

**CIBJO**

# **Marketing and Education Commission**

Bahrain, November 2019  
Jonathan Kendall

**‘Focus on the environment’**

# AGENDA

- Introduction
- CIBJO Greenhouse Gas Initiative
- De Beers Group Activities
- Pearl Industry Example

‘COMPANIES AND INDUSTRIES THAT ARE NOT MOVING TOWARDS LOWER CARBON EMISSIONS WILL BE PUNISHED BY INVESTORS AND GO BANKRUPT’

*Mark Carney – Governor, Bank of England, Oct 2019*

THE UN SAYS,

‘THE COMING DECADE IS CRUCIAL IF THE  
WORLD IS TO AVOID THE MOST CATASTROPHIC  
CONSEQUENCES OF GLOBAL HEATING’.



JEWELLERY  
INDUSTRY  
GREENHOUSE GAS  
MEASUREMENT  
INITIATIVE

# DEFINITION OF ENVIROMENT

“Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their inter-relationships”.



# WORLD ENVIROMENT DAY

- United Nations Day for encouraging worldwide awareness and action to protect our environment.



# DEFINITION OF SUSTAINABILITY

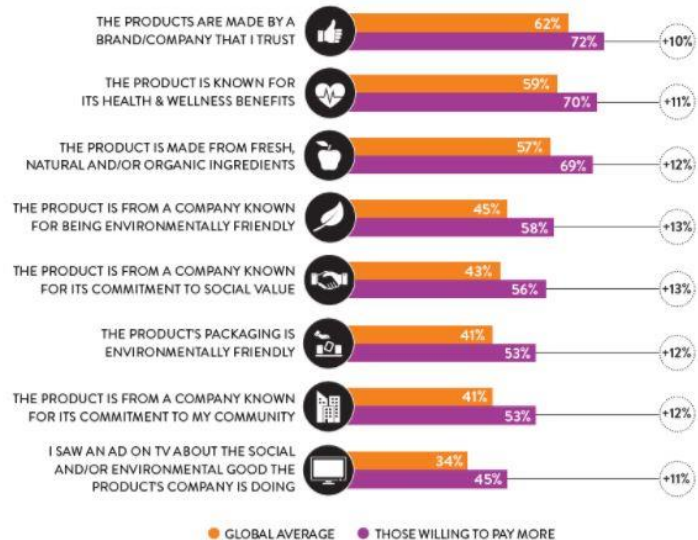
- “Development which meets the needs of the present without compromising the ability of future generations to meet their own needs”.



# SUSTAINABILITY IS A SHOPPING PRIORITY

## TOP SUSTAINABILITY PURCHASING DRIVERS

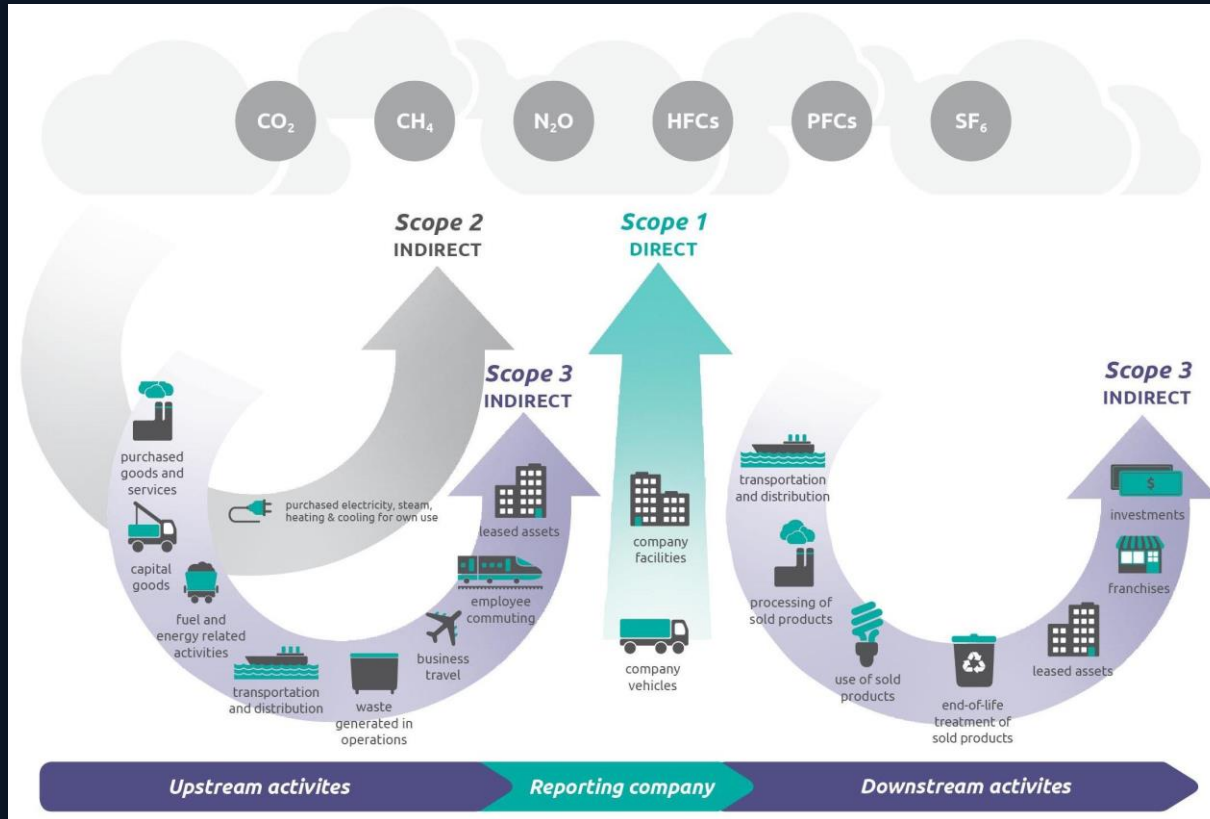
Global Respondents vs. Those Willing To Pay More\*



\*Note: Key sustainability purchasing drivers were categorized as either "very heavy influence" or "heavy influence" by the indicated percentage of respondents

Source: Nielsen Global Survey of Corporate Social Responsibility, Q1 2015

# GHG PROTOCOL – OPERATIONAL BOUNDARY



# SUSTAINABLE DEVELOPMENT GOALS



## SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



# CIBJO INITIATIVE & SDG's

- Scope 1 – Controlled Emissions
- Scope 2 – Electricity



# CIBJO INITIATIVE & SDG's

- Scope 3 – Purchased Goods & Services
- Scope 4 – Capital Goods



# CIBJO INITIATIVE & SDG's

- Scope 3 – Business Travel
- Scope 3 – Waste
- Scope 3 – Employee Commute



## INITIATIVE UPDATE

- All carbon footprint reports for 2019 will include reference to the sustainable developments goals so all organisations within the CIBJO initiative will have easy reference to one document that combines their requirements for reducing their environmental impact and obligations under the UN Sustainable Development Goals.

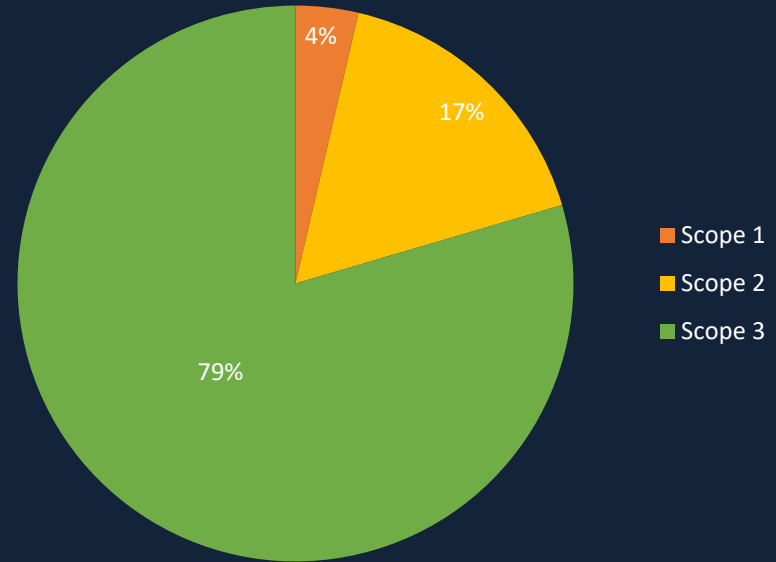
DE BEERS GROUP

# DE BEERS GROUP ENVIRONMENTAL JOURNEY



# DE BEERS GROUP INDUSTRY SERVICES

- Started measuring in 2014 with all locations measuring by 2016
- Key issue was to identify where emissions lay within the business



# CHALLENGES & SOLUTIONS

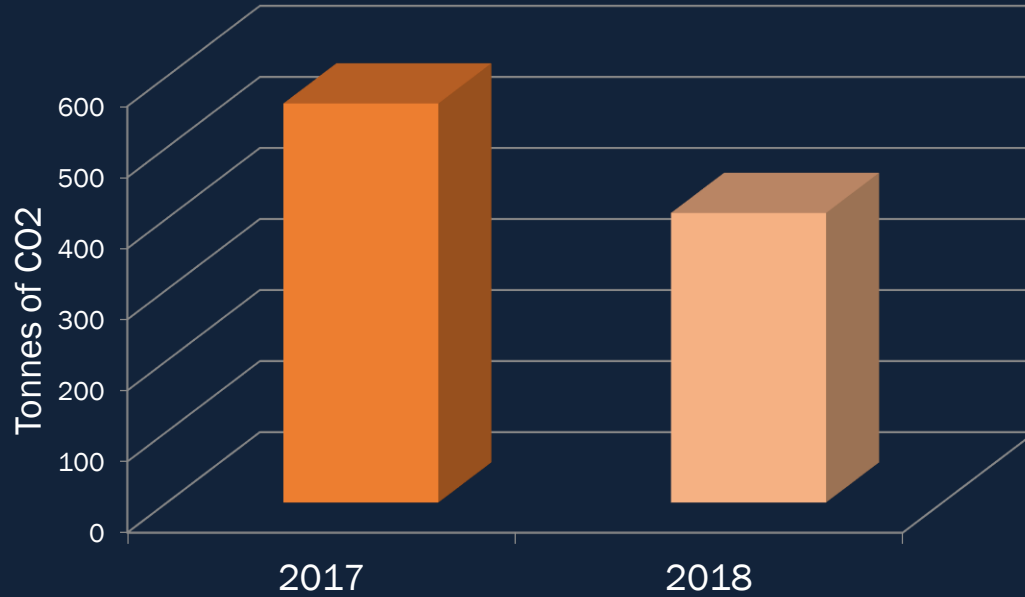
## Challenges

- Work with suppliers to reduce emissions
- Data Accuracy & Quality
- Staff Engagement

## Solutions

- Reviewed utility contracts
- Data Management Plan set up – continuous improvement
- Shared report with team members

# SCOPE 2 EMISSIONS REDUCTION



# SCOPE 2 REDUCTION STRATEGY

- Solar installed in 2018 with additional 188,70kW photovoltaic panels added in 2019.
- Generate a total of more than 161,000 kWh a year.
- 50% of the power requirement will be using Solar Power



## SCOPE 2 REDUCTION STRATEGY

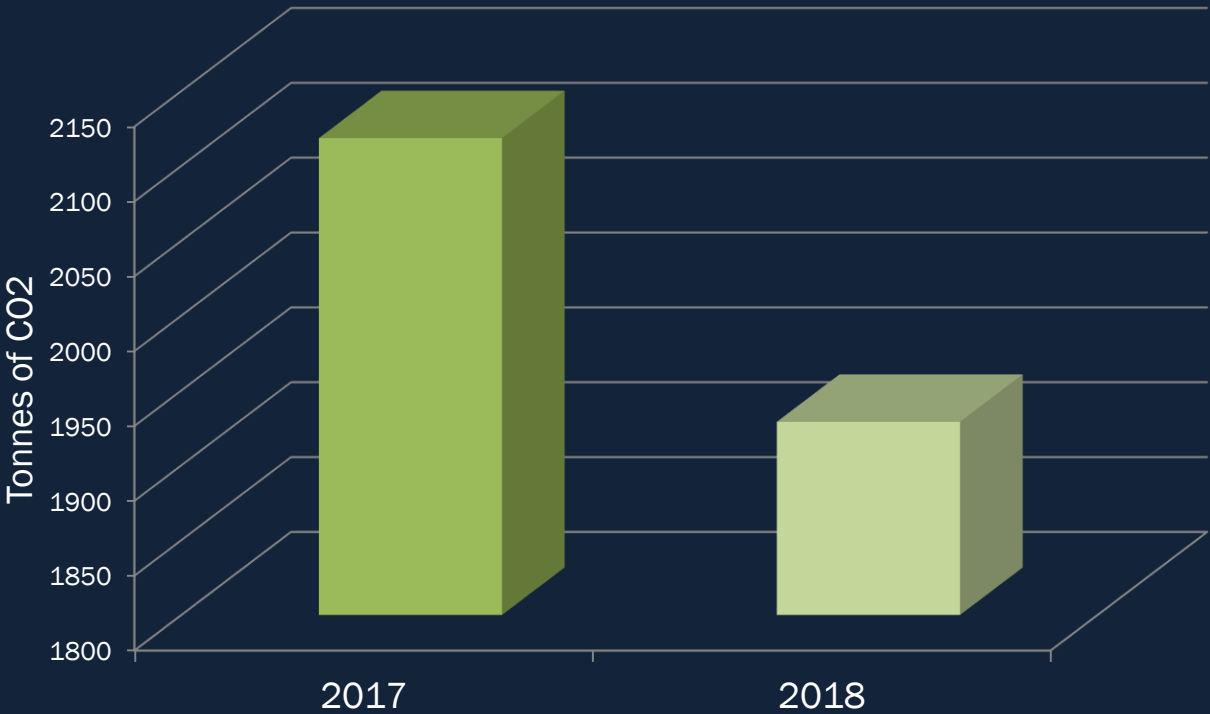
- June 2019 installation of 334 panels on the roof, and is set to generate 88,000 kWh a year
- 53,000 kilograms of carbon dioxide emissions annually avoided
- 1<sup>st</sup> October 2019 Maidenhead facility has switched to renewable energy with zero emissions



## SCOPE 2 REDUCTION STRATEGY

- Leadership Energy Environmental Design (LEED) Green Building Certification
- Belgium facility moved to a Greener building with more efficient heating systems

# SCOPE 3 EMISSIONS REDUCTION

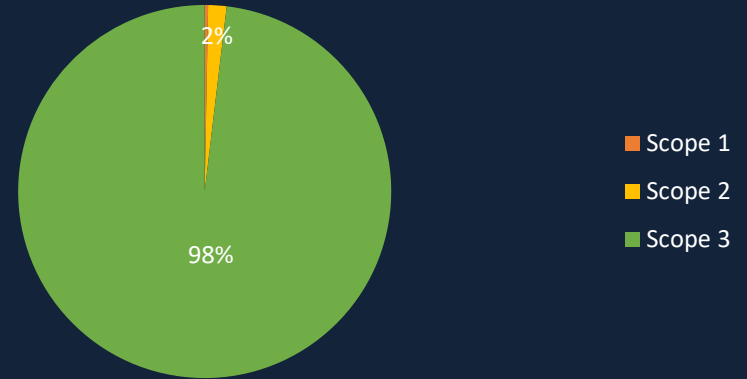


## SCOPE 3 REDUCTION STRATEGY

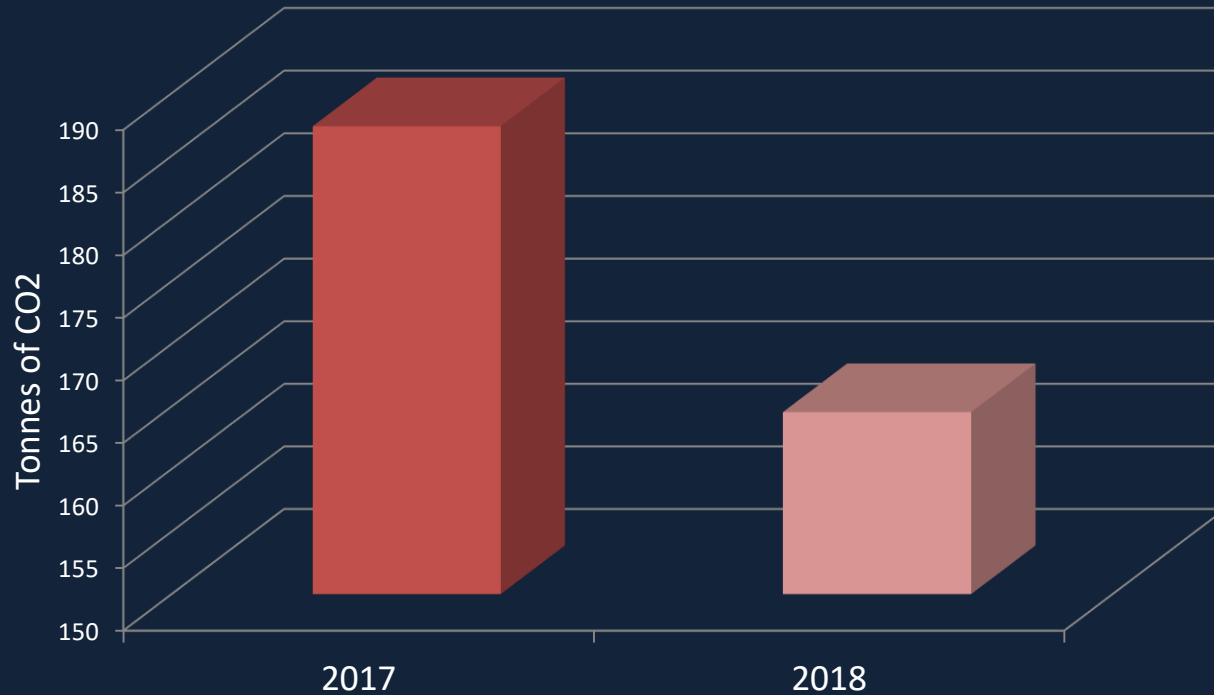
- At all three facilities employee commute emissions are high
- At Surat looking at providing company bus and encouraging bike shares
- Other facilities promoting car shares or incentives for using public transport

# FOREVERMARK

- Started measuring in 2016
- Key issue was to identify where emissions lay within the business



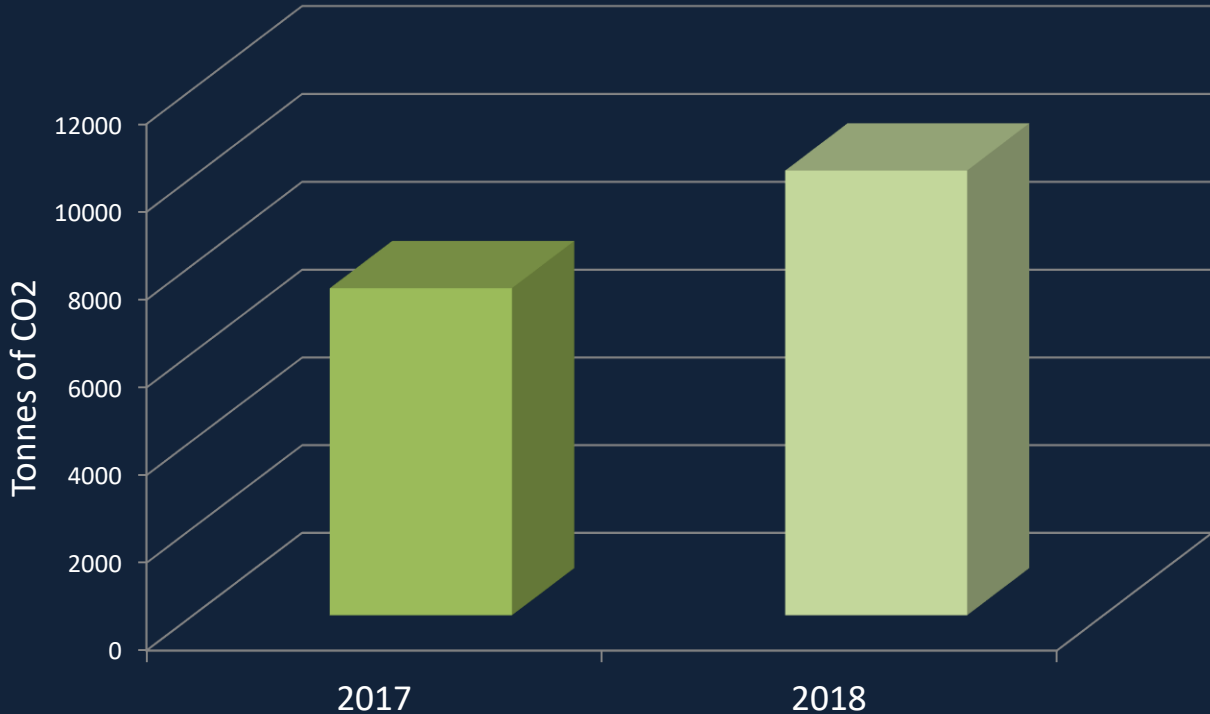
# SCOPE 2 EMISSIONS REDUCTION



## SCOPE 2 REDUCTION STRATEGY

- Not a high emissions source however as direct emissions can be controlled by the company
- Staff awareness on usage policy
- Exploring options to switch to renewable energy

# SCOPE 3 EMISSIONS REDUCTION



## SCOPE 3 REDUCTION STRATEGY

- Transport & Distribution emissions – work with supplier to reduce emissions, use of alternative fuels for transportation
- Business Travel emissions – promote video conferencing where possible
- Purchased goods for marketing materials – switch to digital marketing as will also reduce T&D emissions

## REDUCTION COMMITMENT

- Know that this is only the start of our journey.
- Will take time to change business practice to reduce emissions.
- Are committed to reducing our environmental impact so have an offset program using voluntary carbon credits.



# DE BEERS GROUP MINING

# BUILDING FOREVER

Building a long term positive legacy, enabling trust in our diamonds



## PROTECTING THE NATURAL WORLD

*Our vision is to operate carbon neutral, waterless mines and to deliver net positive impact on biodiversity*

Biodiversity  
**Climate Change**  
Water



## PARTNERING FOR THRIVING COMMUNITIES

*Our vision is to be a catalyst for a step change in skills, health and livelihoods to support community resilience and a diversified economy in our host countries*

Health and Well-being  
Livelihoods  
Skills for the Future



## STANDING WITH WOMEN AND GIRLS

*Our vision is a workforce with equal gender representation as well as equal access to opportunity for women and girls in host communities*

Financial Resilience  
Technical and Leadership Skills  
Challenging Gender Stereotypes



## LEADING ETHICAL PRACTICES ACROSS INDUSTRY

*Our vision is to use our leadership position to build trust in the industry and influence positive change across the value chain*

Ethical Value Chains  
Provenance  
Advocating for positive change

Regional partnerships to support sustainable development beyond mining

Leadership and culture

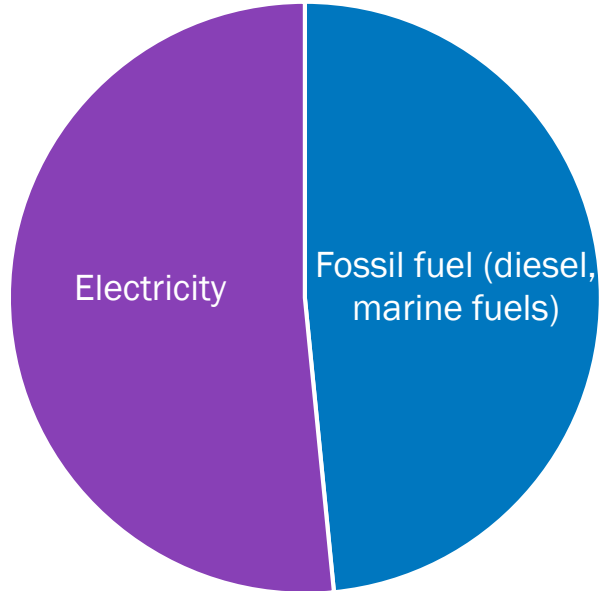
Zero harm

Human rights

Inclusion and diversity

Group standards and legal compliance

Our emissions come from two main sources ....



2018: 1.8 M tCO<sub>2</sub>e





## 1 Reduce Energy Intensity

(Be more efficient with energy and so use less, create a low carbon footprint)



## 2 Replace Fossil Fuels

(Replace dirty fuels (diesel/marine fuel) with biofuels or electricity)



## 3 Replace Fossil Electricity

(Replace coal-based electricity with renewable energy)

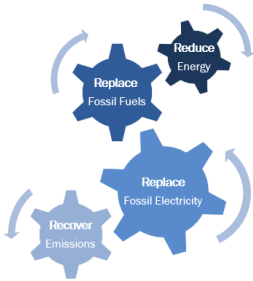


## 4 Recover Carbon Emissions

(Project **Minera** and/or Carbon Offsets)



## 5 Stakeholder Engagement





## Recover Carbon Emissions

- The primary goal is to investigate the potential to use mineral carbonation technologies to store carbon in processed kimberlite in order to offset carbon emissions
- Carbonation of kimberlites is a natural process
- The project is currently exploring 4 methodologies to enhance kimberlite carbonation:
  - Physical
  - Chemical
  - Biological
  - Direct emissions capture



*"This is likely to be one of the easiest and least costly methods of carbon dioxide disposal," Stuart Haszeldine, professor of carbon capture and storage at Edinburgh University said.*

-Reuters article dated May 3<sup>rd</sup>, 2017

# RESEARCH TEAM



A team of experts, researchers from various organizations:

- Dr. Alison Shaw – Lorax Environmental
- Dr. Evelyn Mervine – Anglo American Geochemist
- Dr. Greg Dipple – University of British Columbia
- Dr. Sasha Wilson – University of Alberta
- Dr. Ian Power – Trent University
- Dr. Gordon Southam – University of Queensland
- Dr. Colette Southam – Bond Business School
- Postdoctoral Researchers + Graduate Students



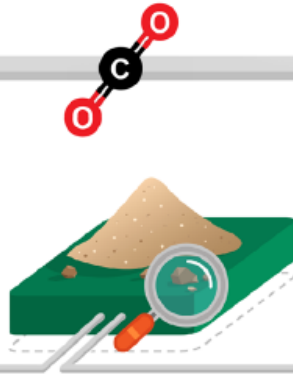
## MINERAL CARBONATION AT A DIAMOND MINE

**STEP 1:  
ASSESS MINE EMISSIONS**



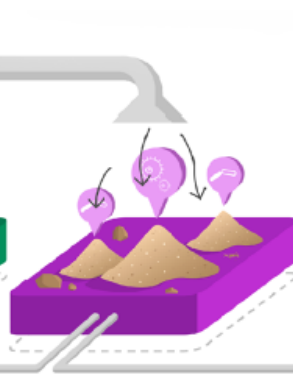
CO<sub>2</sub> emissions at a mine, largely resulting from electricity and vehicles, are quantified before an emissions offset target is set.

**STEP 2:  
ASSESS UNINTENTIONAL  
CARBON STORAGE AND  
ADDITIONAL STORAGE  
POTENTIAL**



Any unintentional carbon storage in mine tailings is identified. Total storage capacity and technologies best suited to facilitate storage are then assessed.

**STEP 3:  
IMPLEMENT TECHNOLOGIES  
TO INCREASE CARBON  
STORAGE IN TAILINGS**



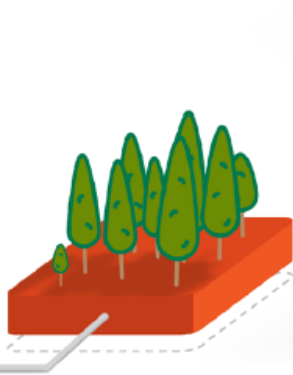
Potential methods to increase carbon storage include CO<sub>2</sub> injection, increasing flow of atmospheric CO<sub>2</sub>, and using microbes to increase reaction rates.

**STEP 4:  
MONITOR CARBON STORAGE  
AMOUNTS OVER TIME**



Various tools and approaches are used to monitor the amount of CO<sub>2</sub> being stored.

**STEP 5:  
REHABILITATE TAILINGS**



As CO<sub>2</sub> storage is a fast process, tailings can be rehabilitated as normal, usually covering them with soil and vegetation.

Key results to date indicate:

- Minerals present in kimberlites at De Beers mines are reactive and have the potential to carbonate
- Processed kimberlite sequesters carbon naturally – how much depends on the particular mine site
- There are different methods that can be introduced to enhance the ability of kimberlites to sequester carbon
- All enhancement technologies (biological, chemical, physical, direct emissions capture) have been proven to be effective in the laboratory – larger scale pilot tests are ongoing.



# ON-SITE PILOTS HAVE COMMENCED ...



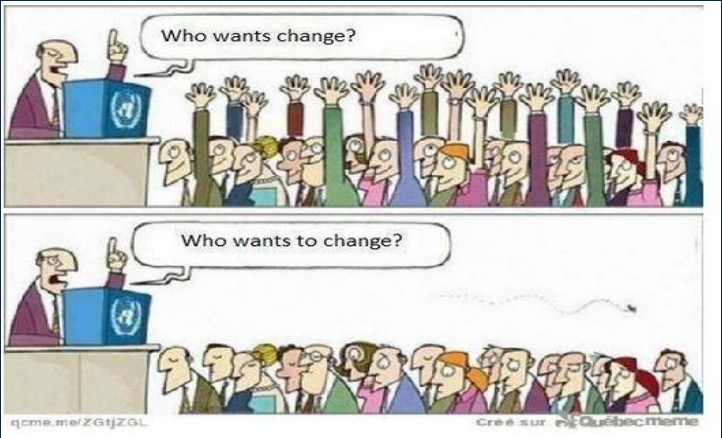
- Project being accelerated as part of the environmental journey
- Baseline carbonation monitoring programs to commence
- Larger scale on-mine pilots to be initiated at Gahcho Kue in Canada
- Technology trials to commence at Venetia mine in South Africa
- Characterization studies to continue and experimental programs to be developed at Orapa/Jwaneng in Botswana
- Based on the field pilot test results, start developing plans for implementation at scale



# PEARL INDUSTRY EXAMPLE



# AND FINALLY...



**THANK YOU**