Platinum Group Metals for a Sustainable World

Mapping the PGM Industry's Spend 2015-2020 to the UN Sustainable Development Goals

Report 2021

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DBK ADVISORY

IPA
INTERNATIONAL PLATINUM GROUP METALS ASSOCIATION

Mapping the PGM Industry's Spend 2015-2020 to the UN Sustainable Development Goals

Report 2021, 1st Edition

Commissioned by the International Platinum Group Metals Association (IPA)

CONTENT

1. INTRODUCTION

1.1 Overview of the PGM industry

Platinum Group Metals (PGMs) are six precious metals mined together, and often found alongside other metals such as nickel and copper. PGMs are highly resistant to wear, tarnish, chemicals, and temperatures, and have excellent catalytic and electrical properties. Combined with an annual production of only around 450 tonnes, orders of magnitude lower than many more common metals, the indispensable nature of these metals in many industrial applications makes them some of the most precious materials on earth.

The industry and value chain surrounding PGMs is highly developed and global, despite the main sources of the metals being in only two countries – Russia and South Africa.

Uses

PGMs play a vital role at the heart of modern societies. They are found in numerous products, from hard disks to aircraft turbines, from anti-cancer drugs to mobile phones, from industrial catalysts to fuel cells.

PGMs have played a role in the manufacture of many goods we use daily, with the most prominent being autocatalysts in vehicles. The chemical industry is another key user of PGMs for various applications. Platinum, platinum alloys, and iridium are used as crucible materials for the growth of single crystals. Platinum or platinum-rhodium alloy catalysts in the form of gauze are used to catalyse the oxidation of ammonia to nitric acid, which is a raw material for fertilizers, explosives, nylon and polyurethane.

PGMs have also become important as catalysts in synthetic organic chemistry. Ruthenium dioxide is used as coatings on dimensionally stable titanium anodes used in the production of chlorine and caustic soda. Platinum supported catalysts are used in the refining of crude oil, reforming, and other processes associated with the production of high-octane gasoline and aromatic compounds for the petrochemical industry. Numerous applications in which PGMs are involved benefit the environment and our quality of life, such as water purification, N_2O abatement and surgical implants, to name a few.

By far the largest use is in auto catalysts, where they are used to reduce levels of harmful emissions.

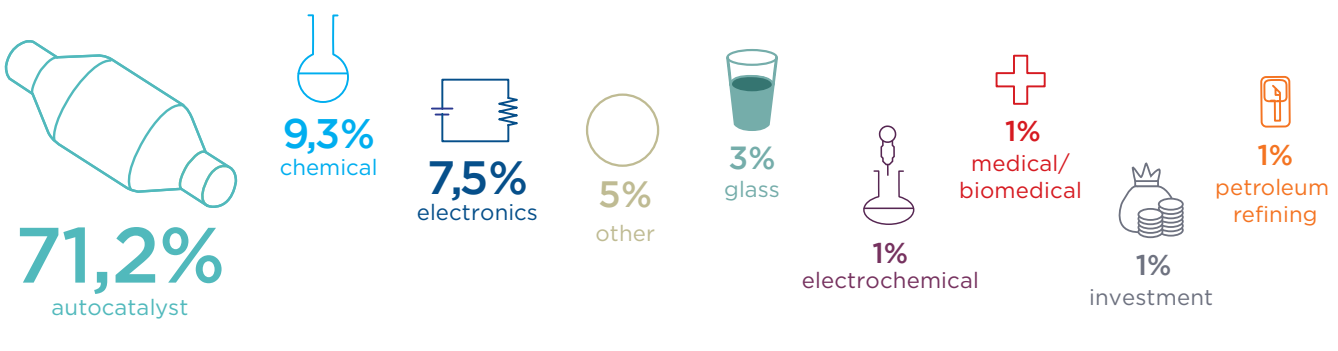
Production

While the world's largest platinum mine, Mogalakwena in Limpopo, South Africa, is an open pit mine, PGMs are typically mined underground, at depths often beyond 2 km. Raw ore is crushed, milled, and concentrated for smelting at temperatures over 1500°C.

The matte which remains once impurities have been removed is then refined through a series of processes, during which gold, nickel, copper, cobalt, chrome, and silver may be extracted as co-products.

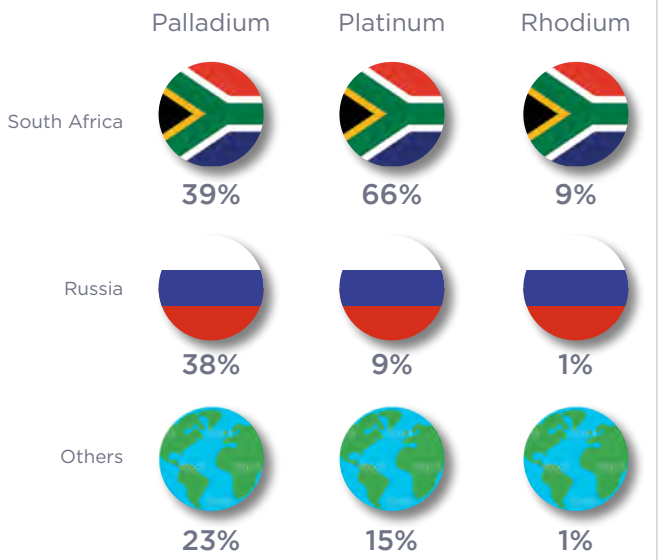
Recycled PGMs, known as secondary production, are a growing source of the metals, as they can be recycled at a very high recovery rate from a variety of end-of-life products. The processes for this can vary widely, but the final products are identical in quality and purity to those refined from mined material.

Major demand categories for PGMs*



Source: JM PGM Market Report - May 2021, *includes platinum, palladium, rhodium, iridium, and ruthenium

Major supply regions for PGMs



Source: JM PGM Market Report - May 2021

Industry

The global PGM industry is split into two main sectors in the up-and-mid-streams – miners and fabricators.

For this report, we have focussed on those companies that are Members of the International Platinum Group Metals Association, the IPA.

The industry has a challenging past, in particular in South Africa where the legacy of mining is writ large across many of the iniquities that still exist in the country. In 2012, the PGM industry in particular found itself at the sharp end of this when a prolonged strike in the sector became violent and ended with the massacre of 34 miners by policemen at Marikana, in one of the darkest days in the global mining industry.

Enormous work has been done since then to right some of the challenges that led to that situation, with mining companies leading the way in challenging predatory pay-day lenders, improving housing and living conditions for workers, engaging more closely and more positively with unions, and many other initiatives. Much remains to be done though.

1.2 IPA Members

Exploration, Mining & Production

Fabrication

Note that Ishifuku, Heraeus, and Tanaka were not included in this analysis as they do not publish public reports.

2. BACKGROUND

2.1 Shifting context – A note on a post-COVID world

At the time of compiling this report (Q2 2021) half of the world remains in varying stages of response to the COVID-19 (C19) pandemic. The C19 crisis represents the greatest threat to global health and stability in a century, and it comes on the back of what were already challenging times globally. It must be remembered, and will be reiterated in the report, that the 2020 figures in this report are affected by this context.

We know that economically and socially, the world will not be the same when we emerge from this crisis. Much uncertainty remains around governments, markets, and business responses to the pandemic, but also to the underlying social changes taking place globally.

The complexity existent in these global systems has been there for years, but the amplification and acceleration of change brought about by an always connected world means that industries and organisations need to be taking far more disparate and often ambiguous information into account when making decisions that could have far reaching impacts.

It is in this changing context that a unifying framework for creating value – beyond only the financial systems – shifts from being important to being critical.

COVID and the SDGs

The impact of the pandemic on the global economy and on international planning is likely to negatively impact the world's ability to achieve the 2030 Goals, but it has highlighted or reinforced a growing voice of the past 20 or so years – that there is a need for a more equitable, stable, and environmentally sound approach, worldwide.

The SDGs, while they may not be met as Goals by 2030, still provide one of the best frameworks for whole value creation and understanding, and industries and companies worldwide will continue to use them as a basis for evaluating whether they are creating more than numbers in a bank account.

2.2 The SDGs as a unifying framework for value

Milton Friedman's hypothesis that 'the social responsibility of business is to increase profit' has been under attack almost since the day it was written, over 50 years ago, and yet it remains common cause among most businesses and investors that almost all measures of value are at their core profit related.

Our current times are particularly pertinent as we reconsider Friedman's statement and look to understand the array of expectations that both shareholders and stakeholders in general have of business.

These expectations coalesce into pressures put onto firms to firstly, increase economic value and contributions made to society, secondly to limit and reverse the environmental impacts of their footprint and to unlock the potential of nature-based assets and solutions, thirdly to improve social development and inclusion, and finally to focus on good governance, improve capability across stakeholder boundaries and to rebuild trust.

In the face of these mounting and shifting expectations corporations and industries have never been more concerned with appearing to be socially responsible. Socially responsible investing has grown in leaps and bounds, and several studies have shown that companies which perform better in ESG (Environment, Social, and Governance) metrics tend to perform better on stock markets as well.

We stand at the crossroads though. The task facing leaders is how to integrate their commercial and operational objectives with the fluidity of the ESG expectations placed upon their business. This then invariably raises the question of what the purpose of the organisation is and how then the intent to be responsible is matching the needs of both business and stakeholders.

The additional complication at this crossroads is the evident multiplicity of frameworks to measure ESG and responsible actions, which are then in many cases decoupled from profits. Also most frameworks have an industry directed focus, and so over the next 5-10 years we will see multiple iterations arise and fall.

There is a challenge as well for investors and individuals in being able to compare apples to apples as the different frameworks present subtly nuanced differences which are difficult to separate/compare.

It is not uncommon to hear company executives, investors and regulators highlight the lack of quality in published ESG data. While many companies are working to improve their data and related analytics, and a whole new industry of advisers, auditors and analytic experts have emerged to assist in these efforts, progress and true visibility will be limited until we agree on common meaningful standards and build trust in how data is reported. Without common standards, even high-quality data will result in comparing apples with oranges.

This statement, from more than a quarter century ago, remains as valid and problematic today as it was then. Large organisations and industries continue to struggle with different languages, different frameworks, and different value systems. The proliferation of new standards and methods does not make this any easier.

The World Economic Forum (WEF) have recognised that the metrics and models that do exist in the ESG space as standards today are backward looking, and as a result, only really tell part of the story (Granat, S (2020): Companies' ESG strategies must stand up to modern scrutiny, World Economic Forum www.weforum.org).

> "The 'financial decision' has gained increasing weight in companies as the calculation and data-gathering techniques have improved. As long as everything can be counted and trends can be projected, any decision can be treated in this way.
> Again, this has come to be accepted as the rational way to make decisions. It solves one major problem lurking in many firms: that of communication. Functional managers do not speak the same language. The everyday operating realities of sales, manufacturing, HR, and R&D environments are very different. Each area will have its own dialect and customs, judgements and values. As a consequence, a common language is needed to communicate across functions, and since everybody has to deal with budgets and is accountable for results, mostly in 'profit' terms, money is often chosen."
>
> Balle, M (1994) Systems Thinking. McGraw-Hill Book Company

What is needed is a meta-language, a framework which can be structurally linked to all other frameworks, a Rosetta stone of value. Having an interlocutor unifying framework provides systems and organisations alignment and comparison opportunities without needing to redo underlying reporting mechanisms.

It is in this space that the Sustainable Development Goals (SDGs) have a powerful role to play for business.

About the United Nations Sustainable Development Goals

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by United Nations Member States in 2015 as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.

There are 17 Goals, which between them have 169 targets and 230 indicators of progress. While the Goals are aspirational for all countries, organisations, and even individuals, the targets and indicators are specifically focussed government action at national levels.

Governments cannot deliver on the SDGs alone and so every societal role player has a key role to play, especially business, in establishing a sustainable socio-economic model for the future. The role of business has been further amplified by the shock that COVID-19 wrought on low to middle income countries where social and economic fault lines were prised open further by the pandemic. Business had the opportunity to step up even more to increase its role alongside government to support communities. This in turn has improved perceptions of trust in business and the private sector (Edelman Trust Barometer, 2020).

The translation of the SDGs to business is however not an exact science as yet. Initial efforts by business at linking their corporate citizenship activities to SDGs in annual reports have resulted in claims of 'rainbow washing' where these linkages do not seem substantial enough to convince stakeholders of their real impact. There are however encouraging

> "The metrics and models that do exist as standards today are backwards-looking, and, as a result, only really tell part of the story. Yes, past behaviour can tell us a lot about future trends and future behaviour. But this wealth of information comes without each company's targets, goals or commitments. What are companies aiming for in terms of reducing their carbon footprint? How are they improving diversity in their boardrooms and senior staff? Are they investing in their employees to deliver their future?"
>
> Granat, S (2020): Companies' ESG strategies must stand up to modern scrutiny, World Economic Forum, www.weforum.org

movements from both within the UN and in business circles to produce frameworks for the effective translation of the SDGs into business metrics.

The SDGs are highly integrated, recognising that any actions impact multiple Goals whether positively or negatively, and that development needs to achieve balance between social, environmental, institutional and economic sustainability. This integration is imperative in developing a whole value mindset and perspective – that only with stability and equity in all areas does a sustainable future become possible.

Applying the Goals to a business context

As mentioned above, the Goals are focussed on a sustainable world, one in which all humans can live with dignity and hope and without destroying the means for continued existence. At a target level though, the specifics are not always directly relevant or pertinent to business, and so the growing movement of 'putting stickers on' in financial or integrated reports, in which organisations reference the SDGs and attach case studies, is an ultimately facile or at best partial effort. Where the Goals and Targets do have a very powerful role to play is as a unifying framework for value. The SDGs cover exceptionally well the multiple aspects which are asked of modern business – their impact on society, their impact on the environment, and their financial wellbeing. The Goals also include the imperative aspect of focusing on peace, justice, governance, institutional capability and partnerships to support all the Goals.

Unlike other frameworks, the SDGs give a common language across business functions and stakeholders.

The SDGs are:

- Generally accepted as the apex set of goals that span more than what other frameworks cover while also being complimentary, and in so doing politely asks those frameworks to broaden their view.
- Encompassing of the commercial sustainability and growth imperatives of business. They are therefore not a 'do good' framework that ignores the other side of the coin: economic value. As such they integrate both the economic and ESG considerations.
- The most comprehensive, yet simple, view of where value is needed.
- The most democratic by design, having been chosen by so many nations through a robust consultation and development process.
- Interrelated and indivisible, thereby able to capture the full extent of business activity impacts.
- Capture gently the emerging social and development agenda 'hot topics' so that the typical 'boundaries' of what is in and outside of sustainability are being re-defined.

The Sustainable Development Goals according to the 5Ps categorisation

All businesses interact with the scope of the SDGs in some manner, and so extant reporting methods need not necessarily be changed. Internally, the SDGs cut across multiple levels of activity, that when used to understand the business footprint includes what is being done to intentionally improve outcomes in:

- The workforce.
- The communities in and around where the business operates.
- The supply chain activities used in procuring material and services but then in how that supply chain is developed.
- The industry associations and partnerships the business contributes to and participates within.
- The broader fiscus and economic contributions that support government services.

2.3 Scope of review

Using the Goals to hold a mirror up to the PGM industry

Ever since the Marikana massacre in December of 2012, the PGM industry, and in particular the South African mining sector, has been under increased scrutiny. Much work has been done since that dark day to improve the strategic and operating practices of the industry, and much work remains to be done. The Sustainable Development Goals mapping gives us an opportunity to hold an honest mirror to the industry.

This mirror is not perfect. It is aggregated, it is reductive, and it does not account for every nuance involved at each operation.

However, it does show industry patterns and a view of the system's intention and feedback loops. It provides insight into the relationship of actions (rather than the actions themselves). This is where the SDGs, being so clearly interlinked and with such clear drivers for action, are additionally valuable – spend is a clear proxy for intention (companies put their money where they believe it's most important) and compares intention as a leading indicator to actual results achieved.

The purpose of this report is to hold up that mirror, that the industry has an opportunity for additional self-reflection, and that broader society has a more accurate view of the industry.

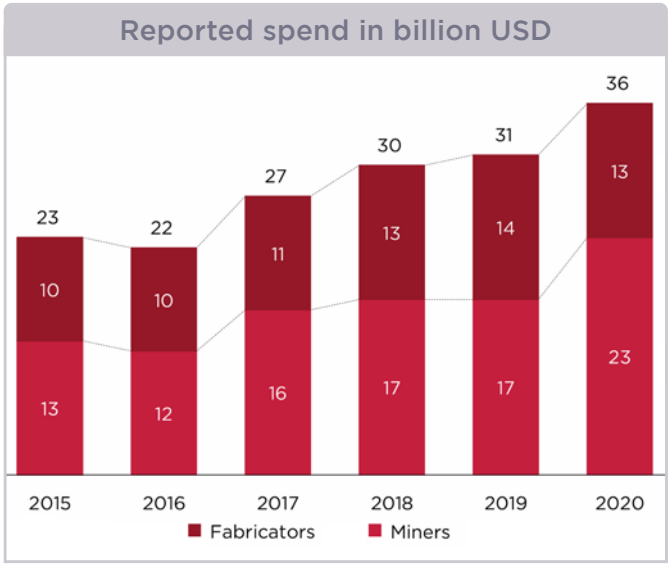
Included in the analysis

This market analysis looks at publicly reported data from 2015 to 2020 inclusive, covering across IPA Members' a total identified reported spend amount of USD 347.32bn.

Of that, approximately USD 169.35bn was reported in granular enough detail to map against the SDGs. The remaining ~$180bn of spend likely had some impact on/towards the SDGs, but was not divisible accurately enough for this report. For this reason, the proportions are more important than the absolutes, and we report throughout using proportional representation rather than absolute numbers.

Spend is a valuable proxy for intention – we spend our money where we believe it will provide the biggest impact, and the impact that we are seeking is a clear way to understand a company's intentions – far more accurate and defensible than stated ambitions.

Intentionality is defined as activity spend (as captured in Annual Financial Statements) that provides a strong signal of a member's intent to change its business or the way it operates.



Throughout the remainder of the report we use proportional measures rather than absolute numbers – the focus is on the *direction* and *interaction* rather than the underlying figures.

Most importantly, the contribution of spend which can be directly linked to SDG achievement has steadily increased in the industry over the five years, from $23bn in 2015 to over $31bn in 2019, even while overall spend has stayed relatively flat. This demonstrates an industry commitment to increased responsible performance, even without the SDGs as a guiding frame.

It is important to note here that the data available on fabricators was less granular, and so while their overall spend is significantly higher than miners, a smaller proportion was able to be mapped against the Goals.

2.4 Methodology used in this report

As an integrated set of global priorities and objectives the SDGs are by design fundamentally interconnected and indivisible, interacting with one another in myriad ways where action in the realm of one SDG results in a set of impacts that affect a range of additional SDGs. A useful analogy to consider is the ripples created in a pond when a stone is tossed in.

A relevant business example of the ripple effect is in using Corporate Social Investment (CSI) funds to build a local community school. On the one hand this is a contribution to SDG 4 Quality Education. There are also contributions being made to other SDGs such as infrastructure, sustainable communities and partnerships with government. The methodology thus caters for the ripple effect of contributions by identifying the primary and secondary SDGs that are linked through intentional business activities.

Ripple effect of building a local community school

The question then of how to go about mapping private sector activities that contribute to the SDGs needs to cater for this ripple effect – this is the issue of the extent of impact. The second key question is to use a methodology that caters for intent, as not all business activities have an impact on SDGs.

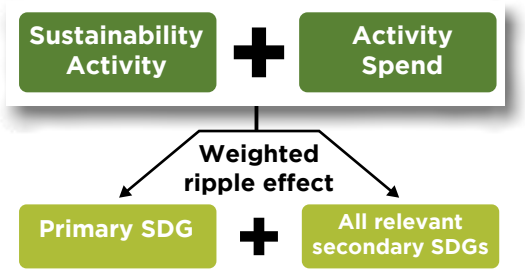
Finally, translating the data and its outputs into a cogent narrative that is defensible, authentic and understandable by stakeholders is crucial.

The answers to these questions lie in using a unifying framework that easily identifies business activities that do link and contribute to SDGs (and excludes those that do not). This collates various forms of data from these activities while aligning that data in a coherent way to the SDGs impacted, while also apportioning appropriate weightings to the ripple effect.

The mapping of IPA Members' contributions to the SDGs therefore used a ripple weighted methodology that identified relevant business activities that are considered as intentional, based on publicly available data, as well as the associated financial and non-financial metrics, in order to produce a data driven, defensible mapping of how the members respond to industry needs and those of society through the lens of the 17 SDGs.

It's important to note that the mapping is not a conceptual exercise commonly seen in private sector reporting where activities are logically linked to the SDG at a goal level. The methodology used in the IPA project counters the 'rainbow washing' dynamic by using actual performance data and thereby linking the nature of those activities at both a SDG goal and target level, which produces a mapping and data set that is evidence based.

The mapping is a status quo view of the IPA Members' contributions to the SDGs, retrospective over six years from 2015 to 2020. The usefulness of this retrospective view is that it provides evidence of where the members have put their focus in terms of sustainability, prior to any potential changes in strategy or approach as advocated by the IPA. This view then provides a picture of where the industry's focus can be maintained, strengthened or re-directed in the context of material issues currently affecting the industry and its sustainability footprint.



The core unit of analysis in the methodology is an activity undertaken by a member, with its associated cost (actual spend on that activity within the financial year) as well as the output metrics (the non-financial metrics) produced by that activity which then begin to unearth what the focus on that activity is producing.

How leadership teams elect to budget is therefore an important proxy for intent to be a responsible, purpose-driven firm that contributes positively to global needs and reduces its negative impacts. Where capital is directed is a strong indicator of where priorities lie, and therefore of intent. So, spend on activities that link to the SDGs, whether operational or CSI in nature, is a key data point in the methodology.

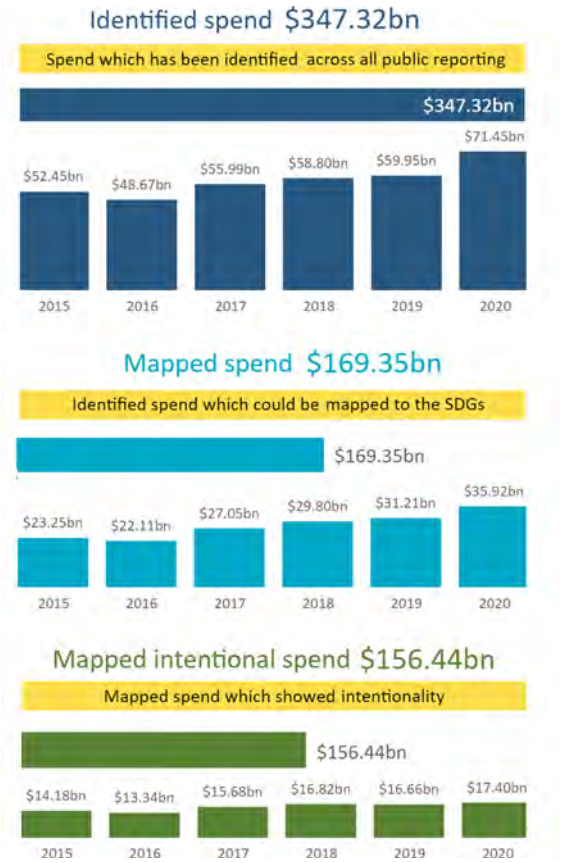
From a monitoring and evaluation lens, we can speak of the activity and associated spend as inputs into the unifying framework. Spend data from Annual

Intentional versus consequential

Business activities considered in the mapping were those that are growth or improvement oriented, towards the business itself or to society. Intentional activities are inputs that give a strong signal of a firm's intent, are typically discretionary in nature and focus on growth or improving operating practices. Activities that are a consequence of maintaining a business were not included. Consequential activities are current or historical inputs which are typically non-discretionary requirements of running a business and don't necessarily give us a strong signal of an organisation's future intentions.

Financial Statements (AFS) reports is used in the methodology in order to understand how the industry is potentially aligning its budgets and investment priorities against the SDG framework. Spend is therefore a measure of input towards the SDGs. The non-financial performance metrics and data associated with those activities are then the outputs, outcomes and at times impacts created by those activities.

The scope of the project was to use easily accessible data from members, and therefore sourced publicly available spend data from the AFS of members for the six years in scope. In addition to being relatively easy to access, relying on this data improves the confidence levels we can have in the mapping as they represent the total financial picture of IPA Members' position each year and are assured by third parties. The weakness of this approach however is that the level of detail contained in AFS data is not granular enough to comprehensively ripple weight SDG links. Despite this challenge, the resultant mapping was valid and representative of the IIPA Members' contributions to the SDGs.



Because not all members report on the same metrics, a cross mapping was done to identify common measures, in order to create a cogent comparative industry narrative.

The mapping was then used as the basis for understanding what the whole value narrative is of the IPA Membership collective contributions to the SDGs. The approach taken in formulating the narrative (the proof points outlined in this report) took into account the following:

- The need for the economic story and imperative to be considered alongside the emerging ESG framing of how investors and society are evaluating companies,
- The SDGs that are key to the industry (informed by the impacts ratings across the value chain),
- The core business indicators identified by the UN in each of the four covered categories - Economic, Environment, Social, and Governance (EESG), and Member data and what the analysis of the financial focus and resultants output performance metric data reveals about Members' alignment to the SDGs over the last six years.

Thumbnail versus high-resolution pictures: both show the same information

While it is easy to use data from publicly available annual reports, the challenge is the lack of detail and granularity in the data for an expansive and deep mapping of intent. The analogy here is of comparing a thumbnail image to a high resolution photograph. The thumbnail is small and low resolution, but the subject contained therein is easily identifiable as the same as that contained in a high-resolution version. It's the same picture, just at different resolutions.

3. ANALYSIS

3.1 Context over six years in view - 2015-2020

It is often tempting to look at a company or an industry in isolation from their environment, as though organisational success were dependent purely on internal factors. Inherently we know this is not the case, and the purpose of using the SDGs as our unifying framework is that it helps to establish a picture of organisational (or industry in this case) success within the context of the operating environment.

In a developing country like South Africa, the mining industry as a whole (PGMs and beyond) is both heavily impacted by and heavily impacts on its environment, and this interface layer is imperative to have visibility of in order to chart a successful future.

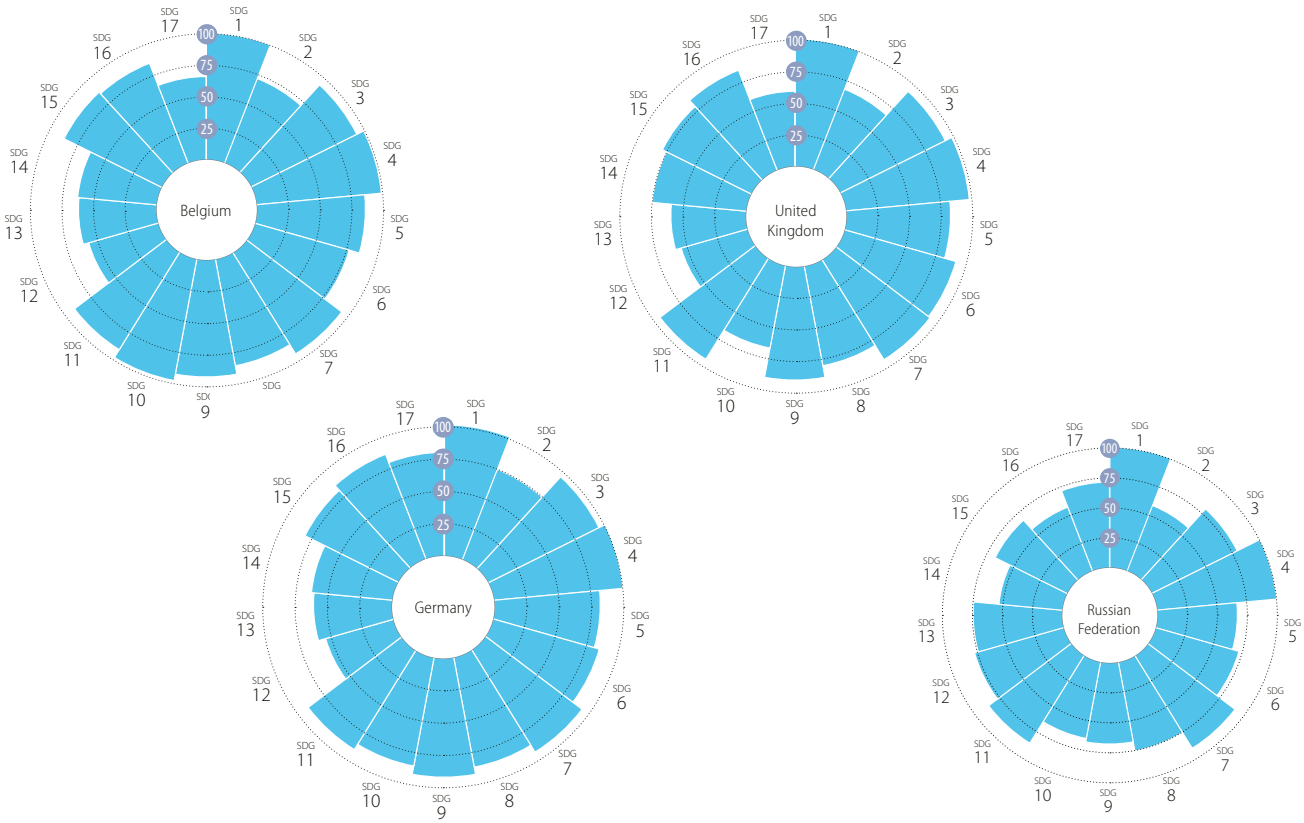
Six years into the 15 year ambition towards Agenda 2030, very few SDGs have been achieved in countries with PGM production (or any). Fabricator countries (Germany (4th), Belgium (5th), and the UK (17th)) rank in the top 15 performing countries globally, whereas mining countries (Russia (46th), South Africa (107th), Zimbabwe (125th), and the United States (32nd) - (SDG Index, 2021)) rank poorly. See the dashboards in the appendix for more detailed information on each country's performance, or visit Sustainable Development Report 2021 (sdgindex.org).

Part of the reason the operating context and country performances are important is that they explain some of the nuances in information available and pertinent for fabricators and miners.

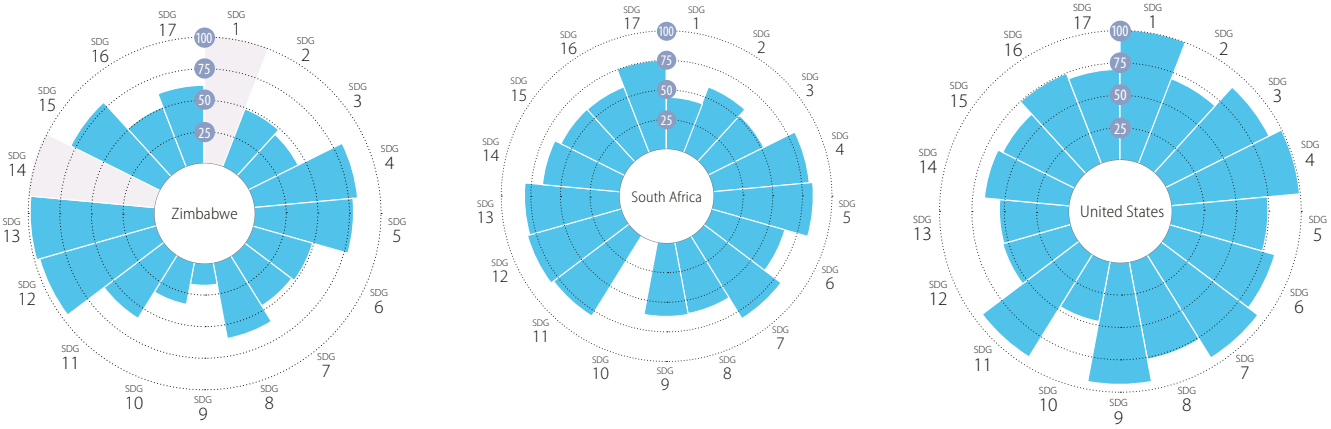
The miners, particularly in South Africa, have additional requirements (legislated as well as implicit) placed on them, which may involve diversity of ownership and workforce, mandated spend in specific regions or areas, challenges with local energy availability, and several others. Fabricators in more developed countries may face questions around source of material, stricter environmental controls, and various other requirements.

For this reason, when showing the industry view, we have where appropriate also split information between miners and fabricators, in order to highlight specifics. Note that because data requirements are different in different regions, they may not always be at the same level of granularity, and so occasionally we may show only one or the other.

AVERAGE PERFORMANCE BY SDG



AVERAGE PERFORMANCE BY SDG

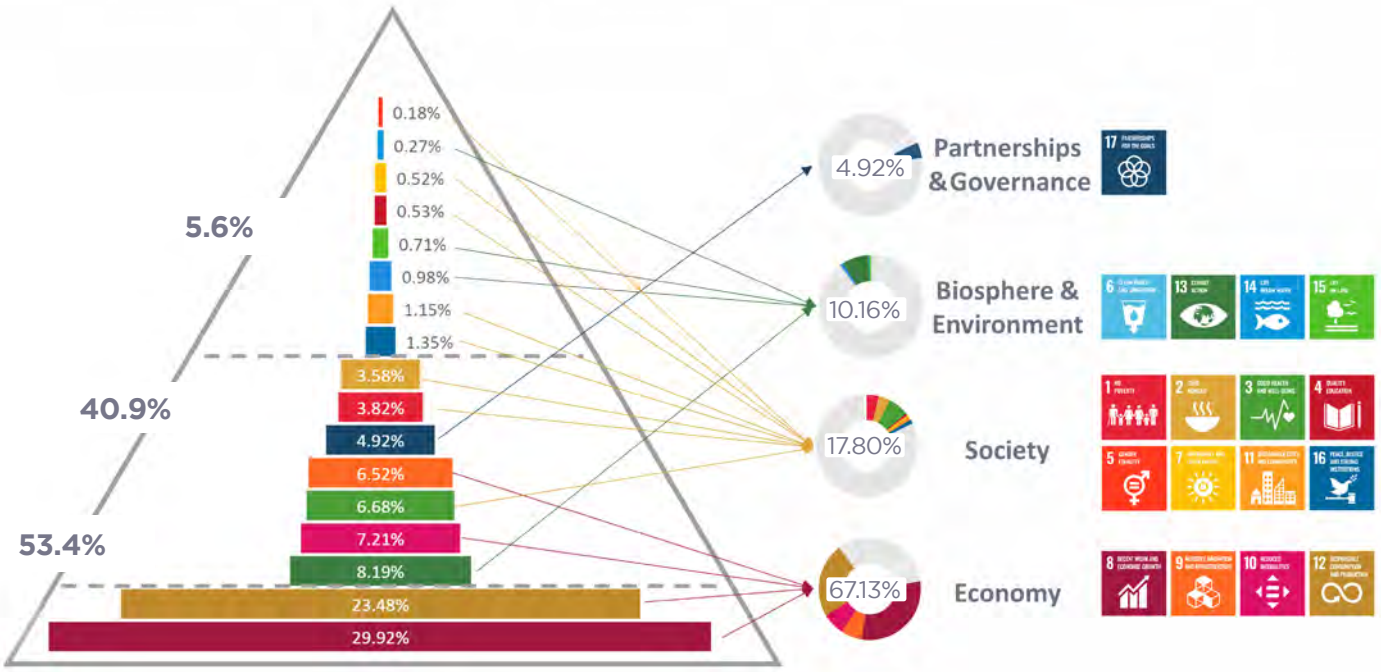


3.2 Overall industry intentional focus

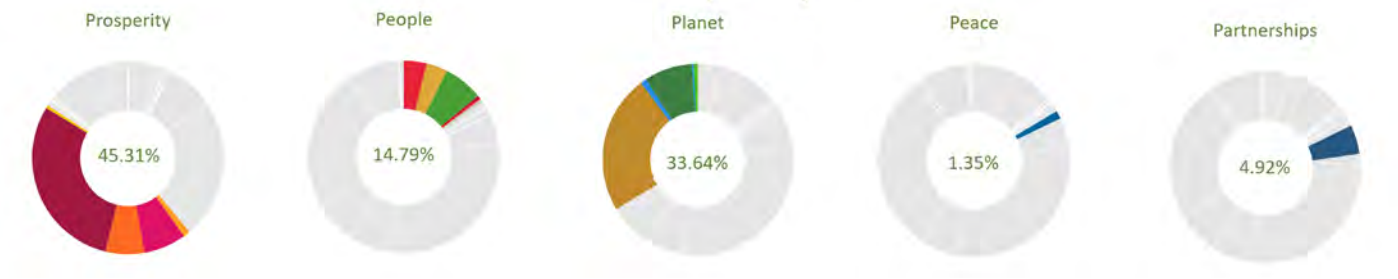
Of all intentional activity mapped for this report ($169bn), the vast majority has been on actions that will have an impact in the economic sphere. This is completely expected in any commercial enterprise. However, a high proportion of spend goes towards activities which will provide benefit to broader society, and to caring for the biosphere. In this last section, naturally activities around Climate Action predictably dominate the spend landscape. It should be noted that this is related to direct spend by industry members, and does not include life cycle benefits.

Significant activities across the SDGs, despite not having a formal commitment, demonstrate a strong collective intent to operate more responsibly regardless of oversight.

SDG mapping according to the Stockholm Institute categorisation



SDG 1: No Poverty
SDG 2: Zero Hunger
SDG 3: Good Health and Well-Being
SDG 4: Quality Education
SDG 5: Gender Equality
SDG 6: Clean Water and Sanitation
SDG 7: Affordable and Clean Energy
SDG 8: Decent Work and Economic Growth
SDG 9: Industry, Innovation and Infrastructure
SDG 10: Reduced Inequalities
SDG 11: Sustainable Cities and Communities
SDG 12: Responsible Consumption and Production
SDG 13: Climate Action
SDG 14: Life Below Water
SDG 15: Life on Land
SDG 16: Peace Justice and Strong Institutions
SDG 17: Partnerships for the Goals



A more familiar categorisation though may be the 5Ps, shown above. One of the most valuable aspects of an SDG mapping such as this is the ability to view the data through different lenses according to our specific needs.

The overall proportional spend contributions across the 17 Goals presents us with a number of crucial points:

- The two largest proportional spend areas are focussed on Decent Work and Economic Growth and Responsible Consumption and Production. These are expected focal areas for any commercial enterprise, and particularly in primary industries.

- The remaining mapped spend is spread across a large group of SDGs, with strong contributions to Climate Action, Reducing Inequalities, Health, Innovation & Infrastructure, Partnerships, Poverty Poverty Reduction and Agriculture and Food Security. The spend in Climate Action related activities is particularly noteworthy as this does not include secondary positive effects of PGM related products.

- It is important to note here that the types of projects matter – for example, a mining company may be closely involved in improving quality education in their local communities, but the spend on this may be marginal when compared to overall costs. The output should then be considered only as a measure of spend focus, and not as a measure of results or comprehensive value set.

Given the need for economic sustainability, and the historic market focus on economic concerns above others, the broad spread across SDGs is significant as a signal of collective intent to operate responsibly and to do so in areas beyond the narrow scope of business.

Next is to consider how this focus has changed over time, showing the shifting intentions of the industry.

3.3 How focus changes over time

A signal of intention is shown strongly through changes in focus over time. The below figures show a relatively stable pattern of spend, although the increasing importance of Responsible Production and Consumption is clear as the overall spend contribution moves from 20% in 2015 to 28% by 2020.

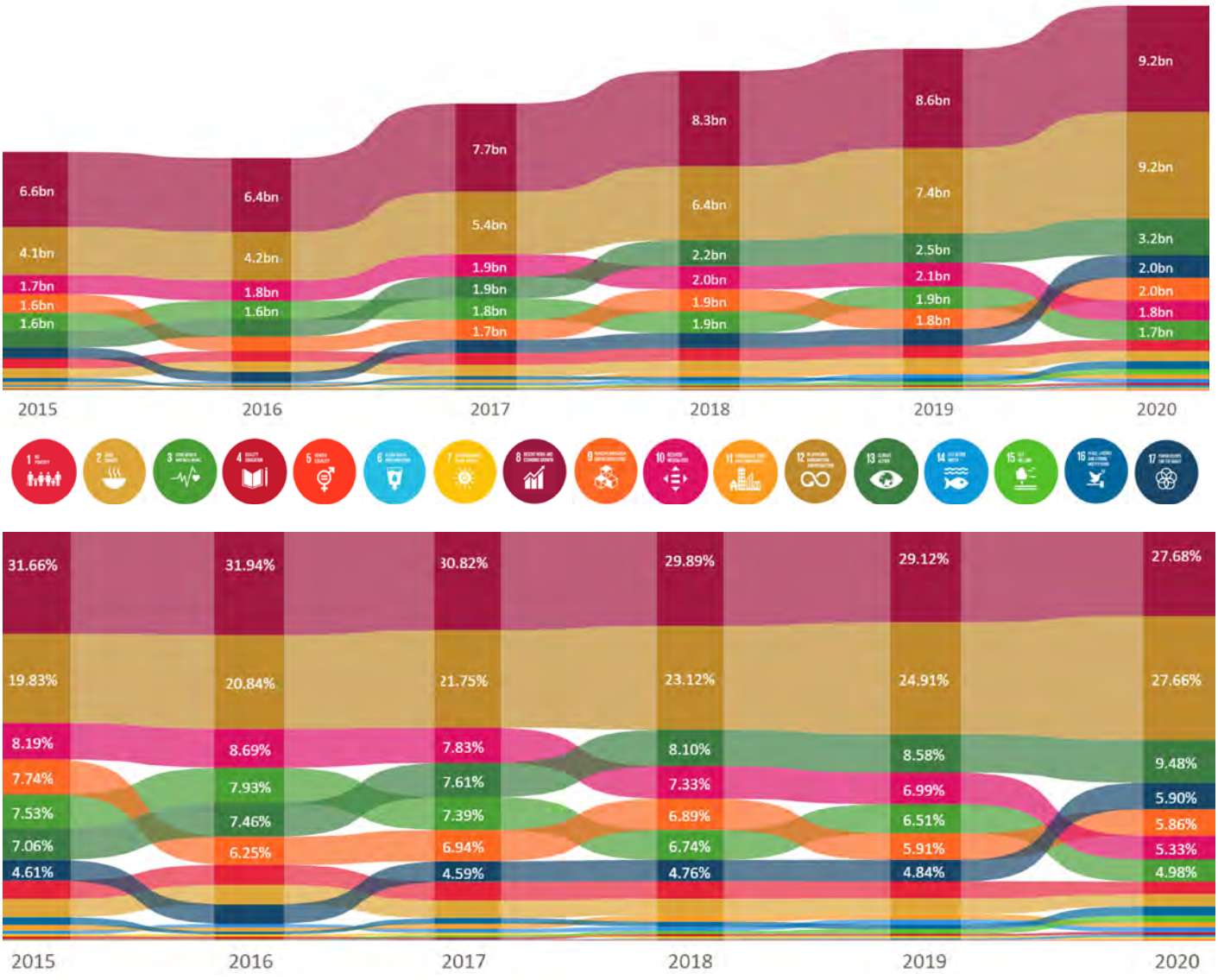
Considering the quantum of spend this is a significant shift and represents underlying strategic moves towards ensuring production is done sustainably. It is also useful to note that this shift has happened in both the mining and fabricating sectors of the industry, in roughly the same proportion, although in the PGM mining sector this (Responsible Consumption and Production) is now the area most focussed on under this analysis. This should be considered in context – the industry is spending more in the area, is focussing more on the area, but that does not inherently mean it is withdrawing spend in other areas.

The other critical shift we see is the increasing relative importance of Climate Action moving from the 6th most focussed on to third over the years 2015-2018. This has been largely driven by increased spend focus in this area from the fabricators, pressured by rising standards in the EU.

The below representation of mapped spend over the six years in question show us some shifts in focus, but more importantly show a strong increase in total spend directed towards SDG linked activities. This could be improved reporting or a shift in focus towards more responsible production.

If we normalise the spend over years, we see significant shifts in focus. Responsible Consumption and Production received proportionally greater focus, with upward shifts in Climate Action (largely driven by fabricators) and Partnerships, largely driven by miners.

Development of spend from 2015-2020 in USD and percentage



Take-away messages – Overall spend and impact trends

- Given that the Members' focus will naturally be on running sustainable concerns – and that committing to the SDGs is not compulsory – the spread across the SDGs is significant as a signal for the collective intent of operating more responsibly by Members.
- IPA Members play a role as large drivers of economic activity in their respective geographies and value chains. The shift in spend focus towards Responsible Production and Consumption (SDG 12) will have a multiplier effect on regional responsibility and SDG achievements.
- Over the six-year period in scope, the spend pattern is relatively stable across the SDGs which indicates that the IPA Membership has a mature and consistent approach to sustainability. Increasing focus has been directed towards Responsible Production and Consumption (SDG 12), Climate Action (SDG 13), and Partnerships for the Goals (SDG 17), and this should reflect in the impact reporting, although with a potential lag time as results are achieved.
- While the industry's focus on Good Health and Wellbeing (SDG 3) appears midtier in nature, attracting 5% of spend focus, these are strong contributions to health in the face of the sheer quantum of economic focus as private entities.

Testing for HIV at PGMs' Amandelbult Hospital, Source: Flickr, ©Anglo American Plc

3.4 Economic Dimension

The economics of the PGM industry are well explored elsewhere, and it is not the intent or purpose of this report to revisit these. Rather, the below analysis is to focus on the economic activity and sustainability of the industry through the lens of the UN SDGs, which will provide us with a more comprehensive and inter-relational view, and should be contemplated as proportional rather than absolute.

There are four primarily economic SDGs:

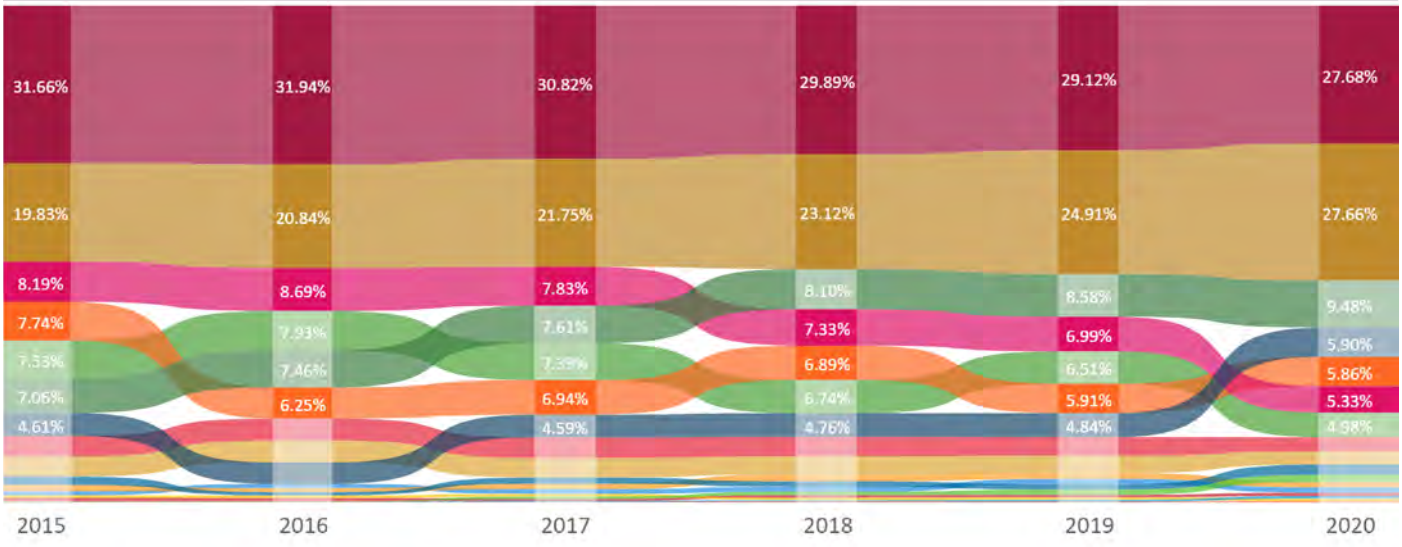
- SDG 8: Decent Work and Economic Growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- SDG 9: Industry, Innovation, and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.
- SDG 10: Reduced Inequalities: Reduce inequalities within and among countries.
- SDG 12: Responsible Consumption and Production: Ensure sustainable consumption and production patterns.

Over the six years in review, these SDGs have consistently been focal areas, which makes sense as companies must remain economically sustainable in order to be able to support ongoing development and employment.

The industry makes significant direct fiscus inputs through taxes, and indirect benefits through salaries paid and levels of employment. These have been mixed results for the industry over the six years, but the industry remains a core part of some economies.

Under the economic dimension, we also look at the quality of working environment and opportunities for progress - how well does the industry treat employees, and train them for future development?

Development of spend on economic SDGs

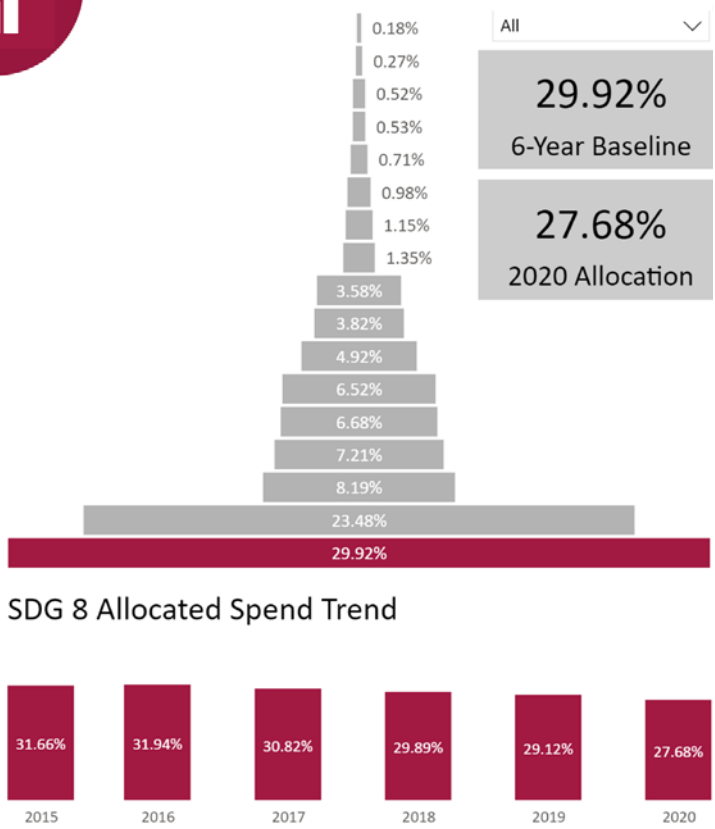


SDG 8: Decent Work and Economic Growth

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

The twelve targets in SDG 8 focus around high employment and employability numbers, diversity and inclusivity, safety of workers, and economic stability and growth.

Decent Work and Economic Growth is expected as the SDG which will attract the most investment, as this covers many of the costs of operating a responsible and profitable business. Overall relative contribution to SDG 8 has remained stable around 30% and shows a very slight decline in relative importance as more money is spent (relatively) on Responsible Consumption and Production (SDG 12) and Climate Action (SDG 13) over the period.

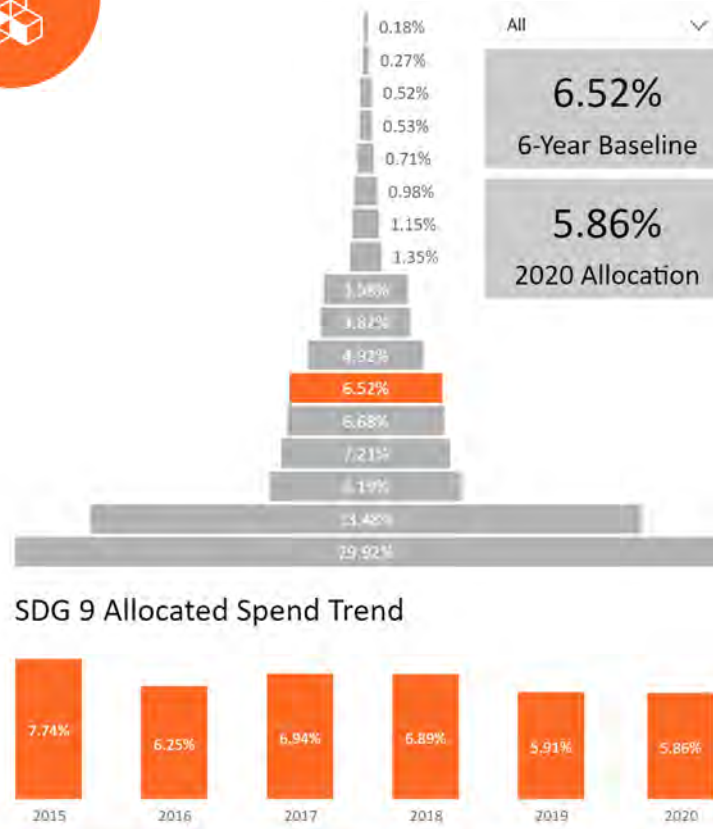


SDG 9: Industry, Innovation, and Infrastructure

Goal: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

The eight targets in SDG 9 are focussed on building the requirements for sustainable infrastructure development, ensuring appropriate levels of industrialisation, and encouraging R&D in technologies that will support human and planetory flourishing.

Proportional focus here has decreased primarily amongst miners facing investment challenges in South Africa, but it clearly remains an important dimension for the industry.

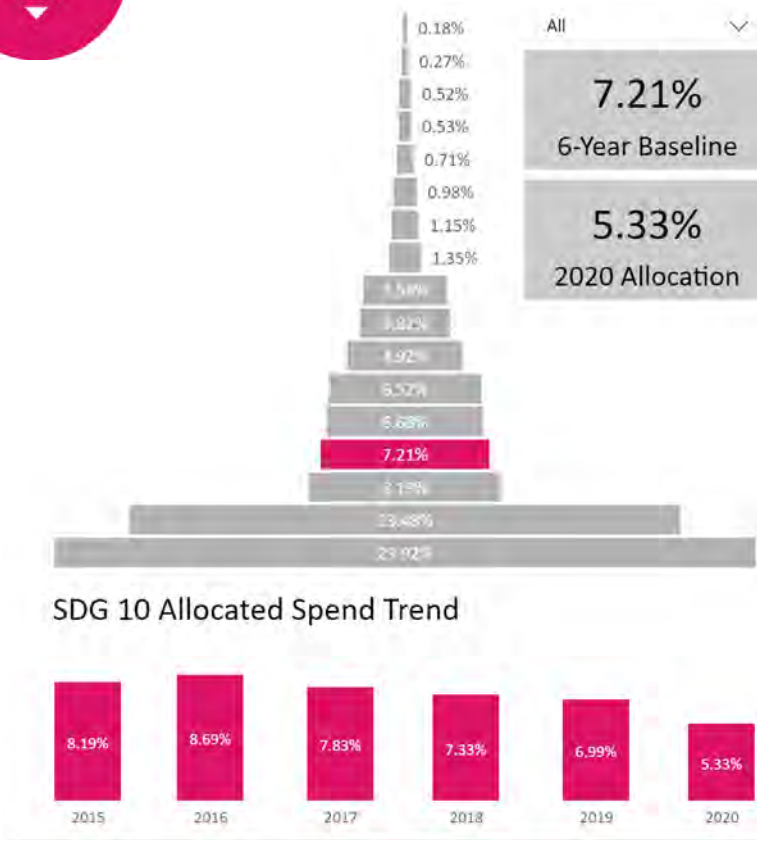


SDG 10: Reduced Inequalities

Goal: Reduce inequality within and among countries.

The ten targets relating to Reduced Inequalities primarily focus on ensuring wealth and income growth for the economically marginalised. They aim to do this through enhancing representation, eliminating discriminatory laws and practices, and improving regulation and monitoring of global financial flows to implement non-discriminatory policies.

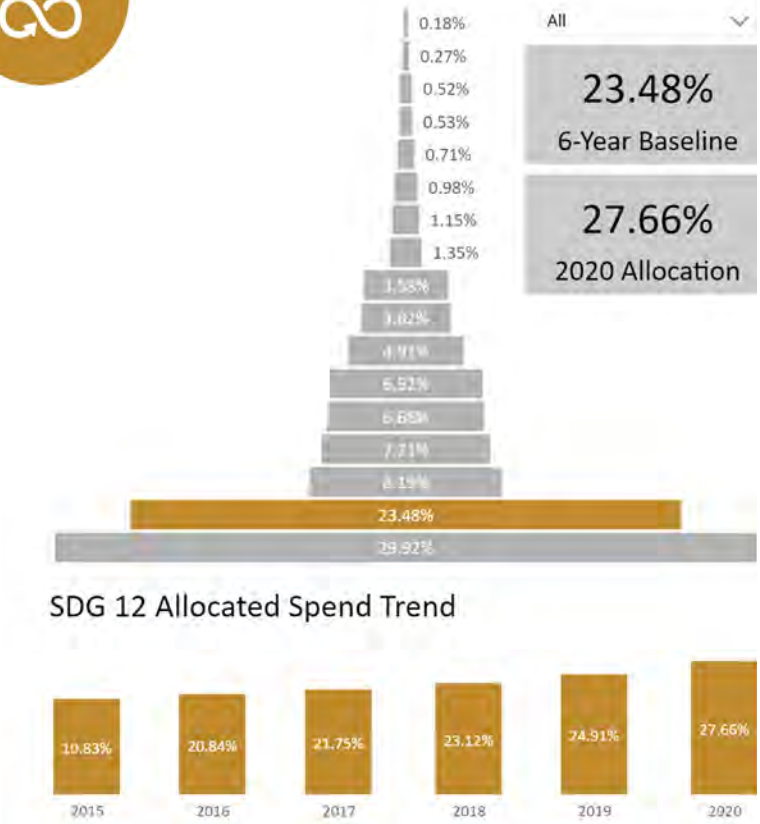
The relatively high proportion of spend on this function is a representation of an industry that is heavily focussed on achieving non-discriminatory best practice, seeking to lift operating regions out of poverty. The relative spend decline may indicate that the work to implement said policies has largely been done and is now entering an operational period.

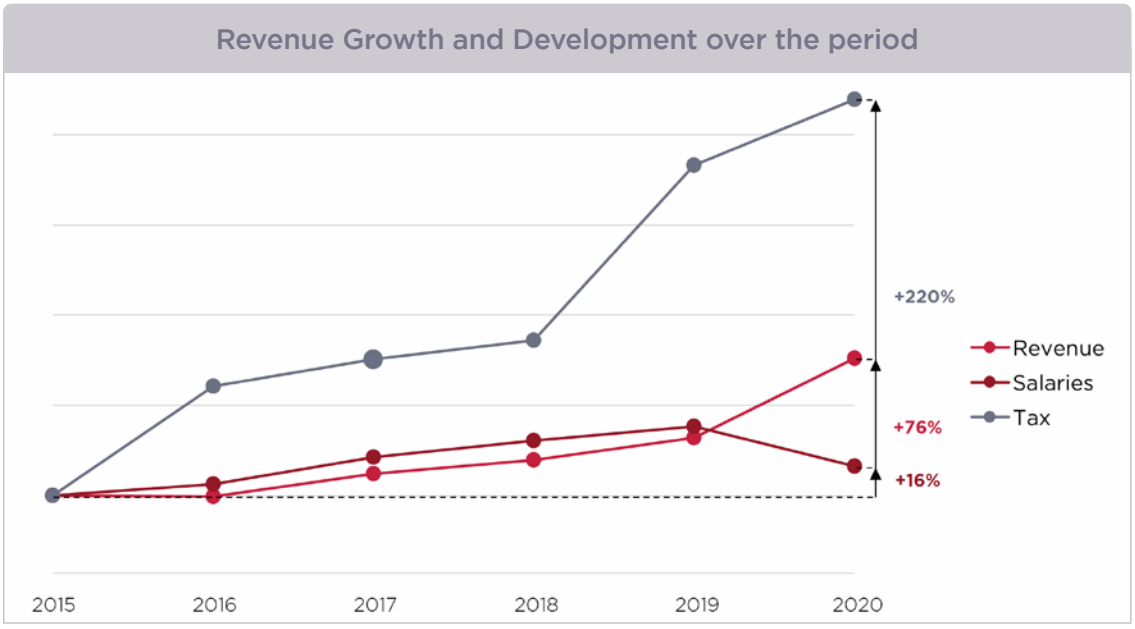


SDG 12: Responsible Consumption and Production

Goal: Ensure sustainable production and consumption patterns.

The eleven targets in Responsible Consumption and Production aim to reduce waste inefficiencies through prevention, reduction, recycling and reuse. This involves establishing best practices for sustainable management of natural resources, reducing supply and value chain inefficiencies, and driving organisations to integrate sustainability into their reporting cycles.
The existance of this report, based on publically available information, is a testament to the improved sustainability reporting in the industry. There remains gaps, which are being reflected on and addressed.
The growth in relative focus on this SDG shows the importance for the industry right through the value chain.





Revenue Growth and Development

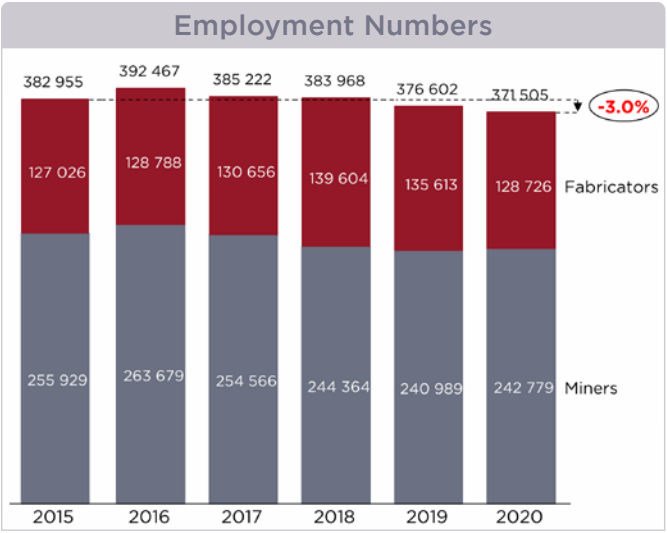
At the core of creating sustainable economic growth is a need to generate revenue and from that revenue pay salaries and taxes. The PGM industry has over the last six years seen consistent revenue growth, and reported salaries outpacing revenues for most of that, despite lowering employment numbers (see below figure on employment numbers). Reported taxes paid over the period have increased significantly.

Employment in the industry

Over the period, the industry lost just over ten thousand jobs, ignoring the spike in 2016, mostly in the South African mining sector. This equates to around 3% of the industry over six years.

Training and job creation

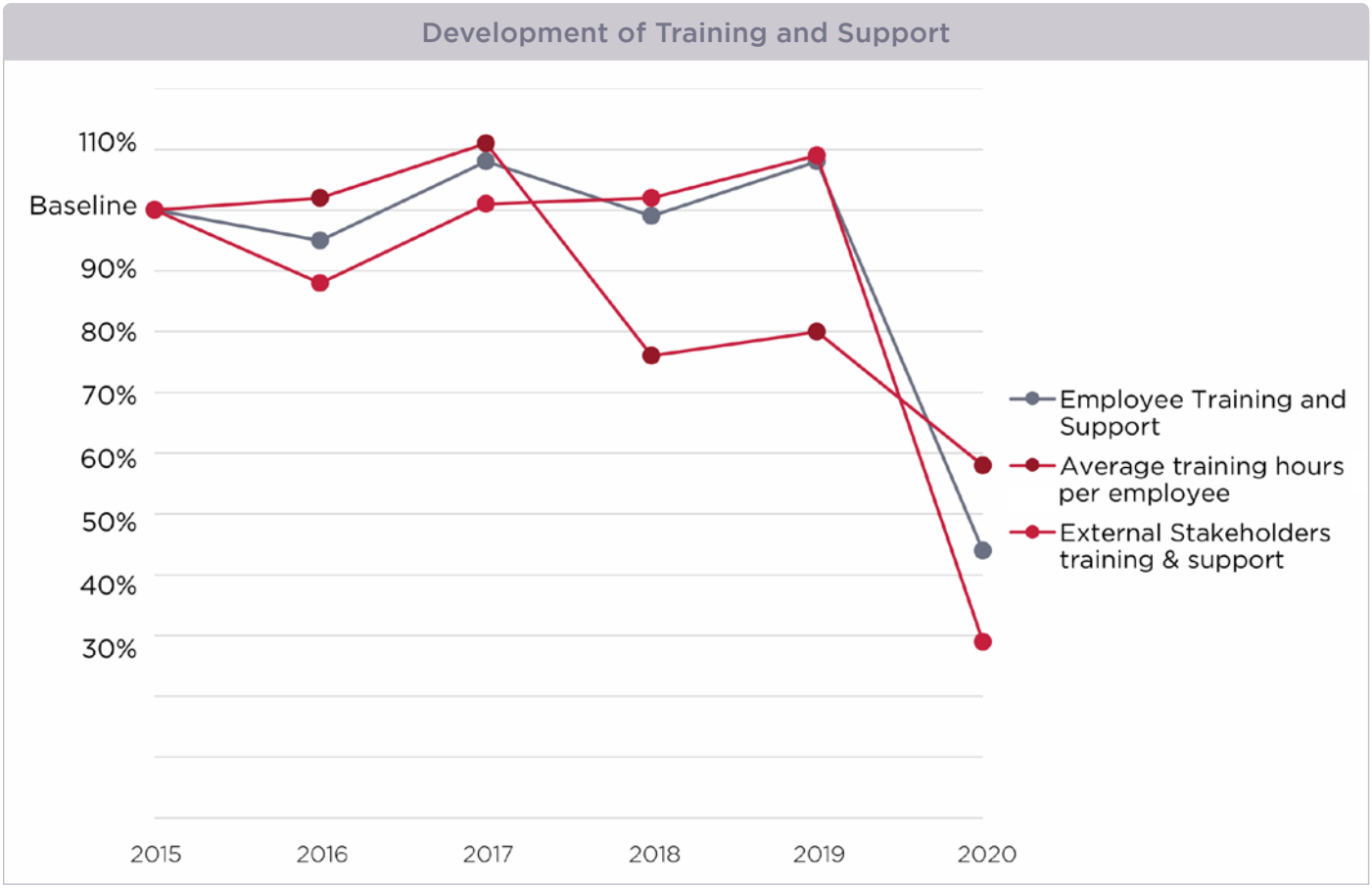
Could some of these losses be offset by training provided? The mining industry in general (note that fabricators do not report training numbers in the same way as the mostly South Africa based miners) provides large training opportunities, both within their employee base and often in surrounding or host communities. Within the PGM industry, absolute numbers can be difficult to quantify exactly based on publicly reported data, as different terms may be used, and in several cases training numbers are reported at a holding company level. We can take some guidance however from the trends shown between 2015 and 2019, where we see that overall employee training and support has increased, even while numbers of employees have reduced over the period.



External stakeholder training has declined over the period, possibly showing cost pressures, but this is an area where industries can apply significant leverage, and also one which can have significant risk impact as organisations recognise more their exposure to their local environment.

By providing training to local communities, they may become more economically engaged and less dependent on mines for livelihoods and economic stability. At the same time, experience has shown that training provided without a pathway to employment creates antagonism, and it is in this complex environment that most of the South African based PGM miners operate.

The mining industry cannot alone carry the burden of pathways to employment, and a shift in recent years has been towards creating the framework or economic structures rather than direct training.



A safer industry that still needs to improve

The industry has shown over the six years in view a strong commitment to improving safety of employees, and results have been positive in general, with Lost Time Injury Frequency Rate (the number of injuries harmful enough to require an employee not to work for more than 24 hours, per million hours worked) on a downward trend over the period.

This is an important measure, because while total lost time injuries have dropped significantly, employee numbers have also reduced (from ~300,000 to ~280,000 over the period).

The total recordable case frequency rate (total cases that occurred, per million hours) has also dropped.

However, the industry has continued work to do on fatalities, where frequency rates have not improved over the six years. Absolute numbers are decreasing, but not in line with reduced overall employment figures.

3.5 Environmental Dimension

The environmental impact of the industry is a challenge to assess in full, as the global benefits of using PGMs in catalytic converters and other emission controlling technology are significant. Our focus in this report however is a far narrower view, looking only at direct impacts.

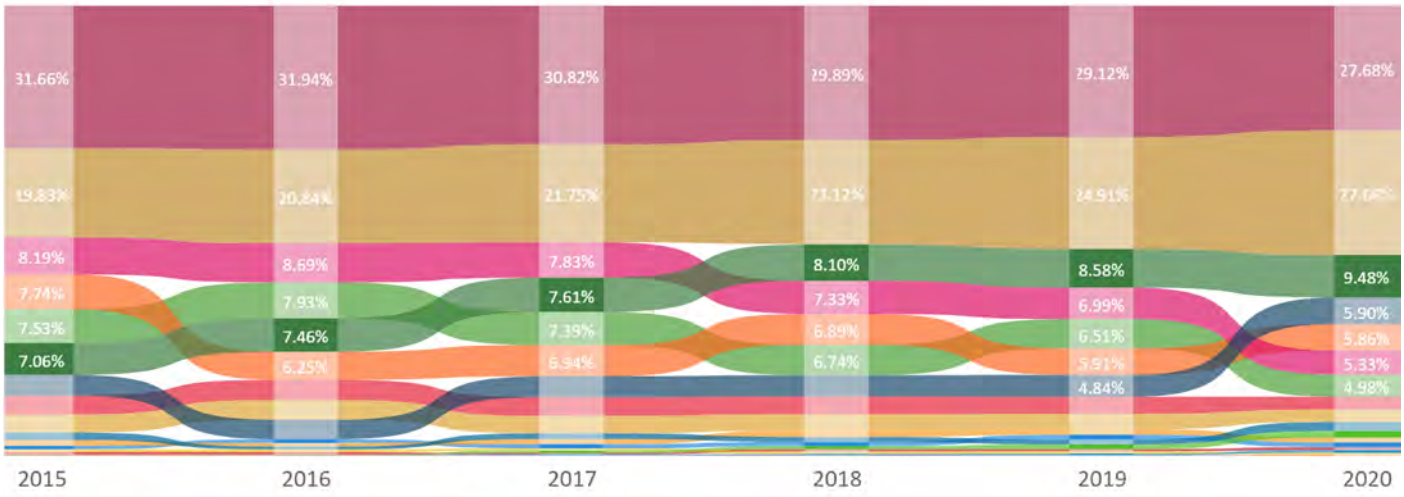
There are four primarily environmental (and biosphere related) SDGs:

- SDG 6: Clean Water and Sanitation: Ensure availability and sustainable management of water and sanitation for all.
- SDG 13: Climate Action: Take urgent action to combat climate change and its impacts.
- SDG 14: Life Below Water: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- SDG 15: 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.

Over the six years in review, the primary shift in spend focus has been the growth of Climate Action (SDG 13) related proportional spend, growing by an additional 2.5% of total industry spend over the period. Given the quantum of spend in the industry, this is a significant input. While both mining and fabrication organisations have increased proportional focus on Climate Action (SDG 13), the real step change has come from the fabricators, driven by increasing pressures in Europe.

For the PGM Industry, most of the impact (both positive and negative) related to the environment relates to climate change and water usage, even while the most visible impact may be on land usage.

Development of spend on environmental SDGs

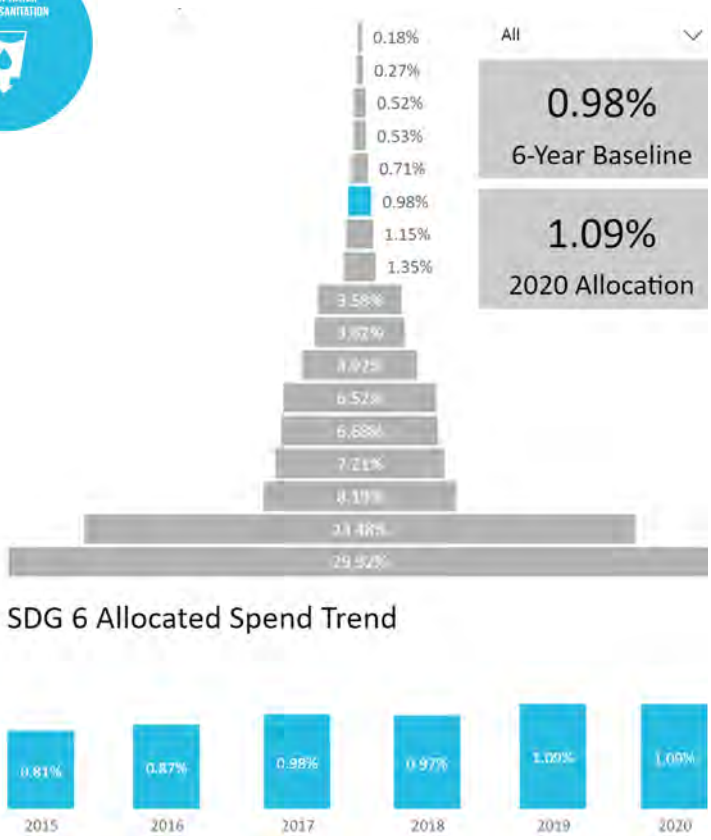


SDG 6: Clean Water and Sanitation

Goal: Ensure availability and sustainable management of water and sanitation for all.

The eight targets in SDG 6 focus on achieving universal access to safe and affordable drinking water, sanitation and hygiene. This involves reducing water pollution, integrating water management, and improving local capability and involvement in water and sanitation management.

In this analysis we see that clean water and sanitation received some focus, and has been increasing marginally in focus over the period, but fundamentally needs analysis of the results (to follow) for deeper understanding of the impact.



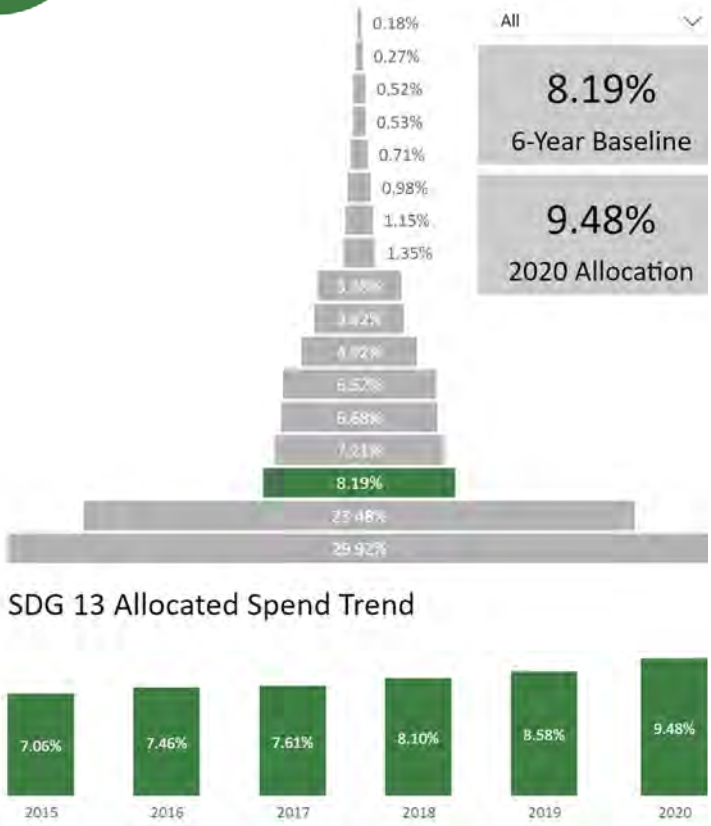
SDG 13: Climate Action

Goal: Take urgent action to combat climate change and its impacts.

The five SDG 13 targets are very clear and direct - strengthen global resilience and adaptive capability to deal with climate related hazards which we are too late to avoid, and drive change in policy and implementation to mitigate further change.

In the industry this has clearly been a most focal activity, and increased proportional spend over the period shows strong commitment. As mentioned elsewhere much of this has come from the fabricator market.

Despite the increasing spend, metrics have not been as dramatic as we might have seen, and hopefully this is simply a time lag as the spend filters through to results.

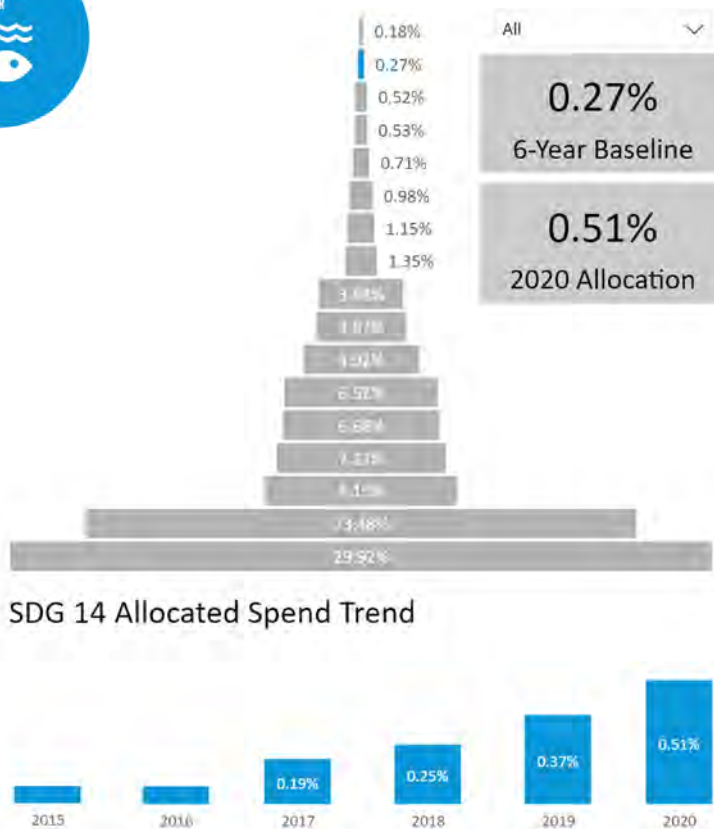


SDG 14: Life Below Water

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

The ten targets in Life Below Water focus on oceans and marine life. They are critically important to global wellbeing, but not heavily impacted by or on the PGM industry, and the low proportional spend patterns reflect this.

Some increases in proportional spend reflect efforts on managing effluent pollutants.

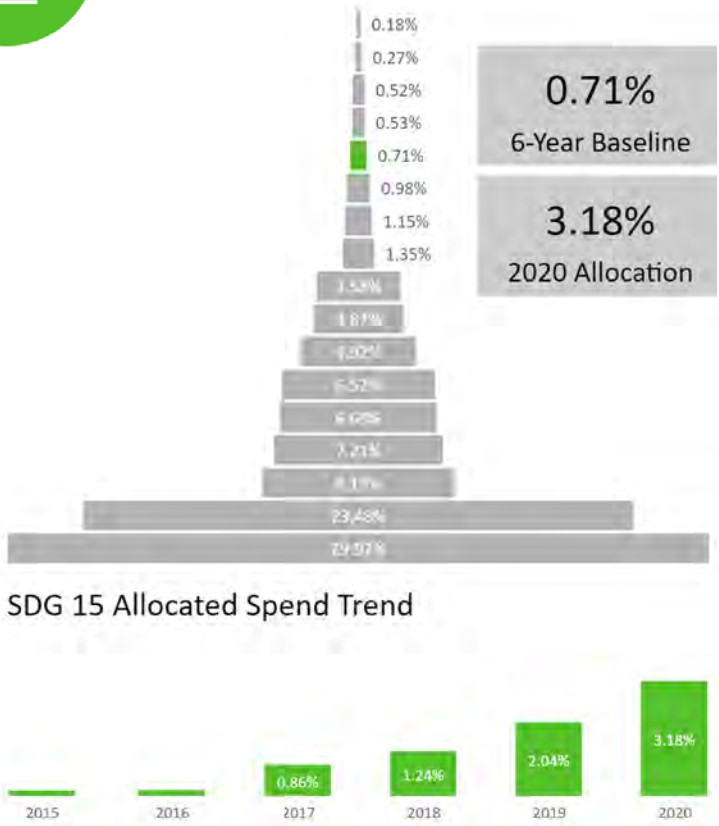


SDG 15: Life on Land

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

The twelve targets in SDG 15 focus on protecting biodiversity and promoting sustainable land managemen - combating desertification, restoring degraded soil, halting deforestation, etc.

The mining industry in particular owns large amounts of land, and responsible management of this is important. Increasing proportional focus in this area is showing results in land protected, land rehabilitation, and reduced amounts of land disturbed.

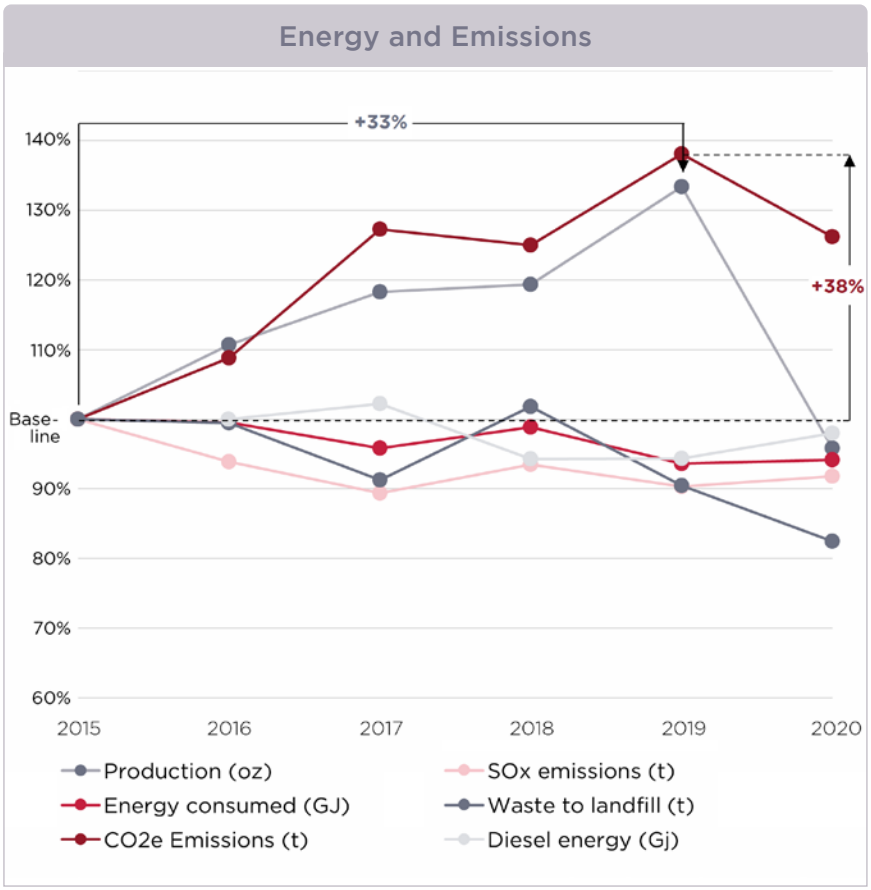


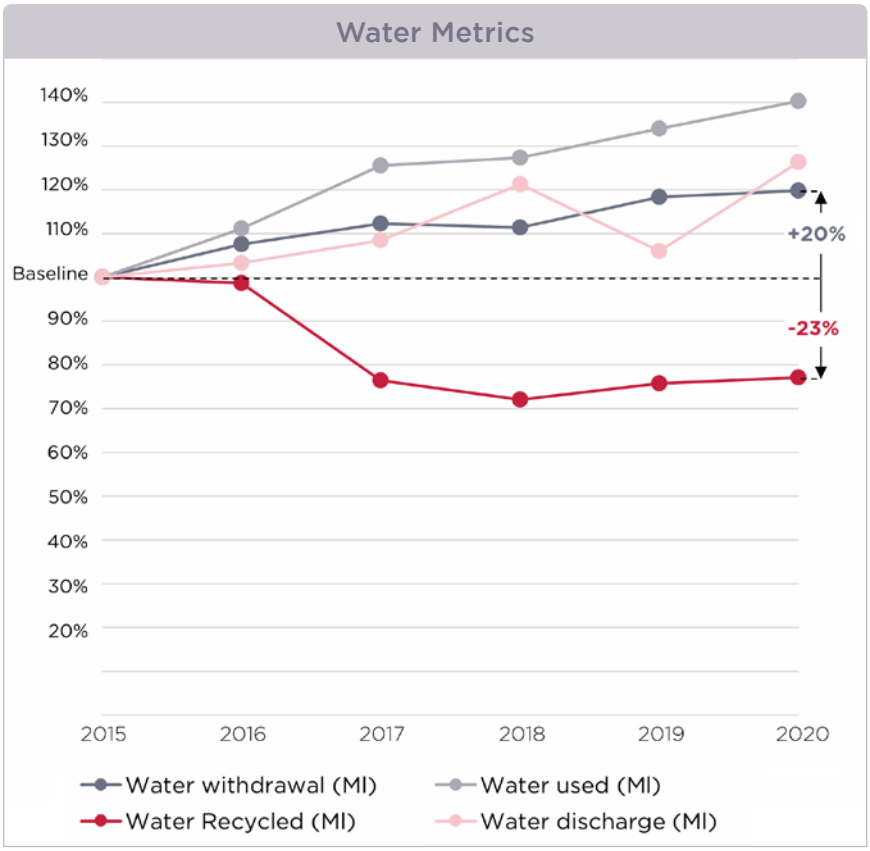
CO_2 emissions are outgrowing production, other GHGs reducing, energy efficiencies improving

The PGM industry plays a critical role in reducing global greenhouse gas emissions through autocatalysts, where emissions reductions outweigh emissions generated during production of the catalyst.

For the purposes of this report however, we focus on direct reported emissions from the companies. The most notable output is that as production has grown, CO_2 emissions have grown by more, tracking 38% higher in 2019 compared to 2015, against a production growth of 33% over the same period. Significant energy use relies on coal, and as coal quality degrades so CO_2 emissions increase. Most other GHG emissions have reduced even though production has increased.

For a more detailed analysis on the life cycle of PGMs and autocatalysts, see the IPA LCA study - 2017, at https://ipa-news.de/index/sustainability/pgms-in-the-life-cycle.html.





Most impressive has been the strong reduction of waste to landfill, as well as the reduction in energy consumed, which shows significant improvements in efficiency.

Water usage has increased, and recycling is down

Water usage has not been a good story to tell for the industry. Over the period in question water withdrawl and water used have both climbed steadily, while water recycled has declined by 23%.

Given the water scarce nature of South Africa (most of the mining), this is a concerning trend.

However, the increased focus on water related SDGs (14 and 6) suggests a leading indicator that we should see improved metrics in the coming years.

3.6 Social Dimension

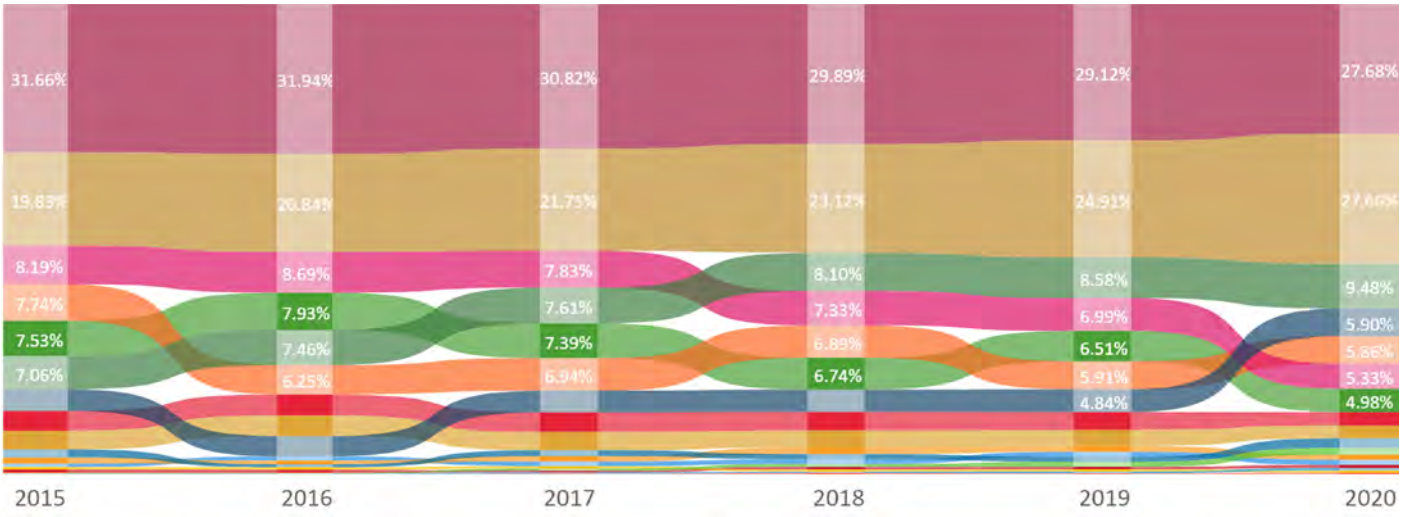
The social impact of the PGM industry is significant, particularly in the mining regions where there is often an over-dependence on mines for socio-economic stability.

- SDG 1: No poverty: End poverty in all its forms everywhere.
- SDG 2: Zero hunger: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- SDG 3: Good health and wellbeing: Ensure healthy lives and promote well-being for all at all ages.
- SDG 4: Quality education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- SDG 5: Gender equality: Achieve gender equality and empower all women and girls.
- SDG 7: Affordable and clean energy: Ensure access to affordable, reliable, sustainable, and modern energy for all.
- SDG 11: Sustainable cities and communities: Make cities and human settlements inclusive, safe, resilient and sustainable.

Overall, the social dimension is the second most-focused on dimension in terms of spend, a lot of which comes through our ripple weighting methodology as secondary focus SDGs - ie, where a business acting responsibly has a positive impact on society.

We don't have as many measures of social impact which are consistently reported across the industry as we would like, but we can explore impacts around gender equality, around education, and around clean power. Overall, the industry has a far greater impact on social performance, particularly in local regions, than is generally well reported.

Development of spend on social SDGs



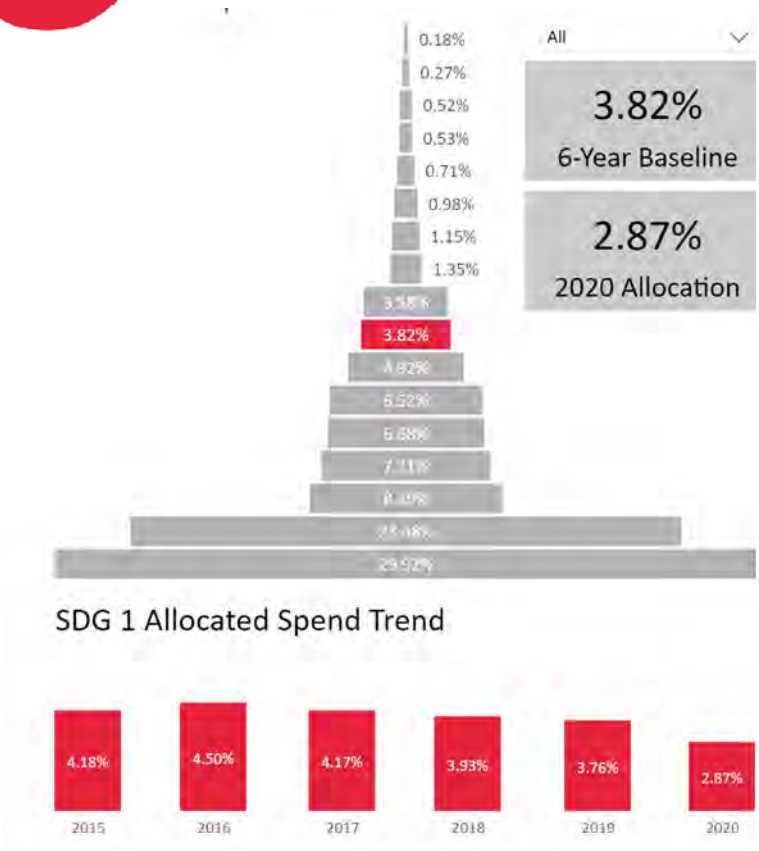
SDG 1: No Poverty

Goal: End poverty in all its forms everywhere.

The seven targets in SDG 1 are focussed on lifting people out of poverty through implementing social protection systems, providing access to services, providing land ownership, and building resilience of the poor and vulnerable to risk events.

In the industry this is grouped as a secondary focus, conscious however of the dimensions included - the significant employment numbers in the industry do much to alleviate poverty, but are marked as consequential rather than intentional.

Deeper analysis has been conducted elsewhere on the impact of the industry on poverty - for our purposes, the impact is positive but primarily a consequence of operations rather than specific focus.

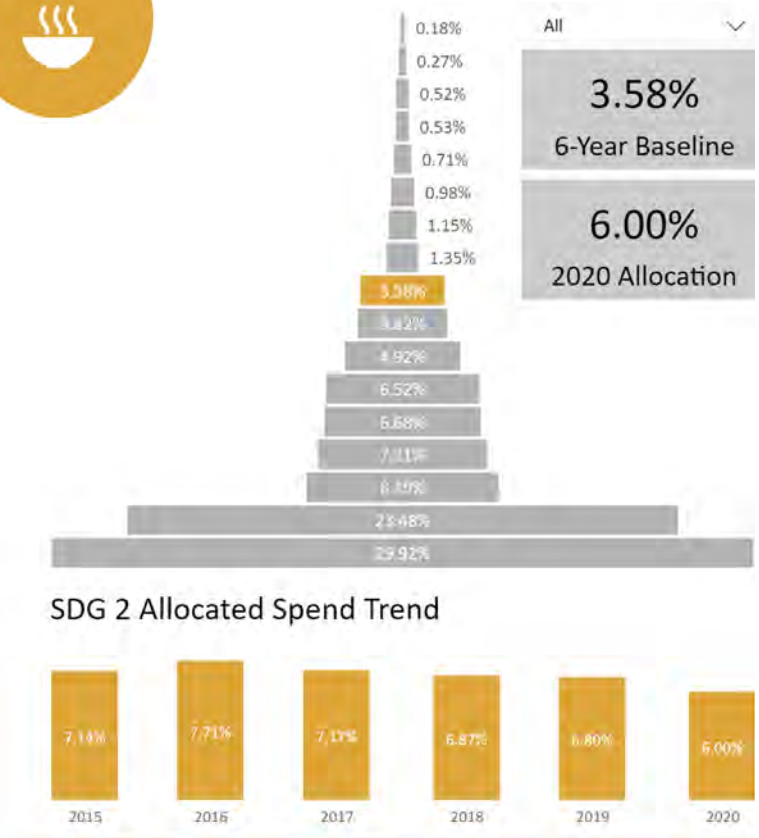


SDG 2: Zero Hunger

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

The eight targets in the Zero Hunger goal focus on ensuring that all people, in particular the poor and vulnerable, have access to safe, nutritious, and sufficient food all year round.

Similar to No Poverty, in this case the industry does more through consequential inputs than through intentional.



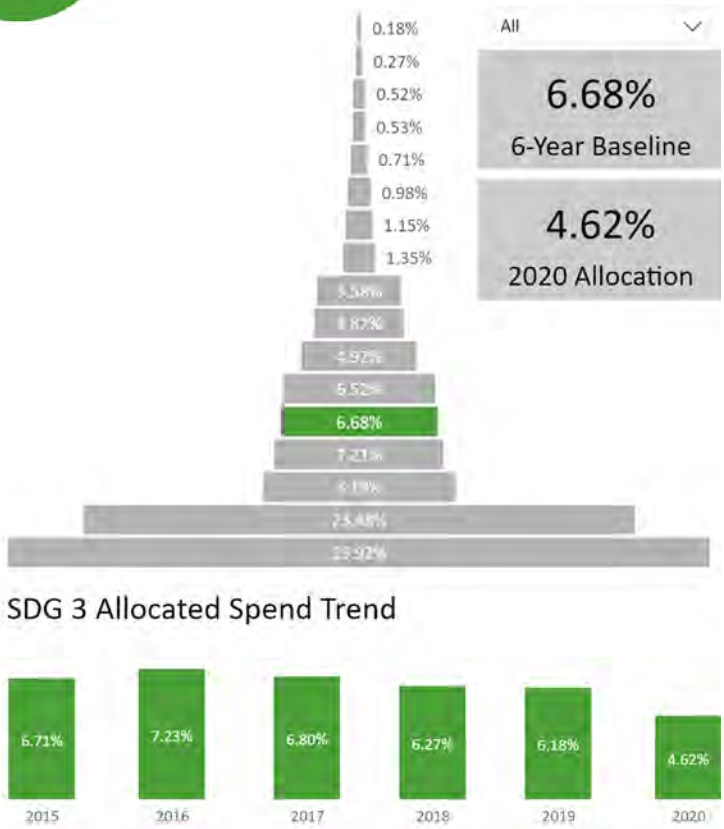
SDG 3: Good Health and Well-Being

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

The thirteen targets in this Goal aim to improve the overall health of all people, particularly the poor and vulnerable. Reducing maternal mortality, young preventable deaths, ending several communicable diseases, and addressing substance abuse all fall into this Goal.

The mining industry in particular has significant input on health and universal access to healthcare in South Africa.

While the proportional spend has dropped between 2016 and 2020, we expect that this is due to lower operational costs as large capital projects (building clinics, hospitals, etc.) are completed.

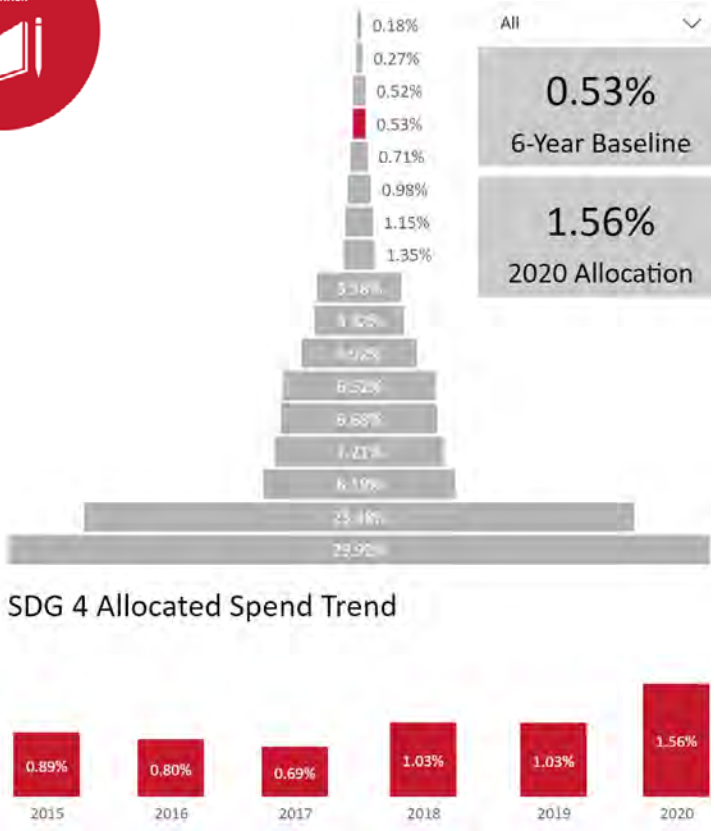


SDG 4: Quality Education

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

The ten targets of Goal 4 aim to ensure that all people have access to quality early childhood development and care, free and equitable primary and secondary education, and quality equal access to affordable technical, vocational, and tertiary education.

The focus on reskilling and adult education has been a significant input of the PGM industry. An ongoing increase in the proportional focus on this Goal will see further impacts over the next time horizon.

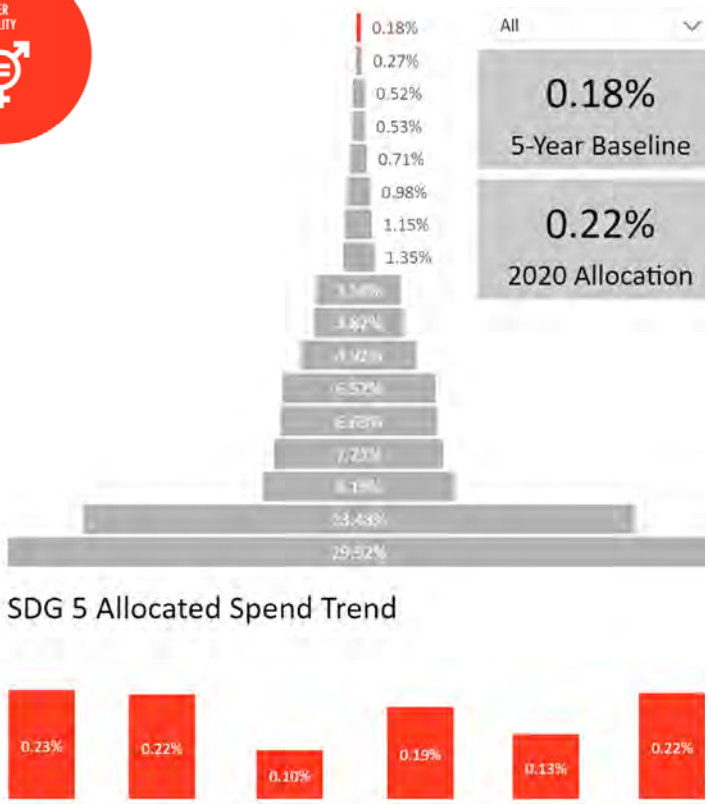


SDG 5: Gender Equality

Goal: Achieve gender equality and empower all women and girls.

Nine goals on Gender Equality aim to end all forms of discrimination and violence against women and girls. This strives to encourage recognition of unpaid care and domestic work, drive national provision of public services, universal healthcare access, and social protection policies, as well as aiming to ensure women's full and effective participation in leadership at all levels of decision making.

Within the industry the spend related to GE has not been proportionally high, but the impact numbers, particularly of women in management, have been notable.

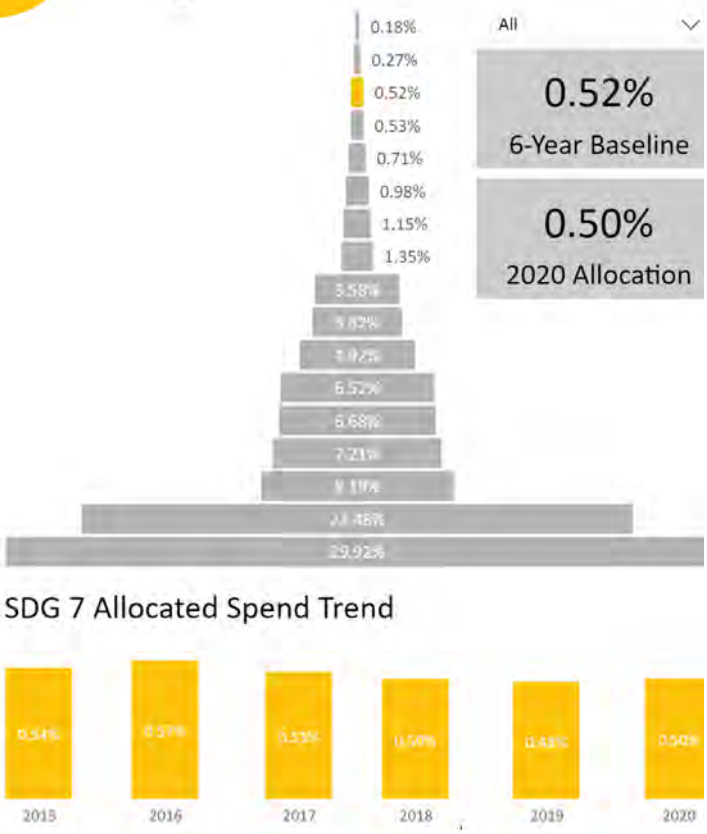


SDG 7: Affordable and Clean Energy

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

The five targets are very clear - increase the share of renewable energy in the global energy mix, and ensure universal access to affordable and reliable energy services.

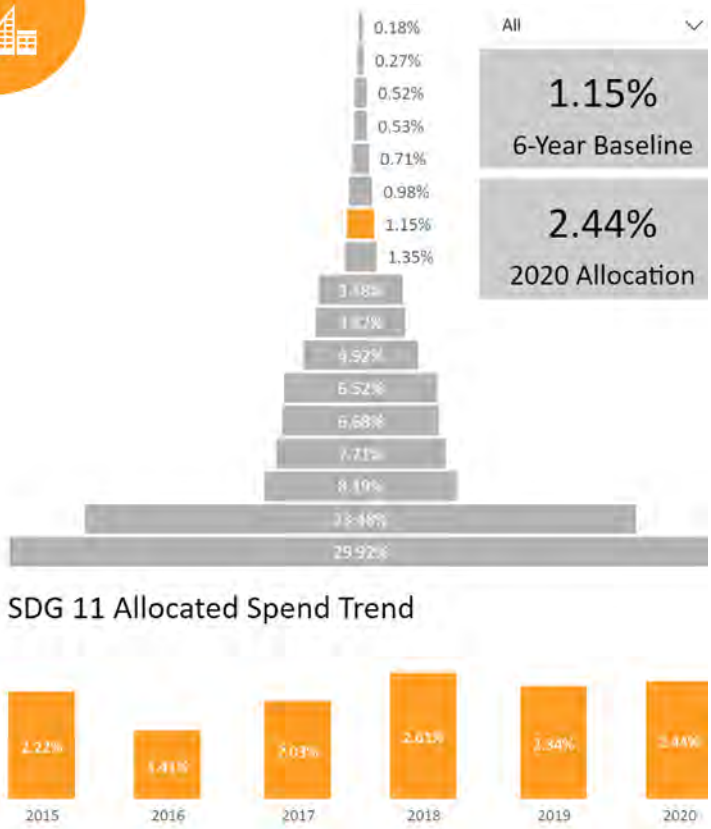
The low proportional spend on this Goal is a complex one, and should be understood in context. The industry has made good strides in reducing energy consumption, but the transition to renewables has been slower - hampered primarily in South Africa where mines have been constrained until very recently on self generation. We expect to see these numbers change significantly over the next 2-5 years.



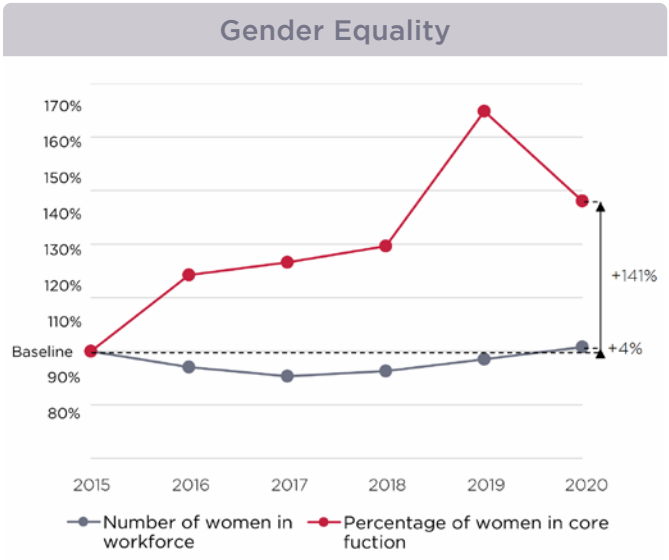
SDG 11: Sustainable Cities and Communities

Goal: Make cities and human settlements inclusive, safe, resilient, and sustainable.

The ten related targets seek to ensure all people have access to adequate, safe and affordable housing, transport, green space, and other necessary homestead requirements for human flourishing.
The mining industry in particular has long been guilty of leaving behind towns which collapse once the primary source of economic support (the mine) leaves (life after mine). Significant focus is these days being put on how to ensure that communities are not economically dependent on a mine.
An opportunity exists here to extend future analyses to include community metrics, employment levels, debt levels, etc.

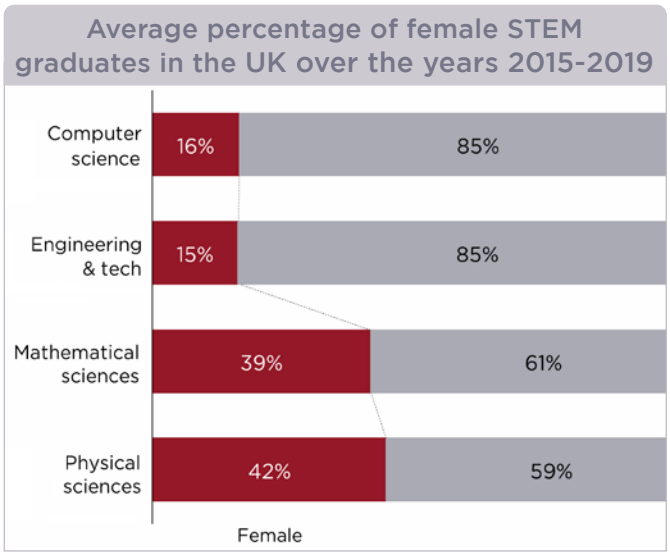


Gender imbalances remain, but women are moving into core functions more



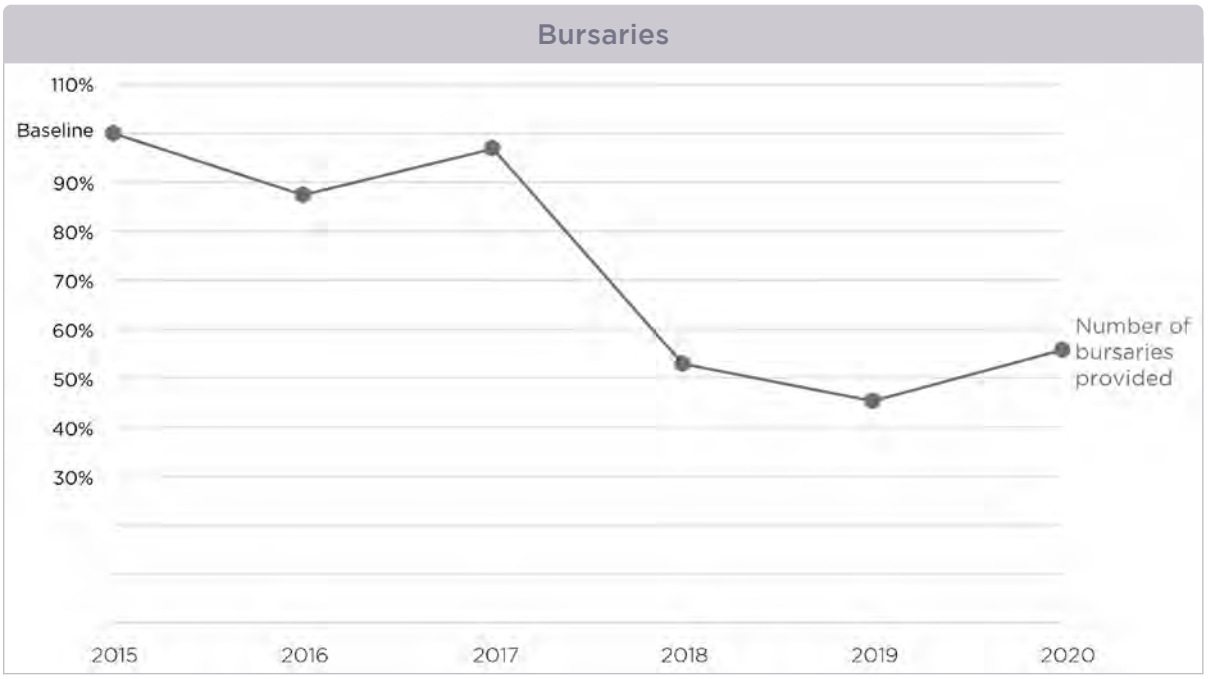
STEM (Science, Technology, Engineering, and Math) fields have long suffered from an under-representation of women. From 2015-2019, 28% of STEM graduates in the United Kingdom were women (see on the right). This figure varies per country, but in very few are more women moving into STEM fields than men, for a multitude of reasons.

The PGM sector has maintained roughly the same proportion of women in the workforce over the period of this report, but importantly has greatly increased the number of women in core functions - an indicator of higher pay and more leadership positions for women.



Source: www.stemwomen.co.uk

Some companies are offering more bursaries, but overall the industry is offering fewer



The offering of bursaries for tertiary education has long been a method of ensuring that future skills requirements are able to be met. Several changes, including perceived lack of 'company loyalty' once graduates complete schooling, cost pressures, and changes in focus, have led to a significant drop-off in the number of bursaries offered by the industry.

It is worth noting that a significant drop was caused by one business stopping bursaries (or reporting) in 2018.

There is certainly potential for increasing bursaries or higher education support and focussing this on the vulnerable and under-priviledged to see a long term benefit to the industry.

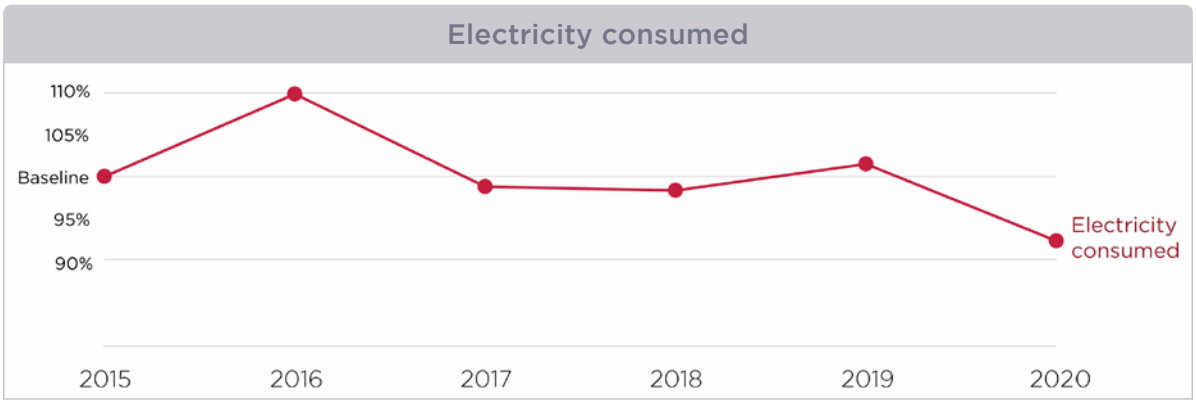
Electricity demand stable, renewables usage under-reported

Across the industry, the use of electricity has been roughly stable, with only 2020 seeing a minor drop as to be expected given reduced outputs.

This is a good example however of how the SDGs are interrelated, as the overall energy mix is classed under Environmental, but has a strong connection to Affordable and Clean Energy (SDG 7).

The use of renewables may in several cases be difficult to calculate, but improving reporting on this aspect is a critical part of the industry narrative in future.

We expect to see increased use of renewables in the mining sector in particular over the next 3-5 years as South African regulatory certainty improves and private generation of electricity is allowed or even encouraged.



3.7 Partnerships & Governance

The impact of the PGM industry is significant, as has been seen throughout. This has the potential to be both negative, or a tremendous force for positive change in societies. Many of the ESG related SDGs take the form of 'non-competitive' work, where the collaboration of companies should see a multiplier value effect. This is particularly true in areas where multiple companies draw from the same labour pool, or are in the same geography.

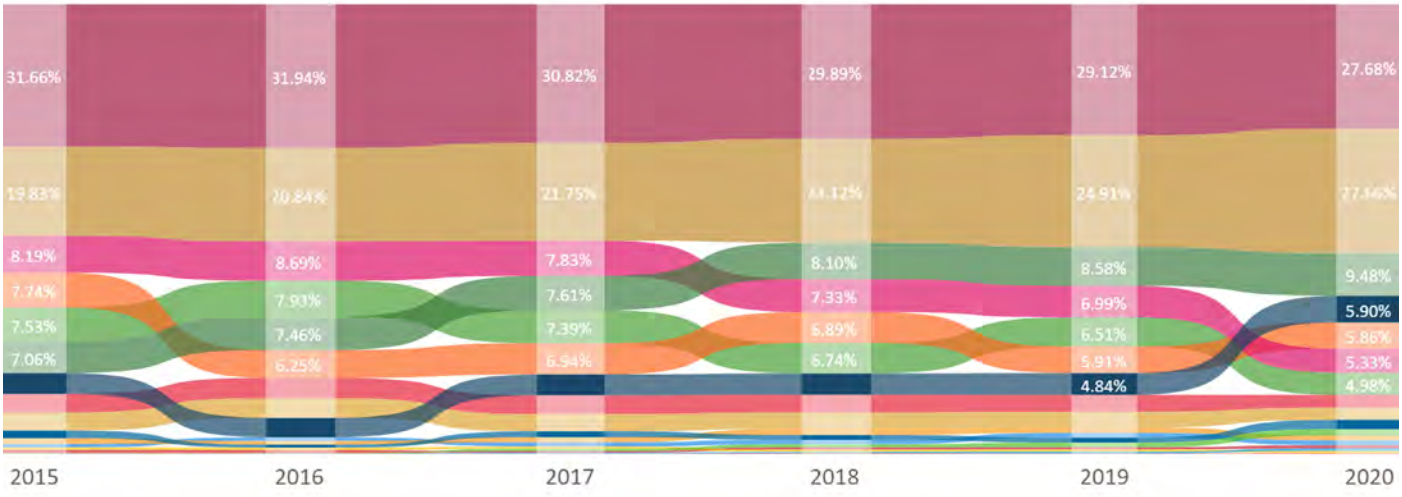
Linked to the opportunity for partnership is the need for strong governance in regions. Many organisations consider this to be 'governments problem', but the simple truth is that the PGM industry has the potential to reshape and support institutional capacity in such a way that they can reduce their own risk exposure.

Nobody – no person, no company, no industry – can operate in a vacuum, and the industry has both the gravitas and the imperative to ensure strong institutions are developed for peace and justice in countries of operation.

- SDG 16: Peace, Justice and 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.

- SDG 17: Partnerships for the Goals: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

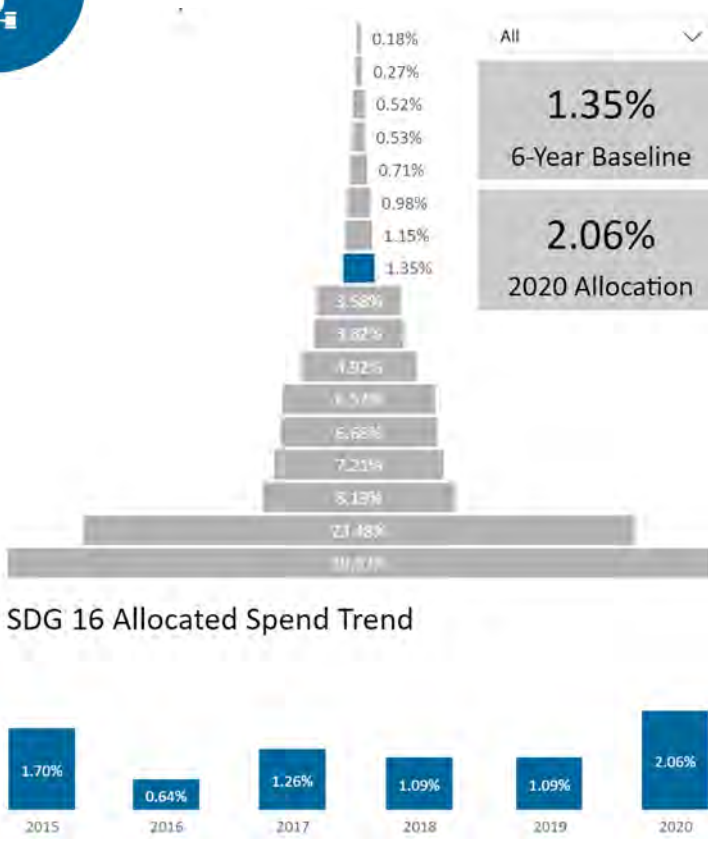
Development of spend on Partnerships and Governance



SDG 16: Peace Justice and Strong Institutions

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

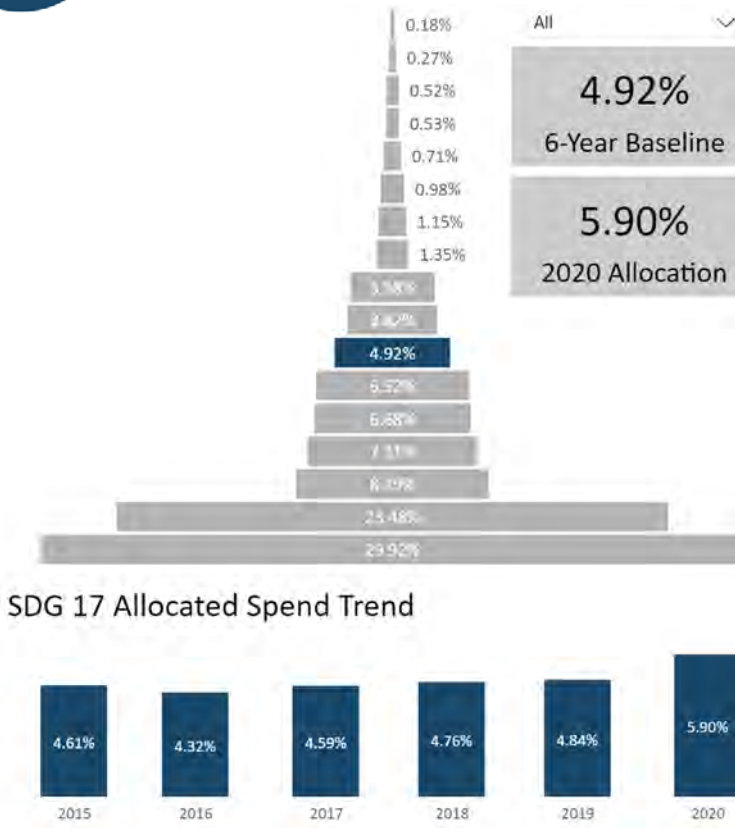
The twelve targets in SDG 16 seek to reduce violence, end abuse and exploitation, promote the rule of law, reduce corruption, and develop effective, accountable, transparent institutions to ensure responsive and inclusive decision making. These targets are primarily at national level, however the PGM sector has a significant focus on ensuring compliance, governance, and anti-corruption practices are in place throughout.
Proportional spend is irregular, we assume because there are large responsive spends with a pro-active baseline. The PGM sector has a positive effect on Goal 16 in countries where it operates.



SDG 17: Partnerships for the Goals

Goal: Strengthen the means of implementation and revitalise the global partnership for sustainable development.

The nineteen targets under partnerships are almost exclusively national or international, but one of the advantages of the methodology used in this report is that we are able to see the impact companies or industries have on the goal, and partnerships are a key driver of many other goals.
One of the drivers of SDG 17 relates to taxes paid in operating countries, and reference to the economic dimension shows a strong increase in taxes paid by the sector over the period.
Several instances of government partnerships exist, and increasing inter-company partnerships are being structured and taking place. The sector has recognised that collaboration on non-competitive social and environmental impacts has long term benefits for all.



4. CONCLUSION

The PGM industry is not a heterogenous one, and any analysis of this sort is by its nature highly abstracted. In this helicopter view though we can discern important strategic trends in the industry, which give us an understanding of the industry's impact on the world, both positive an negative.

The willingness of the industry to hold an honest and open mirror up to itself, and then to reflect meaningfully on what it sees, is already a strong signal of an industry with a deep desire to be better, and to have a postive impact on the world in which it exists.

This being the first edition of this report, it is understandable that there are some gaps in the data. These come about due to differences in reporting, different interpretations of measures across the industry and between geographies, and sometimes due to simple gaps in reporting. As a collective, the industry has recognised these, and where appropriate is exploring how to tell a more comprehensive story.

The aim of this report was to compare spend focus with changes in results, to answer the question of whether the industry is creating change for the money spent.

In many areas, the answer is yes, but more could perhaps be done.

Revenue in the industry has soared recently, and hopefully this will be tied to greater stakeholder returns, improving social impacts and benefits to create a more stable operating environment over the medium term.

A significant increase in focus on Climate Action (SDG 13) has seen some improvements in GHG emissions overall, but there is almost definitely scope to further improve, particularly on CO_2 emissions. If spend is indeed a valid leading indicator, then we should see these improvements coming through over the next 1-3 years.

Allied to this, multiple projects are in planning or under way for increasing use of renewable energy sources, and PGMs both benefit from internal use, and have a strong role to play in renewable power globally.

As a whole, the industry has shown significant intention to operate for the broader good, the results of these efforts are beginning to show, and we expect to see further whole value growth over the short-medium term, leading to a more stable operating environment and better acceptance of the important PGM market.

PGM operations in Rustenburg. Source: Sibanye-Stillwater

BELGIUM

OECD Countries

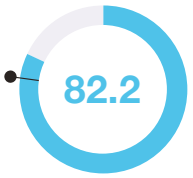
OVERALL PERFORMANCE

COUNTRY RANKING

Belgium

5 /165

COUNTRY SCORE

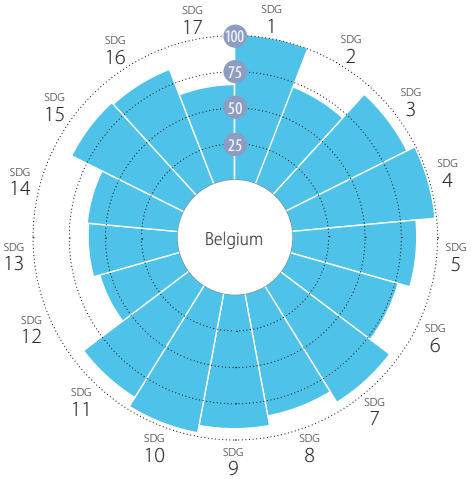


REGIONAL AVERAGE: 77.2

STATISTICAL PERFORMANCE INDEX

0 (WORST) TO 100 (BEST)

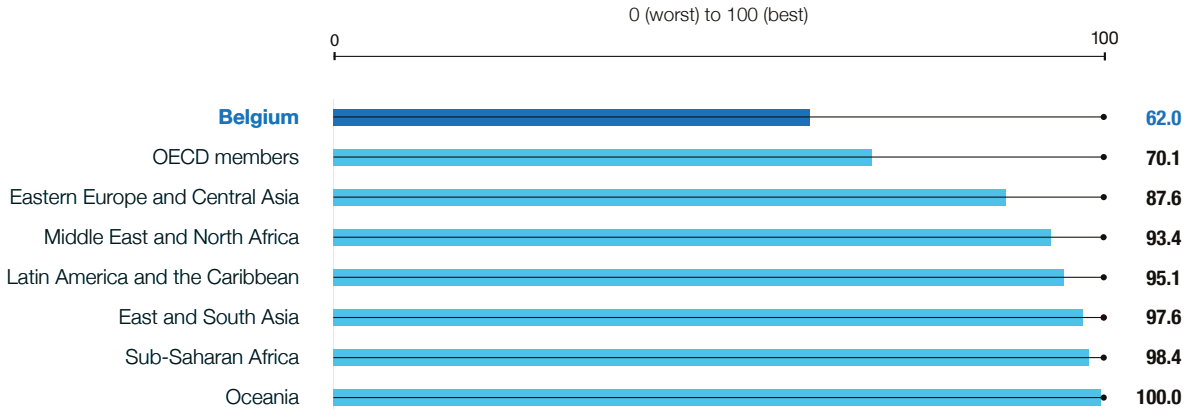
AVERAGE PERFORMANCE BY SDG



SDG DASHBOARDS AND TRENDS

Notes: The full title of Goal 2 "Zero Hunger" is "End hunger, achieve food security and improved nutrition and promote sustainable agriculture".
The full title of each SDG is available here: https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals

INTERNATIONAL SPILLOVER INDEX



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GERMANY

OECD Countries

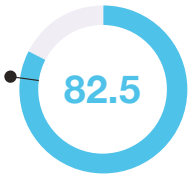
OVERALL PERFORMANCE

COUNTRY RANKING

Germany

4 /165

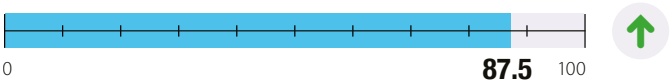
COUNTRY SCORE



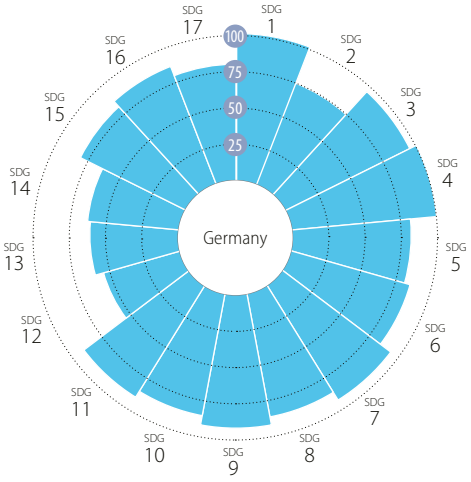
REGIONAL AVERAGE: 77.2

STATISTICAL PERFORMANCE INDEX

0 (WORST) TO 100 (BEST)



AVERAGE PERFORMANCE BY SDG



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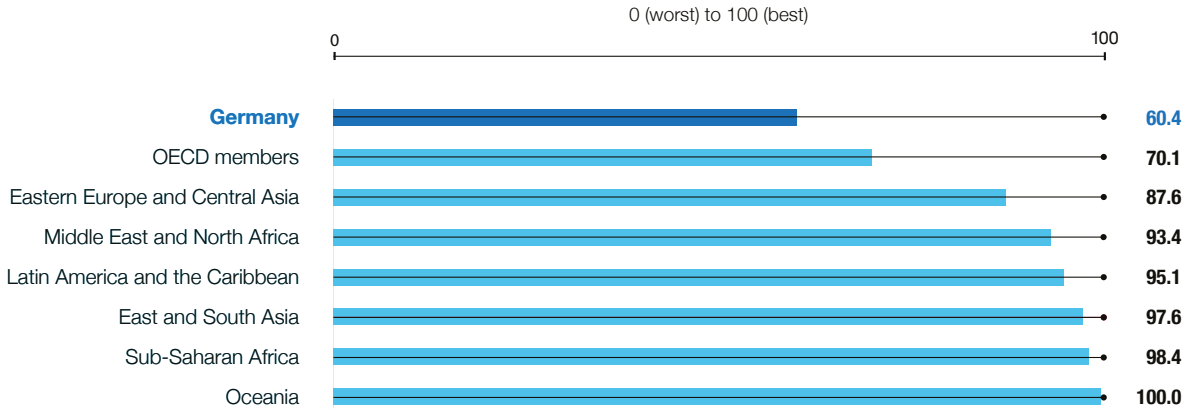

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UNITED KINGDOM

OECD Countries

OVERALL PERFORMANCE

COUNTRY RANKING

United Kingdom

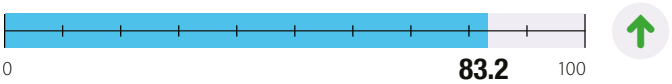
17 /165

COUNTRY SCORE

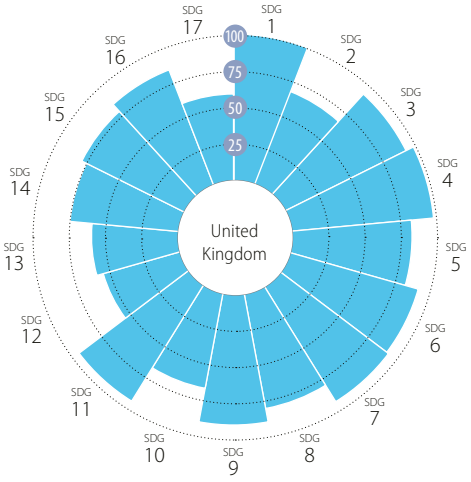
REGIONAL AVERAGE: 77.2

STATISTICAL PERFORMANCE INDEX

0 (WORST) TO 100 (BEST)



AVERAGE PERFORMANCE BY SDG



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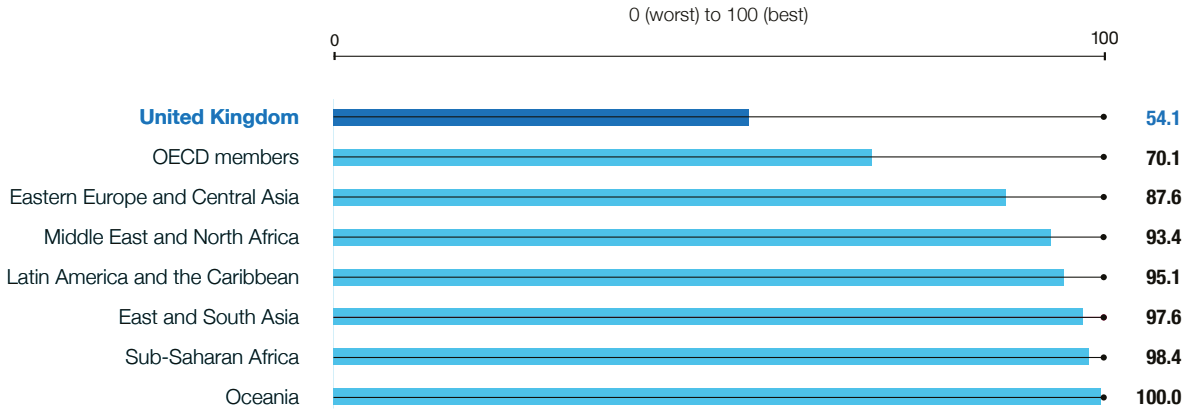
INTERNATIONAL SPILLOVER INDEX



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RUSSIAN FEDERATION

Eastern Europe and Central Asia

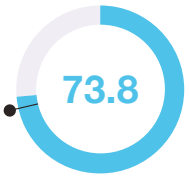
OVERALL PERFORMANCE

COUNTRY RANKING

Russian Federation

46/165

COUNTRY SCORE

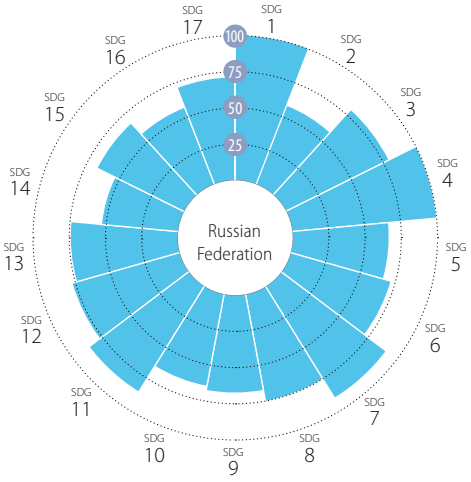


REGIONAL AVERAGE: 71.4

STATISTICAL PERFORMANCE INDEX

0 (WORST) TO 100 (BEST)

AVERAGE PERFORMANCE BY SDG



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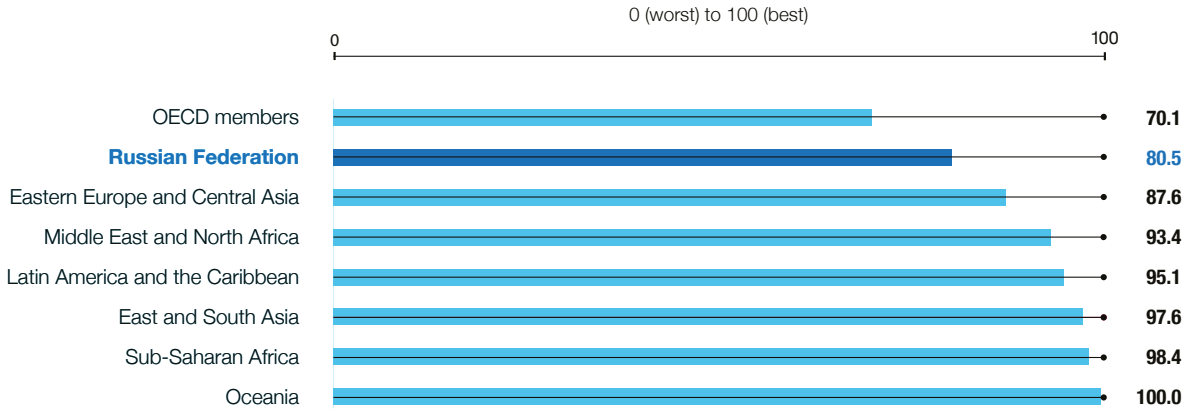

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SOUTH AFRICA

Sub-Saharan Africa

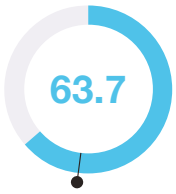
OVERALL PERFORMANCE

COUNTRY RANKING

South Africa

107 /165

COUNTRY SCORE

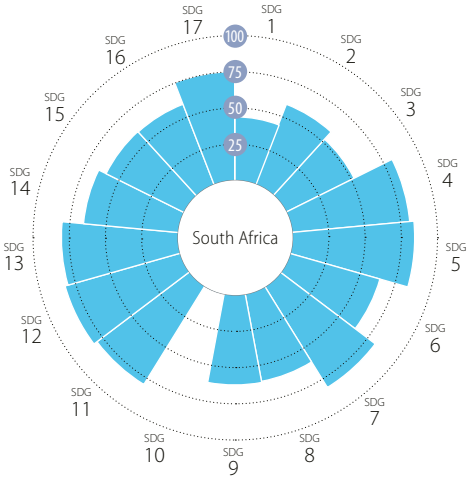


REGIONAL AVERAGE: 51.9

STATISTICAL PERFORMANCE INDEX

0 (WORST) TO 100 (BEST)

AVERAGE PERFORMANCE BY SDG



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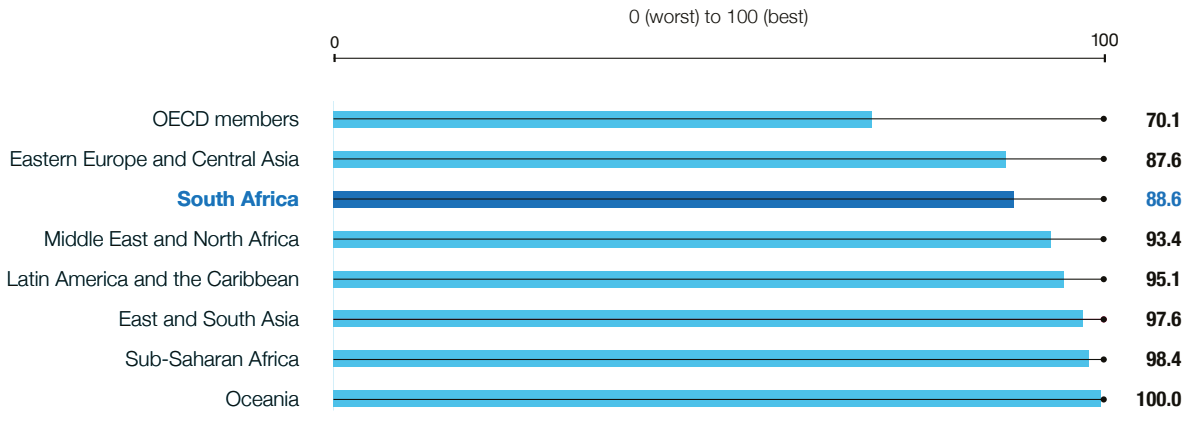


Sustainable Development Report 2021 The Decade of Action for the Sustainable Development Goals

ZIMBABWE

Sub-Saharan Africa

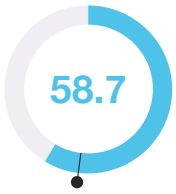
OVERALL PERFORMANCE

COUNTRY RANKING

Zimbabwe

125 /165

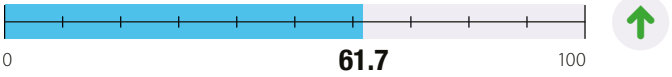
COUNTRY SCORE



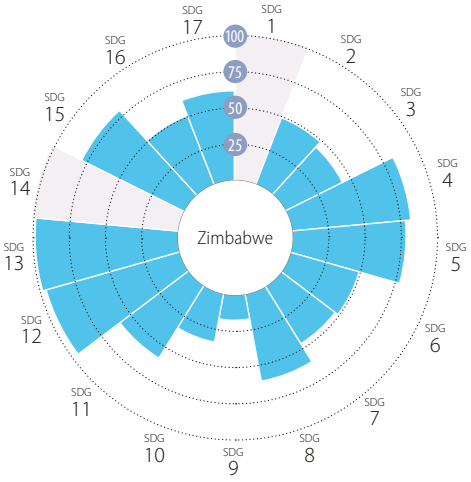
REGIONAL AVERAGE: 51.9

STATISTICAL PERFORMANCE INDEX

0 (WORST) TO 100 (BEST)



AVERAGE PERFORMANCE BY SDG



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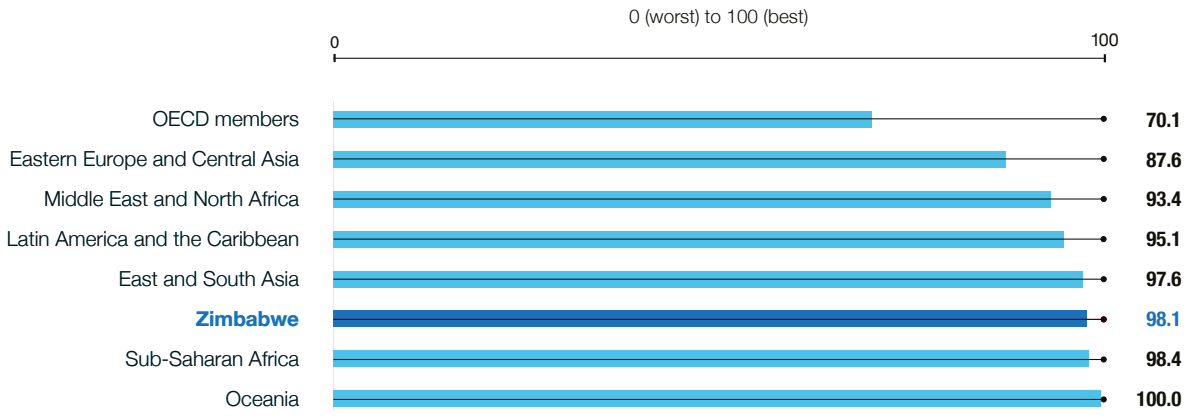

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UNITED STATES

OECD Countries

OVERALL PERFORMANCE

COUNTRY RANKING

United States

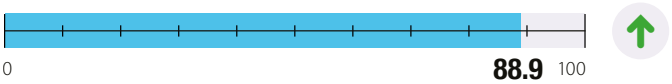
32/165

COUNTRY SCORE

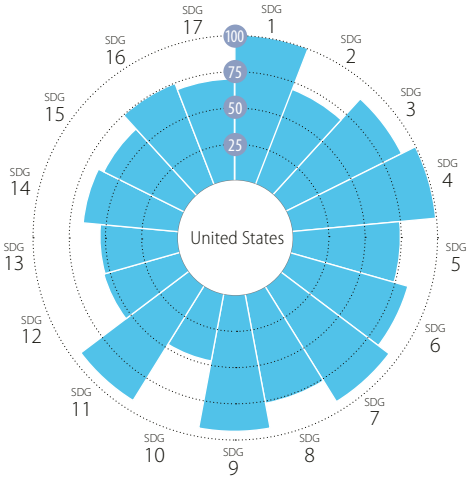
REGIONAL AVERAGE: 77.2

STATISTICAL PERFORMANCE INDEX

0 (WORST) TO 100 (BEST)



AVERAGE PERFORMANCE BY SDG



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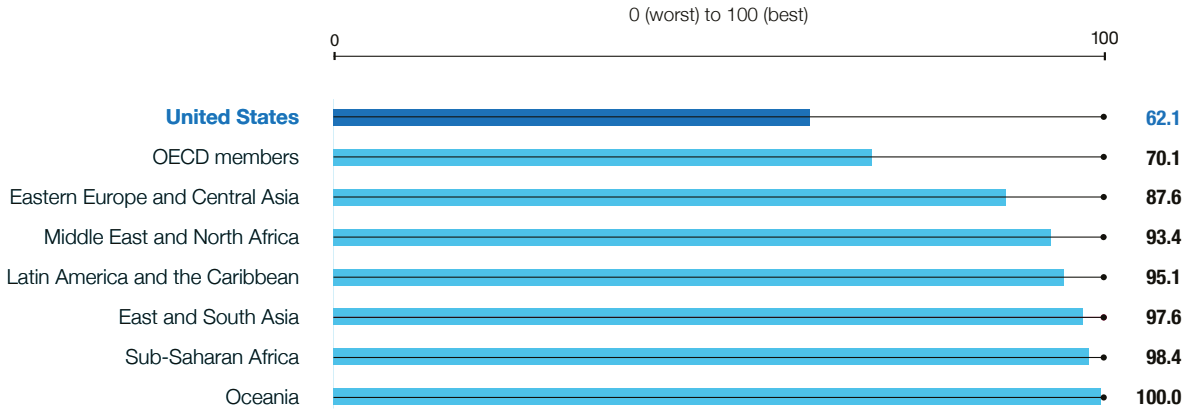

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IPA
INTERNATIONAL PLATINUM GROUP METALS ASSOCIATION

ABOUT THE IPA

The IPA is a non-profit organisation representing 80% of the mining, production and fabrication companies in the global platinum group metals (PGM) industry, comprising platinum, palladium, iridium, rhodium, osmium, and ruthenium.

CONTACT INFORMATION

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www.ipa-news.com

DBK ADVISORY

ABOUT DBK Advisory

DBK Advisory developed the report on behalf of the IPA. DBK is a boutique advisory services firm helping organisations to map and make visible their full range of value to society, using the SDGs as a unifying framework for impact.

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