

# PGMs: metals playing a vital role in sustainability

- Platinum group metals, or PGMs, are the silver-white metals best known for their role in catalytic converters. They are **platinum, palladium, rhodium, iridium** and **ruthenium**.
- PGMs play a critical role in **combatting climate change** due to their unique chemical and physical makeup.
- PGMs are mined primarily in **North America, Southern Africa** and **Russia**.



## How are PGMs used?



PGMs are used in catalytic converters for cars and trucks, including hybrids, to **transform exhaust gases to reduce emissions**.



Platinum is driving the next evolution of PGMs through **alternative energy by its use in electric vehicle fuel cells**.



PGMs also play a role in **renewable energy** generation and conservation through its use in **wind turbines and solar panels**.



Platinum is the **best-known PGM** because of its use in jewelry.

## Increasing demand for PGMs

PGM prices have surged in the last three years due to increased demand and increasing deficits.



**Increased Demand:** Due to tightening emissions standards from global regulators, the auto industry has had to increase the amount of PGMs used in a catalytic converter



**Supply Deficits:** Substantial deficits of palladium and rhodium currently exist as a result of the increased demand and limited supply

## Sibanye-Stillwater's presence in North America

### Stillwater and East Boulder Mines

Sibanye-Stillwater owns the only palladium and platinum producing mines in the United States, located in Montana. This is the only known significant deposit of PGMs in the United States and the highest grade PGM deposit in the world. Palladium accounts for most of the metals mined at Sibanye's Montana mine, which is critical to meeting demand to build catalytic converters for cars and trucks due to increased emissions standards.

### PGM recycling operations

Sibanye-Stillwater owns one of the world's largest PGM recycling centers, the Columbus Metallurgical Complex in Montana. Used PGMs, primarily from catalytic converters, are recycled and melted down to be used again. Recycling PGMs allows us to conserve natural resources, energy and landfill space, ultimately reducing the environmental impact of acquiring mined metals.



View from the Beartooth Mountains in Montana where Sibanye-Stillwater responsibly operates the only PGM mine in the United States.

## Our values and vision define the way we do business

### Our stance on sustainability

Sibanye-Stillwater believes in responsibly mining our mineral resources to protect the environment where we operate for current and future generations. Sibanye-Stillwater is one of only two metals and mining companies to receive a “A” rating by CDP, a global non-profit environmental platform.



### Our Good Neighbor Agreement

The Stillwater Mine sits about 20 miles southwest of Yellowstone National Park, underscoring the importance of responsible mining operations.

Sibanye-Stillwater partners with the local community through the Good Neighbor Agreement to protect the surrounding environment, including air and water quality. This agreement goes further than state mining regulations and requirements to diminish the long-term impacts mining can have on a community.



### Our values and vision in action

Our CARES values – **commitment, accountability, respect, enabling, and safety** – are at the core of our approach to sustainability.

Our vision is to create superior value to all stakeholders through the responsible mining of our mineral resources. We represent the commitment to these values through the indigenous South African Umdoni tree. **Our CARES values are the fundamental roots of our organization, which provide a solid basis for the way we do business.** The trunk of the tree represents the material strength of the company and the leaves on the branches represent all our stakeholders. The tree's seeds and fruits signify the varying benefits and value that our success will bring to those stakeholders.



### About Sibanye-Stillwater

Sibanye-Stillwater is a leading international precious metals mining company. **We are the world's largest primary producer of platinum and rhodium and the second largest primary producer of palladium.** We are also the leading global recycler and processor of spent PGM catalytic converter materials.