Contribution of industrial minerals sector in the implementation

of the Sustainable Development Goals
through their global operations and initiatives

Industrial Minerals

Together for Sustainable Future

IMA Europe

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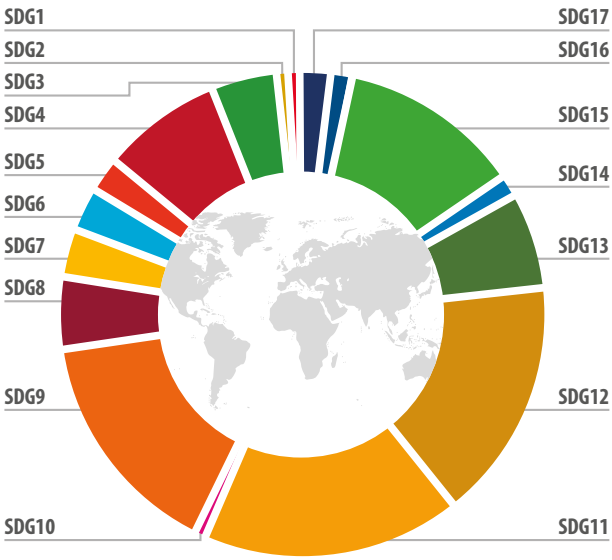
Executive summary

Industrial mineral company projects delivering on the SDG's implementation

For more than a decade, the European mineral industry has been active on developing increasingly sustainable methods of operations. At the UN World Summit in 2015, the United Nations adopted 17 cross-cutting societal challenges to be addressed with concrete actions, known as the Sustainable Development Goals (SDG's). Those Goals were transposed in n 2016, into an orientation package on the EU implementation of the SDG's, through the Communication 'Next steps for a sustainable European future' jointly presented by Vice-President of the European Commission, the EU High Representative for Foreign Affairs and the Commissioner for International Cooperation and Development.

The number of industrial mineral company projects delivering on SDG's:



This report by the European industrial minerals sector covers a multitude of industry sustainability related initiatives/projects which deliver directly or indirectly on all the SDG's. With almost 200 projects delivering on the multiple SDG the industrial minerals operations in Europe, America, Asia Pacific and Africa, shows that the sector is strongly committed to sustainability.

The six top-ranking SDG's, where industrial mineral company projects are contributing directly or indirectly are:

- **SDG11**: Sustainable Cities & Communities.
- **SDG12**: Responsible Consumption & Production.
- **SDG9**: Industry, Innovation & Infrastructure.
- **SDG15**: Life on Land.
- **SDG4**: Quality Education.
- **SDG13**: Climate Action.

In the future the integration of these SDG in the company core business and practices will create synergies with multiple stakeholders to further contribute to the SDG agenda and reinforce sustainability related initiatives.

Introduction

Industrial Minerals as direct contributor to the well-being of society

Throughout history, raw materials have brought significant benefits to society, being vital as a foundation to many products essential for quality of life. Minerals are part of every aspect of our lives. Toothpaste, water, plastic, rubber, cosmetics, construction materials, ceramics, steel, paper, are products we use in our day to day life. They all contain minerals. Minerals also play a key role in new technologies, electrical cars, renewables just to mention e few. Nevertheless, the mining sector faces significant challenges from across the value chain and stakeholder groups, shareholders, customers, governments, communities and consumers. In a constantly changing world, global disruptions and transformations towards a more sustainable and equitable future are challenging the traditional way of doing business and sustainability becomes a condition of staying in business.

The challenge of continuing industrial activity in a sustainable way is well-documented. It started with the definition of Sustainable development (1987) until the comprehensive and integrated agenda of the Sustainable Development Goals (SDG's) in the years leading up to 2030 and beyond. Sustainable development is defined in the literature as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The concept is commonly divided into three pillars: economic, environmental and social. More recently, 2015 represented a historic and unprecedented opportunity to bring the countries and citizens together to embark on new paths. Agreed by the 193 Member States of the UN, the new agenda, Transforming Our World: 2030 Agenda for Sustainable Development, consists of a Declaration, 17 Sustainable Development Goals and 169 targets.

Business has a critical role to play in meeting the demand of global growth in a more sustainable world since it has direct impact on all three of the sustainable development pillars, the social, the environmental and the economic dimension. The industry has, as a matter of fact, responded to this demand through shifting its mindset,

From the Sustainability definition to the Sustainable Development Goals (SDG's) agenda [* IMA-Europe milestones contributing to the sustainability objectives]:

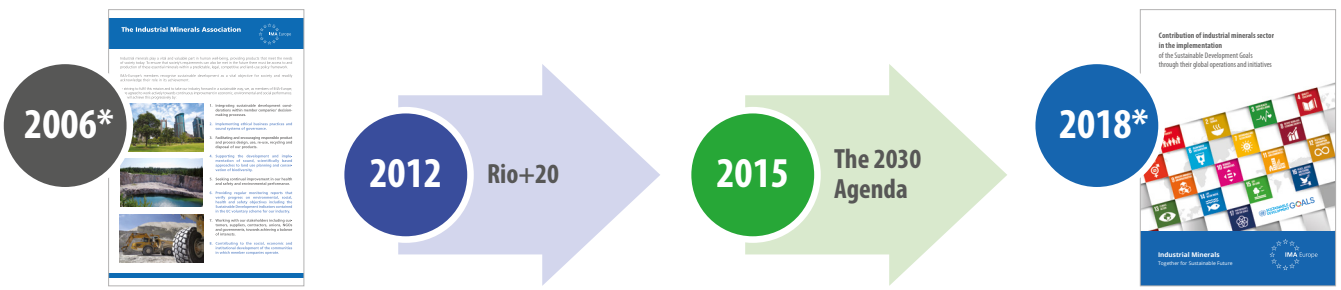
Contribution

strategies and activities. Following an analysis of business communication made by PWC, is resulted in 62% of companies mention the SDGs in their reporting, 79% of companies that prioritise the goals integrate SDG13 (Climate Action), 28% of companies set quantitative targets and linked these to their societal impact for at least one KPI. [1]

Many industrial sectors have already embraced the SDG's and have integrated them in their businesses. This also means that mining can contribute to society, communities and countries where mines operate, having a crucial role in long term wellness. Companies increasingly strive to embrace their relevant role in poverty alleviation, recognizing the economic, environmental, socio-cultural implications of their activities through the full mine project life cycle. When managed properly, mining can catalyse improvements to quality of life and the environment and partnership with governments, local communities and non-governmental organisations can bring a systemic change thanks to implementation of SDG's.

No matter how well recycling is developed, access to essential raw materials remains necessary. It is a fact that extractive activities are dependent on geology and where the mineral deposits are geographically located. [2] Therefore, regional development and benefit-sharing are often essential components of such continuous social license to operate. Sustainable mining development needs to start from the regional level, including the implementation of various benefit-sharing mechanisms that can bring about a broader-based development at the regional level. [3]

In today's world, population growth, urbanization, social and economic development and even demands for a green or low-carbon economy are all contributing to an increase demand for minerals. The critical focus therefore is not on how mining can be sustainable but on how mining minerals and metals can contribute to sustainable development [4] to provide a net positive long-term contribution to human and ecosystem well-being.



Contribution

The United Nations recognises that the mining industry contribute to the all 17 SDGs [5]. Following the example of the metal mining Atlas [6] developed by Columbia Center on Sustainable Investment (CCSI), UN Sustainable Development Solutions Network (SDSN), United Nations Development Programme (UNDP), and the World Economic Forum, this report presents different projects/initiatives developed by the industrial minerals sector that contribute directly to most of the SDG's. From the signature of the Industrial Minerals Association Sustainability Charter [7] back in 2006, the industrial minerals have made significant progresses in their environmental and social impacts, protection of the health of their workers, energy efficiency, respect and support to human rights, whilst continuing to provide opportunities for decent employment and fostering economic development.

We are proud to present these progresses in this report.

[1] PWC, SDG Reporting Challenge 2017.
[2] https://www.ima-europe.eu/commitments/sustainable-development
[3] Resources Policy, Volume 45, September 2015, Mining, regional development and benefit-sharing in developed countries, Patrik Söderholm & Nanna Svahn.
[4] International Council on Mining & Metals, The role of mining in national economies, October 2014.
[5] Mapping Mining to the Sustainable Development Goals: An Atlas. Pp. 4-5.
[6] Mapping Mining to the Sustainable Development Goals: An Atlas. Pp. 1-77.
[7] Industrial Mineral Association Sustainability Development Charter.

Top prioritised SDGs by industry:

	Energy, Utylitis & Mining	Finansial services	Industrial products & Automotive	Retail & Consumer	Technology, Media & Telecoms	Transport & Logistics
1	7 AFFORDABLE AND CLEAN ENERGY	13 CLIMATE ACTION	13 CLIMATE ACTION	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	8 DECENT WORK AND ECONOMIC GROWTH	13 CLIMATE ACTION
2	8 DECENT WORK AND ECONOMIC GROWTH	8 DECENT WORK AND ECONOMIC GROWTH	8 DECENT WORK AND ECONOMIC GROWTH	8 DECENT WORK AND ECONOMIC GROWTH	13 CLIMATE ACTION	8 DECENT WORK AND ECONOMIC GROWTH
3	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	4 QUALITY EDUCATION	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	3 GOOD HEALTH AND WELL-BEING	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
4	13 CLIMATE ACTION	5 GENDER EQUALITY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	13 CLIMATE ACTION	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	3 GOOD HEALTH AND WELL-BEING
5	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	11 SUSTAINABLE CITIES AND COMMUNITIES	3 GOOD HEALTH AND WELL-BEING	2 ZERO HUNGER	5 GENDER EQUALITY	12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Contribution

SDG1

SDG1: End Poverty

End poverty in all its forms everywhere

Global poverty rates have been cut by more than half since 2000, but more intensified efforts are required to boost the incomes, alleviate the suffering and build the resilience of those individuals still living in extreme poverty. Social protection systems need to be expanded and risks need to be, mitigated for disaster-prone countries, which also tend to be the most impoverished. Ending poverty relates also to the access to health, education and participation in social, political and economic decision-making processes that impact sustainable livelihoods.

Mining contributes to eradicating poverty by generating significant revenues through taxes, royal payments and dividends for government to invest in economic and social development of basic public goods, such as access to health, housing, education and infrastructure of communities. Finally, to avoid the risk of exacerbating poverty, mining operations have put in place effective strategies to restore livelihoods that might be adversely affected by mining, including ensuring access to land and natural resources for people in mining communities.

Key UN SDG1 goals relevant for mining:

- By 2030, eradicate extreme poverty for all people everywhere, measured as people living on less than 1.55€ a day.
- By 2030, ensure that all men and women, particularly the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.
- Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, to provide adequate and predictable means for developing countries, with special focus on less developed countries, to implement programmes and policies to end poverty in all its dimensions.

Contribution

SDG1

Contributing to poverty eradication may occur through influencing local procurement, developing local supplier capacity and strengthening local value chains as a strategy for leveraging skills, expertise, innovation and technologies to stimulate further indirect employment and induce economic growth. Mining companies can work with local suppliers and third-party organizations to develop the local and national capacity for the provision of goods and services, building in this way supplier capacity to meet mining industry demand and standards for quality, price, health, safety and the environment.

Industrial companies have taken an inclusive approach to help reduce poverty through champion inclusive employment facilitating equitable access to employment opportunities and offering training and apprenticeship programmes in direct employment their operations or indirect employment resulting from, the local and national procurement of goods and services. Corrupt practices in recruitment that exclude some groups of the population can be dealt by creating incentives for contractors and subcontractors to have a more inclusive and local recruitment approach. Companies can tackle marginalization of groups to access employment opportunities also by creating on-the-job training or complementary programmes in collaboration with technical and educational institutions.

The mineral industry has contributed to poverty reduction through collaboration with local communities and government, civil society and other stakeholders to leverage resources for inclusive poverty alleviation and to strengthen traditional livelihoods. Companies have, for instance, supported multiple non-mining related livelihood options, including investments in programmes to improve agricultural productivity, supporting infrastructure and services to link existing products to markets, collaborating to develop additional economic opportunities or supporting micro-finance initiatives.

Contribution

SDG2: End Hunger

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

Agriculture is the world's largest employer, the primary livelihood for poor rural households and can provide nutritious food for all, while supporting people-centered rural development and protecting the environment. SDG2 seeks to end hunger while improving the sustainability of global food and agriculture systems, meaning reducing negative impacts on the planet's soils, freshwater, oceans, fisheries, forests and biodiversity. A lot of efforts to combat hunger have been put in place since 2000, ending food insecurity and malnutrition for all will require continued and focused efforts, especially in Asia and Africa. More investments in agriculture, including government spending and aid, are needed to increase capacity for agricultural productivity.

Where mining companies operate in traditional agricultural areas, the impact on water, land and biodiversity resources is of concern to farmers and indigenous peoples and can therefore be a potential source of competition. To contribute to SDG2, multiple industrial mineral companies have managed their impacts on natural resources and collaborating to eliminate hunger and improve agricultural production, sustainability and global food security together with the local communities.

Key UN SDG2 goals relevant for mining:

- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.
- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
- By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
- Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular least developed countries.

Contribution

SDG2

To integrate SDG2 into their core business, companies have build synergies where mining and agriculture operate together. Both the activities require land and water and have shared interests in policies and operations impacting these resources. To tackle possible problems arising from this coexisting, mining companies have considered how their operations impact on their neighbors' livelihoods and identify ways to build trust and avoid or minimize negative impacts. Moreover, most mining operations have infra-structures for water management of which design and planning should consider the technical, social and political dynamics of the availability and use of hydrological resources across the watershed.

Mining companies have supported multiple projects to achieve food security and improved nutrition and promote sustainable agriculture by keeping farmland and livestock free from contamination and dust. Mining companies have also contribute to SDG2 ensuring transparency in water management, sharing information about consumption, use, quality and co-sharing this valuable resource. A way to facilitate transparency may be to work with local communities and governments to formalize community-based or third-party approaches to participatory water monitoring practices and management.

Collaborating with farmers, communities, government and other stakeholders, mining companies generate opportunities and benefits for their sector and the society to address shared challenges in hunger, malnutrition, agricultural and natural resource management. An example of this collaboration can be the support of companies to the development of public baselines for planning measuring the availability and quality of water resources, sharing information on company use of water. Companies may also want to engage with stakeholders to implement impact assessments in mining basins where water might be affected by several mines. Companies can also work together with small-scale farmers by funding training and programmes for agricultural extension or helping to source fertilizers for improving yields.

Local community drive to address local needs & demands

An Economic Interest Group (EIG) is a group of interest that assesses the needs of the local community and develops activities that improve the living conditions of its members in the vicinity of a mine in Senegal. There are 2 GIEs of the workers' wives of Thiès and Lam Lam. The Lam Lam's EIG has about 80 women. Their activities are variable, and they comprise: raising goats, chickens, sheep, cows; trade in fabrics, peanuts farming and for resale, tomato, cowpea, et al. These EIG's benefit from the company engagement and the donations from Tolsa Company in Senegal to develop community related projects and improve the living conditions of their community.

Region
Africa

Country
Senegal

Contribution
SDG1/2/5

Company
Tolsa

Contribution

SDG3

SDG3: Good Health & Well-being

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

Since 2000, impressive advancements have been made on many fronts related to ensuring healthy lives and promoting well-being for all at all ages, which is essential to sustainable development. Significant strides have been made in increasing life expectancy, reducing child and maternal mortality and increasing access to clean water and sanitation. However, to meet the global Sustainable Development Goals by 2030, progress must be accelerated to fully eradicate a wide range of diseases and address many different persistent and emerging health issues, particularly in regions with the highest burden of disease. Mining companies have substantial commitments and policies for health and safety to pre-emptively address risk factors, bringing health services to areas that lack them through collaborating with government and other stakeholders.

Key UN SDG3 goals relevant for mining:

- By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
- By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.
- Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
- By 2020, halve the number of global deaths and injuries from road traffic accidents.
- Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

Mining companies are supporting to achieve the SDG3 by championing occupational health and safety, to ensure safe conditions for their workers and developing standards and management systems for the day-to-day and long-term implementation of their policies. For instance, companies have established rigorous workplace health and safety monitoring and reporting, peer-learning from lessons learned and new improvements via the company's health and safety management systems. Mining companies have partnered with communities, government and other stakeholders to improve accessibility to health services, the quality of healthcare and joint approaches to monitoring and responding to epidemics. For instance, companies may support local programmes to combat infectious disease through helping to fund health campaigns distributing mosquito nets, spraying antimalarial insecticide or funding emergencies healthcare facilities and communications campaigns in response to epidemics. Finally, since in Africa, Asia and Latin America traditional medicine is a fundamental approach to meet some primary healthcare needs, companies have linked their work with biodiversity and ecosystems to help strengthen the use and knowledge of medicinal plants or promote the incorporation of effective traditional health practices into local public health approaches.

Smoke free Nordkalk

At Nordkalk, the development of wellbeing at work is methodical and is guided by changing themes quarterly. The quarterly themes in 2016 were lifestyle, exercise and rest and the balance between work and free time. One of the central themes running through the entire year of 2016 was ”Smoke free Nordkalk”. It was first implemented in Finland and it will expand to the other countries in the coming years based on the Finnish model. Support was offered to personnel to stop smoking and as from the beginning of 2017, Nordkalk is a smoke free work place in Finland. This means that one is not allowed to smoke or use any other tobacco products during working hours at the work place or in its vicinity. The smoke free work place applies to the entire personnel, apprentices, co-operation partners, contractors and/or visitors. ”At Nordkalk, we only burn lime” is the new moto that supports the initiative and the personnel has a positive attitude towards the smoke-free work place.

Region
Europe

Country
Finland

Contribution
SDG3/8

Company
Nordkalk

nordkalk.com/news/other-news/2016/11/nordkalk-goes-smoke-free-on-1-january-2017

Saúde Comunitária: a differentiated medical care service in Amazon countryside

In August 2015, the riverside population of Ipixuna do Pará received a large health action made possible by the Imerys Community Health program. Imerys signed a partnership with Sociedade Biblica do Brasil (SBB), a leading entity for more than 50 years in the ”Luz na Amazônia” social program, and took a hospital boat to the region for the first time. The vessel is adapted with medical equipment and allows access to isolated areas to carry health services. The hospital contributed to the Canaan and Fortaleza communities through a team of 34 SBB volunteers, including doctors, dentists, nurses, biochemists, general services, cleaning staff and cooks. Over the course of three days, the Luz da Amazônia attended to more than 400 people in the region and performed more than 1,000 health procedures. The action of the hospital boat in Ipixuna has won the Imerys global 2015 Sustainable Development Challenge award in recognition of the best sustainability practices.

Region
South America

Country
Brazil

Contribution
SDG3

Company
Imerys

imerysnopara.com.br/comunidades/detalhe/?cid=13

Carmeuse H&S strategy

Carmeuse strategy in H&S is: 'Nothing we do is worth getting injured'! To implement, risk assessments are carried out, trainings are put in place to teach employees to react and repot potential risks. As a H&S practice the employees also share home photographs to indicate how they used a H&S attitude at home and in private situations. Viewed as a cornerstone for a sustainable working environment, health and safety initiatives at Carmeuse have inspired Safety First and Always as one of its five leadership principles. The prevailing mantra and creed rising from Carmeuse's culture of safety is, "Nothing we do is worth getting injured" aiming to a zero-tolerance mindset towards ever having an employee get injured, in even the slightest way.

Region
global

Country
global

Contribution
SDG3/8

Company
Carmeuse

CARMEUSE

carmeuse.eu/sustainability/people

Saúde do Idoso: in Amazon countryside offers quality of life for senior citizens

Four years ago, Dona Dilma already knew the health benefits of physical activity, but had no chance to practice. Vila do Conde, where she has been living for 30 years, lacked options to perform these activities. Her only possibility would be to pay for enrollment at a gym, but the price was not compatible with her monthly budget. In 2012, when the Casa Imerys opened, Dona Dilma and her neighbourhood got a living and leisure space, which filled the community's social void. Casa Imerys offers free courses for the entire community: computing, handicraft, professional training, among others. However, senior citizens are placed in a specific group with activities and crews specially designed for them. These actions are all part of the Elders Health Program, developed in-house, involving 62 seniors in activities aiming for welfare, quality of life and health in the old age. Some courses, such as handicraft and therapeutical fitness, may be cyclic, both lasting two months, and others, like dance lessons, have been held twice a week, since the project's first year. With the opening of the second Casa Imerys, in May 2015, the program has started to offer aquarobics classes, a practice recommended for seniors due to the low impact on the joints.

Region
South America

Country
Brazil

Contribution
SDG3/4

Company
Imerys

IMERYS
TRANSFORM TO PERFORM

imerysnopara.com.br/comunidades/detalhe/?cid=8

Healthy Smiles

Smile Healthy offers dental services and education in oral health care and on why it is important to brush the teeth after meals and the negative consequences that not taking care of your oral health brings to your smile. The region where the children live in is lacking essential services, including dentistry. Healthier Smile program offered services, free dental care, regular and quality as well from locals and, more important, helps to improve awareness of oral hygiene for children and adults. The schools serve as a pole of activities of the programme in the communities and the work begins from them. The first action is in the classroom, with a lecture educational for children, parents and guardians, whose purpose is to advise on the major health care related to oral health. In addition to information, children receive a kit of oral hygiene to maintain in the home the care they have learned in school. It is also in the area of schools, or near them, that the medical care is done. The Odontomóvel, trailer equipped by the mining company with a dental office full, it is parked three months in each community and carries out visits to five times a month. In this unit are provided various services, from diagnosis to treatment. This closer relationship between dentist and patient generates a relation in which the dental treatment is going to be more dedicated to prevention than to treatment.

Region
South America

Country
Brazil

Contribution
SDG3/4

Company
Imerys

IMERYS
TRANSFORM TO PERFORM

imerysnopara.com.br
/comunidades/detalhe/?cid=6

Sibelco: Going for zero

Sibelco group has developed and implemented a safety program, which is owned by the employees and is an essential component of the company-wide efforts to manage incidents and minimize accidents worldwide in a harmonious manner. 'Going for Zero' is a comprehensive approach to safety that is based on three pillars: 1. Global safety standards, 2. Life Saving Rules, and 3. Behavior based safety program to empower every employee to a safety leader. The goal is to provide a workplace that causes zero harm by increased awareness of potential risks in a work environment where we are all responsible for the safety of our colleagues. Going for zero is a cornerstone of Sibelco sustainability initiatives Going for Zero' underscores company-wide focus on safety and the importance of health and safety in creating value for the stakeholders. Achieved through programs that promote and reinforce best practices for our employees, contractors and visitors. The application of best practices and celebrate the achievements of our team in delivering on this core company value.

Region
global

Country
global

Contribution
SDG3/8

Company
Sibelco

SIBELCO

González F.R. 2016. Sibelco: A contribution to Sustainable Mining. EU-Latin America dialogue on Raw Materials Santiago de Chile (Chile) 24 April 2016. Platform presentation

Public Health Initiative: Detect and Manage HIV/AIDS related issues

With over 20% of the population aged 15-49 infected, South Africa is severely impacted by the AIDS epidemic. Since 2004, Imerys South Africa has developed a unique, participation based approach to manage HIV/AIDS issues, and in 2015 this approach was extended to include both HIV/AIDS and Wellness. After an initial prevention phase focusing on training all coworkers, local teams moved on to target treatment. Imerys strategy in South Africa was defined in agreement with our stakeholders who meet in an AIDS steering committee. This strategy is clearly coming to fruition with almost 80% of Imerys' employees in South Africa having taken part in the free, confidential screening program.

Region
Africa

Country
South Africa

Contribution
SDG3

Company
Imerys

imerys.com/scopi/group/imeryscom/imeryscom.nsf/pagesref/SBDD-8A9B84?OpenDocument&Lang=en

Effective Safety Campaigns for Sibelco's «lifesaving rules»

Sibelco Europe launched its "Lifesaving Rules" in 2013, with the aim of protecting workers from the most significant safety risks. These rules were supported by existing Performance Standards, which defined in generic terms the minimum standards required. While rules and standards are important first steps in a HS management programme, the HS Europe team recognized that these elements alone do not provide the necessary "fuel" (in terms of knowledge, understanding, planning, resources, engagement) to bring about continuous improvement. In the absence of other essential programme elements, there may be barriers to the physical and behavioral implementation of measures required to improve the safety and health of workers.
A holistic, campaigned approach was required, which would: Explain clearly what standards are expected; Provide tools and guidance to aid interpretation of the requirements; Raise awareness in the workforce via tailored campaign materials; Bring about workforce engagement; Provide a framework for measurement of compliance, via self-assessment; Provide a mechanism by which resources, necessary to implement improvements, could be identified, justified and obtained; Provide information to senior management to guide their decision making. Three successive safety campaigns (mobile equipment / traffic safety; lock-out, tag-out and machinery guarding) have helped Sibelco Europe to bring about year on year improvements in the way it develops and delivers its thematic safety campaigns.

Region
Europe

Country
Netherlands

Contribution
SDG3/8/11

Company
Sibelco

sibelco.com/wp-content/uploads/code-of-sustainable-conduct.pdf

Health & Safety award

Two plants received the Illinois Association of Aggregate Producers IAAP's highest award for safety, the "Rock Solid Excellence in Safety" award, and the 'Gold' level achievement award respectively. For both plants recognition of their achievements in safety at the IAAP Annual Convention was highlighted. To achieve this honor, they achieved the following: Zero MSHA reportable/OSHA recordable injuries or illnesses; Zero final MSHA elevated actions or OSHA citation for a serious violation; MSHA Rate of Violations Per Inspection Day (VPID) less than the national average for your type of operation. (Not applicable to contractors or OSHA sites.) Employee Safety & Health goes to the very core of our operations at Elco, Tamms and all Unimin sites across the United States and Canada. Together, we work to prove daily, that focusing on employee Safety & Health is not just the right thing to do, it is the best thing to do." said the Regional General Manager.

Region
North America

Country
USA, Canada

Contribution
SDG3/8

Company
Sibelco

unimin.com
/rock-solid-in-safety

Lime facility Sponsors Community bike safety event

Carmeuse US Lime & Stone's Port Inland operation recently donated the funds to purchase the youth bike helmets given away at Schoolcraft County's first Bike Helmet Rodeo. This free community event, held on June 24, 2017, was sponsored by Carmeuse and hosted by Schoolcraft Memorial Hospital. In addition to passing out free bike helmets to children, the Bike Helmet Rodeo offered bike safety checks, helmet fittings and lessons on bike safety. Participants also had the opportunity to make their way through a bike obstacle course, take an ambulance tour, play in a bounce house and enjoy a free healthy lunch.

Region
North America

Country
USA

Contribution
SDG3

Company
Carmeuse

carmeusena.com/news
/port-inland-sponsors-
community-bike-safety-event

Innovative solutions to increase Omya work safety

Region
Europe

Country
EU

Contribution
SDG3/8

Company
Omya

2016. Omya World: Sustainability magazine [Pp. 7]

Increasing work safety is a priority at Omya. Every workplace is different and has different requirements for safety. Just like a safe workplace, also the Personal Protective Equipment (PPE) must comply with the highest demands on safety, functionality and comfort in wear. To achieve this, Omya has discussed with its safety professionals and users of PPE products and carried out wearing tests. Based on the employee experience and the application requirements for the individual products, Omya was able to provide for the first time the Omya PPE Catalogue for the Region Europe. they could compile a wide range of general PPE products and accessories that will make it easier to select the right PPE for the respective workplace and the appropriate task.
But before PPE is deployed, employees are asked to always check whether there are other ways to reduce or avoid hazards. The so-called S-T-O-P principle determines the order in which preventive measures should be taken: Substitutional measures (replace harmful substances with less harmful ones); Technical measures (avoid physical hazards, e.g. falling from heights, limit and divert hazardous substances); Organizational measures (specific training for employees); Personal Protective measures (add-on measures to the collective protective measures mentioned above).

”No Dust” teams: Innovation in airborne dust measurements

Region
Europe

Country
EU

Contribution
SDG3/8

Company
Sibelco

Committed to reducing exposure of its staff to airborne dust, Sibelco sought a new way of identifying individual sources of airborne dust generation to be able to prioritise improvements. Sibelco’s multidisciplinary team of experts – Health, Safety and Engineering specialists – developed for the quarry and mineral processing environment a concept in which real-time dust level measurements are combined with video recording of the activity or process being carried out. The new technology makes dust exposure visible.
The equipment – a hand-held monitor and miniature head camera – has been very popular with the workforce, positively influencing worker’s behavior and their personal involvement in Sibelco’s dust improvement efforts.
This innovative, and now affordable technology is now being used throughout Sibelco to assist site-based ”No Dust” teams in their local dust improvement projects.

From Volcano to Vector Control

Region global

Country global

Contribution SDG3

Company Imerys

More than half the world's population is exposed to the risk of mosquito (vector) borne diseases, including malaria, dengue, zika, chikungunya, etc. Today, malaria kills around 450,000 people each year with 90% of the deaths occurring in sub Saharan Africa, with children under 5 years old and pregnant women at the highest risk. Population growth, urbanisation rates and climate change are mega trends impacting how mosquitoes are evolving to develop insecticide resistance that is compromising the success of existing vector control interventions. Imergard TM WP is the 1st known application of an industrial mineral for mosquito control.
The active ingredient of Imergard TM WP, perlite, is not known to have insecticidal properties and has never been used in public health to control mosquito vectors. The development of Imergard TM WP addresses some critical unmet needs: Mosquitoes have developed resistance to many of the traditional chemical controls (i.e. pyrethroids, organochlorine, carbamates & organophosphates) that are used to control mosquito's vectors; When applied as an indoor residual spray, it introduces a new mode of action to reduce incidences of malaria – the disease pathogens transmitted by the African malaria mosquito (*Anopheles gambiae*); The potential for Imergard TM WP to be supplied through a consumer retail model puts the power to control mosquitoes in the homeowner's hands and can relive the dependence on national, provincial or district management programs. Imergard TM WP is the winner of IMA-Europe 2018 Innovation award.

IMA-Europe 2018. Awards brochure – Innovation [Pp. 4]

Senegal health care project

Region Africa

Country Senegal

Contribution SDG3/8

Company Tolsa

Lam Lam's health center was created in 1948 and 4 doctors and 5 nurses have assisted the local community over this period with with medical advice, vaccination and other medical support. The vaccines administered in the center are against: poliomyelitis, tetanus, etc. and the center can receive about 30 to 50 children from 0 to 9 months from the cities near Lam Lam per session. The first phase started with tetanus vaccination from 2015 (for the first 2 doses) to 2016 for the last one. First aid, prenatal consultations are performed by the company doctor. The detection and prevention also are common practices in the healthcare center. During 2017 hepatitis B screening was carried out and 77 agents from Allou Kagne, the port and the headquarters took part. Vaccination will follow for HIV-negative people. In rainy periods, approximately 200 nets are distributed to company staff, outsourced agents and surrounding Fulani villages to minimize exposure to mosquitoes.

Conveyor Safety Training Rig

Region
Europe

Country
UK

Contribution
SDG3

Company
Tarmac

TARMAC
A CRH COMPANY

Conveyors have been used in our industry for decades, to move large quantities of material over long distances. By their very nature and continuously moving components, conveyors are inherently dangerous. Conveyors also feature many nip points with large amounts of mechanical energy which carries the risk of entanglement. More than 50% of conveyor accidents are due to entanglement. Within the lime and stone producing areas at Tarmac Lime & Powders there are many conveyors around site transporting varying sizes and weight of lime and limestone products, some of the conveyors are approximately one mile long. Two apprentices based in Tunstead Workshops were given a project to construct a working rig which simulates a worker coming into contact with conveyor moving parts and nip points. Abigail Finney and James Gratton completed the mechanical and electrical construction of the rig which was inspired from a unit which L&P employees has experience of from previous conveyor safety days. Assistance was given on the initial design and a skeleton design schemed. Abigail and James were then tasked with constructing and creating a working rig. The Safety Training Conveyor Rig has been transported around site and is used for safety training and raising the awareness of the hazards around conveyors. The speed of the simulated conveyor can be adjusted to replicate other conveyors that are in use to allow the employees to experience the 'snatch' of when a conveyor bites. Tarmac Lime & Powders have also offered the conveyor rig to other British Lime Association and Mineral Product Association lime producers for best practice sharing to allow these other companies to benefit from the facility and raising the hazard awareness to their employees. Abigail and James have been awarded merits and recognition for the excellent work that they carried out in producing the piece of equipment that is proving to be a very beneficial piece of safety equipment to all in the industry.

IMA-Europe 2016. Innovation awards brochure [Pp. 36]

Contribution

SDG4

SDG4: Quality Education

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

Obtaining a quality education is the foundation to improve people's lives and sustainable development and requires increasing efforts, especially in sub-Saharan Africa and Southern Asia and for vulnerable populations, including persons with disabilities, indigenous people and refugee and poor children. Even though basic literacy skills have improved, enrolment rates increased, and availability of schools expanded, bolder efforts are needed to strengthen equitable access to quality education that leads to improved economic opportunities for women and men. Mining contribution to SDG4 through technical, vocational and educational training programmes for the current and future workforce, ensure that national curricula offer the technical training required by the mining industry. Companies invest in schools and teacher training, collaborating with government and communities to improve the quality and availability of educational opportunities for all.

Key UN SDG4 goals relevant for mining:

- Ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.
- Ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.
- By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrollment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries.
- By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries.

Contribution

SDG4

The mining industry is contributing to quality education through the implementation of a life-of-mine skills baseline and assessment in the available labor force, analyzing the gap against skills requirements. Matching available skills to skills required in operations, build training and recruitment solutions to close the gaps. Companies have sponsored apprenticeships, scholarships and graduate programs to build specific technical skills required for job performance in addition to other "softer" skills, such as communication, decision-making and planning.

To contribute to SGD4, industrial mining companies collaborate across the industry and with communities and government to understand the challenges and gaps in expanding inclusive access to education and identify opportunities for company participation. For instance, companies have collaborated with community groups, schools and universities to design appropriate curricula and technical and vocational training linked with employment opportunities across the mining industry. Mining industry is continuing the long tradition of supporting and sponsoring local school by, for example, collaborating with teachers to develop workshops and curricula in environmental management supporting school recycling programs or providing local scholarships to enroll the poorest children. Finally, companies have partnered with local governments and civil society to keep children in school, especially ensuring that the economic benefits and opportunities of education exceed those of dropping out to be employed in the informal sector.

Carmeuse Majan supports a training program in Oman

Carmeuse Majan LLC (SFZ) signed with Omani Bahjah Orphan Society an agreement to fund a three-years training program. Within the framework of the partnership in social responsibility and cooperation between the private sector and civil institutions, to support humanitarian and charitable cooperation constitutes a cornerstone for the sustainability on the community partnership between different sectors. The General Manager of Carmeuse Majan LLC (SFZ) signed an agreement with Sheikh Abdulrab bin Salim Al Yafie, founder of the Omani Bahjah Orphan Society and its Vice President, to fund a three-year training program aimed at students enrolled in the Omani Bahjah Orphan Society through training programs that enrich their skills and abilities, resulting in long-term positive impact. The training programs will be held within the scientific and educational basis to serve this important segment of the community.

Region
Middle East

Country
Oman

Contribution
SDG4

Company
Carmeuse

carmeuse.com/news/carmeuse-majan-supports-training-program-oman

Hiring through YOU@S&B program

The YOU@S&B, program was designed to offer work experience to unemployed youth in Greece by providing professional knowledge, skills and experience to improve their employment prospects. In 2013, S&B (which became part of the Imerys Group in 2015) welcomed 25 new employees through this program. The new recruits ranged from high-school to higher education graduates, who gained work experience from 9 months of paid employment with the company. They assumed responsibilities in Research & Development, Environmental Management, Machinery & Electric Equipment Maintenance, Sales, Communication, Finance, Accounting, Information Technology, Human Resources, Legal Services, Internal Audit and Secretarial Support. During the first week of the program, the young colleagues attended an intensive 5-days training course in Business Administration developed in cooperation with ALBA Business School. Distinguished ALBA professors, as well as company executives aimed to provide them with the fundamentals of business operation and to familiarize them with a real business environment.

Region
Europe

Country
Greece

Contribution
SDG4/8

Company
Imerys

imerys-additivesformetallurgy.com/sustainability-case-studies/sb-welcomes-new-colleagues-selected-through-the-yousb-program

Horticulture transformation to create new perspectives for students and teachers

Region
South America

Country
Brazil

Contribution
SDG3/4

Company
Imerys

imerysnopara.com.br
/comunidades/detalhe/?cid=9

Teachers from the Bom Pastor school, located in the Canaã community, in the interior of the municipality of Ipixuna do Pará, have taken advantage of a vegetable garden to teach subjects such as Mathematics, Science and Physical Education to students. And the example that comes from the teaching unit shows how a social project of private initiative can become truly sustainable when incorporated into the community. The vegetable garden as a classroom is another positive step in the trajectory of the project that began in 2011 with the support of Imerys, which has two kaolin mines in the municipality. The community located on the banks of the Capim River naturally has an agricultural vocation and many families use the land to grow food for their own consumption. Imerys offered the technical support of an agronomist to support the community to develop a vegetable garden, which also helps to enrich school meals. Since then, together, teachers and students cultivate beans, chives, cabbage, and other vegetables. Every 15 days, the agronomic engineer hired by Imerys met with the group to discuss how to improve the performance of the cultivated area. The company also supports with fertilizers necessary for the production of food. The project has grown and the garden has transformed into a source of nutrient-rich food for one-third of the total of 900 students at the Bom Pastor school. Also as a result of the collective work, the school community has become more united and more conscious about the environment in which it is embedded. The initiative involves the teachers of the school and groups of students of the 7th grade, aged between 11 and 18 years. All disciplines have been linked to the project and the teaching is associated to the area of cultivation. In science class, for example, students learn about the soil in the region and which vegetables are suitable for it. And in the mathematics discipline students will learn to calculate the area of planting, total production and expansion of the garden.

Partnership with Education Foundation

Region
Oceania

Country
Australia

Contribution
SDG4/17

Company
Sibelco

In October 2017, Sibelco made a donation to the Harden District Education Foundation (HDEF) at a small presentation at Murrumburrah High School, near the Galong site in New South Wales. This donation was the third instalment of a four-year commitment and is being be used to support local youth in pursuing their post high school educational and career goals.

hardenexpress.com.au
/story/5015222/sibelco-helps-harden-students-with-generous-grant

IMA Europe

Unite project for Omya group-wide sustainability

In view of facilitating the integration of our sustainability principles into daily operations, Omya introduced in 2010 the innovative UNITE project allowing for the harmonization, integration and simplification of its management systems on a group, regional, country and site level. Worldwide Omya manages almost 200 different ISO and OHSAS certificates for quality (ISO 9001), occupational health and safety (OSHA 18001), and environment (ISO 14001). With the assistance of a global certification company, Omya is moving all single site certifications into an integrated, multi-site certification which will allow Omya to apply the same standards globally and enhance the transparency of the organization. UNITE has been conceived as the driving force behind the practical implementation of the Group's Sustainability Policy; harmonizing all management systems and business processes, it will gradually lead the company further on the road toward total quality management and sustainability.

Region global

Country global

Contribution SDG4

Company Omya

www.omya.com/Documents/sustainability_brochure_2014.pdf [Pp. 21]

Focusing on educational programs and duplicating best practices to help local communities

Collaboration on educational projects has begun in Brazil, China, India, South Africa, as well as Europe and the United States. In 2016, Imerys India supported schools in the communities of Katni, Nagpur and Wankner. Improvements have been done on schools' infrastructure to favor electricity and water supply as well as access to basic hygiene facilities. Moreover, new programs & trainings have been launched to prepare children and students to the needs of the local labor market.

Region Asia

Country India

Contribution SDG3/4

Company Imerys

imerys-kaolin.com/asia/wp-content/uploads/sites/4/2017/05/Sustainable_development_presentation_Imerys_march_2017.pdf

Tech on Wheels

Region
Asia

Country
India

Contribution
SDG4/11

Company
Elkem

Elkem strives to be a responsible neighbour and to foster good and open dialogue with our stakeholders. Many of Elkem's plants are cornerstone employers and are of great importance to local communities, both in terms of tax incomes, jobs and community development. Most Elkem's plants have local initiatives to support better education, sports activities for children, better local infrastructure or other social programmes. As an example, in Mumbai the organisation Masoom, a non-profit organisation establishing quality education in night schools, launched the Tech on Wheels program together with Elkem in 2016. The Tech Wheels bus is used for spreading science and technology education, life-skills program for boys and girls, a girls leadership program, spreading the importance of education in underprivileged communities, street plays and community awareness programs. In 2016-17 Tech on Wheels reached out to around 350 students in 16 schools. In 2017-18 the number of students were 400. In 2018-19 Masoom has plans to reach out to 800 students from 30 schools with the help of its partner organisations. Since the intitiative started, Elkem has encouraged other companies to come forward and now a second Tech on Wheels bus has been launched. Night school students in India are labourers aged 15 to 21, who work during the day to support their families and study at night to complete their education. They mostly live in slums and come from a poor background. The Tech on Wheels bus provides the students with access to online resources and innovative educational programming. The students also get an international outlook, by exchanging ideas and thoughts with students from USA, through video letters and Skype communication.

elkem.com/sustainability/our-stories/tech-on-wheels-in-india

Mining restored sites as educational spots

Region
North America

Country
USA

Contribution
SDG4/9/11/15

Company
Sibelco

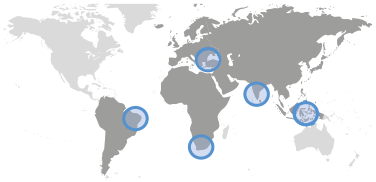
Unimin opens its restored lands for Girl and Boy Scouting adventures, community outings and educational field trips. Through the Wildlife Habitat Council program of Corporate Lands for Learning Unimin has certified and made our properties accessible as outdoor classrooms, wildlife observatories, and recreational spaces. Facility tours provide a different, but equally valuable, educational experience. Unimin opens its doors to school groups and neighbors to share the science and sustainability of mining. Tours offer an insider's experience where both students and adults are always surprised to learn that, minerals surround us.

unimin.com
/community-environment

Education as a building block

Imerys is committed to education and every year sites across the Group develop numerous initiatives to support training and education in basic skills development (literacy and numeracy), young adults' professional integration, and women's and girls' education. A few illustrative examples from across the Group are provided below but are not exhaustive. At company level, education is an essential driver to develop employee competences and creativity as well as a major asset for the company's growth as it is also a guarantee of employees' safety, health, empowerment and employability. Successful initiatives are being carried out worldwide to support the staff who wants to complete their basic education, like in Bekasi, Indonesia and Ipixuna, Brazil, providing free of charge tuition, lessons on the site, material and all the support necessary to achieve formal certificates. Imerys is also addressing the educational needs of employees and contractors that have arrived in a country as refugees, by providing education courses to introduce them the local language, as done at Group operations in Greece. Imerys is strongly involved in community development around its sites and is committed to support the broader access to education. Imerys focuses its support actions towards education to develop local inhabitants' employability and wellness. Initiatives like the Microcredit Program and Casa Imerys in Brazil, the opening of a laboratory at Saraylar Primary School in Turkey, the support to increase the academic levels with Project Ganeshpur in India, or the construction of the Madikoloshe Malepe Secondary School in South Africa, are all examples of the Group efforts to improve community access to education.

Region
Asia, Europe, South America, Africa



Country
Indonesia, India, Turkey, Greece, Brazil, South Africa

Contribution
SDG4/5

Company
Imerys

IMERYS
TRANSFORM TO PERFORM

steelburgernews.co.za/195978/imerys-and-the-peace-agency--launch-project-dignity-in-tubatse

imerys.com/Scopi/Group/imeryscom/imeryscom.nsf/pagesref/SCOI-8S4DU9?Opendocument&lang=en

youtu.be/aKdYHunk-50

Drum Sigur

Drum Sigur is the project through which Școala de Valori and Carmeuse assisted Romanian teenagers in technological high schools with electro-mechanical profiles to discover their innate potential, gain trust in their abilities and use their abilities to pave the way towards a future job in processing facilities. This initiative was developed with joint efforts of education system and industry partners which agreed to develop a new way of addressing lack of trained students to meet employment requirements through tailored schooling and the contact with the industrial site needs. The project Drum Sigur was designed to complement the traditional educational system with a focused approach on the personal development of teenagers and direct use of this knowledge in industry sites and process. This is the first step towards inclusive and sustainable growth through education projects. Hands on practice was tested for over a year in plant facilities for one day per week and consisted in support in production activities such as electrical and mechanical maintenance and process. During their practice hours, the students were seconded and supervised by Carmeuse dedicated staff through training and close follow up. The students appreciated the opportunity to see in and to test their knowledge in real scale industrial facilities. The project is in its 3rd year and involves 4 high schools in 4 different cities and so far 111 participants have benefited from 60 days of non-formal education.

Region
Europe

Country
Rumania

Contribution
SDG4/8

Company
Carmeuse

youtu.be/bEH8DzEL0S0?list=PLfU4DoJySvB-Z0rQiSrJFxba4q--fh1y5s

Creativity and art classes

With the practice of craft, music and sport activities, the Program "Children and Art" is helping to transform children and adolescents, in the age group 7 to 17 years in a situation of vulnerability, into young citizens in Brazil. To participate in the activities, children and adolescents need to be enrolled in the schools of Barcarena, have school attendance and not repeating a year. In this way, Imerys wants to contribute to the reduction in levels of dropping out that are considered high in the region.

Region
South America

Country
Brazil

Contribution
SDG4

Company
Imerys

imerysnopara.com.br/comunidades/detalhe/?cid=4

Lam Lam school

The Lam Lam school was created in 1959 and now has 7 teachers including the Director of the School, 6 classes and 320 students during academic year 2017-2018. The school is equipped with a photocopy machine for the school, a computer for the school principal, each year with learning aids for teaching (notepads, pens, pencils) and end-of-year gifts for the 5 best students in each class. Tolsa company covers all the school expenses: the payment of the salaries of the teachers, the various repairs of the school, etc. A safety wall was constructed to confine the school and recreational area to minimize risks for students/pupils to traffic nearby the school facilities. The school also co-shares the transport bus for the employees for transport from and to school.
The sporting activities of "turnips": football, athletics, cultural activities, are organized every year at Lam Lam during the school holidays (from August to October) for pupils, students and local senior. Lam Lam Sérère, Baliga, and Ndiassane Sérère are heavily involved in Lam Lam's population.
The latter also participate in the tournament of the National Popular Championship of Senegal organized by the municipality of Sherif Lo. The company equips teams with jerseys, balloons and cups for the annual tournments.

Region
Africa

Country
Senegal

Contribution
SDG3/4/9

Company
Tolsa

TOLSA

Westerwälder Tonkiste (Westerwald clay box)

In order to raise the public awareness for the Westerwald plastic clay industry and their responsible extraction of raw materials. This is essential to ensure sustainable and long-term extraction of industrial minerals. BKRI cooperated with the State study seminar for teachers and other experts to develop the clay box. The clay-box is the result of a 5-year interdisciplinary teamwork between school pedagogues and industry experts to experience clay and its sustainability with all senses. The education material contains student texts, teacher´s texts and additional material, like file cards. The box also includes illustrative objects, like small toilets, a ceramic basin, glazed and unglazed pottery or tiles and bricks. Clay samples playfully introduce children to the topic of touching and working with clay. The materials are completed by an earth timeline rudder to show the geological formation of clay during millions of years. Until today, more than 50 "Westerwälder Tonkisten" were sponsored by the extractive industry, by local communities and by end producer companies, and presented also to politicians and ministers who were very impressed by the concept.

Region
Europe

Country
Germany

Contribution
SDG4/9/11/12

Company
BKRI

BKRI

westerwald-ton.info/projekt-
-westerwaelder-tonkiste

Project trains Ipixuna fish farmers and creates business model guided by partnership

Region
South America

Country
Brazil

Contribution
SDG4/8

Company
Imerys

IMERYS
TRANSFORM TO PERFORM

Six traditional families of the community of Vila Oliveira, in the Ipixuna do Pará, have developed a new possibility for income generation, which arose almost in the backyard of their homes (i.e. the shores of the Capim river), in the creek that stores nurseries covered for fish farming. With the support of a Pisciculture Project, developed by Imerys, these families have been learning more than to create the fish; they learn how to build and manage a business in a sustainable associative way. The Project of Fish farming in the Vila Oliveira was planned to improve the qualification of the activity already developed by the inhabitants of the locality. By providing professional training and consulting, Imerys helps the farmers to manage the fish production as a business. In this way, families can overcome the obstacles that normally prevent the increase of its production: failure of structure, lack of buyers, lack of funding to name a few examples. The technical knowledge that Vila Oliveira acquired in three years of activities is one of the elements that demonstrate the maturity of the Project of Fish farming. In 2015, the Program of Fish farming in the Vila Oliveira was recognized by the Award to the socio-Environmental Institute Chico Mendes, in the category of Responsible Social Action. The Project also received the Green Seal of the Institute, which recognizes initiatives that encourage the defense of the environment. With nine years of history, the Award for Socio-Environmental Chico Mendes recognizes examples of solution of conflicts between development, social justice and environmental balance, being considered one of the greatest events that are part of the socio-environmental agenda in Brazil.

imerysnopara.com.br
/comunidades/detalhe
/index.php?cid=11&lang=en

Community empowerment through literacy

Region
Africa

Country
Senegal

Contribution
SDG4

Company
Tolsa

TOLSA

Two literacy training took place during 2017 (June and November) and lasted 4 months each. A total of 22 trainees participated in these kick-off initiatives. French and mathematics are the subjects taught. The trainees and the teacher are provided with teaching didactic material periodically. The objective of this training is to uplift the education level of the community and employed staff in the company. This training will continue in 2018 with another class of 21 people planned to start in Spring.

IMA Europe

Clariant hosts carnival at Zhenjiang primary school to spread message of sustainability

Clariant, as part of its role model to link corporate with local citizens is actively supporting various community initiatives in the regions the company is active in. As part of this commitment, Clariant has co-hosted a carnival at the Zhenjiang Xuefu Road Primary School in April 2016. The carnival is themed "Wonderful and Happy School Life," and intended to give students the opportunity to take a short break from their studies and explore their talents and interests. A highlight of the carnival is a "Science Gadget" event, during which the students had the chance to enjoy the fun of science alongside with the 40 experts from Clariant volunteer team. The event also featured a yard sale to raise funds for scholarships for the students in need, and exhibits on various cultures from around China and the world. Following the school carnival, the HOPES project organized a Clariant's Huizhou manufacturing site where an Open Day of the site was held for the community. The event is part of Clariant's HOPES1 program, which supports local educational development and illustrates how Clariant is establishing corporate citizen relations through its commitment to sustainability in Greater China.

Region Asia

Country China

Contribution SDG4

Company Clariant

CLARIANT

clariant.com/Corporate/News/2015/04/Clariant-hosts-carnival-at-Zhenjiang-primary-school-to-spread-message-of-sustainability

Enterprise learning

Learning Foundation (Foundation pour l'enseignement in French created in 2013 in Wallonia), has the mission to improve the interaction of the teachers with the enterprises in order to keep up to date the level of technical and practical know-how of the teachers and ensure a transfer to the future employees. The idea was that teachers could attend three days of training in an enterprise and learn about the organisation of the work, product quality, project management, health & safety culture and/or behavior. Thanks to this exchange the teachers will put in practice what they learn and educate the students for the upcoming challenges in their professional life. Apart the learning for the day the opportunity to establish links between the company future profiles and summer jobs and develop projects were also foreseen in the near future. Carmeuse has hosted eight of the teachers in their site. This experience was supported by other seven companies in Wallonia (South of Belgium) such as cement producer, aerospace, transport, mechanical companies.

Region Europe

Country Belgium

Contribution SDG4/8

Company Carmeuse

CARMEUSE

fondation-enseignement.be/node/148

Contribution

SDG5

SDG5: Gender Equality

Achieve gender equality and empower all women and girls

Gender equality means action to ensure equal access for women and girls to healthcare, education and jobs as well as equal participation in political and economic decision-making. Gender equality is a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world. Yet, gaps still exist in the right to fully participate in the communities and societies. Achieving gender equality and the empowerment of women and girls requires more focused actions, including legal framework, to circumvent the rooted gender--based discrimination that often results from patriarchal attitude and related social norms.

Mining companies have contributed to SDG5 by aiming at gender parity ad equal pay for equal work across all levels of the organization, recruiting and retaining female employees and making the workplace a safe place for women.

Key UN SDG5 goals relevant for mining:

- Women are still underrepresented in managerial positions. In the majority of the 67 countries with data from 2009 to 2015, fewer than a third of senior- and middle-management positions were held by women.
- Adopt and strengthen sound practices for the promotion of gender equality and the empowerment of all women and girls at all levels.
- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.
- Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.

Contribution

SDG5

To contribute to SDG5, mining companies have adopted proactive strategies to ensure equal opportunities at each stage of the employment cycle and a proactive approach to rebalancing the gender wage gap. Attracting and retaining women in the workforce requires identifying factors that might contribute to unequal opportunities and access, for example establishing awareness training to help enforce anti-harassment policies, offering flexible shift work or childcare and implementing formal career development planning for women.

Mining companies have helped to achieving gender equality through recognizing the roles and rights of women in mining impacted communities, including how women's work and decision-making contributes to family and community engagement. Women's participation can also help identify impact mitigation measures the company can integrate into its core business.

While working with communities, government and other stakeholder, companies can apply a gender-sensitive lens to their work to make sure that women's voices are heard and incorporated. For instance, mining companies have collaborated with women's groups, local government and civil society to manage the impact of mining sites on women and also create synergies for other associated activities that benefit to the local community. Finally, mining companies have made gender-sensitive social investments and commitments, sponsoring, for example, educational opportunities, scholarships and employment training specifically designed for women.

Mining, increasingly attractive to female leaders

Region
Europe

Country
EU

Contribution
SDG5

Company
IMA-Europe

It is no secret that mining traditionally has been and still is a male dominated sector. Over the last years, the industrial minerals sector has been more inclusive on women leadership. As an example, the Industrial Minerals Association Europe (IMA-Europe) Board of Directors is composed of 25% woman for the period 2017-2019. This is an improvement if compared to the IMA-Europe Board of Directors at its creation, which was dominated mostly by man. This leadership change also is reflected in the election of Mrs Catherine Delfaux as the President of (IMA-Europe), for a 2-year term. Mrs Catherine Delfaux is the President and managing director of Provençale S.A., a medium-sized family owned calcium carbonate and marble producing and processing company with operations in France and Spain with exports worldwide. Catherine is a member of the Board of Directors of IMA-Europe since 2004 and President European Calcium Carbonates Association (CCA-Europe) since 2003. She holds a Degree in Mining Engineering from the Ecole des Mines of Saint-Étienne. Her leadership skills are also valuable in the administration and management of one agriculture cooperatives in France.

Executive Vice President Business unit leadership entrusted to Ilse Kenis

Region
global

Country
global

Contribution
SDG5

Company
Sibelco

She holds a PhD in geology. After her university career and having worked for McKinsey & Co for 6 years, she joined Sibelco in 2012 where she held several management positions in strategic development, global business and marketing. Today Ilse is responsible to lead and drive growth in the Global Business unit water and environmental solutions. The business unit covers a global portfolio of filtration and performance materials (silica sands, activated carbon, garnet, calcium carbonate,...) and recycled materials (glass cullets, abrasives,...) with production sites located in Europe, Asia and Australia.

Herlinde Wauteraerts – CEO Europe for Omya

Herlinde Wauteraerts was appointed Chief Executive Officer Europe as from September 2017. In this role, she is member of the Omya Executive Board (OEB). Omya is moving towards modern management structures and embracing workplace diversity. Herlinde joined Omya in 1996 and has served in several roles and countries. Most recently, she had been Vice President Supply Chain Management (SCM) Europe. In this position, she reorganized the supply chain and built an efficient team for internal and external customers. She graduated cum laude as MSc. Communication at the University of Leuven and holds Postgraduate Master Degree in Business Administration (MBA), in Transition to Business Leadership, and in Transport and Maritime Management, and an Executive Master in Supply Chain Management from the Vlerick Business School. She chairs the Board of Directors of Utkilen Shipinvest.

Region
Europe

Country
EU

Contribution
SDG5

Company
Omya

2017. Omya World: Sustainability magazine [Pp. 19]

Helping women move up the managerial ladder

The initiative, Gender diversity – the next frontier for Imerys India Business, was started in 2017 to increase opportunities for women in management, specifically in operational roles. It supports the Imerys Diversity and Inclusion Charter, which pledges to create an environment where people are valued for their differences and their contribution. Embracing workforce diversity and gender equality opens up opportunities for innovative and creative solutions, helps make stronger business decisions and better serves the needs of customers. Around 50 employees – women and their managers – have undertaken training in areas that complement Imerys' leadership behaviors, such as Lead Self, and Communicate and Collaborate. Sessions also looked at issues such as sexual harassment and masculine versus feminine work cultures, and discussed best practices from other organizations. The feedback from the women who have taken part indicated that they have learned how to be visible with management and how to steer their careers in the right direction. As well as providing guidance and skills training to women, the project highlights the important role of managers in ensuring the goals are achieved by supporting women to take senior roles.

Region
global

Country
global

Contribution
SDG5

Company
Imerys

imerys.com/scopi/group/imeryscom/imeryscom.nsf/pagesref/REBA-AYFF5Y/$file/CSR%20Report%202017.pdf [Pp. 14]

Rozita Bahadon – Production manager of Omya in Malaysia

I started to work for Omya in 1995 as a quality officer and got promoted as Quality control manager in 2001. In 2006 a new technology was being tested to produce slurry products and we faced challenges to run the new machinery. After a training on the Omya production site in Thailand I was asked to run the plant and was successful in doing that and in getting the required product specifications. Thanks to common efforts for sustainable production, we managed to optimize chemical consumption which resulted in financial savings. After running for two years the wet plant and these positive results I was promoted to production manager and to take responsibilities for the dry and wet production lines. In a team of 27 staff employees in the plant, I am the only woman and we get good cooperation atmosphere from all the staff. If I were to give advice it would be this: "Always believe that you can take all the challenges given to you".

Region
Asia

Country
Malaysia

Contribution
SDG5/9/12

Company
Omya

Malaysia – Florence Ong leading the activities of the Technical Support center

Graduated in chemistry, Florence Ong started to work 11 years ago in Sibelco and now she holds the position of Sibelco's Technical Solutions Manager – Coatings in Malaysia. Establishing the Paint Technical Support Capability on fillers from scratch, is a key memorable achievement at Sibelco and today, this is being viewed by our customers as one of the best in Asia. Recognition from our colleagues, customers and company motivates her to deliver on expectations. The greatest sense of satisfaction is when the technical input helps colleagues and customers solve their problems. Enjoy and achieve success in our chosen field, passion is of utmost importance, but also be open-minded and pro-active to learn, be bold to try new ideas and be fearless to learn from failure. Having a diversified and inclusive team in these areas, puts Sibelco experts in touch with the local needs and helps us understand the unique requirements from their market so that we can work as a cohesive team to identify new opportunities to deliver on research and innovation. With Sibelco, I have learnt that mineral fillers, the most often neglected component in coatings formulations, can contribute to prolonging the usable life-span of coatings, which in turn helps in conserving resources.

Region
Asia

Country
Malaysia

Contribution
SDG5

Company
Sibelco

SIBELCO

sibelco.com/media/florence-ong

Erika Engstrom – Plant manager of Omya in Sweden

Having worked with Omya 3 years as a process engineer I was asked if I would like to take the position of the plant manager when the former manager was about to retire. After a lot of thinking and encouragement from HR and management I accepted. In total 14 people work in this GCC plant. I was the only female and the youngest, while now there are 2 women and 12 men. The impression from the employees is that it is a calmer work environment with a female manager, while sometimes the reaction from visitors is the surprise to see a female in the position of the plant manager. I don't believe in gender quotation, but I think that we should try to stimulate interest for industrial jobs at early ages and then, hopefully, in time the numbers will be more even and based on qualifications. My advice for young people would be: "Believe in yourself, especially when others already do!".

Region
Europe

Country
Sweden

Contribution
SDG5

Company
Omya

Elkem working towards increase the number of women in their workforce

Elkem, values diversity and strives to be a local employer in all the countries they operate. However, the female representation remained low in 2017, at 21 per cent, and is only 7 per cent among operators. Elkem continues to look for ways to increase the number of women in the workforce. The percentage of women in management positions increased to 28/ in 2017 and they expect the increase to continue in 2018.

Region
global

Country
global

Contribution
SDG5

Company
Elkem

elkem.com/globalassets/corporate/documents/elkem-sustainability-mag-2017-web.pdf [Pp. 3]

Contribution

SDG6

SDG6: Clean Water & Sanitation

Ensure availability and sustainable management of water and sanitation for all

Access to water and sanitation, sound management of freshwater ecosystems are essential to human health and to environmental sustainability and economic prosperity. Water scarcity, poor water quality and inadequate sanitation result in disease and premature deaths and negatively impact food security, livelihood choices and educational opportunities for poor families across the world. By 2050 it is estimated that, at least one in four people is likely to live in a country affected by chronic or recurring shortages of fresh water.

The mining industry needs water to process the raw materials. However it can also contribute to adequate access to clean water and sanitation thanks to the water cleaning using industrial minerals. Reduce water footprint, recycle water in closed loops and also co-management water resources with the local communities can help the water shortage related issues in some areas.

Key UN SDG6 goals relevant for mining:

- By 2030, improve water quality by reducing pollution, eliminate dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from the water scarcity.
- By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.
- Support and strengthen the participation of local communities in improving water and sanitation management practicies.

Contribution

SDG6

The mining industry support the achievements of SDG6 by ensuring water conservation and wastewater recycling, good practices for water management bodies. Reduce water use can be incorporated into processing design along with best practice approaches to treatment of tailings. Another good practice for companies consists in monitoring, with the help of communities and other stakeholders, regularly water quality and reporting and timely tracking on near-mine and downstream water quality.

Understanding high value water assets by considering the full scope of social, cultural, economic and environmental values at the catchment scale is important to identify material risks related to access and quality of water and align operational water management and engagement with communities and government. Companies review their work plans across the operation to ensure a comprehensive approach for both addressing the impacts of the operation over the life-of-mine and addressing stakeholders' concerns about water.

To find solutions to the water management challenge, mining companies collaborate with governments, multilateral agencies, civil society organizations, the local community and scientific research institutes. In water-scarce environments, partnership agreements with governments and other water users can defray costs for all parties to bring water in from elsewhere and alleviate the need to compete for it. The industry's considerable expertise in materials processing and infrastructure upgrading could enable it to be a key contributor for bringing water purification and sanitation to underserved locations. Working with stakeholders, companies can also identify gaps where the company can contribute planning expertise, convening power or targeted investments to improvements in potable water and sanitation.

High performance mineral based dewatering technology

Year after year, around 800 million tons of water-borne sediments (i.e. accumulations from shipping channels, port basins, mining activities etc.) are processed worldwide. Approximately 30% of this may be polluted with toxins (fertilizers, pesticides and other chemical pollutants and heavy metals). Such sediments may not be used, but nevertheless require costly dewatering, with the associated risk that some contaminants will be released in the filtrate water. Retaining contaminants within the sediment and producing a drier transportable material, while generating a cleaner filtrate can dramatically reduce water treatment and sediment disposal and storage costs. In addition, the mining industry faces a variety of sediment challenges, from surface and underground water-borne sediments to tailings, all of which have unique challenges pertaining to operational efficiency of the mine, the safe handling, storage and recovery of tailings and water, as well as the final rehabilitation of closed mines. A unique bentonite--based performance dewatering system for the mining, coastal and riverine dredging and tunneling sectors has been developed to deliver superior technical, cost and environmental performance. Possibility for re-use of sediments as raw materials to eliminate up to 100% of disposal costs.This innovative, high-performance system is an exceptional fit for the dewatering of hard-to-treat and fine sediments in a variety of industrial settings, across the fresh-to-salt-water environmental spectrum, delivering substantial economic, environmental, and sustainability benefits for end users. A much clearer filtrate is achieved that can be returned to nature or more easily reused by the customer, substantially reducing the need for and cost associated with downstream water treatment.

Region
Europe

Country
Germany

Contribution
SDG6/9/11/12

Company
Clariant

CLARIANT

youtu.be/12XV_Qoljn8?list=PL_OsZ7RK-4t51X-tfzL9f4AB-mYnC1kYZL

youtu.be/BlrrgdcU0o8?list=PL_OsZ7RK-4t51X-tfzL9f4AB-mYnC1kYZL

D. Navas & G. Southwood. 2018. Using mineral based technology to boost liquid-solid separation in mine process, surface water and tailings applications. METS 10-12 April 2018 in Madrid, Spain

Sibelco: Water initiatives

To support the water sustainability and awareness two initiatives are to be reported in the vicinity of Sibelco mining site. Lectures & training are held for the community and water distribution to the population in emergency situations.

González F.R. 2016. Sibelco: A contribution to Sustainable Mining. EU-Latin America dialogue on Raw Materials Santiago de Chile (Chile) 24 April 2016. Platform presentation

Region
South America

Country
Argentina

Contribution
SDG6/11

Company
Sibelco

SIBELCO

Water Management Platform

Region
Europe

Country
Belgium

Contribution
SDG6/9

Company
Carmeuse

The operation of multiple stakeholders (drinking water; planning authorities, mining company) within the same area and the competition for water resources is a challenging task, which requires a multi-stakeholder management platform that accommodates discussions and secures access to water for all concerned stakeholders. The Water management project consisted in illustrating the establishment of this system and the modus operandi as established and operated for the period 2003-2011 and the following can be reported: Motivation of all the working group members to put resources and arrive at a solution despite the sectoral differences to create a real common spirit between all the members towards a final common solution operational to all; All stakeholder inclusive platform that allowed all the concerned stakeholders to establish a level of trust to share their respective data;
The data sharing process, allowed the concerned stakeholders to explain their concerns and demands;
The selection of a common (and neutral) Engineering Company to conduct the feasibility study;
This exchange platform allowed the regional authorities to have a helicopter view and understand all constrains and demands and make the best decision on the condition to access the water resource;
This platform allowed to ensure a cohesion between legislations (Ex: conditions of permit for water pumping in quarry are not the same as for a drinking water permit). This process allowed to find a pragmatic and compatible legal solution accepted and respected by all the stakeholders.

eula.eu/documents/2018-eula-innovation-report [Pp. 19]

Water from quarries alternative qualitative supply in time of dry weather

Region
Europe

Country
Belgium

Contribution
SDG6/9

Company
multiple

In the extreme dry weather conditions, the water from quarries is considered as a feasible alternative to water shortages in the South of Belgium. The waters from quarries to be discharged on river and or lakes follow very strict legislations on quantity and quality meaning that drinking or good quality water can be coming out from the extractive activities.

rtbf.be/info/belgique/detail_pas-de-restriction-d-utilisation-de-l-eau-en-wallonie-nos-reserves-sont-importantes?id=9640916

Water management plans

Region
Europe

Country
Sweden, Finland, Poland

Contribution
SDG6/9

Company
Nordkalk

Nordkalk

nordkalk.com/sustainability/environmental/planned-water-management

Even though the limestone industry is not a big consumer of water if compared to the metals mining, access to water is essential to the smooth production process. Nordkalk aims to have a Water Management Plan at each site. The guiding principle is that each quarry must aim for the lowest water footprint both on the surface water and the groundwater. Because limestone is used for water cleaning, any water relating to limestone processing is not harmful to nature. Thanks to the natural filtering ability of limestone, the water is clean. Few examples below indicate how the good water management practices meet the demand in quality and quantity by different stakeholders: The Tytyri mine in Lohja (Finland) deliveres half of its water to the municipal waterworks, where it represents 23 per cent of all raw water received. Filtration through a sand bed takes place before insertion to the water distribution system to ensure its meets quality standards. The Tytyri plant itself uses some 30.000 m³ of water annually, also from the mine, but through a separate pumping station. The surplus water – about half a million cubic meters – is directed to the nearby lake Lohjanjärvi. This is mostly groundwater, but it includes a small portion of storm water gathered from the plant area. Yearly quality measurements show that the water released into the lake corresponds to household water quality. Also Miedzianka quarry (Poland) delivers water to the municipal water utilities. In Lappeenranta (Finland), calcite and wollastonite are processed in a flotation plant that recycles its water. The amount of water circulating in the closed system is about six million cubic metres. The system includes sedimentation ponds, where the flotation sand, a useful by-product of the process, settles to the bottom, and cleared water is reused in the process. In Uddagården in Sweden, water basins for quarry water were equipped with curved pipes, through which water is run forward. This simple solution helps catch any possible oil leaks from the machines as the oil floating on the surface of water cannot travel with the water through the pipe. Recycled water can also be used for other purposes such as: washing yards and vehicle wheels to reduce dust emissions or stone washing to remove clay particles.

Water Reservation

Region
Asia

Country
Indonesia

Contribution
SDG6/11/12

Company
Sibelco

SIBELCO

As part of the reclamation program at the Sibelco Capkala ball clay mine, some mined out areas were converted into a water pond. However, the pond was not being fully utilised and so the site began sharing this resource with the local community nearby, which was especially helpful during the dry seasons. Unfortunately, the access road to the pond was not in a safe nor good condition. In an effort towards providing safe access to the continued provision of this water resource, the team in Indonesia built proper road access as well as a shelter with parking facilities for trucks. They also installed safety signs and improved on the landscape of the areas that were disturbed in the building of the road access.

Drinking water supply infrastructure for the community

The water supply station was created in 1984 by CARITAS because of the arid conditions in the area. The drilling consists of a submerged pump plunged to a depth of 100 meters, which supplies raw water to a 40 m³ capacity tank. This water is transferred to another 9 m³ tank via filters and an ultraviolet generator. But the water from the capacity tank is mostly used for washing water needs, while the filtered water can serve as drinking water. Monthly water samples from the borehole are collected analyzed by the Pasteur Institute of Dakar for the potability of the water. Since 2014, the staff has been equipped with Spring water fountain for drinking and to avoid the use of the plastic bottles.

Region
Africa

Country
Senegal

Contribution
SDG6/9/11

Company
Tolsa

Brazil operations: A cloud based solution – rainwater harvesting

In the Brazilian facilities, Imerys employees together with contractors developed a system to collect the rain water and use it in the processing facilities. The rain was collected during the rainy season and was used in the dry period. A simple solution of harvesting and storing rainwater was beneficial for: 1. Reducing the amount of water to be pumped from groundwater and later be used in the processing facilities; 2. Since the rain water is naturally filtered, it reduced the amount of chemicals needed to clean the water; 3. Supplied 30 to 50% of the demand for water in the processing facilities in Brazil.

Region
South America

Country
Brazil

Contribution
SDG6

Company
Imerys

youtu.be/Dq5pBelEcik

imerys.com/scopi/group/imery-scom/imeryscom.nsf/pagesref/SPIT-8THH4R/$File/IMERYS_NEWS_HS_DD_2011.pdf [Pp. 12]

Contribution

SDG7

SDG7: Affordable & Clean Energy

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

One in five people lacks access to electricity and 3 billion people use wood, charcoal or animal waste for cooking and heating. Progress in every area of sustainable energy falls short of what is needed to achieve energy access for all and to meet targets for renewable energy and energy efficiency. High levels of financing, policy commitments and enforcement will be the challenge in access to energy and energy transition.

To contribute to the access to affordable, reliable, sustainable and modern energy, the mining industry can improve its energy use by incorporating energy efficiency measures and renewable energy into mine power supplies and partnering with utilities to increase the use of renewables. Companies can also leverage their energy demand to extend power to undersupplied areas through partnerships that enable the shared use of energy infrastructure.

Key UN SDG7 goals relevant for mining:

- By 2030, increase substantially the share of renewable energy in the global energy mix.
- By 2030, double the global rate of improvement in energy efficiency.
- By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.
- By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries.

Mining is an energy-intensive industry and to contribute to SDG7 companies need to support research and development focused on new lower energy technologies. In addition, energy audits, improved energy efficiency, reduced use and improvements in equipment maintenance are all ways a company can reduce costs and energy demand. Forward-thinking mining companies are considering environmentally friendlier and potentially lower cost solutions such as off-grid or mini-grid wind, solar or geothermal energy instead of diesel. Aside from the benefit of reducing greenhouse gas emissions, these companies can benefit from reduced energy costs, given that the production costs of alternative energy are falling rapidly.

To address the SDG7 targets the mining sector is well aligned with national/regional renewable energy targets by contributing to energy production and distribution. Sharing benefits through energy infrastructure is an example of possible win-win solutions to address the lack of energy or access infrastructure for the companies and/or communities.

Anaerobic Digestion as a Renewable Energy for the Lime Industry

Lime processing needs large amount of energy (kiln, hydrator, crushers, mill). Objective: Reduce energy costs and reliance on grid electricity and gas and invest in gas or electricity generating projects; 2013 decision made to build an Anaerobic Digester (AD) to meet these objectives; AD is a process where micro-organisms break down some organic biomass in anaerobic conditions to produce biogas, CH_4 + CO_2; The methane can be used to produce electricity or upgraded to Biomethane for injection into the gas grid and can be used as a fuel for lime kilns. Project finalized in 2015. Birch Energy financed, managed, operates the AD installation in a restored area of the former quarry operations. The following achievements can be reported: Built in 2 phases: 1.25 MW Combined Heat and Power (CHP) and 2 MW CHP plus 1.5 MW drier; Uses 45,000 tonnes of feedstock annually; Combined output of the 3 AD plants is 110% of Singleton Birch's electricity demand; Grid connection with capacity to export 100% of electricity to grid and generates 15,000 GWhrs of electricity per annum; Dryer using waste heat from the CHP engines to dry digestate as a high value fertiliser; Employs 5 people.

Region
Europe

Country
UK

Contribution
SDG7/12/13

Company
Birch Energy/
Singleton Birch

Birch Energy Singleton Birch

birchenergy.co.uk

Haworth M. 2016. Anaerobic Digestion as a renewable power source for the Global Lime Industry. ILA October 2016 annual meeting in Washington (USA)

Carmeuse wins award for energy efficient project

Apart from awarding some of the biggest energy efficiency projects in Ontario, the award scheme is used by Hydro One to promote its program that is offered to business and industrial customers as an incentive to assist customers with payment for retrofit inefficient equipment with high--efficiency equipment in their facilities. The retrofit program can offer incentives up to 50 per cent of the projects costs, and covers lighting upgrades, air conditioning units, refrigeration units and more. The program is aimed at owners and managers of commercial buildings, institutional buildings, industrial facilities, agribusinesses and multi-residential buildings. The award is given out by Hydro One twice a year to businesses all over Ontario who have initiated a significant energy conservation project. The Carmeuse Lime in Beachville received the Excellence in Energy Conservation award from Hydro One for its energy efficiency efforts that cut their hydro costs by nearly 35% by installing a variable frequency drive (VFD) in a 800 horse-power fan used in a kiln facility. The VFD replaced the original damper control with speed control sensors to allow modulate speed and ultimately save electricity and the project will pay for itself in two years time.

Region
North America

Country
Canada

Contribution
SDG7/12/13

Company
Carmeuse

CARMEUSE

woodstocksentinelreview.com /2016/12/02/carmeuse-wins -award-for-energy-efficient -project/wcm/1f341995-64e0 -801e-9ae7-0ab7ee48f21f

The largest solar park in Wallonia build by a lime company

The largest PV plant in Wallonia to date. 13.200 solar panels will supply annually over 3,6 GWh of electricity to the Carmeuse quarry located at Moha (province of Liège). On an annual basis, the solar plant will cover 9% of the quarry's total electricity consumption. PV coverage will average over 14% during the months of April till September. The ground-mounted panel arrays are installed on 4,5 ha right next to the quarry.

Region
Europe

Country
Belgium

Contribution
SDG7/12/13

Company
Carmeuse

CARMEUSE

IMA-Europe 2018. Awards brochure – Innovation [Pp. 2]

eula.eu/documents/2018-eula-innovation-report [Pp. 44]

Steetley Dolomite's / Lhoist in UK

Lime processing needs large amount of energy for the different multiple processing stages. The objective of energy intensive industry operators is to improve the overall energy efficiency, resulting in reducing the energy costs and the reliance on grid electricity. These are the drivers for the feasibility study of a Heat recovery system installation in lime operations: Waste heat recovery systems integrate organic rankine cycle (ORC) technology into renewable heat sources, industrial kilns and furnaces; The ERC generator can convert waste heat temperatures as low as 85 °C into electricity; Waste heat from heat intensive industrial processes can be recovered by: igh temperature hot water above 85 °C, saturated steam above 6 bar, exhaust gas above 130 °C; These sources of waste heat are fitted with a heat exchanger designed for the application. Project is already operational and the following can be reported: A waste heat to power system was commissioned in September 2013 at Steetley Dolomite / Lhoist facility in UK; The WHRPG system recovers 4 MW of thermal power from a rotary kiln exhaust gas, and converts it to 0.5 MWe of low carbon electrical power; The new system delivered 25% improvement in electrical efficiency of the plant; It can generate net power of around 3,000 MWh annually, equivalent to 7,500 hours of carbon-free electricity; In total, kiln CO_2 emissions will be reduced by 1,600 tonnes per year; The project offers an attractive return on investment, when considering £ 1.3 m investment against purchasing 3,000 MWh per year of electricity from the grid over the next 10 years. Heatchatcher Ltd have designed, installed and are maintaining a modular 'Waste heat to power' system at Steetley Dolomite's Lime Plant. The system works by using low-grade waste heat generated during the energy-intensive calcination process to vaporise a refrigerant, which in turn drives a rotary generator. Heatcatcher aims to make efficient waste heat to power conversion an industry standard. They estimate that there is the potential for 1 million MWh of power to generated by this process in UK alone.

Region
Europe

Country
UK

Contribution
SDG7/12/13

Company
Steetley/Lhoist

Lhoist

Bryant D. 2016. Waste not, Want Not. ENERGYST [Pp. 48-49]

2013. Heatcatcher secures waste heat recovery project with Steetley Dolomite. Global Cement [Pp. 20]

IMA Europe

Reduced energy consumption through optimized processes and capacity use

Lime processing needs large amount of energy (kiln, hydrator, crushers, mill). Objective: Reduce energy costs and reliance on grid electricity and gas; Invest in gas or electricity generating projects; Reducing energy consumption, a priority in new investments and repairs in the lime processing facilities. Few projects were implemented, and the following can be reported: The automation system of the lime kiln in Pargas was renewed in 2016; the new automatic optimization system adjusts the kiln's operation parameters for obtaining uniform lime quality and low energy consumption.
The system monitors constantly the measurements of the process and product quality to level out changes in the process. It also decreases the possibility for production interruptions. The automatic process optimization has been calculated to save annually up to 4000 MWh heath energy;
The grinding plant in Vampula uses biogas supplied through a 1.5 km pipeline by the local biogas producer Vambio.
The gas is produced from by-products of the food industry, slaughterhouses and livestock-breeding as well as wastewater sludge; In 2015, Nordkalk tested the use of biofuel in Ignaberga (Sweden) facility. The fuel is a surplus product from ecological feed production. The tests have given good results, and so in 2016, Nordkalk invested in equipment to adjust the production and equipment for the switch from fossil fuels to biofuels.
The stone drying in Ignaberga runs now 100% on biofuel.
Nordkalk was granted climate investment support for the Ignaberga project by the Swedish Environmental Protection Agency in December 2015. Nordkalk is one of twelve companies receiving support for "measures that demonstrate the greatest sustained reduction of greenhouse gas emissions per crown invested".

Region
Europe

Country
Sweden, Finland

Contribution
SDG7/12/13

Company
Nordkalk

Nordkalk

nordkalk.com/document/3/1001/bdac1fa/Nordkalk_Environmental_Report_2016.pdf [Pp. 11]

nordkalk.com/document/3/261/cc53037/Nordkalk_Environmental_Report_2011.pdf [Pp. 12]

Reinson K. & Roioiose Antti. 2012. BioGas. Report prepared by University of Taru [Pp. 11]

Lime improves Flue Gas Treatment (FGT) and Waste to Energy (WtE) incinerator output

The pressure to optimize resources and deliver greener energy to end users are high in the European policy makers agenda. However, over the last years, several waste-to-energy plants in Italy have experienced an increase of the concentration of acid gases (HCl, SO_2 and HF) in the raw gas. This is due to progressive decrease of the amount of treated municipal waste, which is partially replaced by commercial waste generally characterized by a higher variability of its chemical composition because of the different origins. To address this challenge, intensive long-lasting tests were performed in four waste-to-energy installations in Italy using a specific dolomitic sorbent as a pre-cleaning stage. Project finalized in 2012 and show: By injecting around 6 kg of sorbent per tonne of waste, the decrease of acid gases concentration downstream the boiler was in the range of 7-37% (mean 23%) for HCl, 34-95% (mean 71%) for SO_2 and 39-80% (mean 63%) for HF; This pre-abatement of acid gases allowed to decrease the feeding rate of the traditional low temperature sorbent in all four tested plants by about 30%; Furthermore, it was observed by the plant operators that the sorbent helps to keep the boiler surfaces cleaner and resulting in improved energy efficiency during the operation and reduce the climate change impact by 28%; LCA study underlines that is an eco-friendly and sustainable technology and in the comparison with the traditional operation shows that 17 impact categories out of 19 are reduced.

Region
Europe

Country
Italy

Contribution
SDG7/12/13

Company
Unicalce

UNICALCE

Binganzoli L., Racanella G., Rigamonti L., Marras R., Grosso M., 2015. High temperature abatement of acid gases from waste incineration. Part I: Experimental tests in full scale plants. Waste Management 36 [Pp. 98-105]

Binganzoli L., Racanella G., Marras R., Rigamonti L., 2015. High temperature abatement of acid gases from waste incineration. Part II: Comparative life cycle assessment study. Waste Management 35 [Pp. 127-134]

Contribution

SDG8: Decent Work & Economic Growth

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

Roughly half the world's population still lives on the equivalent of about 1,6€ a day and in too many places, having a job doesn't guarantee the ability to escape from poverty. This slow and uneven progress requires to rethink our economic and social policies aimed at eradicating poverty. Increasing labour productivity, reducing the unemployment rate, especially for young people, and improving access to financial services and benefits are essential components of sustained and inclusive economic growth. SDG8 seeks therefore to create the conditions needed for sustainable and inclusive economic growth and job creation.

Direct employment generated by large-scale mining have potential for large economic multipliers through local procurement. Companies can help to build approaches to promote competitive domestic enterprises for increasing local content and supply capacity, which also helps drive more sustainable, long-term, diversified economic growth.

Key UN SDG8 goals relevant for mining:

- Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.
- Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.
- By 2020, substantially reduce the proportion of youth not in employment, education or training.
- Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.
- Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women, migrants, and those in precarious employment
- Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.

Contribution

SDG8

Generating direct employment is not the only way mining can contribute to SDG8, because the number of jobs directly created is often small relative to the size of the capital investment. Companies and their investments have other economic impacts that are often larger and can make considerable contributions to local and national economies. Economic growth can be driven by building a comprehensive approach to procure from local suppliers and build community diversification activities.

Another way to contribute to SDG8 for mining companies is to expand the inclusiveness of direct employment, communicating early and often with local communities so they are aware of the scope of opportunities and limits that mining activities can generate. Companies can also implement impact-benefit/community agreements covering community access to employment, procurement and training opportunities in exchange for company access to land and water resources.

Mining companies operating in developing economies are under increased pressure to advance the development of local, regional and national procurement to broaden economic growth and diversification through value chain cooperation. Business incubators are a good tool for building local capacity, entrepreneurship and skills. In environments where there is no local production, or it is not of sufficient quality to be used by the mine, companies can target social investments to build local supplier capacity. Such business incubation programmes can improve the local skill base and educate prospective suppliers about opportunities for working with the company.

Omya academy

Omya has developed a tailored program to assist its employees to develop the necessary skills to contribute and grow within the Omya operations and functions. The program consists of identifying areas of interest for the company & employ and build-up on them to achieve personal and professional satisfaction as well as a develop a carrier path. The trainings can be from 1-day to multiple month program and can cover trainings, soft skills, IT training, language courses, process, raw material. These training courses create the right atmosphere and exchange to gain and transfer knowledge through peer-employees skill development & evolution. Also visit the other Omya operations is a way of learning how things are done in different regions where Omya operations are located. As part of these peer learning and exchange process 20 employees from the Verpol (USA) operation where selected to have a meeting with Omya Executive Board in Switzerland headquarter which was to share and exchange ideas on the theme 'What makes a good employer'.

Region
Europe, North America

Country
Switzerland, USA

Contribution
SDG4/8

Company
Omya

www.omya.com/Documents/Vermont/Inside%20Omya%20-%20Summer%202016.pdf

Developing professional skills

This project was developed in partnership with the municipality from August to December 2016 and is targeting the local community empowerment. The aim of the project is to identify and develop professional skills for the adults to support the local development and increase the employment rate in the region. Eleven technical courses (i.e. maintenance management, industrial hydraulic automatization, industrial pneumatic automation, auxiliary mechanical self-maintenance, mechanical technical drawing), each 6-months long, were organized at local schools with a total of 714 hours of classes and 146 students trained. Moreover, 10 topical conferences featuring universities professors and technical consultants as speakers, were organized for 59 selected students covering multiple fields such as: professional/personal leadership; electric; information systems; law; administration and labor market; occupational health and safety; chemistry and mechatronics; environment; innovation and technology. These conferences are for students enrolled in a Young Apprentice Program, accordingly to which the young person is trained both in a training institution and in a company, combining theoretical and practical training, and are aimed at improving the quality of the program and increase the chances for employment.

Region
South America

Country
Brazil

Contribution
SDG4/8

Company
Sibelco

Community & Environment

Unimin takes great pride in community relations, and value the constructive exchange that exists between the company, the neighbors and many local stakeholders. Locally formulated community action plans reflect that pride, and the genuine desire to be an involved community member. These plans include financial participation, sponsorship and volunteer service to benefit school, scouting and sports programs, public safety, fire prevention and conservation initiatives. We also recognize that the economic viability of our communities is a critical foundation stone of our sustainable performance. We encourage our plants to spend locally and source as much as 80% of our operating consumables from local vendors. The multiplier effect of our expenditures cascades through local contractor, business and service industries to benefit all who live in the community.

Region
North America

Country
USA

Contribution
SDG8/11/15

Company
Sibelco

SIBELCO

unimin.com
/community-environment

Hire veterans as a reintegration strategy

Two years ago, the HR team reviewed their talent acquisition and diversity strategy in North America and realized there was a great opportunity to tap into a workforce that had complementary knowledge, skills, attributes and values. Veterans tend to be very committed, possess high levels of initiative and have very strong leadership and team skills. Veterans make up nearly 10% of the Carmeuse workforce have over 15 years of tenure with the organization.
The strategy they put in place consisted of three pillars: Develop strategic partnerships with different veteran programs; Training & Education in job fairs. Carmeuse HR professionals facilitated multiple session on interviewing skills and resume writing to common jargon language to ease their integration and ensure a fair chance to postings; Community & Company Recognition. Carmeuse is exploring ideas such as partnering new hire veterans with another Carmeuse veteran "buddy" to help/assist during the hiring and onboarding process. The Carmeuse Lime & Stone was awarded the 2017 Most Valuable Employers (MVE) for Military Veterans. The MVE recognition serves to help military-experienced job seekers identify the top employers to target for civilian careers but also gives back to the community those that have served.

Region
North America

Country
USA

Contribution
SDG4/8

Company
Carmeuse

CARMEUSE

carmeusena.com/news
/its-time-hire-veteran

Digital immersion programe (Inclusão Digital)

Region
South America

Country
Brazil

Contribution
SDG4/8

Company
Imerys

IMERYS
TRANSFORM TO PERFORM

In the municipalities of Barcarena and Ipixuna do Pará (Brazil), the towns in which Imerys is present, computer classes known also as Digital Immersion Program are offered in spaces equipped by the company with the appropriate computers, free of charge, in response to a public that would have few opportunities to do a similar course. Since it was deployed in 2012, the initiative has helped in the formation of small businesses and has assisted several people in getting a job. 70% of the students are young people and only 15% have an occupation. What is common to all is the interest of attendees to learn with the goal of growing personally and professionally. A differented approch has been adapted for each of the locations to meet local needs: In Barcarena, the classes are held at Casa Imerys, a social project of the mining company installed in Vila do Conde, with the supply of computer courses at the basic level and the intermediate to the residents of the community from 12 years old.
The course is intended for the technical use of the computer with special focus on the use of it as a work tool, but is not restricted to this. The content prepares participants for the job market by developing skills that will support them in the achievement of a job. The course has orientation activities on topics such as behavior in a job interview, and proper formatting of the curriculum; In the Ipixuna do Pará, computer science is learnt in the classroom. Santa Maria of the Bacuri is located in the rural zone of the municipality of Ipixuna do Pará, access to the location is difficult and the communication – by phone or internet – is almost non-existent. This isolation affects the population in various ways, including the lack of access to computers. In Ipixuna, the Digital Immersion Program expands the work of digital education successfully carried out by the mining company in Barcarena, but is adapted for the Santa Maria do Bacuri. The course is applied in the municipal school of the community and is part of the curriculum of the teaching unit, reaching approximately 220 students from 5th to 8th grades. A dedicated teacher, hired by Imerys, instructs classes on basic computer classes and intermediate throughout the school year. The project should be expanded soon with a class of an intensive course in basic computer for adults during the school holiday period, given the demand identified among the residents of the community.

imerysnopara.com.br
/comunidades/detalhe/?cid=7

Contribution

SDG9

SDG9: Industry, Innovation & Infrastructure

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

Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries. It has long been recognized that growth in productivity and incomes, and improvements in health and education outcomes require investment in infrastructure. Expanding access to basic infrastructure is key to enhancing innovation and productivity, helping to create opportunities in other sectors of the economy, which in turn is necessary for diversification and enabling sustainable growth.

Mining is also a user of all these forms of infrastructure. Shared infrastructure, especially in countries with a large infrastructure financing gap, represents a significant opportunity for mining to expand access to critical services. Given that distinct geological characteristics require specialized mining techniques, mining companies can also contribute to in-country innovation through research and development programmes and through their procurement practices.

Key UN SDG9 goals relevant for mining:

- Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
- Increase the access of small-scale industrial and other enterprises, in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.
- Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries.
- Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.
- Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.

Contribution

SDG9

Mining industry is contributing to SDG8 by supporting local procurement and skill development. As for SDG1 and SDG8, companies are helping in financial, technical and technological support programmes for domestic companies/communities that have the potential to become suppliers. The acquired expertise also helps these suppliers to offer their goods and services to other sectors domestically or abroad, thereby contributing to economic diversification and sustainable economic growth. Another way to contribute to SDG9 is for companies to share infrastructure solutions, in which companies and governments share funding responsibilities and/or usage rights. Apart from improving infrastructure access to surrounding regions and potentially unlocking economic opportunities that were previously not viable, economies of scale and scope can be achieved when infrastructure are shared and co-managed.

The support of mining companies at creating peer-learning from innovations made in mining to other sectors is also a way to reach SDG9. Companies have taken a proactive approach to prioritize these peer-learning by collaborating with government to promote and reward first mover companies that invest in research and development to replicate mining technologies to other sectors. Creation of industry clusters can be an engine of growth as it enables the dissemination of knowledge, reduce transaction costs, help with the acquisition of best practices, increase competitiveness and promote innovative collaborations. Clusters can also integrate non-mining industries that have synergies with the mining industry, as well as technological institutes to encourage the exchange process. Finally, mining companies can create research hubs and/or liaise with national universities to explore innovative ways to improve mining processes, which can benefit the industry, while spurring local innovation.

Green Energy

Sibelco is harnessing renewable energy technologies at more sites each year. A trio of new wind turbines are now fully operational at the Mol/Dessel site in Belgium. Standing 150 m tall, with a rotor diameter of over 100 m, the turbines will generate more than 21,000 MWh of clean energy per year. The project was developed in association with energy specialists, EDF Luminus, and will significantly reduce the carbon footprint of the local operations.
A second project, incorporating seven turbines at Sibelco's site in Lommel, Belgium, is in the final stages of permitting.
This year the company also began working on a project to install solar panels at three sites in Taiwan. This includes the Da Chai plant, where PV panels will eventually contribute around 15% of the plant's total electricity usage, whilst also reducing the need for air conditioning as the panel-covered roof helps to reduce direct sunlight on the building.
In Australia, new solar panel installations at six Sibelco sites will cut energy usage by around 15% at each location and reduce the six sites' combined carbon emissions by a total of 228 tonnes per year.

Region
Europe, Asia

Country
Belgium, Australia, Taiwan

Contribution
SDG7/9/12
SDG13/17

Company
Sibelco

SIBELCO

sibelco.com/investors

Responsible Mining: Lead by example

Omya Quarry is located in a remote area 70 km from any nearby towns. To minimize impacts on the surrounding environment, multiple projects were developed: Developed a bio garden, using the liming material from the quarry, to grow the vegetables and fruits for the quarry employee consumption; Train the local communities on the importance of environmental protection and on the minimization and sorting of waste; Green house build and trees grown there are planned in the property (18000) and in the community (9000) area for reforestation projects. Only species from the impact area are used to minimize the impact of the works on the surrounding; The site is the only small mining site in Ecuador to have three certifications ISO:9001; ISO 14001 and OHSAS 18001.

Region
South America

Country
Ecuador

Contribution
SDG9/11/12/15

Company
Omya

OMYA

2016. Omya World: Sustainability magazine [Pp. 9]

Revalorization of by-products with a low MgO content, for use as flame retardant fillers in recycled plastics

The project objective is to revalorise by-products with a low MgO content, coming from Magna's industrial activity, for use as fire-resistant or halogen-free flame retardant additives for plastic recycling, thereby reducing the environmental impact of these products. During the development of the project, 4 samples of various by-products of Magna have been studied to evaluate their potential for fire retardant. Based on the results obtained, two by-products (PC8 and basic magnesium carbonate) have been selected to study their behavior in a plastic matrix. The mixtures of these products with five different polymer matrices (PP, LDPE, PVC, EVA and PA) have been studied in order to increase potential fire retardant. The results have been satisfactory for both products and their flame retardant potential has been tested for use as additives in polymer matrices.

Region
Europe

Country
Spain

Contribution
SDG7/12/13

Company
Magna

MAGNA
MAGNESITAS NAVARRAS S.A.

magnesitasnavarras.es/themed/magna/files/docs/128/035/magna14eeagrant_ignifugos_eng.pdf

A Safe Place For Rare Bats

In the USA, a former Sibelco mine is now a safe haven for more than 45,000 endangered Indiana bats, after Sibelco donated ownership of the Tamms site in Illinois to the Organisation for Bat Conservation. The site now offers a protected environment for the Indiana bats together with several other species, and has the potential to become an important location for scientific study into these fascinating mammals, which play such an important role in our ecosystem. Although Sibelco is responsible for industrial mineral mining, the company has the goal to "advance life" as well, serving as of a steward of the land it mines.

Region
North America

Country
USA

Contribution
SDG9/11/15

Company
Sibelco

SIBELCO

sibelco.com/investors

Unimin to modernize its Canadian Nepheline operations

Multi-million-dollar investment will secure operational future of the mining and manufacturing operation in the Kawartha Lakes Region and reduce environmental footprint in the area. Unimin Canada announced today that it will make a multi-million-dollar investment in the modernization of the company's mining and manufacturing operations at Blue Mountain in the Kawartha Lakes region of Ontario to be implemented between 2018-2020. When completed, the new operation will further improve the site's environmental footprint and support continued mining, manufacturing, and employment at the facility for many more decades. The modernization will enable the optimization of new technologies and practices to reduce noise, dust, lighting, and use of water, as well as electricity and, will provide improved capabilities to serve coatings, polymers, glass, and ceramics markets. The long-term sustainability of this operation is one of the key goals of this project.

Region
North America

Country
Canada

Contribution
SDG8/9/12

Company
Sibelco

SIBELCO

unimin.com/modernization

Industrial Minerals enable industrialization through value chain enhancement

The relation between the number of direct jobs created by mining, the total number of jobs including those indirectly created in other parts of the economy, is known as the employment multiplier. Studies of the total employment effect of mining give widely different estimates of the multiplier, from less than one up to several jobs supported for each direct job in mining see Söderholm & Svahn 2014; Ejdemo & Söderholm 2011) based on the Scandinavian estimates. The Mineral Product Association (MPA) in the UK has made an estimate of the gross value added of minerals in multiple downstream sectors in UK. Total GVA generated by minerals including mineral extraction, products manufacture and first uses, which is 16% share of the UK total economy is directly attributable to minerals.

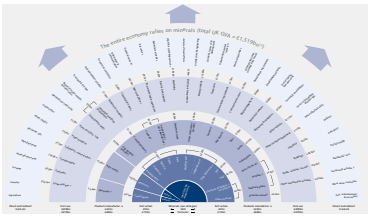
Region
Europe

Country
UK

Contribution
SDG9/11

Company
Mineral Product Association

mpa



cbi.org.uk/news/minerals-critical-to-the-uk-economy/cbi-report-the-uk-mineral--extraction-industry

Life Cycle Assessment of Hot Mix Asphalt using lime to improve road durability & lower carbon footprint

The main objectives of this project were to assess 110 publication/reports on the effect of lime in asphalt. The project developed a comparative assessment between classical HMA (no hydrated lime) vs Modified HMA (with hydrated lime) of the environmental footprint of all the life stages of a Hot Mix Asphalt (HMA) road (raw materials, transport, construction, maintenance, recycling, end of life) by means of life cycle assessment tools. Projects were finalized in 2012 and 2015 respectively. The following findings can be reported. The hydrated lime increases the road durability with 25% based on science and testimonies from users. Thanks to this increase in durability one maintenance step less for the lifetime of a road of 50 years is achievable. For the lifetime of the road (50 years), the modified HMA has the lowest environmental footprint compared to classical HMA (43% less primary total energy consumption resulting in 23% lower GHG emissions). This also results in savings up to 30 % of the road maintenance cost due to less maintenance works and the smaller amount of raw materials needed.

Region
Europe

Country
EU

Contribution
SDG9/11/12

Company
EuLA

eula.eu/sites/eula.eu/files/EULA_Asphalt_UK_web.pdf

Schlegel T., Puiatti D., Ritter H.-J., Lesueur D., Denayer C., Shtiza A., 2016. The limits of partial life cycle assessment studies in road construction practices: A case study on the use of hydrated lime in Hot Mix Asphalt. Transportation Research Part D: Transport and Environment. Volume 48. [Pp. 141-160]

Ritter H-J., 2014. Use of Hydrated lime in asphalt in Europe: current state. International Lime Association Meeting. Vancouver, Canada. October 2014. Platform presentation.

SDG10: Reduced Inequalities

Reduce inequality within and among countries

Despite the international community has made significant strides towards the reductions of poverty in many countries, poverty and inequalities are growing, particularly in least developed countries. Economic growth is not sufficient to reduce poverty if it is not inclusive and if it does not involve the three dimensions of sustainable development – economic, social and environment. Taking an inclusive approach to expand economic opportunities and include marginalized peoples is fundamental to minimizing these disparities.

While governments are primarily responsible for reducing inequality through policies and redistributive mechanisms, mining can play an active role by promoting inclusion in direct employment, leveraging direct, indirect and induced economic benefits through local procurement, supporting livelihood diversification, and collaborating with government and communities to support transparent public consultations and expand access to basic services and infrastructure.

Key UN SDG10 goals relevant for mining:

- By 2030, progressively achieve and sustain income growth of the population at a rate higher than the national average.
- Empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

Social inequality in resource rich countries can be followed by social unrest resulting in conflicts. Mining companies need to proactively address underlying issues through their core business or in collaboration with other stakeholders. Mining companies also champion inclusivity widely across operational activities and expand how local communities access and benefit from the mine's economic development through projects of social inclusiveness. Companies can ensure that recruitment and employment strategies reach marginalized populations, including women and young people, invest in local procurement and business incubators to widen economic opportunities, especially for poorer, excluded segments of the population, invest in technical skill building with their workforce and the community of future employees and promote reinvestment of mining revenues back into local communities and across the region.

The mining industry collaborate with government and local communities to identify a long-term solutions to address disparities reduce inequality and foster social cohesion.

Replicability of projects as a way of implementing best practices in multiple global regions

When summarizing the projects developed and mapped by this report towards the implementation of the SDG within our sector, is obvious that they are replicated in other regions. 60% of the projects are developed in EU but their replication is in other regions in the world as a matter of exchanging the best practices is a very common practice. This contributes to uplift the level of the sector operations and the communities they operate.

Region
Europe, global

Country
EU, global

Contribution
SDG10

Company
IMA-Europe

Contribution

SDG11

SDG11: Sustainable Cities & Communities

Make cities and settlements inclusive, safe, resilient and sustainable

In recent decades, the world has experienced unprecedented urban growth. In 2015, close to 54% of the world's population lived in cities and that number is projected to increase to about 5 billion people by 2030. Cities have enabled people to advance socially and economically. However, many challenges exist to maintain cities in a way that continues to create jobs and prosperity while not straining land and resources. Common urban challenges include congestion, lack of funds to provide basic services, a shortage of adequate housing and declining infrastructure. Better urban planning and management are needed to make the world's urban spaces more inclusive, safe, resilient and sustainable.

Mining companies contribute to sustainable cities and communities by supporting the development of relevant local infrastructure, involving all stakeholders in land use and settlement planning, implementing cultural heritage plans, and reclaiming mined land into parks and green spaces where appropriate. Mining landfills to reduce waste and the reuse of materials and technologies are also potential contributions.

Key UN SDG11 goals relevant for mining:

- Enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.
- Strengthen efforts to protect and safeguard the world's cultural and natural heritage.
- By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste flows.
- By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities,
- Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local raw materials.

To contribute to SDG11, mining companies when apply for land use for life-of-mine develop strategies which aim to use best available technologies to minimize overall impacts of the mine. To avoid straining land that has a cultural, historical or local tie with communities, best practice in the mining industry includes identification of cultural and historical assets through baseline assessments and engagement with indigenous peoples and local communities, starting with the exploration phase and throughout the life of mine.

Mining companies can anticipate the need for raw materials caused by the urban development and identify mitigation strategies that can be built into company policies for workforce housing, company-provided transportation, and collaborative efforts with local governments and communities. Material engineers are increasingly beginning to see secondary resources in megacities as potentially attractive opportunities for the large-scale production of raw materials. Companies also leverage investment in basic infrastructure, contribute to the development of housing and help develop green spaces. Open-pit mines have been transformed into parks, restored green spaces and ecosystem servicies.

The New Time Tunnel Wülfrath

Enhance local engagement to inform and educate the public on the generation of the limestone deposits and their relevance for our daily lives. The projects aims at explaining the use of lime in our daily life and showing the work in active quarry operations, the industrial history of limestone mining. Outcome: In the old 160-meter-long former mining tunnel of the Bochumer Bruch, 400 million years of geological history can be experienced with all the senses. On this journey, visitors will meet unusual creatures, dinosaurs and the first humans, observe the shift of the continents and the many fossils in the showcases, and experience the minimal period of industrial history of lime mining, which has shaped the landscape to this day. The Lhoist social engagement is positively received by local authorities and in public media. It is seen as an important contribution to the presentation of the region to the public. The Zeittunnel attracts around 12,000 visitors during a full season, thanks to its mixture of a unique exhibition venue with an entertaining presentation of geological history, a wide range of activities for children and adults, as well as an ambitious program of events. 'The new time tunnel' is the winner of IMA-Europe 2018 Public awareness award.

Region
Europe

Country
Germany

Contribution
SDG9/11

Company
Lhoist

wuelfrath.net/kultur-tourismus/museen-ausstellungen/zeittunnel

ima-europe.eu/about-ima-europe/events/ima-europe-2018-conference-and-awards-ceremony

IMA-Europe 2018. Awards brochure – Public awareness

Environmental Clean-up

In a bid to contribute to the care of the environment surrounding Sibelco's site in Korea, employees organized a clean-up campaign at Tapjeong Lake in Nonsan City. This activity was a combination of their efforts towards Corporate Social Responsibility and the "Greening our Home" project. The team walked for about 20 km on the shore around the lake and for 3 hours they manually picked up litter and rubbish that was left behind by the general public. Cleaning up at Tapjeong Lake gave them a sense of achievement and increased awareness of their responsibility to look after the environment.

Region
Asia

Country
Korea

Contribution
SDG9/11/12

Company
Sibelco

The Eden Project in Cornwall

The former Kaolin Quarry become the Eden park after a close consultation and engagement of the local community and science. The Eden Project in Cornwall is a spectacular example of a re purposed mine. Until 1995, the land was mined for kaolin and clay. Today, the old pit has been transformed into an ecotourism destination and educational charity with beautiful gardens showcasing some of the world's rarest plants, sustainability training programmes for educators and students, and on-site modules for a Master of Science programme in sustainability. The Eden project in Cornwall employs some 400 people and gives another 300 people the opportunity to volunteer with. Since opening to the public in 2001, the place has attracted more than 18 million visitors and inspired an economic renaissance by contributing more than £ 1.7 billion to the local economy.

Region
Europe

Country
UK

Contribution
SDG8/9/11/15

Company
Goonvean

Goonvean

edenproject.com

Stakeholder engagement – as a collaborative tool

Stakeholder engagement is part of the company CSR policy. IMI Fabi in fact involves many groups in its activities: Customers – planned visits, dedicated area manager and technical support, dedicated customer service, joint value creation, joint business plans, customer satisfaction, general surveys; Communities – mine visits, concerts, sponsorships, artistic heritage preservation, humanitarian associations, recreational associations, dedicated events for schools; Government and authorities – recycling and recovery initiatives, chamber of commerce inscription; NGOs – membership of business and industry associations; Suppliers – supplier evaluation and audits, sustainable sourcing, join value creation, supplier policy; Shareholders and analyst – general meeting, quarterly roadshow and results, briefing, dialogue with analyst and investors; Employees – individual development plans, health and safety preservation, equal opportunities, limited turnover.

Region
Europe

Country
Italy

Contribution
SDG11

Company
IMI Fabi

IMIFABI
tune in to innovation

imifabi.com/149-Stakeholder--Engagement.html

Yellow-bellied toad development programme

Region
Europe

Country
Germany

Contribution
SDG9/11/15

Company
Sibelco

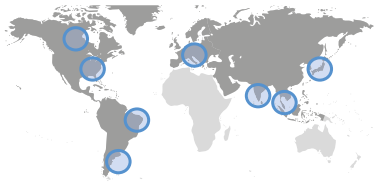
projekt-gelbbauchunke.de
/index.php/en

Following the agreement with the country Rhineland-Palatinate in 2009 Sibelco Deutschland takes care of amphibians in general already during production in clay and kaolin quarries. In Oedingen especially, a kaolin quarry working in campaigns, the habitat has been optimised and extended by creating ponds and keeping the area open by removing the vegetation regularly. These activities took place under consultancy of specialists (Biologische Station Bonn / Rhein-Erft e.V.) and in contact with authorities. Since 2012 Oedingen is part of the project "Restoring and linking of Yellow bellied toad populations in Germany" ("Bundesprogramm Biologische Vielfalt", www.projekt-gelbbauchunke.de). Because of the positive development Oedingen became a source habitat for the repopulation of other areas. During the reproduction period eggs from ponds with low water levels are collected and reared ex situ. Later the larvae are returned to areas (within the former natural distribution area), that are suitable for Yellow bellied toads but currently without a population. The project improves biodiversity by supporting and developing the population of a red list species. Additionally, the red list species Yellow bellied toad has to be considered as an umbrella species which means that species with similar habitat requirements such as other amphibians or pioneer species in general benefit from conservation activities as well. In Oedingen we find one of the biggest populations of Yellow bellied toads in North-Rhine-Westphalia. The population size is estimated to more than 100 individuals. Following the Natura 2000 evaluation scheme for Yellow bellied toad populations in North-Rhine-Westphalia the conservation status of the population in Oedingen is favorable. Our aim is to stabilise and promote the population by ongoing habitat management activities. The project shows that mining operations and amphibians can live alongside each other. This is an excellent case of 'Temporary Nature' during operations and this is a good example for other Sibelco sites in Europe. It shows that this can be done in other quarries as well. It is a low effort & low cost project with a great added value for nature in return. Additionally, in this case, amphibians are going to be a key element in the restoration plans when operations are ended.

European Minerals Days goes Global

The European Minerals Days (EMD) is an initiative by the European industrial minerals sector and its related representative organizations. The objective of this Industry initiative is to open the quarries and introduce the quarrying and transformation to the local communities and authorities. During its first edition in 2007, it welcomed more than 30,000 visitors in over 100 sites in 17 European countries. Its success incited a wave of enthusiasm and the number of sites has been steadily increasing, even spreading to other regions in the world! European Minerals Day 2013, engaged children and adults at 113 sites in more than 170 events in 20 European countries & 11 events in the rest of the world. In 2017 the 10th anniversary was celebrated across the world (118 open sites, 25 countries, 150 events, 43,000 visitors).

Region
Europe, Asia Americas



Country
EU, Japan, India, Malaysia, Argentina, Brazil, Canada, USA

Contribution
SDG3/4/8/9
SDG11/12/15

Company
IMA-Europe

IMA Europe

ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/european-minerals-days-2017-2019

youtu.be/EynN7_XFflg

youtu.be/Hefu66y98cM

youtu.be/20hQhvRVcL4

High-Tech and Energy Efficient Cristobalite

To meet growing demand from customers worldwide, in October, Sibelco officially opened its third cristobalite kiln. Located in Dessel, Belgium, the new kiln utilises the latest technology to synthesise cristobalite – a white, inert polymorph of silica used in applications such as engineered stone, coatings, polymers, abrasives and silicates. The new kiln operates to advanced levels of energy efficiency with lower emissions. A multinational team worked collaboratively to deliver the project on promise, with construction completed on time and budget with zero accidents, and in close cooperation with the local community and authorities throughout. Sibelco was privileged to welcome a wide range of stakeholders to the official opening ceremony, providing customers with a close-up look at the new facility.

Region
Europe

Country
Belgium

Contribution
SDG7/9/11
SDG12/13

Company
Sibelco

SIBELCO

sibelco.com/investors

IMA Europe

Community Initiatives

Region
North America

Country
USA

Contribution
SDG3/11/12

Company
Sibelco

In the USA, the donation of ten truckloads of washed sand from the Sibelco Camden Plant in Tennessee helped to recreate a beachfront area at a local scout camp for their beachfront renovation and beautification project, covering approximately one square acre of land. The new beach has given a real boost to the facility, which is used by around 2,000 boy scouts each year for a wide range of outdoor activities.

The Sibelco Camden Plant team also showed their support and appreciation for a local emergency service, donating a no longer needed Sibelco water truck to the Carroll County Fire Department. Carroll County Fire-Rescue, located in Huntingdon, Tennessee, serves as a full-service fire and emergency medical services agency. They provide basic and advanced pre-hospital life support, fire prevention and education programs, fire suppression services, arson detection, vehicle extrication, and heavy tactical rescue. As with many volunteer organizations, budgets are tight and the squad depends on the generosity of the community.

Meanwhile in Illinois, the Sibelco Tamms and Elco Plants positively impacted the local fire department, as well as Trinity Christian School. A welcome financial donation was given to the Tamms Volunteer Fire Department, an invaluable service that relies on the support of local businesses to fund new equipment and personnel training. The fire department covers 98 square miles of zone that includes the Village of Tamms, Township of Sandusky and Township of Elco in rural Southern Illinois. Their primary source of income for training and certification of personnel – as well as upgrades to equipment - is from local businesses like Sibelco and local fundraisers. These plants' employees also donate empty ink cartridges to the local school since recycling ink pays big dividends for the environment and local schools. In addition to reducing the amount of waste going to landfills and reusing valuable resources, Trinity Christian School will receive $2 in Staples rewards for every cartridge donated.

sibelco.com/investors

The nature trial of the miner – a project for biodiversity preservation of Brusada-Ponticelli area

Region
Europe

Country
Italy

Contribution
SDG4/9/11/15

Company
IMI Fabi

IMIFABI
tune in to innovation

A project aiming at identifying and safeguarding the rare botanic species around the talc mine of Brusada Ponticelli was developed back in 2009 through the implementation of 4 pillars: An educational and environmental laboratory aiming at increasing people awareness towards biodiversity protection; An experimental yard to test the most suitable techniques to restore the identified area. Thanks to the cooperation of two naturalists - some panels have been designed to create a specific trial along which people can be led to discover conifers, broad-leaved trees, lichens, woodland animals, woodland flowers and learn more about evolution of species. In the same period the involved naturalists have also tested – in the identified area – two different restoration techniques to choose the most suitable one; During summer of 2009 an accurate survey has individuated the following 4 interesting rare species: Armeria Alpina, Carex bicolor, Saxifraga Rotundifolia and Sanguisorba dodecandra. These species have been cultivated ex – situ in a specific laboratory and after their germination have been gathered and reintroduced in the nursery set for biodiversity preservation. For the first time a project was carried out in Valmalenco to assess and preserve autochthonous rare species in the identified area to increase the conservation of their genetic heritage. Recently the seedlings placed in the nursery were transferred to the natural environment within this area; A nature trial carried out with the realization of 8 panels describing the most important aspects of environmental and local morphology. Guiding tours with experts naturalists can be booked at the City Hall each month. Thanks to this initiative, visitors can better understand that the diversity of living things results from the evolutionary process, which starting out from the original forms has led to a continuous differentiation. In addition, didactic activities can be planned thanks to a permanent laboratory kit reserved for school workshops, through which kids can learn through simple activities of observation the true meaning of biodiversity.

imifabi.com/134-Case-Study-Brusada-Ponticelli-Mine.html

Shaping the future of the neighboring community together with the municipality

Region
Europe

Country
Germany

Contribution
SDG6/9/11/15

Company
Sibelco

SIBELCO

In 1991 Sibelco took over the quarry and mining activities from a refractory company in the Eisenberg region (Germany), and initiated a constructive and trustful cooperation with the city of Eisenberg, contributing to the urban development, while securing access to resources: Facilitating the development of a commercial park, by opening-up access that crossed the resource; Creating a river diversion to get access to the clay beyond the river; Upgrading of the access roads; Developing areas for species & biotopes and local recreation to ensure co-habitation of environment and economic activities.

IMA-Europe 2016. Innovation awards brochure [Pp. 27]

IMA Europe

Quarry hosts yearly a temporary open-air theatre

Since 2010, Sibelco's limestone quarry in Winterswijk (the Netherlands), is transformed every year for three weeks during summer, in an open-air theater, staging 4 evenings of performances. The high-level cultural event attracts visitors from all over the country and beyond. At its start in 2010, when the musical Jesus Christ Superstar was on stage, the Steengroeve Theater Winterswijk gained right away an enormous success and this success is steadily increasing. This project, bringing together communities, business, nature and culture, was possible and turned into a success through the collaboration with many partners, local and national, public and private: i.e. the Foundation Steengroeve Theater Winterswijk, the National Forest Service "Staatsbosbeheer" and Non-Governmental Organizations (NGO's) as "Natuurmonumenten" and "Oehoewerkgroep Nederland", local businesses, numerous volunteers (400 people), etc. This project is an example of how building and maintaining strong rela-tionships with local communities is a core priority of Sibelco's corporate social responsibility. Through this project Sibelco brings together people, culture and nature.

Region
Europe

Country
Netherlands

Contribution
SDG9/11/15

Company
Sibelco

SIBELCO

steengroevetheater.nl

Heat from lime production warms up homes

Nordkalk's lime kilns generate residual heat as a by-product of quicklime production. In Louhi secondary heat from the kiln is utilised in various on-site processes. In Köping in Sweden, and in Pargas and Tytyri in Finland, the residual heat from the lime kilns is utilised in communities' district heating networks. In 2017, Nordkalk delivered 82.000 MWh, which equals the amount of energy in about 8.2 million litres of heating oil. Most of the heat was produced in Köping, where a new annual record of 55.000 MWh was reached. It is enough energy to warm up 3.000 single family houses. Utilisation of residual heat is a very sustainable way of providing heat to both domestic and industrial applications, as it reduces the use of fossil fuels or other energy resources which would otherwise be needed to generate the heat required.

Region
Europe

Country
Sweden, Finland

Contribution
SDG7/11/12/13

Company
Nordkalk

Nordkalk

nordkalk.ee/document/6/1330/ba5954a/sustai_a450a27_Sustain-ability_report_2017.pdf [Pp. 20]

nordkalk.com/sustainability/community/heat-for-koping

Promotion of biodiversity in the renatured forest wildlife

Whereas open pit quarries offer welcome pioneer habitats for many rare and endangered plant and animal species, creating a habitat for some old-forest species may take many decades. In 2014 Quarzwerke signed a partnership with the forestry office, which with the objectives set delivered upon multiple nature enhancement activities and biodiversity restoration. The highly complex strategy includes: a changed forestry concept; a provision of maternity roosts & winter boxes for bats; the construction of a bat winter cave; the creation of woodland habitats for amphibians and the building of an amphibian tunnel. The project in the restored mining area not only provides habitat for 600 different plants and of course a lot of pioneer species but also protects the old forest wildlife as well. Most recently, in close cooperation with a bat expert, the company has developed an old power house into a home for bats in the re-cultivated forest which has already been accepted by bats.

Region
Europe

Country
Germany

Contribution
SDG9/11/15

Company
Quarzwerke

Quarzwerke

buschbellerwald.de
/fledermausvilla-im-
rekultivierten-wald.html

Waste as a common community challenge

Omya, starting from 2014, has initiated a 'training programme let's save the environment' in close collaboration with a village school in Serbia, as well as the authority. The idea is to run annual recycling competition for the students of the school.
Omya has been contributing to the project by: donating 3 containers for waste classification to local village school; together with municipality officials, supporting school in waste managing by involving them in town waste collection system.

Region
Europe

Country
Serbia

Contribution
SDG4/9/11/15

Company
Omya

Open Day (Running in the quarry) & Archaeological Heritage

On May 1st 2017, Sibelco's Fossanova site hosted the sixth edition of the "Trail in Miniera", the annual 10 km cross-country challenge embracing the perimeter of Fossanova quarry. Like every year, 2000-2500 people joined the event. In addition to the main marathon challenge, which starts at 10.00 am, a lot of other collateral events were planned: a non-competitive walk (5 km), a baby-family walk (3 km), live music, fun for children and gourmet food stands with typical local products and dishes. The Fossanova site team worked hard to make this event possible, together with local AVIS Group (Volunteers Blood Donors).
In 2014, archaeological investigations carried out in this Sibelco quarry led to the discovery of a funerary building dating from the end of 1st and the first half of 2nd century A.C. For conservation and protection needs of the monument, its remains have been translated into a site located about 200 meters away, equipped with the same environmental and natural features, so as to enhance it and make it accessible to the public. The disassembly and relocation of the monument, of particular delicacy, was carried out by highly qualified technicians with experimental solutions that made use of innovative materials and technologies. The result was an exceptional intervention of protection but also of educational use with volumetric and virtual reconstructions. The monument will be opened to the public and to school groups throughout the year, with guided tours arranged with Sibelco. The project realized by Sibelco and the Archeology Superintendence of Lazio and southern Etruria is a virtuous example of collaboration between the public and private sectors for the enhancement of the archaeological heritage. At the center of the sepulcher, consisting of a quadrangular enclosure, a cremation burial was discovered inside a pit protected by a ‚cappuccina' roof; on the back wall there is a counter used for funeral rituals. The ashes of the deceased were kept in a refined blown glass recipient, with a lid placed inside the pit between charred remains of bones and pira wood. The rest of the kit included a coin of the emperor Titus, a valid indicator for dating, and a bronze nail with magical value. The monument is linked to a villa located nearby and probably belonged to a member of a family of the Roman aristocracy who had possessions in the territory or to a wealthy citizen of Privernum.

Region
Europe

Country
Italy

Contribution
SDG3/4/8/9
SDG11/12
SDG15/17

Company
Sibelco

SIBELCO

facebook.com/podistica.avispriverno/photos/a.908161979214429/2276910029006277/?type=3&theater

archeologialazio.beniculturali.it/it/237/eventi/1237/la-tomba-di-un-agiato-cittadino-romano--e-il-suo-corredo-al-museo-archeologico-di-priverno

Carmeuse team and 450 good deeds

"Plantam fapte bune in Romania" (We plant good deeds in Romania) is the name of the program initiated by a non-profit organization, EcoAssist Association. The objective of 2018 spring project was to stabilize the soil and prevent landslides on the hill area in Arges county. Over 6.000 trees were bought for this action. Carmeuse enthusiastically responded to their call, since this action took place in the community near their facilities. Besides the financial support, Carmeuse decided to give out some of employees time to contribute to a greener environment. 18 employees from HQ and near Plant said YES to this initiative and they planted 450 of the trees. Right attitude is the key for sustainability. Responsibility for prosperity, people and planet should be felt as values at individual level. And this action proved once more Carmeuse cares and understand the true meaning of acting sustainably.

Region
Europe

Country
Rumania

Contribution
SDG11/15

Company
Carmeuse

CARMEUSE

carmeuse.eu/sites/default/files/20180404_memo-on_ro-planting-trees_0.pdf

Back to nature with the Olivine solution

After more than eighty years of bombshells and bullets, the 165 sq km of land that makes up Hjerkinn Military Range in the mountains of Oppland, Norway, was suffering the effects of significant ground contamination. So, when the Norwegian Parliament decided to close down the range and convert the area into a nature conservation area, the restoration project team were faced with a major challenge. For the past four years, Sibelco's Nordic team have been collaborating with the Norwegian Defence Estates Agency (NDEA) in researching and developing the use of a series of olivine-based products to help clean up the contaminated land at Hjerkinn. The work has focused on olivine's natural ability to neutralise acid and to absorb heavy metal pollutants. This partnership approach recently resulted in Sibelco being the supplier for a olivine natural based solution to clean up the contaminated soil and water. Bentonite from Finland, also for use at the landfills. The restoration work is expected to finish in 2020 and represents a unique project for Norway's defence and conservation sectors, attracting international attention. The project will strengthen the rich and vulnerable animal and plant life in the area, including increased protection for one of Northern Europe's largest ecosystems of reindeer.

Region
Europe

Country
Norway

Contribution
SDG9/11/15

Company
Sibelco

SIBELCO

sibelcomedia.s3-ap-southeast-2.amazonaws.com/20170608035910/olivine.pdf

Compensation measures for the protection of the orchid Ophryss drumana

Les Merles is a silica and kaolin quarry in the south east of France. ZNIEFF (Zones Naturelles d'Intérêt Ecologique Faunistique and Floristique) has created nearby an important area for flora, especially for orchids. Ophrys drumana, a departmental protected species, grows in the calcareous grasslands, near forest edges and is endangered by increasing forest development. Inventories showed the presence of Ophrys drumana in a future quarry area. As part of the mitigation measures, Sibelco France proposed to take compensation measures to get authorization for exploitation in 2005. The following actions were taken to support the development of Ophrys drumana outside the quarry area: The acquirement of "les pelouses de tête d'homme", of about 1.2 ha, where a significant population of Ophrys drumana grows. The site is situated in the valley of Beauregard-Baret and was reassigned to the CREN (Conservatoire Rhône-Alpes des Espaces Naturels); CREN handles the management of "les pelouses de tête d'homme" and Sibelco France supports financially. An active management is used to re-open the landscape by the combination of: Manual bush and shrub management & Grazing of horses for the grass. The evolution of the flora populations is monitored regularly; The site has been designated as a protection zone for biotopes by the French authorities. The results were an increase in the overall Ophrys drumana population, after 4 years there were counted a fourfold from the initial situation on the site "les pelouses de tête d'homme" (in 2006: 52 / in 2007: 76 / in 2008: 164 / in 2009: 206). Additionally, the management that is used for maintaining the open landscape has helped in introducing 5 other new species of orchids and a total of 22 different orchids were counted. The biodiversity created on the site is also accompanied with a high diversity of butterflies. Information panels were developed to illustrate to the public the species evolution in time.

Region
Europe

Country
France

Contribution
SDG9/11/15

Company
Sibelco

SIBELCO

mi-france.fr/doc
/01_Sibelco2mars2010.pdf

Good Environmental Practicies – Erimsa Consession of Exploitation Yeyo

Region
Europe

Country
Spain

Contribution
SDG9/11/12/15

Company
Erimsa

Erimsa

Strategic entrepreneurial criteria do not apply to the location of geological deposits. The mine is developed where the deposit is located. The deposits exploited by Erimsa in Spain are characterized for being of low thickness, but on large areas under agricultural soil. Therefore, large terrain surfaces are needed, making the search for methods that allow compatibility of the mining activity with other soil uses (i.e. agriculture). Therefore, the purpose is to find a mining method which promotes an environmentally sustainable and social mining in the most efficient way, ensuring that when plots are returned to the owners, the terrain can maintain its previous use or new use with greater added value. Erimsa and The University of Compostela have succeeded in developing a quartz, aggregate and sand exploitation and restoration system that goes beyond the environmental recovery of the surfaces affected by mining activity, reaching a sustainability model over the territory and optimizing its resources. Despite starting from a highly fractionated land (1195 ha, in 870 plots belonging to 613 different holders), this system allows, in a very short period of time, to get a qualitative mining yield while keeping or improving the initial characteristics of the terrain. Even in those plots with lower agrological value or completely unproductive, it provides them with better conditions for future uses.

ima-europe.eu/about-ima-europe/events/ima-europe-2018-conference-and-awards-ceremony

IMA-Europe 2018. Awards brochure – Innovation [Pp. 7]

Invested in the future

Region
North America

Country
USA

Contribution
SDG8/11/15

Company
Sibelco

SIBELCO

Unlike real estate development that forever changes the land, mining is a transitional process that ultimately returns the ground to a landscape that is environmentally harmonious with its surroundings thanks to mitigation measures and sustainable practices. The mining company support of universities engaged in the study of geology, hydrogeology, restorative ecology and regulatory policy underscores our commitment to a sustainable and environmentally sound future for the mining and mineral processing indus-try. Unimin encourages and applies responsible and sustainable mining practices through community outreach, industry association and university scholarship programs. At each level, these programs foster a better understanding of mining and industrial minerals in our society and reinforce best operational and environmental practices. We work with local communities to develop win-win plans for the final use of the land we have been responsible for. Over the years, we have established nature reserves, parklands, bat habitats, grazing lands, picnic grounds and even urban development.

unimin.com/sustainable

IMA Europe

Community Education

On 8 June, in occasion of World Environment Day 2017, four Sibelco's Mexican plants carried out various activities under the motto "Connecting People with Nature". All activities were focused on raising awareness about the importance of nature conservation to continue enjoying the environmental benefits that it offers us: Ahuazotepec Plant: the employees responsible for Plant Ecology, went to the community's secondary school to raise awareness issues to teachers and students about the importance of caring for the environment. Endemic plant were donated in order to be planted in the school and lectures about the benefits of the trees and the basic care they should receive were given to students; Jáltipan Plant: as every year, Jáltipan Plant was present at the 3rd World Environment Day fair, held on June 8 in the community where they operate (Jáltipan). During that morning, students from upper secondary institutions presented projects with benefit to the environment, as well as lectures on the care of the environment to students of basic level and community. Jáltipan Plant, actively participated and was a sponsor for the donation of containers to segregate waste, as well as endemic plants; Canoitas Plant: talks were given to the workers in the 3 shifts with a focus on caring for the environment, the benefits we receive from nature and the dependence we have on the environment to survive; San José Plant: together with their relatives, the workers enjoyed a bicycle tour and a walk in the company's premises, where they could be in full contact with nature. Later, they organized a cleaning and reforestation campaign in the community park (El Arenal de Arriba), where they were accompanied by students from the school "Juan de la Barrera" and by representatives of the H. Ayuntamiento, headed by the Municipal President of San José Iturbide, who participated in the activities and contributed to raising environmental awareness.

Region
North America

Country
Mexico

Contribution
SDG4/11/15

Company
Sibelco

SIBELCO

Sibelco. 2018.
Sibelco Annual Report 2017

Extraordinary important paleontological discoveries operation area of Galve mine

Region
Europe

Country
Spain

Contribution
SDG11/15

Company
Sibelco

Based on the Spanish legislation related to Paleontological Heritage Protection, Sibelco Spain collaborates since 2008 with the paleontological Dinopolis Foundation (Fundación Conjunto Paleontolgico de Teruel-Dinopolis). Dinopolis Foundation is an institution of the Aragon Government focused on provincial development through the social use of its paleontological resources. Its activities include research in paleontology, paleontological heritage conservation and dissemination. Dinopolis Foundation, with the collaboration of Sibelco Spain does weekly preventive paleontological monitoring in the Galve red clay mine. This collaboration ensured the excavation of paleontological dinosaur sites in the quarry. The mine exploits the clays of the Camarillas Formation (Maestrazgo Basin, Galve sub-basin), which present a great biodiversity of vertebrate fossil remains. The first new dinosaur species ever described in Spain, and also the first Spanish Mesozoic mammal were defined in Galve. The consolidated partnership of Sibelco Spain with the Dinopolis Foundation lead in 2015 to the discovery of 8 paleontological sites in a new operation area of the Galve clay mine (Cerro San Cristobal). Over 1000 fossils were recovered: dinosaurs (Sauropods and Ornithopods), footprints, lizards. The discovery in 2015 was of extraordinary scientific importance because a new species of dinosaur, Iguanodon galvensis, was found and the first nursery of dinosaurs for the genus Iguanodon was published.

IMA-Europe 2016. Innovation awards brochure [Pp. 26]

National monitoring of forest night butterflies for measuring biodiversity

Region
Europe

Country
Finland

Contribution
SDG11/15

Company
SMA Mineral

Forest night butterflies are being monitored in the herb-rich forest around the Kalkkimaa limestone mill site. It is one of the currently existing 50 traps for monitoring biodiversity with butterflies in Finland. Once a week, butterflies are collected with a Jalas-light trap. The butterflies are being frozen for afterwards determining the species, the number of individuals, number of males and females, and in addition, the colour forms of some species. The monitoring of butterflies provides information about the environmental changes, land use and climate change. The measuring provides information on the state of the Finnish insect diversity. The aim is to establish, based on these indicators, a practical policy proposal can be developed. The company is working closely with the regional authority. These monitoring were also promoted during the European Mineral Day Activities organised by the SMA company in Finland.

ima-europe.eu/sites/ima-europe.eu/files/publications/SMA%20Mineral%20Oy%20%28FIN%29%20-%20Butterfly%20monitoring.pdf

IMA Europe

Valuing our natural capital Biodiversity Strategy

Region
Europe

Country
EU

Contribution
SDG9/11/15

Company
Sibelco

SIBELCO

ima-europe.eu/award/award

Sibelco developed a Natural Capital approach that assesses the potential negative impacts on nature and shows how sustainable mining practices can create great opportunities for nature and biodiversity through the implementation of mitigating measures. Typical extraction activities such as large-scale earth movement, revealing of geological substrates, changing topography, building slopes and benches are often of added value to nature in general. It can enhance the biodiversity by creating pioneer habitats and by attracting rare species. Part of the project is the development of a toolkit to enhance the value of the Natural Capital. Sibelco has identified 6 tools: Guidance on regulation; Capacity building; Partnerships; Planning; Monitoring; Communication. A set of Reference Sites are sites selected throughout Europe with different conditions and in different phases of the lifecycle of the mine. The knowledge and expertise built in the Reference Sites will be used to inspire other sites. It is important to emphasize that working on biodiversity and increasing the value of the Natural Capital is not a static process, the toolkit and focus can change over time depending on the needs and opportunities identified. Additionally, the Sibelco Natural Capital project includes two Europe wide action programs: Species Protection Program for pioneer species related to quarry areas: amphibians that profit from temporary small ponds (Natterjack toad, Yellow belied toad, ...) and birds that profit from steep slopes (Eagle-owl, Sand martins, ...); Calculator for Ecosystem Services (ESS) and Biodiversity based upon specific land use in the quarries (before, during or after mining) and management variables that allow to achieve sustainability objectives. Ecosystem services can provide substantial benefits for neighbors and land users and are often interlinked with biodiversity. The calculator will be a standardized tool to value the Natural Capital as a result of planning and management characteristics. This holistic strategic approach undertaken by Sibelco was awarded the IMA-Europe 2016 Innovation award for biodiversity.

SDG12: Responsible Consumption & Production

Ensure sustainable consumption and production patterns

Sustainable consumption and production is about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Achieving Goal 12 requires a strong national framework for sustainable consumption and production that is integrated into national and sectoral plans, sustainable business practices and consumer behaviour.

Mining can contribute to more sustainable production by undertaking responsible "materials optimisation" across the value chain towards the circular economy principles i.e. minimize mining waste, valorize by-products from extraction and processing, recycle, reuse and repurposing of raw materials and products to improve sustainable consumption.

Key UN SDG12 goals relevant for mining by 2030:

- To achieve the sustainable management of resources through efficient use of natural resources.
- Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil.
- Reduce waste generation through valorization, prevention, reduction, recycling and reuse.
- Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

To integrate SDG12 into their business, mining companies have developed projects to optimize efficient blasting, new fuels for mobile fleets, reduced energy for processing and recycled process water, minimize waste flows, and finding creative uses for remaining waste and overburden. Mining companies have continued to strengthen their efforts to improve responsible mining management and minimize risks associated with chemicals they use by working across the value chain and with other stakeholders.

Much of the mining industry is focused on extracting more value from existing operations rather than building new ones, but as long as the population and prosperity grow, new mines with optimized and more efficient operations will be needed. Mining companies have integrated environmental and social considerations and requirements into their procurement processes, establishing criteria in addition to quality and cost helps drive improved performance at the production end of the value chain like safety and community engagement.

Sustainable production and consumption requires an integrated approach for best practices in all the steps of the entire value chain towards identifying efficiencies, improve sustainable consumption and provide end users with information about the origin of the raw materials and products they use. One best practice for the mining industry would be to collaborate to establish codes of conduct and sourcing principles across the mining value chain.

Life Cycle of Industrial Minerals

The sustainability and environmental impacts have put pressure on the value chain to generate data and quantify impacts. As a pro-active action towards sustainable raw material management and communication along the value chain, the Industrial Minerals Association (IMA-Europe) has managed to develop multiple life cycle inventories for various grades of industrial minerals (i.e. Clays, Kaolin, Calcium Carbonate, Bentonite, Feldspar, Silica Sand, Ball clay, Quicklime and Hydrated lime) from cradle (extraction) until the gate (the processing facility). The data are used by the companies to improve their performance but also to communicate within the value chain. The data readily available from the European Life Cycle database a freely available database managed by the European Commission.

Region
Europe

Country
EU

Contribution
SDG12/13

Company
IMA-Europe

IMA Europe

ima-europe.eu/eu-policy/environment/life-cycle-assessment

eplca.jrc.ec.europa.eu/LCDN/

Electronic Recycling

Electronic recycling, or E-cycling is the practice of reusing, or distributing for reuse, electronic equipment and components. Sibelco's team in Taiwan made this the focus of their project and combined it with a community outreach opportunity that would also allow them to practice Corporate Social Responsibility. They advocated the recycling of electronics by donating used computers to the disadvantaged children of Miaoli county.
This was also a good chance for the children to learn about technology. The local IT support ensured that the computers and all necessary attachments were in usable condition and the team conducted educational activities that involved participation from the children.

Region
Asia

Country
Taiwan

Contribution
SDG4/11/12

Company
Sibelco

SIBELCO

sibelco.com/investors

EPOS: Enhanced energy and resource efficiency and Performance in process industry Operations via onsite and cross-sectorial Symbiosis

Process industries account for 20% of the EU manufacturing sector in terms of employment and turnover. The challenge to address the cross-sectoral energy and resource efficiency was undertaken by 5 process sectors, namely cement, chemicals, engineering, minerals and steel with the development of a digital tool to allow the exchange and the delivery upon these challenges. The EPOS project assessed the opportunities in the industrial hub in Hull (UK) to implement the industrial symbiosis (IS) as a means to achieve resource, energy efficiency and low carbon footprint via: The EPOS toolbox will enable users to identify, assess, prioritise and manage IS through rapid screening; The EPOS blueprints are a new, innovative way to share anonymized industrial information in and across sectors but also facilitate discussions with academics, policy makers and other stakeholders; The project delivers a tool that can be embraced by the industrial minerals thereby facilitating the integration of process streams (energy, materials, waste), engineering (technologies, utilities, facilities) and organisational solutions (services, business schemes) within the value chain; This project also shows that IS is a reality delivering in circularity ecosystems, especially in industrialized regions where the multi-sector facilities are in the vicinity and wastes or by-products from other sources, thus reducing CO emissions to the environment.

Region
Europe

Country
EU

Contribution
SDG9/12

Company
Omya

EPOS
SYMBIOSIS IN INDUSTRY

spire2030.eu/epos

IMA-Europe 2018. Awards brochure – Innovation [Pp. 5]

Sustainable Mining Award

Sibelco UK operations have been awarded the prestigious Carbon Trust Standard for the tenth consecutive year. The Carbon Trust is an independent organisation whose mission is to tackle climate change by accelerating the move to a sustainable, low carbon economy. Sibelco, was one of the first mineral companies to receive the award back in 2003. Sibelco UK operations were awarded the Carbon Trust Standard for the tenth consecutive year. The ongoing actions to reduce energy emissions and the recognition of the Sibelco actions, are a clear indicator of our commitment to sustainable mining practices.

Region
Europe

Country
UK

Contribution
SDG9/12/13

Company
Sibelco

SIBELCO

sibelco.com/media/sustainable-mining-award

IMA Europe

Creating Habitats For Solitary Bees

Sibelco's drive to support the conservation of solitary bees across its operations earned the company the 2017 European Bee Award. Solitary bees, unlike bumblebees or honeybees, do not live in colonies. There are more than 20,000 species of bee worldwide, and around 90% of these are solitary bees. Conditions in the mines can attract solitary bees as they look for dry siliceous habitats on southern-facing slopes in which to make their nests. Sibelco's bee conservation initiative is raising awareness about these creatures, whilst creating the right type of habitat for bees within the site.

Region
Europe

Country
EU

Contribution
SDG9/12/15

Company
Sibelco

SIBELCO

sibelco.com/investors

Noise barrier at Miedzianka (Poland)

Noise barriers or acoustic baffles are the best way to "fight" noise, which is emitted by transport, trucks, trains and loaders. In 2015, the Miedzianka Plant in Poland finished building 700 metres of wall baffles along its traffic routes. The seven metres high walls are made of sound-absorbing material. They are located on the side of the plant closest to the private houses. The measurements that were carried out after the installing of acoustic baffles fulfilled the requirements of the contract concerning the reduction of noise emissions. In 2016, additional actions were taken to further reduce noise emissions at night. As a continuation to the sound-absorbing barriers built a year earlier, two new environmental investments were finished. Special octagonal noise reducers were installed on the upper edge of the barriers. These octagonal noise reducers allow to lower the sound level by absorbing diffracted sound waves into the sound-absorbing mineral wool plate. Another improvement was replacing an old steel element gate with acoustic panels. The noise measurements carried out after finalising the construction showed significant reduction of the noise level.

Region
Europe

Country
Poland

Contribution
SDG9/11/12

Company
Nordkalk

Nordkalk

nordkalk.com/document/3/1001/bdac1fa/Nordkalk_Environmental_Report_2016.pdf [Pp. 8]

Eco-friendly Perlite-Scrub (P-Scrub) for personal care

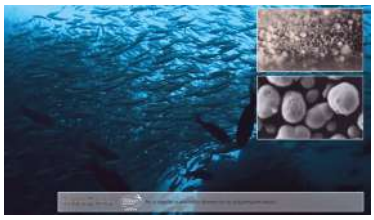
The scientists estimate that in America alone, more than eight trillion microbeads, enough to coat 300 tennis courts, enter the water streams every year. Once they are absorbed by fish they enter in the human food chain. This poses a high risk for the environment and public health. The pressure and growing demand of consumers for natural, eco-friendly personal care products which replaces the use of plastic microbeads for personal care resulted in the development of a novel and patented technology which is derived from 100% natural volcanic rock perlite and contains no harmful additives. The P-Scrub range is eco-friendly, certified Cosmos / Ecocert and responds to policy developments (ban of plastic microbead manufacturing in USA (2016) & UK, Finland, Sweden (2018), Plastic strategy in EU (2018)) and provides an eco-friendly alternative to end consumers delivering the same functionality in personal care.
This eco-friendly mineral based product is the Winner of the IMA-Europe 2016 Award Innovation.

Region
Europe, North America

Country
EU, USA

Contribution
SDG12

Company
Imerys



youtu.be/S422JZ9Nsew

Casteran T. 2017. L'usage des minéraux dans les cosmétique: la dictature de la functionalité. SIM 2017, 17-20 Octobre 2017 in Metz (France). Platform presentation. In French

IMA-Europe 2016 Innovation award. Ceremony on 28 September 2016 in Brussels (Belgium) ima-europe.eu/award/award

Street Cleaning

The road leading to the Sibelco Sopprab Plant sees heavy logistic, vehicular and pedestrian traffic from the plant and the residents in the area. Rubbish and litter are being indiscriminately disposed off by the road users, thus spoiling the surrounding environment. Sibelco employees took a welcome break from their daily activities to start their "Greening our Home" project by picking up the rubbish and cleaning up the streets. This was their way of looking after the local community in the area and, in the 400 metres that they covered, the team collected more than 10 kg of rubbish from the streets.

Region
Asia

Country
Thailand

Contribution
SDG9/11/12

Company
Sibelco

100% Resource use in limestone quarry in Estonia

Nordkalk strives to optimize the raw materials, aiming for 100% material efficiency, which is sound from both financial and environmental point of view. In Kurevere--Esivere, the excavation generates no side stone and all fine material from crushing and screening is used into agriculture product applications. The material efficiency has been 100% already for many years. This is possible thanks to e.g. simple production organisation leading to efficiency and optimality and to the personnel, who are dedicated to the material optimization. This operation was chosen as the host for the Launch of European Minerals Day 2017 events across Europe. The EMD Launch event show how the minerals industry contributes to sustainable regions and the well-being of the local communities. The international group of guests to the EMD launch event visited Nordkalk's quarry in Kurevere and had an opportunity to follow a blasting demonstration and be introduced to the local orchids biodiversity project.

Region
Europe

Country
Estonia

Contribution
SDG11/12/15

Company
Nordkalk

nordkalk.com/document/3/264/5043d1d/Nordkalk_Environmental_Report_2014.pdf [Pp. 11]

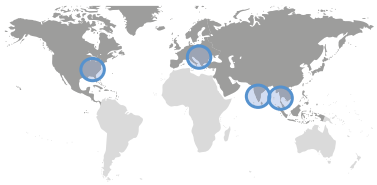
eu2017.ee/fr/political-meetings/journee-europeenne-des-mineraux

Renewable power for Omya plants

To support decision making, Omya conducted a survey and analysis of key parameters for the renewable energy from all Omya production sites in 2017. This formed the basis to define the targets for 2026: aspire to generate more than 10% of electrical energy consumption with proprietary renewable power facilities. Omya's proprietary renewable power generation is focusing on solar photovoltaic technology, followed by wind energy. Other renewable technologies may be considered too, provided they have zero fuel cost. The target of more than 10% is for the entire Group and will be allocated to regions and countries based on opportunities with distribution reviewed every two years. Two projects are already approved: a photovoltaic system on a warehouse roof in India and a ground-mounted photovoltaic facility in Thailand. Several projects are currently in evaluation throughout the regions. The initiative tackles at the same time production cost and sustainable footprint improvements.

Region
North America, Asia, Europe

Country
USA, India, Thailand, Switzerland



Contribution
SDG12/13

Company
Omya

2017. Omya World: Sustainability magazine [Pp. 11]

Bentonite & Sepiolite transfer mining reclamation process assisted by Drone Technology

Minimizing the impact of mining on land is a societal and sector challenge that is delivering upon multiple policies such as Circular economy and the Sustainable Development Goals (SDG's) as well as community and cross-sector benefits. Although the mining by transference system has been used for a long time with successful results, the use of new technologies (drones) is seriously improving the performance of the process by giving high quality images of the reclamation process and helping in the control of the end-results, like quality control of the organic substrate that ends the process before agriculture use. The use of these digital tools and reclamation techniques delivers on: Minimum impact Mining on Bentonite and Sepiolite thanks to zero waste mining process and reduction of land use; Reduction of yearly emissions of 156 tons of CO_2, as well as the economic impact of the circulation of a 28 tons – truck for 90.000 km; Improvement of the community and social relations by showing the low impact and high benefits of the activity for the stakeholders; Improving the reclamation process in a framework of Zero Waste mining contributes to multiple SDG's and Circular Economy policies.

Region
Europe

Country
Spain

Contribution
SDG9/11/12
SDG13/15

Company
Tolsa

ima-europe.eu/about-ima-europe/events/ima-europe-2018-conference-and-awards-ceremony

IMA-Europe 2018. Awards brochure – Innovation [Pp. 6]

A natural all-purpose raw material

In moderate climates, bentonite must be dried by means of thermal heating. This process has been successfully converted to solar drying at a mining site in Sardinia, Italy. Because of this, emissions of 2000 tons of CO_2 per year are eliminated in a first step. Additionally, the number of required truck trips were reduced in the process by a distance of 40000 kilometers because sundried bentonite exhibits smaller volume. In addition, dependence on fossil fuels and their price fluctuations were eliminated for the future. This process will be extended to additional suitable individual locations.

Region
Europe

Country
Italy

Contribution
SDG9/12/13

Company
Clariant

reports.clariant.com/2015/sustainability-report/service-pages/downloads/files/entire_clariant_csr2015.pdf [Pp. 68]

IMA Europe

STOICISM: Sustainable Technologies for Calcined Industrial Minerals in Europe

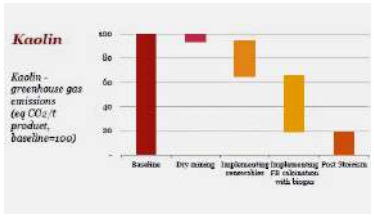
Resource and Energy efficiency are two key challenges of the industrial minerals sector towards competitiveness and market innovation. As such, the STOICISM project was designed to tackle several sustainability aspects of the EU's industrial minerals industry by targeting research and development in the effective use of resources (both mineral deposits and energy resources) with the hope of leading to the sustainable production of better and purer products with less waste and lower environmental impact. The STOICISM project allowed a detailed assessment of different measures needed to make a breakthrough innovation for the 3 minerals in the scope of the project, namely Diatomite Earth (DE), Kaolin Calcined and Perlite. The life cycle assessment analysis indicated that the implementation of all investigated measures and processes could reduce the environmental footprint of the three minerals from 40% to 80%. Some of these measures are implemented in multiple sites and delivering upon the sustainability objectives of the project.

Region
Europe

Country
EU

Contribution
SDG12/13

Company
Imerys



stoicism.eu

ima-europe.eu/about-ima-europe/events/ima-europe-2018-conference-and-awards-ceremony

IMA-Europe 2018. Awards brochure – Innovation [Pp. 3]

Reduce, Reuse, Recycle

In the Sibelco Kota Damasara office located in Kuala Lumpur, Malaysia, Sibelco employees launched the 3Rs Program – Reduce, Reuse, Recycle. To create awareness, they invited guest speakers to share insights on how to better care for the environment and followed up on the talk with proactive initiatives. The event gave the participants good knowledge and insight on how contributing in little ways can make a big difference to the environment: Placing posters to encourage Sibelco colleagues to save water and paper; Reducing the usage of plastic and paper utensils in the office; Placing recycling bins in the pantry for paper and plastic segregation; Creating "Green Zones" in every department to encourage recycling; Organising Recycling Collection Days – Encourage everyone in the building to bring in recyclable items from their homes once a month.

Region
Asia

Country
Malaysia

Contribution
SDG6/11/12

Company
Sibelco

Reducing environmental impacts

Region
Europe

Country
Sweden, Finland, Poland

Contribution
SDG9/11/12

Company
Nordkalk

nordkalk.com/document/3/1001/bdac1fa/Nordkalk_Environmental_Report_2016.pdf [Pp. 7]

Nordkalk's operations are regulated by legislation and the limit values defined by authorities in permits, and by the company's own environmental objectives. They are part of Nordkalk's continuous improvement process in accordance with the ISO 14001 environmental management system. The surrounding environment and the employees' working environment are always taken into consideration in production & planning. Nordkalk has mines and production at 27 locations. Limestone is extracted and processed into crushed and ground limestone, calcium oxide (quicklime) and calcium hydroxide (slaked lime), as well as special products. The operations can cause dust, noise and vibration. Nordkalk minimises these e.g. by using best available technologies (BAT) in investments and repairs.
Dust emissions can be controlled effectively. The air emitted by the grinding plants and lime kilns is purified using filters, which are also used at loading areas. Enclosed conveyor solutions prevent dust dispersion. Production areas and roads are asphalted in order to make cleaning as efficient as possible. Roads and stored stone material are watered during dry periods. Sound insulation is improved by constructing noise barriers, planting trees and using various noise-damping materials at crushing plants, conveyor belts and loading places. In locations near residential areas, there are restrictions on night-time operations to avoid disturbances to the local residents. Residential areas are taken into account when planning and carrying out blasting. Vibration caused by blasting is measured; at Tytyri in Lohja, Finland, e.g. continuous measuring is carried out at three locations near the mine and at several temporary measuring points. On the basis of the results, necessary changes are made to blasting methods in order to reduce the amount of vibration. Nordkalk has ensured the readiness of its production facilities for the demands of the EU's Industrial Emissions Directive (IED), that entered into force in 2017, by making significant investments in Best Available Techniques (BAT).

Resource optimization

Region
North America

Country
USA

Contribution
SDG9/11/12/15

Company
Sibelco

unimin.com/sustainable

Unimin is committed to the responsible and efficient use of the natural resources. Consistent with continuous improvement culture, plants operate with state-of-the-art and best available technologies to minimize water and energy consumption and to preserve the air quality and noise levels of nearby communities. Good resource management also means optimized utilization of the resource to ensure sustainable performance for many stakeholders. Mine planning, process engineering, and production management are organized to optimize our operational performance with a minimal operational footprint. While there is no "one size fits all" approach to resource management, Unimin applies an entrepreneurial approach, tailoring our best practices to work in harmony with the natural surroundings.

Projects for community empowerment by recycling waste

The Performance & Filtration Minerals unit looked for an alternative solution for its waste management from the Perlite plant in Argentina at the same time as also strengthen the ties with the neighboring community. A program was put in place to educate the employees and local community, on how to valorize the recyclables included plastic, broken packing and stationary paper. General education on recycling and more specific communication on the preparation, classification and value of materials was a critical milestone in the project building phase. Once the logistics were in place, bins and signs were set up at strategic locations around the plant. In the first six months of the waste management program, more than 24 tons was collected and sold. Recycling rates have increased to 50% for urban waste and 90% for industrial waste resulting a triple response to foster the sustainability, the business, planet and people. The revenues from waste were ploughed back into the community into two major projects: Children's Art Workshops make up for the lack of creative outlets in formal education. The focus is also on health, safety and the environment; Housewives' Workshops give local women valuable knowledge about nutrition, home economics and the best use of resources.

Region
South America

Country
Argentina

Contribution
SDG12/15

Company
Imerys

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imerys.com/scopi/group/imery-scom/imeryscom.nsf/pagesref/SPIT-8THH4R/$File/IMERYS_NEWS_HS_DD_2011.pdf [Pp. 16]

Sustainability Dialog

As a commitment to sustainability and value chain sustainable management practices, Clariant hosted its first ever Sustainability Dialog on 2 September 2015, at Clariant's Innovation Center in Frankfurt. Clariant brought together journalists, investors, and other stakeholders to foster a dialog about sustainability in the industry, and to show how Clariant is applying sustainability thinking to its products and processes. The platform helped to share the engagement down the value chain and foster the peer-learning along the value chain.

Region
Europe

Country
Germany

Contribution
SDG9/11/12

Company
Clariant

CLARIANT

youtu.be/UEgocwqhAkc?list=PL_OsZ7RK-4t51X-tfzL9f4-ABmYnC1kYZL

HEMPCRETE: Hemp-lime Based Construction Materials – an Ecological, Sustainable and Carbon Negative Solution

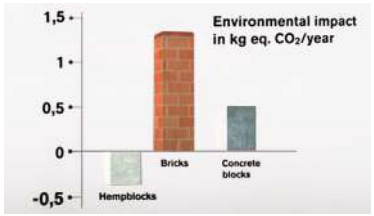
Residential and commercial buildings are the world's biggest energy consumers and CO_2 emitters. In the European Union, the buildings consume about 40% of the Union Energy. More than 50% of the building energy consumption goes for heating/cooling. To make EU buildings energy efficient the focus is to increase the market value of green construction materials. The objective of this project is to illustrate how hemp-lime based construction material can respond to these EU multifaceted policy objectives. The project was terminated in 2015 and the Products were placed on the market in Multiple EU countries (BE, NL, RO). Key deliverables of the project consist of: Grows quickly and locally with one of the highest yielding – 4 to 6 months from seeding till harvest – without need of pesticide chemicals; 100% of the hemp plant can be used in many different applications such as textiles, plastics, food products, papers, oils, paints, building material. The later, accounting for around 60% of the hemp, fibers and shives; Mixing lime with hemp, improves comfort and health thanks to better breathability. No condensation build-up, lower thermal conductivity, antibacterial activity, more flexibility than concrete, which reduces cracks; Durability: stronger than conventional fibers such as glass and rock fibers since it can be used for inner/outer masonry and/or insulation; Carbon sequestration during the growth and Carbon negative footprint & sustainable during use phase in a building, 1 kg of dry hemp stores 0,38 kg of carbon, equivalent to 1,4 kg CO_2.

Region
Europe

Country
Belgium

Contribution
SDG9/11/12

Company
Carmeuse



carmeuse-construction.com/your-applications/building-materials/hempbuilding

Van Rompay G., 2015. Hemp-lime Based Construction Materials – An Ecological, Sustainable and Carbon Negative solution. ILA Conference. 8 October 2015 in Istanbul (Turkey)

Development of a gunitador mobile robot for application of refractory material into electric furnaces

The main objective of the project is the development of a mobile robot for electric furnaces, characterized by an easy installation and versatility. Thanks to the digitalization and innovation, this mobile robot can be adapted to different sizes of oven to improve productivity and occupational health of the workers, reducing to the minimum the use of bridge crane.

Region
Europe

Country
Spain

Contribution
SDG3/9/12

Company
Magna

magnesitasnavarras.es/en/proyectosid/desarrollo-robot-gunitado-movil-para-aplicacion-material-refractario-hornos-electricos

IMA Europe

Efficient use of natural resources

Nordkalk's material-efficiency efforts include using all by-products: wall rock that is extracted in addition to regular limestone, fine sand produced in the flotation process, filter dust, which builds up in all lime kilns and at grinding plants, and residues created in lime burning and slaking. Nordkalk also assists its customers by handling their process by-products in a sustainable way. In 2017, new uses were found for Pargas wall rock, one type of which is used mainly for concrete and asphalt production. The other type of stone is suitable for subbase layers in infrastructure projects, and lately it has been used in different offshore infrastructure projects like building breakwaters and ferry quays. It was used in the Finnish archipelago, and even in Latvia, where three wall rock products were used in building a breakwater: the underwater concrete caissons were built using 8/16 stone, after which they were filled with larger 90/250 stones. The caissons were then cladded on the sides with huge 500 – 2.500 kg chunks. Both wall rock types from Pargas quarry are standardised according to EU standards.

Region
Europe

Country
Finland

Contribution
SDG11/12/15

Company
Nordkalk

nordkalk.com/document/3/1327/1743ed7/Nordkalk_Sustainability_Report_2017.pdf [Pp. 24]

New investments to improve technology and connectivity for resource optimization in talc mine

In the frame of minimizing visual impact, improve its performance and optimize the resource, IMI Fabi has completed the new crushing talc plant mine in Lanzada, Italy. IMI Fabi is currently renovating the external silo and related ore transport operations. The new underground crushing plant has been recently accomplished whereas the new external silo will be ready in the coming months. Furthermore, a new talc ore body will be reached assuring a steady supply of raw material with regards to quality and capacity for the long term. As a first step, towards the industry 4.0. principles, a Wi-Fi system will be installed during 2018 to develop highly efficient and competitive automation processes and improve communication between operators during the different working phases.

Region
Europe

Country
Italy

Contribution
SDG9/12

Company
IMI Fabi

tune in to innovation

https://www.imifabi.com/pressrelease/12-Brusada--Ponticelli-Valbrutta-mine-new-investments.html

Recovering waste & more

The Imerys Group's facilities are continually raising the standard on the efficient use of natural resources. Eleven projects related to non-energetic resources efficiency were entered for the 2017 Sustainable Development Challenge. These projects from across the globe address topics linked to: **Minerals Resources optimization** – maximizing the use of mineral resources, optimizing production yields on materials through sound industrial management, seeking opportunities for recycling and circular economy solutions; **Water Use Efficiency** – water withdrawals monitoring and water scarcity and water footprint reduction (e.g. consumptions reduction, recycling, etc.); **Other Raw Materials Rational Use** – optimization of raw materials use and end of life.
Two recent examples linked to mineral resources management from the UK include the investment in modern high efficiency chalk slurry screening equipment achieved multiple long term benefits, including: reducing the loss of chalk product from the screens by over 90%, reducing waste product ultimately disposed, reducing maintenance time and costs from extended life of the screen meshes and increasing operational efficiency by reducing time spent cleaning and maintaining the equipment. The second project involves an agreement with a local aggregates company to utilize surplus waste material from one of the redundant tips at Lee Moor in order to process and sell secondary aggregates as a sustainable alternative to primary sourced materials. The sale of sand, stone and concrete block products derived from Lee Moor waste materials is evidence of a long term sustainable business approach: creating jobs in the area, generating a royalty income for Imerys, delivering significant environmental improvements by re-profiling the tip and a long term aim of improving the visual aspect of the entire area.

Region
Europe

Country
UK

Contribution
SDG12/15

Company
Imerys

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imerys.com/scopi/group/imeryscom/imeryscom.nsf/pagesref/REBA-AYFF5Y/$file/CSR%20Report%202017.pdf

youtu.be/w_BQ9Q7YaE8

SDG13: Climate Action

Take urgent action to combat climate change and its impacts

People are experiencing the significant impacts of climate change, which include changing weather patterns, rising sea level, and more extreme weather events. The greenhouse gas emissions from human activities are driving climate changes. They are now at their highest levels in history setting a record of about 1.1 degrees Centigrade above the preindustrial period. On the other hand, affordable, scalable solutions are now available to enable countries to leapfrog to cleaner, more resilient economies. The pace of change is quickening as more countries are turning to renewable energy and a range of other measures that will reduce emissions and increase adaptation efforts. Implementation of the Paris Agreement, adopted at the COP21 in Paris on December 2015, is essential for the achievement of the SDGs, and provides a roadmap for climate actions that will reduce emissions and build climate resilience.

Mining companies can address climate change by reducing their carbon footprint and engaging in dialogue with stakeholders to enhance adaptive capacities and integrate climate change measures into policies and strategies. Barring large-scale commercial viability of emission-reducing technologies such as carbon capture use and/or storage (CCU/CCS) or geo-engineering, or a carbon price that accurately accounts for the negative environmental impacts of emissions.

Key UN SDG13 goals relevant for mining:

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters.
- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.
- Promote mechanisms for raising the capacity for effective climate-change-related planning and management in least developed countries, including marginalized communities.

Integration of SDG13 into the mining industry is part of multiple IMA companies' corporate strategy. The number of projects where companies are involved shows the commitment and willingness to deliver upon this societal challenge. The strategy implementation needs assessment on climate and energy risks, identification and implementation of cost-effective energy efficiency opportunities, internal governance structures and processes to clarify accountabilities for energy management.

Companies are also involved in projects to assess and drive the development and deployment of low emission technologies to reduce operational emissions and improve productivity, using renewable energy, significantly cleaner fuel sources or efficiency gains realized through increasing mechanization. Multiple companies have also align company strategies with national efforts, share the company's policy on climate change and support the enhancement of the renewables goals.

Grand River Fuel Project Earns International Award

Region
North America

Country
USA

Contribution
SDG7/9/12/13

Company
Carmeuse

Alternative fuels are viewed as a key means of addressing sustainability issues by lessening dependence on fossil fuels and reducing CO_2 emissions through use of "carbon neutral" biomass materials. Installed in 2013, the Grand River alternative fuel system allows safe, efficient storage and conveyance of an alternative fuel that reduces coal consumption, lower the CO_2 emissions and reduces its exposure to volatile coal prices and supply issues.

The annual CemFuels Conference is an important industry event that is attended by equipment vendors, cement and lime manufacturers, fuel suppliers, academics, and researchers from around the world. In open voting, conference attendees, as well as others, considered nominees in four categories. The Grand River Project was eligible for and won in the "Outstanding Alternative Fuel Project (cement or lime company)" category. Carmeuse's alternative fuel project at its Grand River, Ohio operation has earned the "Outstanding Alternative Fuel Project" award at the 8th Global CemFuels 2014 Conference, held in Vienna (Austria) in February 2014. The alternative fuel project at the Grand River facility is indicative of the company-wide commitment Carmeuse has made to improving fuel efficiency, reducing carbon footprint, and conducting business in a manner that sustains people and the environment.

carmeuse.com/node/178

Innovative solutions in transportation

Region
Asia

Country
Thailand

Contribution
SDG12/13

Company
Omya

Omya Group implemented an ingenious planning system for sea vessels which allows to use the largest ships with the lowest relative fuel consumption. This innovation allows Omya to lower the consumption of combustibles for its fleet by approximately 50%. In addition, the use of low-sulfur diesel fuel provides a yet larger reduction in combustibles. As part of its sustainability strategy, the Surint Omya plant in Thailand implemented an environmentally friendlier transport solution by reducing the dependence on petrol by moving entirely to the use of 100% natural gas vehicles. Surint Omya has been the first company in Thailand to implement this measure.

www.omya.com/Documents/sustainability_brochure_2014.pdf [Pp. 15]

Improving energy efficiency

Imerys has operational energy demand in its mineral transformation processes that use thermal technologies and its quarrying activities that use heavy equipment. The Group energy initiatives are driven collaboratively between the different operational and functional groups at Corporate, divisional and site level, including operations, industrial management, environment, purchasing, geology and mining. The Group Corporate Energy function defines the analysis standards and reporting and provides necessary training to ensure consistency and reliability of the reported results. Energy efficiency improvement makes it possible to use less energy to achieve the same level of productivity and consequently to contribute to SDG 7 to ensure access to affordable, reliable, sustainable and modern energy for all. Detailed energy efficiency analysis is disclosed in a quarterly energy report and, together with the improvement plans, this analysis is reviewed by senior management. Part of the Group variable incentive scheme for concerned managers has also been linked to performance against energy efficiency KPIs. Since 2016, the Group has been focusing in particular on energy management of 12 key industrial sites, which represent approximately 30% of the Group's total energy consumption. Specific improvements projects have been carried out at these sites and the main variations observed are assessed in order to follow the progress on the KPIs. Imerys is improving energy management and driving excellence through the Group Industrial Improvement Program. The reviews at these 12 key sites mentioned above generated 74% of the energy saved by the Group in 2017. Best practices across the group range from energy measurement to combustion optimization and included projects on electrical mapping, allocation and energy trend monitoring enhancements, waste heat capture and utilization. The Group continues to support the transition to renewable energy and advanced and cleaner fossil-fuel technology where feasible. Renewable energy sources (solar, hydropower and wind power) are also being employed in the electrical power grid and indirectly supplied to some of the Imerys operations. To date 17 renewable installations have been developed across Group sites: 10 in the United Kingdom, four in France, one in Australia, one in Austria and one in India accounting for 52 MW (eight solar units, four wind turbines, four hydraulic systems and one district heating).

Region
global

Country
global

Contribution
SDG13

Company
Imerys

imerys.com/scopi/group/imery-scom/imeryscom.nsf/pagesref/REBA-9W2H65/$File/RDD.UK.2014.pdf [Pp. 26-27]

imerys.com/scopi/group/imeryscom/imeryscom.nsf/pagesref/REBA-AYFF5Y/$file/CSR%20Report%202017.pdf

Low Emissions Intensity Lime and Cement

The aim of this European multiparter project is to develop in situ CO_2 capture process for lime and cement manufacturing. The Low Emissions Intensity Lime and Cement (LEILAC) will pilot the Direct Separation Reactor (DSR) advanced technology that has the potential to capture unavoidable process emissions and enable both Europe's cement and lime industries to reduce emissions by around 60% to 70%. Direct Separation provides a common platform for CCS in both the lime and cement industries. Calix's DSR technology has been used successfully to produce niche "caustic MgO" since 2012, while trapping the plant's process CO_2 emissions. The DSR is an in-situ CO_2 capture technique that requires no additional chemicals or equipment. LEILAC project innovation consists in the temperature scale up the DSR.

Region
Europe

Country
Belgium

Contribution
SDG9/11/12/13

Company
Lhoist, Tarmac

Lhoist

TARMAC
A CRH COMPANY

Rennie, D. 2017. Trapping process CO_2 emissions with the LEILAC project. GLOBAL CEMENT: CO_2 CAPTURE [Pp. 16-21]

Replacing natural gas with biomass

Sunflower husks have become the main energy source for the Ukrainian subsidiary Vatutinsky. With gas-fired rotary kilns, energy accounted for a large share of the plant's costs. The unit makes chamottes for the European refractories and sanitaryware industries. Finding a cheaper, alternative fuel was crucial to its long-term future.
Given the local abundance of straw, a renewable resource, a study was carried out on its use. After a series of tests sunflower husks, another widespread crop in Ukraine were tested. After checking performance on a pilot facility in early 2009, the operation's management worked to set up a full-size project. By May 2011, six months after the first investment, sunflower husk had replaced more than 60% of gas, leading to almost half a million euros in savings. The change in energy source obviously led to a significant reduction in the unit's CO_2 emissions.

Region
Europe

Country
Ukraine

Contribution
SDG7/12/13

Company
Imerys

IMERYS
TRANSFORM TO PERFORM

imerys.com/scopi/group/imerys com/imeryscom.nsf/pagesref /SPIT-8SVB4N/$file/RAIM011 _RDD_GB_WEB.pdf [Pp. 17]

imerys.com/scopi/group/imerys com/imeryscom.nsf/pagesref /SCOI-8SBLZX?OpenDocument &lang=en

From rock to added value products

Based on highly sophisticated product and process technology, the Nordkalk engineered products offer high performance in coatings, adhesives and paper, as well as in building material applications. These products, based on calcium carbonate, allow for replacing non-natural products such as titanium dioxide and binder, and reducing the carbon footprint of the end application, while enhancing product durability and strength, offering an economic and ecological mineral solution. During the development stages, Nordkalk succeeded to enhance many functional properties of calcium carbonate which were traditionally thought to be lacking when using the mineral.

Region
Europe

Country
Finland

Contribution
SDG12/13

Company
Nordkalk

Nordkalk

nordkalk.com/products
/fine-calcite/nordkalk-c-series

CO_2 neutral manufacturing sites and product

Sivomatic is a fully integrated extractive mining, processing and cat litter producing company. Since 2014 the production sites in Holland and Austria are CO_2 neutral and certified by Climate Neutral Group. As a part of this carbon neutral certification process, a solar panel project is operational since 2013 in the Dutch processing facility. It is about 1,300 panels with a power of 330,000 Wp. This is one of the larger projects in the Netherlands. To compensate for the remaining CO_2 emissions Sivomatic participates in a biogas project and a wind energy project in Turkey. Furthermore, Sivomatic supplies a CO_2 neutral product since 2015. For this product all CO_2 emissions from mining till the end of life are compensated and it is also certified by Climate Neutral Group.

Region
Europe,
Middle East

Country
Netherlands,
Austria, Turkey

Contribution
SDG9/11/12/13

Company
Sivomatic

SIVOMATIC
ABSORBENT PRODUCTS

hoppenbrouwerstechniek.nl
/projecten/sivomatic

sivomatic.nl/quality-and-
environment/?lang=en

NECAPOGEN 4LIME: NEgative-CAarbon emission POwer GENeration from integrated solid-oxide fuel cell and lime calciner

The pressure for low carbon manufacturing processes, as well as negative emissions technologies which can remove 7 gigatonnes of CO_2 from the atmosphere is there. Energy intensive sectors are under pressure to find ways to meet this societal challenge. Origen Power's 'negative emissions technology' supplies natural gas to a solid oxide fuel cell. About half the chemical energy is converted into electricity and the remainder into high-grade heat which is used to thermally decompose limestone ($CaCO_3$) in a calciner to produce) lime (CaO) and carbon dioxide. The system is configured so that all the CO_2 generated is pure, making it cheap and easy to either use or store. The lime that is produced can be used in a range of industrial processes and, in being used, removes carbon dioxide from the air. Advanced modelling has shown the technical and economic viability of the technology. A detailed techno-economic assessment of the process indicates that if the electricity and the lime are sold at wholesale market prices, then the costs are covered without a carbon price – even as it removes carbon dioxide from the air. A bench scale demonstrator has been built by Cranfield University and the UK Government Energy Entrepreneurs fund has awarded a grant to build a 400 kW prototype at the Singleton Birch facilities in UK.

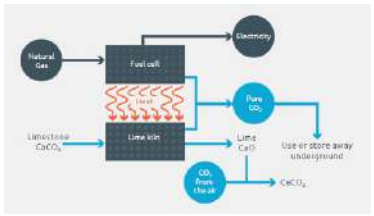
Region
Europe

Country
UK

Contribution
SDG7/9/11
SDG12/13

Company
Birch Energy/
Singleton Birch

Birch Energy Singleton Birch



Hanak D., Jenkins B., Kruger T., Manovic V., 2017. High-efficiency negative-carbon emission power generation from integrated solid-oxide fuel cell and calciner. Applied Energy 205 [Pp. 1189-1201]

Biogas development in Clérac

Under a partnership with SITA Sud-Ouest, Imerys Aluminates (Minerals for Refractories activity) invested in a process to reuse biogas at its facility in Clérac (Charentes, France). Approximately 30% of the facility's furnace energy needs for its chamottes production are now met using biogas. This translates into a decrease in CO_2 emissions of 6,500 tons per year since 2007.

Region
Europe

Country
France

Contribution
SDG7/12

Company
Imerys

IMERYS
TRANSFORM TO PERFORM

imerys.com/Scopi/Group/imeryscom/imeryscom.nsf/pagesref/SCOI-8SBLGM?OpenDocument&lang=en

Supports science and technology

At a broader level, Lhoist supports a range of science and technology initiatives. One example is the Princess Elisabeth Belgian station in the Antarctic, which is the only polar base operating entirely on renewable energies. This Belgian site acts as both a technological showcase and a launching pad for the wider understanding of climate change.

Region
Europe

Country
Belgium

Contribution
SDG4/13

Company
Lhoist

lhoist.com/br_en/community-relations

Microalgae as CO_2 capture solution

Reduction of the process emissions and fuel dependency are common challenged that brought together a glass and a lime manufacturing company in a European project. The technology tested was the capturing CO_2 in the flue gases using microalgae cultures, and then processing these microalgae to extract biofuel, to be used again in the product process to reduce the consumption of fossil fuels. CO_2 is directly used by the algae in the photosynthesis process, and the heat contained in the gases is used for thermal control of the culture and to power surrounding process, thus maximizing the environmental benefit of the pilots. Hence, demonstration on both production processes would show the versatility of the technology. The technology is tested but the cost did not allow to implement. Further developments and trials are ongoing to improrve the technology readiness level.

Region
Europe

Country
Belgium

Contribution
SDG9/12/13

Company
Carmeuse

eula.eu/documents/2018-eula-innovation-report [Pp. 27]

IMI Fabi: Renewables & Energy efficiency as a driver towards sustainability

By promoting the use of renewable energy, the company developed assets with high added value, being considered as a key point for safeguarding the planet's resources and contribute to lower the carbon footprint. IMI Fabi is currently supporting the development of renewable energy in Italy with contribution to multiple projects: Thermoelectric energy – in 2014 a 2 MW cogeneration plant started up at IMI Fabi's site in Postalesio, thereby giving it partial electric independence and at the same time the opportunity to reuse the heat generated in the talc production cycle thus contributing to the energy efficiency of the operations; Solar energy – thanks to the realization of a 1 MW photovoltaic park located in Pianfei near Cuneo in northern Italy from 2011; Hydroelectric Energy – through the participation of 30% of the hydroelectric project along Mallero stream whose entry into service is planned within the next two years; Wind energy – through a feasibility study for testing the possibility to build a wind farm near the Sa Matta mine near Nuoro and eventually include it in a broader environmental restoration plan.

Region
Europe

Country
Italy

Contribution
SDG9/11/12/13

Company
IMI Fabi

IMIFABI
tune in to innovation

imifabi.com/136-Renewable-Energies.html

Carbon Storage by Mineralization (CSM)

A study was performed within the Finnish Carbon Capture Storage Program on the carbonation of serpentinite, along the ÅA-CSM (Åbo Akademi University – Carbon Storage by Mineralization) route, as a method of permanently fixing CO_2 from lime kiln flue gases as a thermodynamically stable carbonate. Focus of the study was on raw material reactivity, reaction kinetics, optimizing reactor capacity and utilizing kiln flue gas waste heat and the exothermicity of the carbonation reaction for minimization of energy input to the carbonation process.

Region
Europe

Country
Finland

Contribution
SDG9/12/13

Company
Nordkalk

Nordkalk

Romao I., Eriksson M., Nduagu E., Fagerlund J., Gando-Ferreira L.M., Zevenhoven R., 2012. Carbon Dioxide storage by mineralisation applied to a lime kiln. 25th International Conference on Efficiency, Cost, Optimisation, Simulation and Environmental impactr on Energy Systems. 26-29 June in Perugia.Italy [Pp. 13]

The use of natural drying in the bentonite fields

Natural drying of bentonite significantly reduces energy consumption. In comparison to industrial drying, its adoption results in approximately 35% savings reducing, not only fuel consumption, but also CO_2 emissions by 24,000 MT annually. Use of low-quality bentonite raw material to mix with high quality raw material and to dry in open fields instead of the artificial drying techniques also contributes to resource optimization. This new way of drying the final bentonite products has decreased the carbon footprint of the processing stage by up to 10% and has lowered the fuel dependency for the processing stage. This project won the IMA innovation award prize in 2012 by an external jury. The independent Award Jury with members from a European institutional body, academia, an environmental organization, and the European Press, highlighted that the implicit simplicity of this project in combination with its significant and measurable results, weighed heavily on their decision. Following this European recognition award, this know-how was transfered to other Group production facilities.

Region
Europe

Country
Greece

Contribution
SDG12/13

Company
Imerys

IMA 2012. Recognition award ceremony on 14 November 2012 at the European Parliament in Brussels (Belgium) imerys-additivesformetallurgy.com/news/european-award-for-sbs-environmental-practice-at-its-milos-operations

Bizarro P. 2017. Optimization du séchage de bentonites. SIM 2017, 17-20 Octobre 2017 in Metz (France). Platform presentation. In French

SDG14: Life Below Water

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

The world's oceans drive global systems that make the Earth habitable for humankind. Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. Throughout history, oceans and seas have been vital conduits for trade and transportation. SDG14 is about reducing negative impacts of climate change and pollution on the world's oceans and protecting fragile marine ecosystems.

Key UN SDG14 goals relevant for mining:

- By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land--based activities, including marine debris and nutrient pollution.
- By 2030, increase the economic benefits to small island developing states and least developed countries from sustainable use of marine resources, including fisheries, aquaculture and tourism.

The mining industry contribute to the SDG14 in a number of ways. Company environmental impact assessments consider effects on life underwater and the connectivity of ecosystems from watershed to ocean floor related to tailing disposal that can pollute underwater ecosystems. The importance of elevated environmental precautions for mine waste disposal, especially near water bodies, cannot be understated. Company impact assessments, for which communities should be consulted, considers both the direct impacts of company infrastructure on marine-based livelihoods and the indirect impacts and expectations may arise.

Company cooperation with government, local communities and other stakeholders to research, protect and discuss the balanced use of marine resources, for example by setting aside conservation areas and marine reserves and developing integrated coastal zone management plans and support ecosystem monitoring and assessment capacity.

The town of Lohja (near Helsinki) acquires water from Nordkalk

More than one million cubic meters of groundwater is pumped up yearly from the underground mine. About half of the water is delivered to the municipal waterworks, where it represents 23 per cent of all raw water received. It is filtered through a sand bed before being led to the water distribution system. The Tytyri plant itself uses some 30.000 m3 of water annually, also from the mine, but through a separate pumping station. The surplus water – about half a million cubic meters – is directed to the nearby lake Lohjanjärvi. This is mostly groundwater, but it includes a small portion of storm water gathered from the plant area. Yearly quality measurements show that the water released into the lake corresponds to household water quality. In Tytyri, there is also The Tytyri Experience including a museum and other activities. The Tytyri Experience is operated by the city and visited by more than 10.000 people annually. KONE Corporation's high-rise elevator test laboratory is located in old mine shafts. One of the elevators is used to transporting visitors to the Tytyri Experience.

Region
Europe

Country
Finland

Contribution
SDG6/9/11
SDG12/14

Company
Nordkalk

nordkalk.com/sustainability/community/water-for-lohja

Lime stops phosphorous runoff – work for healthier Baltic Sea

In agriculture, liming reduces the soil's acidity, which improves the plants' living conditions and allows them to use nutrients more efficiently, resulting in bigger crops and reduced nutrient runoff into watercourses. In addition to traditional soil-improvement lime, tackles the challenge of phosphorous runoff. Fostop is used for the structure liming of fields, the stabilisation of sludge, and for lime filters and drains that help to reduce leakage and contribute to the recycling of phosphorus. This is extremely important because world's phosphorus reserves are estimated to last only for a few more decades. In Sweden, where the state grants environmental subsidies to farmers for curbing phosphorus runoff, Nordkalk's lime product is a well-established method. One of Nordkalk's many phosphorus-related research projects is also under way in Sweden. It involves structure liming and testing filter drains in the fields surrounding lake Bornsjön near Stockholm. The project is being carried out in co-operation with Stockholm Water and the Swedish University of Agricultural Sciences.

Region
Europe

Country
Sweden,
Finland

Contribution
SDG9/11/14

Company
Nordkalk

nordkalk.com/sustainability/community/lime-stops-phosphorous-runoff

Wellness efforts as part of the treatment of Klinthagen quarry

The lake in Klinthagen quarry holds about 2.5 million cubic metres of water. In 2015 a two-kilometre-long ditch was built to dewater the northern and central part of the quarry. The ditches create a self-regulating system with natural sedimentation of the water extraction. From the exit point the water will be transported to an area of active wetland vegetation for further cleaning of the water downstream from the Klinthagen quarry and into the creek. Any limestone particles, clay particles and nitrogen resulting from limestone quarrying are removed, so that the water is crystal clear and has the same concentration levels as the natural creek water. Fish conservation efforts are being carried out in the creek, to promote spawning fish and other aquatic organisms. Spawning gravel has been deployed and ditches adjacent to the sea and farmland have been cleared. An arched bridge has been constructed under a minor road so that more trout will be able to spawn further up the creek. To promote the fry's hatching period, small flows will be pumped out into the creek from April to midsummer. Information on how the trout's spawning territories evolve over time, are collected by counting the numbers of spawning pockets every autumn and will continue until two years after completion of quarrying.

Region
Europe

Country
Sweden

Contribution
SDG9/11/14

Company
Nordkalk

nordkalk.com/sustainability/environmental/planned-water-management

nordkalk.com/document/3/1001/bdac1fa/Nordkalk_Environmental_Report_2016.pdf [Pp. 15]

SDG15: Life on Land

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

Forests cover 30% of the Earth's surface and, in addition to providing food security and shelter, forests are key to combat climate change, protect biodiversity and the homes of indigenous populations. Deforestation and desertification pose major challenges to sustainable development and have affected the lives and livelihoods of millions of people in the fight against poverty. Efforts are being made to manage forests and combat desertification and the pace of forest loss has slowed and improvements continue to be made in managing forests sustainably and protecting areas important for biodiversity.

Mining and its associated infrastructure can have an impact on ecosystems that provide valuable services to society and the biodiversity on which these ecosystems depend. Mining companies have an important role to play in biodiversity and conservation management. The mitigation hierarchy of avoid, minimize, restore, enhance and offset provides a framework for mining and other companies to assess and determine appropriate measures to protect ecosystems and biodiversity.

Key UN SDG15 goals relevant for mining:

- Ensure the conservation, restoration and sustainable use of freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands.
- Assess relevant actions to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.
- Assess measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species.
- Enhance support to empower local communities to pursue sustainable livelihoods.

Mitigate impacts that mining activities have on forests, wetlands, mountains, drylands, rivers, deserts, oceans, the first step in the biodiversity mitigation hierarchy is to avoid impacting critical habitats. By applying the mitigation hierarchy, companies, working with key stakeholders, can better manage their impacts and have a workable approach to identifying and undertaking actions to protect and conserve biodiversity and ecosystem services.

Contribution

SDG15

Another practice for companies would be to implement biodiversity offsets, which can be used to ensure that any significant residual loss of biodiversity or ecosystem services at or around the project site can be made up for by deliberately conserving and preserving biodiversity or ecosystem services elsewhere. Companies also implement assessments to better understand the nature of the operation's impacts on ecosystem services and identify mitigations, considering not only the static presence of different species, but also the dynamic nature of ecosystems as a whole and the services that they generate.

Mining companies collaborate with governments, NGOs, communities and academia to protect and promote biodiversity and other terrestrial resources through habitat restoration, reforestation projects and ecosystem-related research. Companies support programmes enhancing the sustainability of these linkages and improve ways to measure, assess and report on biodiversity gains or losses. Companies can support landscape-scale planning to help guide sustainable development and reduce biodiversity impacts by identifying critical habitat and ecosystem services for maintaining healthy landscapes, opportunities for shared infrastructure that has lower impact and guiding biodiversity offset investments to the highest priority areas/actions in the landscape.

Enhanced rehabilitation to foster the settlement of the Rainbow bird

A regional endangered species called the Rainbow bird (Merops Apiaster) has been observed nesting in Imerys operating quarries. The rehabilitation of the quarry may compromise the settlement of this bird, which needs specific conditions to nest. Good practices were assessed to ensure that the settlement of this bird will be sustainable. In parallel to applying to open a new quarry in the South of France, Imerys signed a 10-year convention with a local association to foster the development of this bird in the new quarry. The NGO Charente Nature will monitor the settlement, provide advice and define good practices to enhance the natural habitat in order to expand the settlement of this endangered bird species in the quarry operations.

Region
Europe

Country
France

Contribution
SDG15

Company
Imerys

IMA-Europe 2016. Innovation awards brochure [Pp. 12]

Heathland restoration in an integrated life cycle approach

Heathland restoration is an important aspect of Sibelco's whole-of-life approach for making closed quarries & passive assets a legacy to Nature as demonstrated by many projects in quarries all over Europe (e.g. Belgium, France, UK, Netherlands) before, during and at the end of life of the quarry. Heathlands play a crucial role in the traditional European landscape, adding to many ecosystem services, such as food and water supply, landscape conservation and historical nature. Maintaining and restoring heathland areas requires appropriate active management such as grazing, control of invasive species, etc and therefore exchange of expertise, experience and knowledge with scientists, nature associations, authorities, local communities. Threatened plants and animals are attracted and start colonizing thanks to heathland restoration. Through heathland protection and restoration, business gives back to nature and to neighbor communities, creating and enforcing bridges with stakeholders. To increase awareness, information boards, site visits and synergies with community groups, authorities, environmental associations and scientific researchers are also organised. Heathland restoration project is the winner of IMA-Europe 2018 Award on Biodiversity.

Region
Europe

Country
Belgium, France, UK, Netherlands

Contribution
SDG9/11/15

Company
Sibelco

IMA-Europe 2018. Awards brochure – Biodiversity

Restore former perlite quarry to organic vineyard in Milos

Region
Europe

Country
Greece

Contribution
SDG12/15

Company
Imerys

IMERYS
TRANSFORM TO PERFORM

In 2014, Imerys (formerly S&B) decided to "transform" a usual reclamation practice into an innovative economic, environmentally friendly activity at the rehabilitated part or of Trachilas active perlite mine in Milos island, (Greece). A feasibility study and a business plan were initially carried out to assess the initiative's sustainability. Then, in February 2014 the planting of 17,500 vines of a Cyclades variety (Assyrtiko) in the first 5 hectares of S&B's "vineyard" was concluded. The Milos Vineyard project is fully compliant with the company's environmental strategy on the fundamental principle of the minimization of its environmental impact at the same time adhering to Biodiversity management principles for the use of local plant species in reclamation works. Viticulture, as a traditional cultivation activity of the island in the past. An organic cultivation method is applied promoting the protection and conservation of the environment. Irrigation water (invaluable in the Cyclades characterized by long summer droughts) is recycled and not derived from the island's aquifer.

In this respect, the activity encourages Milos' residents to begin using more environmentally friendly farming methods through free training seminars organized by Imerys in cooperation with an oenologist consultant, educating/urging them to start using organic agricultural methods in general, and especially for the production of quality local organic wine. Milos Vineyard "educational aspect" targeting industrial minerals, abundant on the island of Milos, is furthermore extended to the island's visitors. Minerals, almost everywhere in our everyday-life, play a significant role also in wine-production. Sulfur used to protect the crop from disease in organic winegrowing, bentonite used for wine stabilization, and perlite used in wine clarification are prominent examples of Milos' minerals used in viticulture and wine production. On August 12, 2015 first grapes were harvested. Imerys Industrial Minerals Greece S.A. participated with 4 nominations – best practices, contributing to the promotion of its sustainable development objectives. Imerys got a distinction in "Bravo Market" Category, with the Vineyard of Trachilas in Milos Island. These achievements were a great honor for company, not only because an Academic Committee and Stakeholders Groups awarded it, but also because active citizens participated online in the evaluation process. Specifically, 200 selected stakeholders took part in the evaluation of these programs together with more than 10.000 citizens through Internet voting.

imerys-additivesformetallurgy.com/novel-post-mining-land-use-initiatives-revive-local-traditions

imerys-additivesformetallurgy.com/sustainability-case-studies/bravo-sustainability-awards-ceremony-2017

youtu.be/6E-t2MnrHt8

Creating a substitution are for Silene portensis

Region
Europe

Country
France

Contribution
SDG9/11/15

Company
Sibelco

The quarries of Bédoin are silica sand quarries close to the Mont Ventoux in the south east of France. Next to the exploitation, is a ZNIEFF area, a protection zone for fauna and flora. A special species found in the area is Silene portensis, a very rare and regional protected species, that grows on acidic sandy grounds and which disappears when the vegetation becomes denser. In 2004, an inventory was conducted as part of a study to expand the quarry. A hot spot of Silene portensis, was found, that would be jeopardized by the expansion. According to these findings, Sibelco France set up 2 actions to preserve this species: On the edge of the quarry, a sandy area "Sablonnière" was created as a substitution and to allow the reintegration of Silene portensis. The new area is about 300 m² and includes 150 m² of the original vegetation of the former sand pit. For Silene portensis, the plants were relocated and the seeds were collected and planted in 2005; Outside the authorized area, Sibelco has an area of 1.2 ha with one of the largest populations of Silene portensis with a surface of 500 m²: "la station de Vacquière". At the end of 2013, the populations were followed-up by CBNMP (Conservatoire Botanique National Méditerranéen de Porquerolles). The results were promising: In the Vacquière area, the Silene populations also increased. The population in the new sandy area has increased to more than 150 plants in 2009 (compared with 10 plants in 2002); In addition, a red list species was also found in the new area: Bassia laniflora. Additionally, the created sandy area is a favorable place for hymenoptera (such as bees, wasps, sawflies, ants...).

mi-france.fr/doc
/01_Sibelco1mars2010.pdf

Mining in a touristic region: resource efficient and innovative solutions in Italy

Region
Europe

Country
Italy

Contribution
SDG9/11/12/15

Company
Omya

In Vipiteno (South Tirol), Omya operates a modern underground calcite marble mine, and is the only industry left in the very touristic Bolzano region. Besides having succeeded in reducing visual impact, Omya researched how to keep disturbances in the local communities to a minimum and optimize local operations. In this regard, a 3000 meter tunnel was excavated in the mountain, which allows for transporting the ore over a conveyor belt to a second mine in the valley, closely located to the processing facilities, thereby making the transportation by trucks over the small mountain roads obsolete.

www.omya.com/Documents
/sustainability_brochure_2014.pdf
[Pp. 17]

Unimin transfers Mine Rights to OBC

Region
North America

Country
USA

Contribution
SDG4/9/11
SDG12/15

Company
Sibelco

SIBELCO

Where miners used to dig, an endangered bat species now flourishes thanks to the partnership between mine and Organisation for Bat Conservation (OBC). In October 1995, a visit to the mine site, which was originally used to extract microcrystalline silica used in the paint and coatings industries, identified several thousand bats including the endangered species (i.e. Indiana bat, Little Brown Bat, Long-Eared Myotis Bat). Bat, being a social species gathers in large numbers during hibernation. Any impact to their hibernation site such as modification of caves, surrounding areas that change airflow and alter microclimate in hibernacula site can cause their death. Unimin reached out to bat conservation experts to discuss preservation and enhancement of the naturally formed habitat and engaged with volunteers who helped to stabilize the main entrance and install a bat-friendly gate. As a result of these measures, the Indiana bat population in the mine would grow from 100, to more than 40000, in just a few years. Historically, Unimin has hosted speakers who lead to better understanding of bat habitat and provided guided educational tours for zoology students. As from September 2017, the rights to this bat sanctuary were transferred to ensure continues education and environmental study of bat populations in their natural habitats. The transfer of the Magazine Mine to the Organization for Bat Conservation (OBC) is a huge step in protecting the rare and endangered Indiana Bats. We are proud to partner with Unimin in this endeavor, and excited to see what secrets the mine may hold for the future of bat research said Rob Mies, Executive Director for the Organization for Bat Conservation.

unimin.com/unimin-transfers--mine-rights-to-obc

Transformation of a quarry site into a wetlands nature reserve

Region
Europe

Country
Austria

Contribution
SDG9/11/12/15

Company
Omya

OMYA

Within 12 years, an unused quarry site at Gummern was transformed into a wetlands nature reserve. With the help of a local school, small biotopes & dragonfly ponds were created through careful mapping exercises and planting. The former quarry is now a natural haven of wildlife and hosts many rare and/or endangered species.

www.omya.com/Documents/sustainability_brochure_2014.pdf

Apollo and large blue butterfly project

In connection with Nordkalk´s latest limestone quarry permit application for a new quarry area on Gotland, which is an island situated in the Baltic Sea, the EIA study found two rare butterflies, the Apollo (Parnassius apollo) and Large Blue (Maculinea arion), at the planned quarry. Nordkalk developed a special protection and conservation programme aiming to increase the natural areas of the two rare butterfly species at a suitable overgrown nature area close to the quarry. A detailed plan on how to trim bushes and trees to create the right habitat conditions for the butterflies and their host plants and host ants was developed, with help from experienced ecological experts. This project is the first of its kind in the Swedish mining industry that applies protection and conservation measures according to the Habitat Directive (Council Directive 92/43/EEC), based on a Swedish Environmental Court decision. The court decision stated that such an approach was considered to comply with the Habitats Directive's overall aim of biological diversity and restoration work.

Region
Europe

Country
Sweden

Contribution
SDG9/11/12/15

Company
Nordkalk

nordkalk.com/document/3/1327/1743ed7/Nordkalk_Sustainability_Report_2017.pdf [Pp. 22]

"Zandloperpad" Footpath in Maasmechelen

Located in the Mechelse Heide National Park in Maasmechelen (Belgium), the "Zandloperpad" (hourglass road) footpath is now available through Sibelco's partnership with local organisations and national governments. As part of the National Park's mission to ensure nature is available to all, this new 1.5 km paved path is now available to people with disabilities, wheelchair users and families with infants in prams. From the path, there is a great view of the old Sibelco quarry of Maasmechelen. Maasmechelen plant removed and rebuilt a bit further This is a unique project in Flanders (Belgium), not only in terms of creating a footpath but also for the total makeover of the landscape. After consultation and agreements with all parties about mining in the Hoge Kempen, Sibelco removed its operations in the area, which included replacing 5.000 m² of asphalt as well as demolishing buildings to make the plant surroundings blend into nature. The official opening was attended by the Flemish Minister of Welfare, Health and Family, the local Mayor, a director of Nature and Forests as well as local partners. The path was open to the public at the beginning of May 2014 with more than 1.000 visitors on the Opening Day.

Region
Europe

Country
Belgium

Contribution
SDG9/11/15

Company
Sibelco

sibelcomedia.s3-ap-southeast-2.amazonaws.com/20170606020409/footpath.pdf

Increase quarry acceptance in a sensible region

Region
Europe

Country
France

Contribution
SDG9/11/15/17

Company
Omya

Omya's quarry in Orgon is nearby an old typical Provencal village in Natura 2000 area, and part of Alpilles regional natural park. "Alpilles" mountains a high place for tourism, olive oil and wine production. The mining activity in the region is not well accepted, various associations are against quarry development. In the early 2000 Omya tried to extend its historical quarry and lost in court the mining permit.
A change in Omya way of communication to local communities was initiated to have a better acceptance. A local quarry council with village representatives, local association, Alpilles regional park, administration representative and Omya was created and meet together at least once a year. Those meeting give the opportunity for local association to take part in quarry recultivation and for Omya to better understand their worries. Different projects were put in place, taking into account the remarks and demand of local authorities, associations. The project's purpose is to show to the population that good professionals and truly care for the environment: Create a view point of the quarry with direct access from the village and open to anyone, anytime; Involve the local school in the recultivation; a school class came to plant lavandas as part of the recultivation planned; Install specific habitats (stone boulders) in the recultivated area for timon lipidus; Take the occasion of changing the pre-grinding installation to answer to environmental improvement demands. (Horus Project); Take part in local events in partnership with Orgon museum like open days for paleontology or European heritage days.

IMA-Europe 2016. Innovation awards brochure [Pp. 30]

The Owl Project

Region
Europe

Country
Belgium

Contribution
SDG9/11/12/15

Company
Lhoist

The Owl Project monitors the presence of eagle owls, increasing in numbers, which have returned to an area that comprises both active and closed quarries.
The mines represent important secondary habitats in a densely-populated area for this endangered and closely protected species. In the excavation sites, an expert ornithologist studies owl habitats, population development and breeding as well as new generations and hunting practices. The project also seeks to improve habitat conditions for the owls. The project is being carried out in collaboration between the lime industry and local authorities; all parties have signed a public law contract.

lhoist.com/restoring-nature
#owlProject

IMA Europe

Ecological connectivity in Arcos de la Frontera

Sibelco Spain has developed a Biodiversity Management Plan in the quarry of "Arcos de la Frontera". The plan was developed as a tool, it will be a guidance of the ecological balance in the quarry area. The plan involves the different life stages of the quarry: the area where operations take place, the areas that are being restored and the areas that already have been restored. We will also take care of management of exotic species (Acacia farnesiana) and specific actions to ensure the survival of some species (Bee-eater, Cork oak). The quarry of Arcos is creating several lagoons in the area that function as an important connectivity between larger water bodies in the surroundings. On a short-term view, the lagoons can be important resting or foraging areas for migratory animals (birds and mammals). On the long-term view, these lagoons will upgrade the structural ecological connectivity of the land, because the lagoons will form an important stepping stone between larger water bodies. There are 4 lagoons and 1 lagoon in front of exploitation ("lacunar system dredger"). Lagoon 1 and 2 are in the restored area and have developed marsh vegetation dominated by reed (Phragmites australis) and cattail (Typha domingensis) with some poplar tree (Populus alba), willow (Salix) and tamarisk (Tamarix africana). It hosts a large community of waterfowl, indicating stability and water quality. Lagoon 3 is located in the area that is being restored, actions that will be taken here are in function of the bee-eater (Meriops apiaster) which likes to make nests in the steep sandy slopes near the water. Especially flowering plants will be used for the vegetation, plants that flower in spring and autumn, to guarantee the presence of the bees (e.g. Dittrichia viscosa and Phillyrea angustifolia). The largest area of water is the lagoon in front of exploitation ("lacunar system dredger"). The operations take place alongside the presence of a large group of birds such as Marsh harrier (Circus aeruginosus), Common egret (Egretta garzatta), Grey heron (Ardea cinérea), Purple gallinule (Porphyrio porphyria), etc. Lagoon 4 also forms a habitat for a wide range of water birds, here we also see a development of vegetation, an ecological succession process that ensures shelter for the birds during the breeding season.

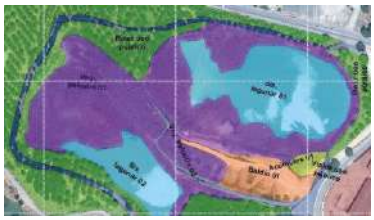
Region
Europe

Country
Spain

Contribution
SDG9/11/12/15

Company
Sibelco

SIBELCO



IMA-Europe 2016. Innovation awards brochure [Pp. 24]

Protection of endangered species in Argentina and Chile

In Latin America, Sibelco restores former mining sites under a company-sponsored environmental initiative called 'Volta à Vida' (Back to Life). The initiative is designed to propagate local flora and fauna species in the company's reclaimed mining properties. While many Sibelco operations in Latin America are certified by the World Habitat Council under the Wildlife at Work (WAW) program, 'Volta a Vida' takes local conservation efforts to the next level by recreating natural habitats to re-introduce native plant and animal species. The implementation of the Back to Life Program, was kicked off with the certification process by the Wildlife Habitat Council (WHC) to protect endangered species. Sibelco team experts regularly involve biologists and botanists which are consulted in multiple of the mining and processing facilities in Argentina and Chile to share best practices and jointly develop reclamation plans that will return the land to its former state. Over the past 13 years, these teams have protected and propagated hundreds of species.

Region
South America

Country
Argentina, Chile

Contribution
SDG9/11/15

Company
Sibelco

SIBELCO

González F.R. 2016. Sibelco: A contribution to Sustainable Mining. EU-Latin America dialogue on Raw Materials Santiago de Chile (Chile) 24 April 2016. Platform presentation

Local school visits on biodiversity

The plant of Carmeuse Aisemont has organized a school visits in restored part of the quarry where biodiversity is wonderful (orchids, butterflies, reptiles, falcons, owls, ...). This visit was made for local school groups with the support of local nature associations who provide scientific help in the communication to children. This is a very pragmatic example of close relationship between the industrial operator and its social environment. Education of young students on how industry can integrate nature in its day-to-day life is an important part of the sustainability program. It also helps professor to give concrete examples to students on how they can act for biodiversity in their own environment.

Region
Europe

Country
Belgium

Contribution
SDG4/11/15

Company
Carmeuse

CARMEUSE

carmeuse.eu/sustainability/people/neighbor-relationships

Developing the Beemerys community

A bee conservation program that started life in the one division has been such a success that it's rolling out across the entire Group. Cerabees was established in 2016, with the support of the French National Beekeepers Association (UNAF: Union Nationale de l'Apiculture Française) and other local associations. Since then, the collaboration has increased the number of beehives. There are now more than 50 beehives located in Europe, the US and New Zealand. The honey is distributed free of charge to Imerys employees and/or donated for local community programs. The Group is now extending the program under the name Beemerys and has prepared a toolkit to support the development of partnerships and apiculture projects around Group operations.

Region
Europe, North America, Oceania

Country
EU, USA, New Zealand

Contribution
SDG15

Company
Imerys

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youtu.be/0D4sdJwIV84

imerys.com/scopi/group/imeryscom/imeryscom.nsf/pagesref/REBA-AYFF5Y/$file/CSR%20Report%202017.pdf [Pp. 24]

Tree Planting

Protecting the environment was the key message that Sibelco's employees in India wanted to share. For about 200 of them, the planting of 43 saplings was a significant activity to commemorate the 43rd Environment Day in India. The celebration started with an Indian ritual of worship and ended with distribution of sweets to mark the happy occasion.

Region
North America

Country
USA

Contribution
SDG11/15

Company
Sibelco

SIBELCO

BioDiversity for Industrial Minerals

Region
Europe

Country
EU

Contribution
SDG9/11/15

Company
IMA-Europe

https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/biodiversity-ima-tool

BioDiversity for Industrial Minerals (BioDIMA) is a common project developed by the IMA members and for the members in order to exchange the best practices in Biodiversity restoration and to enhance peer-learning between different companies and their biodiversity implementation strategies. The project covers the entire life time of a quarry (permitting, during the operations, post operations and the monitoring steps at the closure of the quarry). It is expected that the project will have a significant and positive impact in the methodology of managing and restoring biodiversity along all life stages of a quarry and, it will provide numerous benefits to both local communities and economies. BioDIMA will represent a great communication tool for member companies and will undoubtedly raise public's and authorities' awareness on biodiversity value of mineral extracting sites. It is lastly anticipated that the project will result in setting quality standards on company transparency and communication about biodiversity and contribute to the sustainability of the extractive activity, providing in turn, economic benefits to the EU industry. The project is also a raw material commitment of the IMA-Europe and member companies that contributes to the objectives of the European Innovation Partnership on Raw Materials and specially the non-technology pillar.

'Back to life' initiative in Brazil

Region
South America

Country
Brazil

Contribution
SDG9/11/15/17

Company
Sibelco

González F.R. 2016. Sibelco: A contribution to Sustainable Mining. EU-Latin America dialogue on Raw Materials Santiago de Chile (Chile) 24 April 2016. Platform presentation

In Latin America, Sibelco restores former mining sites under a company-sponsored environmental initiative called 'Volta à Vida' (Back to Life). The initiative is designed to propagate local flora and fauna species in the company's reclaimed mining properties. While many Sibelco operations in Latin America are certified by the World Habitat Council under the Wildlife at Work (WAW) program, 'Volta a Vida' takes local conservation efforts to the next level by recreating natural habitats to re-introduce native plant and animal species. In Jaguaruna, Brazil, an environmental survey uncovered an important archeological site close to our processing plant. The location discovery was immediately designated as a protected site by our local manager and is now providing vital clues about the ancestral history of those who lived in this location approximately 4000 years ago. In Brazil, the developed in partnership with the Universidade do Sul de Santa Catarina (UNISUL) and the Universidade do Extremo Sul Catarinense (UNESC), allowing students to carry out project on site.

Sa Matta Mine nature trail – increasing the awareness of biodiversity treasures

IMI Fabi follows a code of practice consistent with policies of sustainable development. The company supports several programmes aimed at biodiversity conservation and builds on its previous successful experiences. The biodiversity project Sa' Matta Mine consists of the creation of a nature trail located in the charming Mediterranean area adjacent to the Sa' Matta mine with the aim to increase awareness about life form varieties within this specific geographic region. After a careful analysis of the environmental aspects of the area around the Sa' Matta mine has been carried out, the locally most widespread trees and shrubs were identified. Next, the educational trail was designed along a lake and up the hill, opposite the mine entrance.
A floating pier was positioned on the lake and is used as an observation deck. Information panels have been placed at key locations along the trail, highlighting the natural resources of the area. Another observation point has been built on top of the hill, from where one can enjoy a spectacular view, showing the mining activities below. The Sa' Matta nature trail has become an educational trail, with its 8 panels-describing the main characteristics of this habitat and pointing out its natural aspects: information on the local fauna and flora, the pond's vegetation, the Mediterranean low and high scrubs, as well as the site's restoration techniques and mining activities. This allows for self-guided tours designed to teach the viewers about the biodiversity they are seeing with information they will remember long after their visit. This is a great way to show how mining activities can go hand in hand with the beauty and biodiversity of Mediterranean vegetation. The company has worked with two experts to define the tools and the ideas of the trial.

Region
Europe

Country
Italy

Contribution
SDG4/9/11/15

Company
IMI Fabi

tune in to innovation

imifabi.com/133-Case-Study-Mine-of-Sa-Matta.html

youtu.be/XodI8q1VJbw

Omya: Biodiversity project in partnership with WWF Austria leads to best practices

In 2004, in partnership with WWF Austria, Omya started to evaluate the impact of its restoration and renaturation practices at the Gummern site with the aim to adopt best practices. A first assessment showed a higher biodiversity, especially where the company had allowed nature to gradually take over the area with minimum intervention. A follow-up project measured the impact of the quarry on the local biodiversity in comparison to the surrounding area. To this end, a long-term Biodiversity Index (LBI) was introduced, in line with the principles of the European Impact Assessment (EIA) Directive. Core was the comparison of the actual state to the original state. The findings confirmed the higher biodiversity in the renaturated area of the Gummern site at repeated evaluation exercises. The outcome of this study allowed Omya to determine the optimal renaturation strategy, which has subsequently been integrated into the restoration plans of the Gummern site and validated by the authorities.

Region
Europe

Country
Austria

Contribution
SDG9/11/15

Company
Omya

www.omya.com/Documents/sustainability_brochure_2014.pdf

Former ball clay quarry recognized as Site of National Importance for dragonflies

The 16 hectare Little Bradley New Pond site nestles in Devon's Bovey Basin area, home to the UK's most important reserves of ball clay and close to Dartmoor National Park. Restoration of the former clay extraction site began back in 1991 through a partnership between Sibelco, Devon Wildlife Trust and Devon County Council. Sibelco's partnership approach to land management was recognized nationally in 2005 when our Little Bradley Pond scheme collected an 'Award for Excellence in Restoration' from the Quarry Products Association. Today the site provides a diverse range of wildlife habitats and is officially recognised as a Nationally Important Key Site for dragonflies. In recent years, twenty species of dragonfly have been recorded of which thirteen species are known to have bred.

Region
Europe

Country
UK

Contribution
SDG7/12/15

Company
Sibelco

ima-europe.eu/sites/ima-europe.eu/files/publications/Biodiversity_Case_Studies_Sibelco_UK_Devon.pdf

Turtle Conservation

In 2014, Sibelco started conducting turtle surveys weekly at its nepheline operations in Ontario as part of a WHC (Wildlife Habitat Council) Wildlife at Work program. Employees at Sibelco monitored species in these wetlands and completed weekly counts of turtles. Results are continuously tabulated, monitored and shared with the WHC. 2017's turtle nesting survey was a huge success. Similar to 2016 survey, Sibelco employees witnessed several turtle species utilizing the company properties wetlands, water courses and haul road as habitat and/or travel. The key difference in 2017 is that employees witnessed several nesting turtles and were able to recover eggs for incubation. Additionally, employees were able to assist the Ministry of Natural Resources and Forestry in the release of 13 Blanding's turtle hatchlings into the wild on August 24th. Further investigation into permits and incubators will be made prior to 2018's survey, as Sibelco may incubate the nests on site. Sibelco also conducts onsite annual "Turtle Training" through the local Ministry of Natural Resources and Forestry office. Training is focused on the importance of turtles in the ecosystem and the promotion of turtle species in the area and has always been well received by employees.

Region
North America

Country
Canada

Contribution
SDG4/9/11
SDG12/15

Company
Sibelco

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sibelco.com/investors

Grassland as restoration

Carmeuse has recreated calcareous grassland in a former quarry closed in late 80's. The restored quarry helped put the soil into light. A specific flora and fauna recolonized the area. To date the site houses a wide variety of butterflies, crickets and grasshoppers, the harvest mouse and different species of orchids, including a dozen beautiful himentoglossun hircinum. The site today, houses a flora and fauna typical of these rare habitats.

Region
Europe

Country
Belgium

Contribution
SDG9/11/12/15

Company
Carmeuse

CARMEUSE

carmeuse.com/sites/default/files/content/calcareaous-grassland-case-study.pdf

Project Biodiversity Management Plan at an Open Pit Mine

Region
Europe

Country
Austria

Contribution
SDG12/15

Company
Imerys

imerys.com

Community expects that after the plant closure this area should be included in their soft tourism approach as part of the regional hiking circuits or a mining history trail. This largest open pit in Austria is situated in a mountainous scenery close to the "Styrian Apple Road", the "Naturpark Pöllauer Tal" and some tourist attractions. To rebuild the original environment and create compatible ecological systems, the land is recultivated or renatured. The area is a valuable habitat for some species, so a continuous accompanying ecological planning and monitoring is done during the projected expansion of the pit. The most important goal is to stop erosion by recultivation. This requires considerable efforts, starting with underground amelioration. Where possible, rehabilitation with adapted plants or grass from surrounding areas was applied in order to close open soils. Another measure to increase biodiversity is creation of wetlands, rocky habitats, sands or gravel areas. Floristic investigations brought up a species inventory of 342 taxa of vascular plants, 85 lichens, 21 bryophytes and six fungi. A total of 85 higher species listed in the Red Lists of Austria have been found. Seven of them are actually as being at risk for all Austria, the rest is specific for the Styria County. A comprehensive base study was done in the 2006, a management plan has been implemented and is reviewed regularly. Success of the measures is examined during the monthly inspections and corrective actions are decided. Every two years, the site is open to visitors for one day, guided tours are offered on request. The site is involved in the European Minerals Day and organizes tour in the quarry. At the yearly "Barbara Festivity", all stakeholders are welcomed and get an overview of the activities. School classes and universities are also invited to build up a positive picture of the open pit. The rehabilitation of the mining area has been implemented in collaboration with "Naturpark Pöllauer Tal", a protected area, and follows the advices of local authorities in cultivation issues.

The access to water in the isolated areas

Region
South America

Country
Brazil

Contribution
SDG6/11/14/15

Company
Sibelco

The access to water is a common challenge in the isolated areas. Thanks to a partnership with the Army, the Health Centre, city hall, the mining company and the community, the water from the quarry operations is shared for 3 months /year. The water from the quarry operations is used for the livestock of the region during the dry season and ensuring a co-existence and support during the very dry period.

González F.R. 2016. Sibelco: A contribution to Sustainable Mining. EU-Latin America dialogue on Raw Materials Santiago de Chile (Chile) 24 April 2016. Platform presentation

Diversification of habitats as a way of improving biodiversity

Region
Europe

Country
Belgium

Contribution
SDG11/12/15

Company
Carmeuse

CARMEUSE

Two projects have delivered on biodiversity in Belgium as the result of a very fruitful cooperation between public, private and non-governmental partners.
The creation of the Frasnes wetland follows the project pilot WALPHY (2009-2013) and aimed at restoring quality physical and biological characteristics of Eau Blanche and its tributaries and to recover aquatic habitats rich in biodiversity. Ponds and wetlands, once very numerous in the valley, have become rare today. A wetland of +/- 1.6 ha with large permanent ponds, with a depth up to 1.50 meters, has been developed on land belonging to Carmeuse, in the immediate vicinity of the settling ponds of the quarry. The creation of a vast network of ponds has allowed the recreation of aquatic habitats rich in plant and animal species. For example, the Crested Newt, the Midwife Toad, the Redshank or the Grass Snake will find a first-class refuge.
A lodging location for the shore Swallows in collaboration with the association Les Bocages. The establishment of two specific infrastructures allows the reception of the Swallow banks. This increasingly rare species comes back to nest each year at the heart of the industrial facilities of the quarry and Carmeuse's desire is to perpetuate the experience. The quarries have become alternative habitats and host more than 95% of the Swallow bank population in Wallonia. The colony that returns each year to nest at the quarry of Frasnes is one of the largest in Wallonia.

carmeuse.eu/sites/default/files/170519_communique_carmeuse_final.pdf

Tomorrow's world: recognition for habitat restoration

One of the largest habitat recreation schemes in Europe has earned Imerys a major award at the Quarries and Nature 2017 event. Imerys' Tomorrow's Heathland Heritage Project – Putting the Wild Heart Back in to Cornwall received the Natural England Award for Landscape-style Biodiversity. The project recreated almost 2,000 acres of lowland heathland over 26 square miles of mid-Cornwall.
More than 250 years of china clay working had resulted in a mosaic of active and disused clay pits, tips and mica dams. Imerys' project involved landscaping and reprofiling those sites, seeding them with heathland plant species, and planting thousands of native trees. The scheme also saw the creation of public access and installation of stock management facilities to enable grazing management.
The scheme has recreated once-lost habitats by developing large areas of heathland to reflect the historic nature of the area that existed before agricultural improvement and china clay extraction. The project shows the potential for effective landscape restoration and has provided a template for the cost-effective restoration of large areas affected by minerals extraction. The lessons learned will support other sites being prepared for restoration, including early tip design, soil creation and appropriate flora species selection.

Region
Europe

Country
UK

Contribution
SDG12/15

Company
Imerys

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businesscornwall.co.uk/news-by-industry/awards/2017/11/regeneration-award-for-imerys

NaSa explorers (Nature and Sand Explorers)

At their Frechensite, Quarzwerke launched in 2014 a successful environmental education project for pupils, including refugee and mentally handicapped children. As "Nature and Sand explorers" (NaSa), the children enjoy exploring local nature habitats, and learning about biodiversity conservation compatible with silica sand extraction. Equipped with an exploration bag and tools, the children go out into the woods & fields, to pools and ponds, and into the laboratory and the quarry. They are guided by Quarzwerke's biologist and a teacher specialized in providing environmental education for children.

Region
Europe

Country
Germany

Contribution
SDG4/15

Company
Quarzwerke

Quarzwerke

buschbellerwald.de

IMA Europe

Awareness raising campaign on conservation areas through a running and education event

Region
North America

Country
Mexico

Contribution
SDG3/4/9
SDG11/15

Company
Sibelco

SIBELCO

Jaltipan maintains a close relationship with stakeholders. Some actions include tour for school visits to the plant. Donation of trees to the community; Support for women with self-employment courses; Participation and sponsorship in the green race, organized by the research institute and opinion leader in environmental matters (INECOL), this was carried out in a protected natural area "Forest of Fog Sanctuary", Environmental State authorities attended the event. On September 22nd and 23rd , 2016, the United Expo for a Clean Veracruz was held at the World Trade Center in the municipality of Boca del Rio, Veracruz, organized by the Association of Industrialists of the State of Veracruz (AIEVAC) and the Mexican Fund for the Conservation of Nature (FMCN), with the participation of government agencies such as the Ministry of Environment and Natural Resources (SEMARNAT) and the State Secretariat of Environment (SEDEMA), the State Attorney's Office for Environmental Protection (PMA), the National Water Commission (CONAGUA) and the Federal Procurator for Environmental Protection (PROFEPA). Sibelco's Jáltipan Plant participated in the exhibition and the environmental forum alongside with Authorities, NGOs and Academics. Particularly, planta Jaltipan received an invitation from SEMARNAT to highlight the compliance of the environment document and success of the unique design program for our strategy and implementation techniques at the national level. In the event, the Plant installed an exposure stand and participated in a sharing of the experiences of the integrated reclamation project which includes surveys of the ecosystem and of the native plant species for the analysis of soil and vegetation strategy. Thanks to this reclamation project, 22 thousand plants were planted in only one year, on a surface of 22 hectares an old extractive area. This Institute of Ecology (INECOL), recognized academic organization in biodiversity, biology and soil, coordinated scientifically the project. Priority was given to the planting of more than 8 thousand plants of the tropic endangered species (Quercusoleoides), which represents the value of this ecosystem. SEMARNAT and SEDEMA authorities visited the project together with other authorities and NGOs' representatives and highlighted its importance in importance of generating alliances and relationships with experts and scientists such as INECOL, as well as spreading these efforts in favor of the environment so that other companies can be inspired to take similar action and contribute as well to the protection of the environment. In 2015 and 2016 Sibelco participated in the Jáltipan Folkloric Fair, with the theme "Ecological Restoration", so the community is aware of the work that Jaltipan Plant does in support of the environment. In addition to donation of trees for rehabilitation of green areas, as well as practices of how to plant a tree; in conjunction with the eighth district of the municipality of Jáltipan, Sibelco has participated in campaigns such as: Adopt a tree, World Forest Day, World Environment Fair and Science and Technology Fair.

Sibelco. 2018.
Sibelco Annual Report 2017

Old Soviet military airfield turned into sea of orchids

Region
Europe

Country
Estonia

Contribution
SDG11/15

Company
Nordkalk

Nordkalk

nordkalk.com/news

Mining areas provide an excellent environment for plants thriving in lime-rich soil, where several rare plants, such as orchids, can be found. While extraction is going on, rare species can be moved and replanted in new areas that correspond to natural conditions near the quarry, and later re-established in the post-mining areas. Former mine areas can serve as new environments, or neo-landscapes, favouring unique biodiversity. Deforestation of the Kurevere quarry area brought up orchids. The near-by old Soviet airfield, the soil is also rich in dolomite, and full of orchids. Nordkalk left the airfield out of the mining permit. The company takes care of the airfield by cutting grass twice a year to maintain the conditions favourable for orchids. Unlike real estate development that forever changes the land, mining is a transitional process that ultimately returns the ground to a landscape that is environmentally harmonious with its surroundings thanks to mitigation measures and sustainable practices. The mining company support of universities engaged in the study of geology, hydrogeology, restorative ecology and regulatory policy underscores our commitment to a sustainable and environmentally sound future for the mining and mineral processing industry. Kurevere site is near a Natura 2000 area. Nordkalk has had discussions with bird watchers and had a research made on the impact quarrying has on birds. The research found there to be no impact. Nordkalk also build a bird watching tower in a nearby bird protection area Matsalu Bay.

Preserving wildlife habitat and enhance biodiversity

Region
North America

Country
USA

Contribution
SDG9/11/15

Company
Sibelco

SIBELCO

unimin.com
/community-environment

An important component of our resource management program is our commitment to preserve and enhance biodiversity on the lands we manage. Working with community and national organizations, Unimin has transformed more than 100,000 acres into healthy and diverse ecosystems for wildlife, including wood ducks, whitetail deer, wild turkey, bluebirds, screech owls and an abundance of fish species. Unimin is recognized by the Wildlife Habitat Council (WHC) for its preservation efforts and has certified 37 of the sites through WHC's Wildlife at Work program. We're especially proud to have received the Wildlife Habitat Council's most coveted Corporate Habitat of the Year Award, recognizing our conservatory projects designed to reintroduce and protect displaced species.

Committing to Biodiversity

In 2018, Imerys together with 64 other companies in France shared their commitment to biodiversity during the act4nature event, organized by Entreprises pour l'Environnement (epe). Hosted by the GoodPlanet Foundation, the event was supported by Emmanuel Macron, President of the French Republic and represented by Nicolas Hulot, French Secretary for Ecological Transformation. Given the serious global threat to biodiversity, Imerys wants to further structure and harmonize its approach. As one of the priorities of its Corporate Social Responsibility (CSR) program, Imerys has designed and implemented a biodiversity project in line with international CSR standards, the main goals of the National Biodiversity Strategy and the general commitments of act4nature to mobilize businesses for the protection of biodiversity. In 2017, Imerys carried out an assessment of the issues facing its business, in collaboration and consultation with key stakeholders, and based on the EBEvie approach. The action program was drawn up between late 2017 and early 2018 by an internal working group comprising a range of support and operational functions. This program is designed to respond to these challenges and will be implemented at all Imerys sites around the world. It is based on four key areas: design and deploy a global continuous improvement approach; initiate and conduct studies and research on biodiversity knowledge and conservation; develop pilot projects; raise awareness, train and involve internal and external stakeholders.

Region
global

Country
global

Contribution
SDG12/15

Company
Imerys

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imerys.com/scopi/group/imeryscom/imeryscom.nsf/pagesref/SCOI-8S4EBC?opendocument&lang=en

SDG16: Peace, Justice & Strong Institutions

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

SDG16 is dedicated to the promotion of peaceful and inclusive societies for sustainable development, the provision of access to justice for all, and building effective, accountable institutions at all levels. Mining companies can contribute to SDG16 in various ways. By actively combating mining-related illicit financial flows through disclosure and reporting, mining companies can encourage transparency and avoid undermining the integrity of public institutions. Mining companies can also ensure they do not endanger peaceful societies by preventing company-community conflict, providing access to information, respecting human rights, supporting representative decision-making and carefully managing their security approaches to ensure they decrease rather than increase the likelihood of violence or conflict.

Key UN SDG16 goals relevant for mining:

- Significantly reduce all forms of violence and related death rates everywhere.
- Promote the rule of law at the international and national levels and ensure equal access to justice for all.
- By 2030, significantly reduce illicit financial flows.
- Substantially reduce corruption and bribery in all their forms.
- Ensure responsive, inclusive, participatory and representative decision-making at all levels.
- Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.

To contribute to SDG16, mining company could anticipate the scope of their social, environmental and economic impacts, understanding how these may spark conflict. Consistent and ongoing engagement with local communities and other stakeholders, as well as formal complaints and grievance mechanisms, are the foundation for responding early to concerns, listening to questions and sharing information.

Companies have a responsibility to support and protect human rights as defined in the UN Universal Declaration of Human Rights. Human Rights Impact Assessments (HRIAs) are becoming standard practice across the mining sector, helping companies identify their responsibilities relevant to human rights across the scope of their operations and solutions to enhance and improve their performance.

Peace and transparency requires a multi stake-holder approach. Many initiatives that the mining industry can entail focus broadly on transparency, promoting the rule of law and good governance in the countries and communities where they work, respecting and complying with existing legal frameworks and collaborating with government.

Code of Sustainable conduct

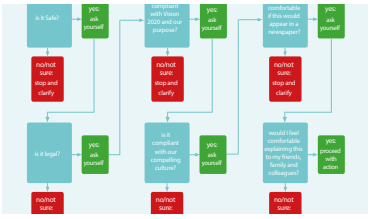
Sibelco purpose is to provide Material Solutions Advancing Life. To reach this objective means that business is conducted in a sustainable and responsible manner to create enduring value for all stakeholders. The Code of Sustainable Conduct, presented in 2017, represents the company's commitment to uphold ethical business practices and conduct its activities sustainably and responsibly. It contains the cornerstone principles of Sibelco activities and outlines how to act when working for, or on behalf of, Sibelco, namely: A Safe and Healthy Workplace; A Compelling Culture; Model Work Conditions and Human Rights; Governance and Legal Compliance; Business Relationships; Relationships in the Community.

Region
global

Country
global

Contribution
SDG16

Company
Sibelco



sibelco.com/wp-content /uploads/code-of-sustainable-conduct.pdf [Pp. 8]

Omya code of conduct Manual

Modesty, Courtesy, Integrity and Perseverance summarize how Omya people behave vis-à-vis customers, partners and colleagues. These four values are the most visible expression of company style and a key ingredient of its corporate identity. All Omya employees are committed to live these values in daily work. Personal integrity is the basis of the integrity of the company. Omya has always been committed to conducting business in a responsible and ethical manner and maintaining a safe, sustainable and productive work environment which are also the cornerstone of the Code of conduct Manual. In addition to this Code of Conduct, also the respective local laws and regulations as well as Omya's other corporate policies and specific internal guidelines must always be respected.

Region
global

Country
global

Contribution
SDG16

Company
Omya

2016. Omya Code of Conduct Manual [Pp. 25] www.omya.com/code-of-conduct

Imerys commitment to the UN Global Compact Principles

Imerys joined in 2017, the United Nations Global Compact which is a voluntary initiative based on CEO commitments to implement universal sustainability principles to meet fundamental responsibilities in the areas of human rights, labour, environment and anti-corruption covered by the 10 principles: **Human Rights**: 1. Businesses should support and respect the protection of internationally proclaimed human rights; 2. Make sure that they are not complicit in human rights abuses. **Labour**: 3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; 4. The elimination of all forms of forced and compulsory labour; 5. The effective abolition of child labour; 6. The elimination of discrimination in respect of employment and occupation. **Environment**: 7. Businesses should support a precautionary approach to environmental challenges; 8. Undertake initiatives to promote greater environmental responsibility; 9. Encourage the development and diffusion of environmentally friendly technologies. **Anti-Corruption**: 10. Businesses should work against corruption in all its forms, including extortion and bribery.
In accordance with the UN GC Principles, the Group submitted its first Communication of Progress (COP) in 2018. Group CSR commitments, 2017 objectives and results, are detailed within the 2017 Registration Document and are presented in the context of preliminary progress made towards the UN GC Principles and UN SDGs.
For the elaboration of Group CSR Strategy for 2018 and beyond, internal reflection and dedicated working groups have been launched to identify programs to be developed or strengthened to contribute further towards these goals.

Region
global

Country
global

Contribution
SDG16

Company
Imerys

unglobalcompact.org
/participation/report/cop
/create-and-submit/active/415357

SDG17: Partnerships for the Goals

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

A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local level. A stronger commitment to partnership and cooperation is needed to achieve the SDGs requiring coherent policies, an enabling environment for sustainable development at all levels and by all actors and a reinvigorated Global Partnership for Sustainable Development. Sustainable development will not depend on social investment or corporate responsibility writ large, but on existing business activities and markets being better aligned with sustainable development objectives and on new markets developing where sustainable development is the core business. Whether through paying a reasonable and fair share of the taxes they owe in the jurisdictions where they operate, deploying environmentally sound technologies in their operations, employing people and inducing broader economic activity or in partnering with governments in shared infrastructure arrangements or public-private partnerships, mining companies have a role to play.

Key UN SDG17 goals relevant for mining:

- Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.
- Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, as mutually agreed.
- Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development.
- Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.
- By 2020, enhance capacity-building support to developing countries, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other relevant characteristics.

To contribute to SDG17, mining companies can, in addition to pay their fair share of taxes and promote transparency, collaborate with governments to improve institutional capabilities to track, collect and administer taxes and other mining revenues. Partnerships with other companies, academia and public institutions are also the recommended mechanism for facilitating the transfer of knowledge and technology to other sectors and society in general by: Participating in dialogues with governments, civil society and development partners on the role of the mining industry in national sustainable development strategies; Strengthening coordination between initiatives that focus on mining and sustainable development; Apply the SDG indicators as decided with government and other stakeholders.

Protect the Peak District National

Tarmac (UK) is committing £ 20,000 each year for the next five years and is directly providing the money and volunteer hours needed to care for and protect the special landscape of the Peak District National Park. Employees will help the new volunteer projects assistant one day each month for the duration of the partnership. Sarah Fowler, chief executive of the Peak District National Park, said of the commitment: "We are absolutely delighted to be working alongside Tarmac to help look after this wonderful place. It's a great example of a business determined to invest back into its local communities." To launch the partnership, employees from Tarmac's Tunstead Quarry, near Buxton, are helping to repair a section of dry-stone wall. The company has set a national target to deliver 50,000 volunteer hours per year by 2020.

Region
Europe

Country
UK

Contribution
SDG11/15/17

Company
Tarmac

TARMAC
A CRH COMPANY

MPA. 2017. The magazine of Mineral Product Association: Adapting to change [Pp. 15] mineralproducts.org/documents/Mineral_Products_Today_15.pdf

Joining the UN Global Compact as a driver for setting the priority SDG's for Elkem

Since 2016, Elkem is a signatory to the UN Global Compact. Elkem defines sustainability work as continuous efforts to minimize any negative impact on the environment and society. Complying with relevant public regulations, while simultaneously building a profitable and respected business are the drivers and contributors towards the SDG' agreed in 2015, by United Nations to be achieved by 2030. The SDGs require the active participation of businesses as a principal driver in achieving these global goals. For the first time, Elkem has analysed how their business activities impact the SDGs and which goals are most relevant for Elkem to contribute towards (namely SDG3/7/8/9/13/16).

Region
global

Country
global

Contribution
SDG16/17

Company
Elkem

Elkem

elkem.com/sustainability

elkem.com/globalassets/corporate/documents/elkem-sustainability-mag-2017-web.pdf [Pp. 2]

IMA Europe

Matrix of IM case studies versus SDG's

SDG / Project	Company	Country	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
SDG2: End Hunger																			
Local community drive to address local needs & demands	Tolsa	Senegal	•	•			•												
SDG3: Good Health & Well-being																			
Smoke free Nordkalk	Nordkalk	Finland			•					•									
Saúde Comunitária: a differentiated medical care service in Amazon countryside	Imerys	Brazil			•														
Carmeuse H&S strategy	Carmeuse	global			•					•									
Saúde do Idoso: in Amazon countryside offers quality of life for senior citizens	Imerys	Brazil			•	•													
Healthy Smiles	Imerys	Brazil			•	•													
Sibelco: Going for zero	Sibelco	global			•					•									
Public Health Initiative: Detect and Manage HIV/AIDS related issues	Imerys	South Africa			•														
Effective Safety Campaigns for Sibelco's «lifesaving rules»	Sibelco	Netherlands			•					•			•						
Health & Safety award	Sibelco	USA, Canada			•					•									
Lime facility Sponsors Community bike safety event	Carmeuse	USA			•														
Innovative solutions to increase Omya work safety	Omya	EU			•					•									
"No Dust" teams: Innovation in airborne dust measurements	Sibelco	EU			•					•									
From Volcano to Vector Control	Imerys	global			•														
Senegal health care project	Tolsa	Senegal			•					•									
Conveyor Safety Training Rig	Tarmac	UK			•														
SDG4: Quality Education																			
Carmeuse Majan supports a training program in Oman	Carmeuse	Oman				•													
Hiring through YOU@S&B program	Imerys	Greece				•				•									
Horticulture transformation to create new perspectives for students and teachers	Imerys	Brazil			•	•													
Partnership with Education Foundation	Sibelco	Australia				•													•
Unite project for Omya group-wide sustainability	Omya	global				•													
Focusing on educational programs and duplicating best practices to help local communities	Imerys	India			•	•													
Tech on Wheels	Elkem	India				•							•						
Mining restored sites as educational spots	Sibelco	USA				•					•		•				•		
Education as a building block	Imerys	Indonesia, India, Turkey, Greece, Brazil, South Africa				•	•												

Contribution

SDG / Project	Company	Country	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
Drum Sigur	Carmeuse	Rumania				•				•									
Creativity and art classes	Imerys	Brazil				•													
Lam Lam school	Tolsa	Senegal			•	•					•								
Westerwälder Tonkiste (Westerwald clay box)	BKRI	Germany				•					•		•	•					
Project trains Ipixuna fish farmers and creates business model guided by partnership	Imerys	Brazil				•				•									
Community empowerment through literacy	Tolsa	Senegal				•													
Clariant hosts carnival at Zhenjiang primary school to spread message of sustainability	Clariant	China				•													
Enterprise learning	Carmeuse	Belgium				•				•									
SDG5: Gender Equality																			
Mining, increasingly attractive to female leaders	IMA-Europe	EU					•												
Executive Vice President Business unit leadership entrusted to Ilse Kenis	Sibelco	global					•												
Herlinde Wauteraerts – CEO Europe for Omya	Omya	EU					•												
Helping women move up the managerial ladder	Imerys	global					•												
Rozita Bahadon – Production manager of Omya in Malaysia	Omya	Malaysia					•				•			•					
Malaysia – Florence Ong leading the activities of the Technical Support center	Sibelco	Malaysia					•												
Erika Engstrom – Plant manager of Omya in Sweden	Omya	Sweden					•												
Elkem working towards increase the number of women in their workforce	Elkem	global					•												
SDG6: Clean Water & Sanitation																			
High performance mineral based dewatering technology	Clariant	Germany						•			•		•	•					
Sibelco: Water initiatives	Sibelco	Argentina						•					•						
Water Management Platform	Carmeuse	Belgium						•			•								
Water from quarries alternative qualitative supply in time of dry weather	multiple	Belgium						•			•								
Water management plans	Nordkalk	Sweden, Finland, Poland						•			•								
Water Reservation	Sibelco	Indonesia						•					•	•					
Drinking water supply infrastructure for the community	Tolsa	Senegal						•			•		•						
Brazil operations: A cloud based solution – rainwater harvesting	Imerys	Brazil						•											
SDG7: Affordable & Clean Energy																			
Anaerobic Digestion as a Renewable Energy for the Lime Industry	Birch Energy	UK							•					•	•				
Carmeuse wins award for energy efficient project	Carmeuse	Canada							•					•	•				
The largest solar park in Wallonia build by a lime company	Carmeuse	Belgium							•					•	•				

Contribution

SDG / Project	Company	Country	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
Steetley Dolomite's / Lhoist in UK	Steetley/ Lhoist	UK							•					•	•				
Reduced energy consumption through optimized processes and capacity use	Nordkalk	Sweden, Finland							•					•	•				
Lime improves Flue Gas Treatment (FGT) and Waste to Energy (WtE) incinerator output	Unicalce	Italy							•					•	•				
SDG8: Decent Work & Economic Growth																			
Omya academy	Omya	Switzerland, USA				•				•									
Developing professional skills	Sibelco	Brazil				•				•									
Community & Environment	Sibelco	USA								•			•				•		
Hire veterans as a reintegration strategy	Carmeuse	USA				•				•									
Digital immersion programe (Inclusão Digital)	Imerys	Brazil				•				•									
SDG9: Industry, Innovation & Infrastructure																			
Green Energy	Sibelco	Belgium, Australia, Taiwan							•		•			•	•				•
Responsible Mining: Lead by example	Omya	Ecuador									•		•	•			•		
Revalorization of by-products with a low MgO content, for use as flame retardant fillers in recycled plastics	Magna	Spain									•			•					
A Safe Place For Rare Bats	Sibelco	USA									•		•				•		
Unimin to modernize its Canadian Nepheline operations	Sibelco	Canada								•	•			•					
Industrial Minerals enable industrialization through value chain enhancement	Mineral Product Association	UK									•		•						
Life Cycle Assessment of Hot Mix Asphalt using lime to improve road durability & lower carbon footprint	EuLA	EU									•		•	•					
SDG10: Reduced Inequalities																			
Replicability of projects as a way of implementing best practices in multiple global regions	IMA-Europe	EU, global										•							
SDG11: Sustainable Cities & Communities																			
The New Time Tunnel Wülfrath	Lhoist	Germany									•		•						
Environmental Clean-up	Sibelco	Korea									•		•	•					
The Eden Project in Cornwall	Goonvean	UK								•	•		•				•		
Stakeholder engagement – as a collaborative tool	IMI Fabi	Italy											•						
Yellow-bellied toad development programme	Sibelco	Germany									•		•				•		
European Minerals Days goes Global	IMA-Europe	EU, Japan, India, Malaysia, Argentina, Brazil, Canada, USA			•	•				•	•		•	•			•		
High-Tech and Energy Efficient Cristobalite	Sibelco	Belgium							•		•		•	•	•				
Community Initiatives	Sibelco	USA			•								•	•					

Contribution

SDG / Project	Company	Country	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
The nature trial of the miner – a project for biodiversity preservation of Brusada-Ponticelli area	IMI Fabi	Italy				•					•		•				•		
Shaping the future of the neighboring community together with the municipality	Sibelco	Germany						•			•		•				•		
Quarry hosts yearly a temporary open-air theatre	Sibelco	Netherlands									•		•				•		
Heat from lime production warms up homes	Nordkalk	Sweden, Finland							•				•	•	•				
Promotion of biodiversity in the renatured forest wildlife	Quarzwerke	Germany									•		•				•		
Waste as a common community challenge	Omya	Serbia				•					•		•				•		
Open Day (Running in the quarry) & Archaeological Heritage	Sibelco	Italy			•	•				•	•		•	•			•		•
Carmeuse team and 450 good deeds	Carmeuse	Roumania											•				•		
Back to nature with the Olivine solution	Sibelco	Norway									•		•				•		
Compensation measures for the protection of the orchid Ophryss drumana	Sibelco	France									•		•				•		
Good Environmental Practicies – Erimsa Consession of Exploitation Yeyo	Erimsa	Spain									•		•	•			•		
Invested in the future	Sibelco	USA								•			•				•		
Community Education	Sibelco	Mexico				•							•				•		
Extraordinary important paleontological discoveries operation area of Galve mine	Sibelco	Spain											•				•		
National monitoring of forest night butterflies for measuring biodiversity	SMA Mineral	Finland											•				•		
Valuing our natural capital Biodiversity Strategy	Sibelco	EU									•		•				•		
SDG12: Responsible Consumption & Production																			
Life Cycle of Industrial Minerals	IMA-Europe	EU												•	•				
Electronic Recycling	Sibelco	Taiwan				•							•	•					
EPOS: Enhanced energy and resource efficiency and Performance in process industry Operations via onsite and cross-sectorial Symbiosis	Omya	EU									•			•					
Sustainable Mining Award	Sibelco	UK									•			•	•				
Creating Habitats For Solitary Bees	Sibelco	EU									•			•			•		
Noise barrier at Miedzianka (Poland)	Nordkalk	Poland									•		•	•					
Eco-friendly Perlite-Scrub (P-Scrub) for personal care	Imerys	EU, USA												•					
Street Cleaning	Sibelco	Thailand									•		•	•					
100% Resource use in limestone quarry in Estonia	Nordkalk	Estonia											•	•			•		
Renewable power for Omya plants	Omya	USA, India, Thailand, Switzerland												•	•				
Bentonite & Sepiolite transfer mining reclamation process assisted by Drone Technology	Tolsa	Spain									•		•	•	•		•		

Contribution

SDG / Project	Company	Country	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
A natural all-purpose raw material	Clariant	Italy									•			•	•				
STOICISM: Sustainable Technologies for Calcined Industrial Minerals in Europe	Imerys	EU												•	•				
Reduce, Reuse, Recycle	Sibelco	Malaysia						•					•	•					
Reducing environmental impacts	Nordkalk	Sweden, Finland, Poland									•		•	•					
Resource optimization	Sibelco	USA									•		•	•			•		
Projects for community empowerment by recycling waste	Imerys	Argentina												•			•		
Sustainability Dialog	Clariant	Germany									•		•	•					
HEMPCRETE: Hemp-lime Based Construction Materials – an Ecological, Sustainable and Carbon Negative Solution	Carmeuse	Belgium									•		•	•					
Development of a gunitador mobile robot for application of refractory material into electric furnaces	Magna	Spain			•						•			•					
Efficient use of natural resources	Nordkalk	Finland											•	•			•		
New investments to improve technology and connectivity for resource optimization in talc mine	IMI Fabi	Italy									•			•					
Recovering waste & more	Imerys	UK												•			•		
SDG13: Climate Action																			
Grand River Fuel Project Earns International Award	Carmeuse	USA							•		•			•	•				
Innovative solutions in transportation	Omya	Thailand												•	•				
Improving energy efficiency	Imerys	global													•				
Low Emissions Intensity Lime and Cement	Lhoist, Tarmac	Belgium									•		•	•	•				
Replacing natural gas with biomass	Imerys	Ukraine							•					•	•				
From rock to added value products	Nordkalk	Finland												•	•				
CO_2 neutral manufacturing sites and product	Sivomatic	Netherlands, Austria, Turkey									•		•	•	•				
NECAPOGEN 4LIME: NEgative-CAarbon emission POwer GENeration from integrated solid-oxide fuel cell and lime calciner	Singleton Birch	UK							•		•		•	•	•				
Biogas development in Clérac	Imerys	France													•				
Supports science and technology	Lhoist	Belgium				•									•				
Microalgae as CO_2 capture solution	Carmeuse	Belgium									•			•	•				
IMI Fabi: Renewables & Energy efficiency as a driver towards sustainability	IMI Fabi	Italy									•		•	•	•				
Carbon Storage by Mineralization (CSM)	Nordkalk	Finland									•			•	•				
The use of natural drying in the bentonite fields	Imerys	Greece												•	•				
SDG14: Life Below Water																			
The town of Lohja (near Helsinki) acquires water from Nordkalk	Nordkalk	Finland						•			•		•	•		•			

Contribution

SDG / Project	Company	Country	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
Lime stops phosphorous runoff – work for healthier Baltic Sea	Nordkalk	Sweden, Finland									•		•			•			
Wellness efforts as part of the treatment of Klinthagen quarry	Nordkalk	Sweden									•		•			•			
SDG15: Life on Land																			
Enhanced rehabilitation to foster the settlement of the Rainbow bird	Imerys	France															•		
Heathland restoration in an integrated life cycle approach	Sibelco	Belgium, France, UK, Netherlands									•		•				•		
Restore former perlite quarry to organic vineyard in Milos	Imerys	Greece												•			•		
Creating a substitution are for Silene portensis	Sibelco	France									•		•				•		
Mining in a touristic region: resource efficient and innovative solutions in Italy	Omya	Italy									•		•	•			•		
Unimin transfers Mine Rights to OBC	Sibelco	USA				•					•		•	•			•		
Transformation of a quarry site into a wetlands nature reserve	Omya	Austria									•		•	•			•		
Apollo and large blue butterfly project	Nordkalk	Sweden									•		•	•			•		
"Zandloperpad" Footpath in Maasmechelen	Sibelco	Belgium									•		•				•		
Increase quarry acceptance in a sensible region	Omya	France									•		•				•		•
The Owl Project	Lhoist	Belgium									•		•	•			•		
Ecological connectivity in Arcos de la Frontera	Sibelco	Spain									•		•	•			•		
Protection of endangered species in Argentina and Chile	Sibelco	Argentina, Chile									•		•				•		
Local school visits on biodiversity	Carmeuse	Belgium				•							•				•		
Developing the Beemerys community	Imerys	EU, USA, New Zealand															•		
Tree Planting	Sibelco	India											•				•		
BioDiversity for Industrial Minerals	IMA-Europe	EU									•		•				•		
'Back to life' initiative in Brazil	Sibelco	Brazil									•		•				•		•
Sa Matta Mine nature trail – increasing the awareness of biodiversity treasures	IMI Fabi	Italy				•					•		•				•		
Omya: Biodiversity project in partnership with WWF Austria leads to best practices	Omya	Austria									•		•				•		
Former ball clay quarry recognized as Site of National Importance for dragonflies	Sibelco	UK							•					•			•		
Turtle Conservation	Sibelco	Canada				•					•		•	•			•		
Grassland as restoration	Carmeuse	Belgium									•		•	•			•		
Project Biodiversity Management Plan at an Open Pit Mine	Imerys	Austria												•			•		
The access to water in the isolated areas	Sibelco	Brazil						•					•			•	•		
Diversification of habitats as a way of improving biodiversity	Carmeuse	Belgium											•	•			•		
Tomorrow's world: recognition for habitat restoration	Imerys	UK												•			•		

Contribution

SDG / Project	Company	Country	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
NaSa explorers (Nature and Sand Explorers)	Quarzwerke	Germany				•											•		
Awareness raising campaign on conservation areas through a running and education event	Sibelco	Mexico			•	•					•		•				•		
Old Soviet military airfield turned into sea of orchids	Nordkalk	Estonia											•				•		
Preserving wildlife habitat and enhance biodiversity	Sibelco	USA									•		•				•		
Committing to Biodiversity	Imerys	global												•			•		
SDG16: Peace, Justice & Strong Institutions																			
Code of Sustainable conduct	Sibelco	global																•	
Omya code of conduct Manual	Omya	global																•	
Imerys commitment to the UN Global Compact Principles	Imerys	global																•	
SDG17: Partnerships for the Goals																			
Protect the Peak District National	Tarmac	UK											•				•		•
Joining the UN Global Compact as a driver for setting the priority SDG's for Elkem	Elkem	global																•	•

Notes

Contribution

Contribution

Contribution

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