Our journey to managing climate change impacts

BASELINE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD) REPORT 2018
About Gold Fields

Gold Fields Limited is a globally diversified gold producer with nine operating mines (including our Asanko Joint Venture) and projects in Australia, Chile, Ghana, Peru and South Africa, and total attributable annual gold-equivalent production of approximately 2Moz.

It has attributable gold Mineral Reserves of 48.1Moz and gold Mineral Resources of 96.6Moz. Attributable copper Mineral Reserves total 691 million pounds and Mineral Resources 847 million pounds, while silver Reserves total 39.3Moz and Resources 43.7Moz.

Gold Fields has a primary listing on the Johannesburg Stock Exchange (JSE) Limited, with a secondary listing on the New York Stock Exchange (NYSE).

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About this report

In 2018 Gold Fields has become only the 2nd South African company and the first South African mining company to publicly endorse the Financial Services Board’s Task Force on Climate-related Financial Disclosures (TCFD). The TCFD recommendations, backed by most financial regulators around the world, encourage companies to release details about their climate-related financial risks and opportunities to provide consistent and comparable information to investors, lenders, insurers, and other stakeholders.

The TCFD voluntary guidelines provide for comparable and reliable disclosure of climate-related information, which companies commit to publish at least once a year. Today we are releasing our first TCFD Report as a companion to our 2018 Integrated Annual Report. This report will therefore serve as our baseline to monitor our climate change-related performances for the next few years to come. Our TCFD report replaces our previous annual submissions under the Carbon Disclosure Project (CDP).
“WE ARE COMMITTED TO ADDRESSING ONE OF THE DEFINING GLOBAL CHALLENGES SOCIETY IS FACING”

Gold Fields’ commitment to leadership in sustainable gold mining underlies everything we do as a business. As such, we are committed to addressing one of the defining global challenges society is facing, namely the impact of the rapidly changing climate on our business, our employees and our host communities.

We have responded to this challenge through a range of strategic policy interventions as well as operational adjustments. The management of climate change impacts and our transition to a low carbon environment is a key component of environmental stewardship at all our operations and projects. Compared to other metals, such as steel, coal and aluminium, gold mining’s carbon emission intensity per unit value is amongst the lowest in the sector. As a mining business, Gold Fields is fully cognisant of the fact that we have a material impact on the surrounding environment and the communities with whom we share this environment.

Our carbon emissions are primarily from diesel consumed by haulage trucks and electricity consumption in mining and gold processing.

Internally, Gold Fields has recently reviewed and updated a number of policy statements and guidelines, reflecting our environmental priorities. They cover the following areas of responsibility in the Company: energy and carbon management; environmental management; water management; tailings management; mine closure and climate change.

Our Board in 2017 approved a Climate Change Policy Statement, committing us to identify and assess climate-related risk and opportunities; reporting and disclosing our performance via various reporting frameworks; raising the share of renewable energy; and energy and water efficiency initiatives.

In addition, we have signed up to a number of global initiatives and programmes that support both corporate disclosure of climate change impacts and encourage multi-stakeholder commitments to combating it.

It is increasingly clear that the negative physical impacts of climate change are real and immediate, due to:

- The long-term risks posed by climate change to the Group’s operations and surrounding communities
- Increasing regulation of carbon emissions in most of our jurisdiction
- Taxes imposed by governments to disincentivise non-renewable energy consumption,
- Taxes imposed by governments to disincentivise non-renewable energy consumption.

As such, Gold Fields’ climate change programme is focused on a comprehensive assessment of climate change-related risks and mitigation opportunities, as well as the development and implementation of action plans. Gold Fields’ objectives are to minimise the Company’s contribution to climate change and to build resilience to the direct physical impacts of climate change on its operations and host communities.

At operational level our integrated energy, carbon management and water strategies highlight the approach taken by our mines to achieve:

- Greater energy efficiencies
- Improved use of low carbon and renewable energy sources
- Security of water and energy supplies
- Careful management of our water resources.

The impact of this has been to achieve greater energy and water security, lower energy intensity and reduced carbon emissions.

We have disclosed our carbon footprint to the Carbon Disclosure Project (CDP) since 2008. During this time, Gold Fields has consistently been ranked as one of the JSE leaders in terms of disclosure to the CDP. (See https://www.goldfields.com/sustainability-reporting.php)

From 2018 onwards, we will be reporting on our climate change performance exclusively under the disclosure recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In November 2018, we publicly endorsed the TCFD recommendations. This report is the first for Gold Fields in support of the TCFD framework and we will use it to report transparently on our climate change journey in the years ahead.

Our journey ahead

Adapting to climate change is an ongoing journey, and we will continue to integrate it into our business strategy. Our approach will also be guided by the following overriding principles to improve our:

- Quantitative performance: Deepen our understanding around climate-related performance metrics; Seek partnerships with other mining companies, particularly through the IOMM, on adaptation initiatives; Explore technology and innovation-related solutions to reduce our carbon and water footprints
- Disclosures: Put in place processes and systems to improve capturing of financial data on climate-related events and risks; Establish a Group Leadership Forum to further improve our TCFD reporting
- Preparedness: Seek partnerships with stakeholders to improve emergency responses

Nick Holland – CEO
In 2017, our Board adopted a Group Climate Change Policy Statement, setting out our commitment to a balanced mitigation and adaptation approach in achieving our climate change objectives.

Externally, Gold Fields has worked directly – and through the International Council on Mining & Metals (ICMM), a collaboration of 26 of the world’s leading mining companies – on a range of programmes and initiatives that illustrate our commitment to transparency about our climate change impact and our support of climate change adaptation and mitigation initiatives.

Over the years, we have disclosed our carbon footprint through the CDP, submitted our responses to the Dow Jones Sustainability Index (DJSI), signed The Paris Pledge for Action, supported the ICMM's Climate Change Position Statement, reported under the Global Reporting Initiative (GRI) Standards and endorsed the recommendations of the TCFD.

Gold Fields Limited recognises that climate change is a serious challenge globally to society at large, our host communities and our operations. The Group climate change strategy is to identify and assess risks related to climate change, and develop action plans. Our objectives are to minimise our contribution to climate change and to build resilience to the physical impacts of climate change at our operations and growth projects.

To achieve our strategy, Gold Fields commits to:

- Reporting and publicly disclosing our greenhouse gas emissions footprint and performance
- Regularly undertaking vulnerability risk assessments at all our operations and host communities
- Developing and implementing regional climate change strategies that include mitigation and adaptation plans
- Setting objectives and targets that give effect to the plans
- Investing in renewable, low-carbon energy solutions and energy efficiency initiatives to reduce our greenhouse gas emissions, including carbon offset programmes
- Investing in solutions for efficient utilisation of water at our operations, while ensuring the security of water supply
- Supporting research and development to achieve our climate change objectives
- Supporting transparent carbon pricing mechanisms that incentivise innovation to drive reductions in greenhouse gas emissions
- Establishing an appropriate level of employee awareness and training employees who hold direct responsibility for activities that reduce our carbon emissions
- Complying with applicable legal requirements and other requirements to which the organisation subscribes
- Encouraging business partners and suppliers to adopt similar principles
- Fostering dialogue and seeking collaboration with governments, investors, non-governmental organisations, host communities and other stakeholders to address climate change challenges.

All those working for and on behalf of Gold Fields, including employees, contractors, suppliers and partners, play a central role in meeting these commitments by:

- Taking responsibility for implementing applicable climate change adaptation and mitigation programmes and initiatives
- Adhering to the Group’s climate change policy
- Integrating climate change considerations into business planning and processes, including carbon pricing.

Nick Holland – Chief Executive Officer
February 2017

Gold Fields’ Climate Change Policy Statement

Gold Fields’ global commitments on climate change
Our governance processes around climate-related risks

Integration of climate-related risks into Gold Fields strategy

Oversight over climate change-related strategies, developments and risks is held at Board level. The main Board of the Group sets the strategic direction and approves policies that are relevant to our management of energy, water and climate change issues.

The Gold Fields Board’s Risk Committee provides oversight on Group risks. The Committee undertakes and reviews company-wide risk assessments twice a year, with a view to ensuring effective and adequate risk management strategies are in place.

The Safety, Health and Sustainable Development (SHSD) Committee of the Board reviews performance against climate-related strategies, such as energy, water, environmental and climate change programmes, on a quarterly basis.

At Group level, Gold Fields’ executive management is tasked with implementing Board-approved policies and strategies as well as related risk management plans. Quarterly updates on these issues are provided to the SHSD Committee.

Permanent appointments at Group level of a Head of Water, Environmental Manager, and Head of Energy and Carbon provide central coordination through to Group executive management and the Board. A number of Group-wide teams from the regions and operations, led by corporate, collaborate to enhance management of water, environment, energy and climate-related risks.

At regional level, strategic and operational risk registers include climate-related risks, implementation plans and opportunity assessments.

Balanced scorecard (BSC)

The annual BSC outlines Gold Fields’ strategic objectives for the year. These directly cascade from and support the achievement of the overall Group strategy. BSC deliverables are cascaded from our Group executives to site managers.

The diagram alongside illustrates how the climate change BSC objectives support relevant Group strategic objectives:

1. Improve disclosure
   Transparent reporting is an important means to improve engagement and build stronger relationships with our stakeholders. This is done through the publication of our Climate Change Policy, TCFD submission and, historically, our CDP and CDP Water submissions.

2. Improve climate change preparedness
   Building climate-change resilience into our operations involves understanding and then planning for both the risks and opportunities that may arise. This helps us improve our business planning (as detailed below under strategic planning and life-of-mine planning), and improves the cost, security and supply of energy and water. The outcomes of this work inform renewable energy investments and water infrastructure.

3. Improve quantitative performance
   Measurable targets are in place to reduce reliance on diesel, electricity and related carbon emissions as well as, where appropriate, increase our use of renewable energy. These targets are as much driven by bottom-line cost considerations as they are by our ethos of environmental responsibility.

Strategic planning

A key climate change objective is to improve the resilience and preparedness of operations in dealing with climate-related risks and events.

Climate change is therefore an important consideration during the Group’s three-year strategic planning process and reflected in our top 20 Group risks. This process conducts a scenario analysis for each operation, assessing how best to maximise cash-flow, life-of-mine and margin, and ultimately improve the quality of our portfolio.

The energy, water and diesel requirements are mapped for all mines, and a carbon footprint developed for each scenario. This information directly informs the strategic decisions taken across our portfolio of assets.

Life-of-mine planning

Gold Fields uses the International Council on Mining & Metals’ (ICMM) Mining Climate Assessment (MiCA) tool in our long-term life-of-mine planning process. This allows us to develop and implement plans that respond to material climate risks that could impact our assets and operations.

The MiCA tool uses 15 global climate models to provide an overview of weather-related changes (in wind, temperature, rainfall and water scarcity) as well as projection data sets developed by the United Nation’s Intergovernmental Panel on Climate Change. The data sets are centred around the year 2035 and provide 10-year horizons between 2025 and 2035 and between 2035 and 2045 based on baseline data from 1986 to 2005. (See p8)
Adapting our business to climate change risks

The long-term risks posed by climate change to the Group’s operations, projects and surrounding communities, could impact our ability to operate our mines sustainably as they may increase both operational and capital costs. By impacting on surrounding communities they could also affect our social licence to operate. These risks warrant that mitigating actions to these risks are integrated in our business strategy.

Therefore, our climate change programme objectives are to:
- Build operational resilience against climate-related risks
- Optimise use of the natural resources (energy and water) we use
- Reduce our contribution to climate change through carbon emission reduction

We aim to achieve these objectives by:
- Continuously reviewing and refining our understanding of climate-related risks and opportunities
- Assessing climate-related risks through project delivery studies and operational risk assessments
- Integrating energy, water, and carbon emissions management plans into our business strategic planning
- Improving efficiencies in the use of natural resources (energy and water)
- Allocating capital in innovation and technologies to reduce our carbon footprint while managing regulatory risks.

The diagram alongside summarises our embedded controls, policies, strategies and integration development.
Physical risks in our portfolio

AUSTRALIA
- Potential failure to deal with floods beyond 1 in 100-year levels
- Declining availability of water
- Increased cooling costs
- Surface temperature rises may affect our surface thermal equipment performance
- Heat stress on mine employees
- Legislative changes, including aggressive taxation regimes and carbon abatement requirements.

GHANA
- Increased operational costs linked to maintenance of roads and more frequent replacement of tyres and increased dewatering
- Heat stress on mine employees
- Favourable conditions for vector-borne diseases
- Droughts affecting long-term availability of grid power.

PERU
- Water shortages in the rainy season - insufficient water in tailings dam for dry season
- Limited capacity to send concentrate to port due to severe weather events
- Mudslides and rockfalls affecting the transport of concentrate to port.

SOUTH AFRICA
- Variabilities in rainfall intensity increasing operational costs for alternate water sources
- Temperature increases could affect surface cooling plants
- Heat stress on surface mine employees
- Climate change-related regulatory uncertainty.
Recent climate-related developments, risks and opportunities

The table below lists our most recent experiences of climate-related risks and opportunities, both from an operational and a regulatory perspective. The table also lists our remedial actions to these risks.

### CONTEXT AND SELECT CASES

#### GOLD FIELDS

**Gold Fields:**

1. **Climate change regulations** have increased across our regions. All our host countries have published their Nationally Determined Commitments (NDCs), with implications for their industries.

   **In Australia,** we annually report our energy consumption and greenhouse gas emissions under the National Greenhouse and Energy Reporting (NGER) scheme. In 2016, a safeguard mechanism was introduced, with penalties for exceeding emissions baselines of 153,000 t CO₂-e. Since 2017, we have successfully converted our abated carbon emissions at our Granny Smith mine and auctioned these carbon credits off to the Australian government under the Emissions Reduction Fund (ERF). The resulting income of A$126,000 was used to offset the safeguard mechanisms exceedances at St Ives.

   **Chile:**

   The carbon tax scheme became effective in 2017 – at US$5.00 t CO₂-e – targeting large grid connected generation facilities. Our Salares Norte project in the Atacama Desert, which is currently awaiting environmental approval, is a remote operation, with no road grid and will not be affected.

   **In Ghana,** the Renewable Energy Act of 2011 aims for 10% renewable energy across the grid by 2030 (initial date was 2020). Our mines have started investigating how to achieve this.

   **Peru’s Climate Change Framework Law** was published in April 2018. The law, once enacted, aims to accelerate renewable and clean energy, promote industrial energy efficiency, introduce emissions controls and measures, combat land use and promote sustainable transportation. We are still assessing the impact on our Cerro Corona mine.

   **In South Africa,** the Carbon Tax Act imposes levies on companies’ Scope 1 CO₂ emissions, became effective in 2020. South Deep’s exposure to the tax is minimal as its Scope 1 emissions were only 5,504 t CO₂-e in 2017, with 96% from diesel usage. A 10c/ℓ carbon tax levy was announced by the Finance Minister in the February 2019 budget speech. South Deep’s 2018 diesel usage was around 1,961 kℓ, resulting in a levy of approximately R197,000 (US$15,000). In addition, should the state-owned power utility (Eskom) be allowed to pass the cost of the tax from its customers, electricity tariffs may rise significantly.

   **In South Africa:**

   The mine incurred costs to source fresh water from the local water utility.

   **In Ghana:**

   The country experienced a severe drought in 2016, which affected South Deep’s on-mine water supply. The mine incurred costs to source fresh water from the local water utility.

   **In Peru:**

   Diesel usage related emissions onto its customers, electricity tariffs may rise significantly.

   **In South Africa:**

   Diesel costs.

   **In Ghana:**

   Recent chronic weather events at our operations included:

   - **Ghana:** In August 2018, persistent rainfall at our Tarkwa mine flooded the pit for five days. Damages and costs incurred by the mining contractors included repairs to vehicles that were submerged, additional dewatering infrastructure and higher cooling plant efficiencies.

   - **Peru:**

     - In February 2018, persistent rainfall at our Tarkwa mine flooded the pit for five days. Damages and costs incurred by the mining contractors included repairs to vehicles that were submerged, additional dewatering infrastructure and higher cooling plant efficiencies.

     - **Chile:**

       - In 2017, a cyclone caused damage to property at St Ives. At our Gruyere project, severe rainfalls during January and February 2018 led to a three-month project delay. We have reviewed the adequacy of our flood management measures, sought to understand the impact on our water reserves and are implementing energy saving initiatives to mitigate the rising cooling costs.

       - **South Africa:**

         - In early 2018, earth-plate movements in Cuzco State resulted in the gas pipeline supplying our independent power producer being shut down for 12 days. The result was higher monthly electricity costs as diesel-based reserve power plants had to be utilised.

       - **South Africa:**

         - High rainfall in the KwaZulu-Natal province led to a three-month delay in the commissioning of the mine. The mine incurred costs to source fresh water from the local water utility.

       - **Chile:**

         - Chronic physical climate change incidents have the potential to materially impact Gold Fields’ operations. The availability of suitable water for our operations in particular is critical, as the majority of the countries in which we operate are water stressed. Chronic water risks range from the impact on staff health and safety, to damages to equipment or infrastructure that could cause work stoppages. During 2017, we spent US$32m in water management initiatives.

#### MARKETS

**Gold Fields primarily produces gold, which is rather immune to the impact of climate change.** Gold Fields also produces copper – around 30,000 tons a year – as a secondary product at its Cerro Corona mine in Peru. The impact of climate change offers opportunities for the copper price as the metal is an excellent conductor of electricity and a key metal in renewable energy and electric vehicle technologies. According to a World Bank report, the 2°C warming scenario will drive demand for copper and silver. Gold Fields estimates that a 1% rise in the copper price will increase the Group’s total revenue by approximately US$32m/year.

Gold Fields manages commodity price market volatility risks by adopting hedging policies which lock in prices at favourable levels. Gold Fields takes short-term hedges on oil, foreign exchange, gold and copper prices to manage volatility in commodity prices.

**The following opportunities have arisen as a result of our investment in gas and renewable energy projects in Australia:**

- **In 2017, we have successfully converted abated carbon emissions at our Granny Smith mine after converting a diesel power plant to gas and auctioned these carbon credits off to the Australian government under the Emissions Reduction Fund (ERF).** Over a seven-year period, we received approximately A$120,000 a year in credits. Some credits were used to offset the safeguard mechanisms exceedances at the St Ives mine.
- **Switching off the diesel power plant at Granny Smith enabled us to remove exposure to oil price volatility.**
- **Expected carbon emission reductions of approximately 50,000 CO₂-e a year from the renewable energy power plants at Granny Smith (9,400 t CO₂-e) and Agnew (45,000 t CO₂-e).**
- **Wind based power is being implemented at Agnew and are being assessed at Gruyere and Granny Smith to leverage further opportunities.**

### RISK

**Gold Fields has processes and controls in place to ensure compliance with relevant laws, regulations and codes.**

**Gold Fields operates in regions with participation in regional carbon trading schemes.**

### COMPLIANCE

**Potential that Gold Fields could violate a climate-related law or regulation**

- **Potential that Gold Fields could violate a climate-related law or regulation**
- **Fields could violate a climate-related law or regulation**
- **Gold Fields has processes and controls in place to ensure compliance with relevant laws, regulations and codes.**

### REGULATORY

- **Potential for new laws to increase costs related to compliance or cause disruptions to the business**
- **Gold Fields has processes and controls in place to ensure compliance with relevant laws, regulations and codes.**
- **Gold Fields operates in regions with participation in regional carbon trading schemes.**

### OPPORTUNITY

- **Gold Fields has processes and controls in place to ensure compliance with relevant laws, regulations and codes.**
- **Gold Fields operates in regions with participation in regional carbon trading schemes.**
- **Gold Fields has processes and controls in place to ensure compliance with relevant laws, regulations and codes.**

### MARKETS

- **New market opportunities or demand risks for our current products**
- **Gold Fields has processes and controls in place to ensure compliance with relevant laws, regulations and codes.**
- **Gold Fields operates in regions with participation in regional carbon trading schemes.**

### CONTEXT AND SELECT CASES

**Recent severe weather events at our operations included:**

- **Australia:** In 2017, a cyclone caused damage to property at St Ives. At our Gruyere project, severe rainfalls during January and February 2018 led to a three-month project delay. We have reviewed the adequacy of our flood management measures, sought to understand the impact on our water reserves and are implementing energy saving initiatives to mitigate the rising cooling costs.

- **Chile:**

  - The 2016 winter was severe with heavy snowfalls at the Salares Norte project, resulting in reduced project activities for longer than planned.

  - **Salaverry Port in Peru:**

    - Switching off the diesel power plant at Granny Smith enabled us to remove exposure to oil price volatility.

    - **Expected carbon emission reductions of approximately 50,000 CO₂-e a year from the renewable energy power plants at Granny Smith (9,400 t CO₂-e) and Agnew (45,000 t CO₂-e).**

    - **Wind based power is being implemented at Agnew and are being assessed at Gruyere and Granny Smith to leverage further opportunities.**
In assessing our mines’ exposures to climate-related risks, we are guided by our Climate Change Policy statements as well as external guidelines.

These are:
- The ICMM’s Climate Change Position Statement. We have been a member of the ICMM for more than 10 years and are fully aligned to its position statement (See p6).
- The Nationally Determined Commitments (NDCs) from our host governments (see adjacent table).
- Our 2016 climate change vulnerability assessments, which was conducted using an ICMM sponsored tool, which in turn utilised the UN’s Intergovernmental Panel on Climate Change scenarios (RCP8.5).

The lives-of-mines of our operations range from six to 70 years, hence exposure levels to climate-related risks and mitigation actions vary across our portfolio.

Gold Fields runs three planning horizons:
- Operational plans (one year, short term), strategic (three to five years, medium term) and long-term plans (life-of-mine plans). These planning horizons involve capital allocation, informed by operational and strategic drivers, including impact of climatic changes, as well as security of supplies for energy and water.
- Along these planning horizons, action plans are developed for climate-related risks affecting production, environment and reputational aspects.

In line with our commitment to engage stakeholders, as enshrined in our Climate Change Policy Statement, we seek to contribute to policy development through active participation in industrial associations and forums in the regions where we operate.

The output of the various scenarios are used to assess impacts of climate-related risks in our project study deliverables, as well as into our strategic risk registers.

Gold Fields uses the NDC scenarios to ensure close alignment of our strategies with those of the relevant national programmes and policies to reduce global temperature increases.

The parameters (and timeframes) used in this scenario analyses are geographical tailored to include the commitments of the various countries in which Gold Fields operates. These include the parameters of the respective national policies and energy mixes.

The NDC analyses are also considered across all the business areas such as mining, processing and logistics. The outcomes of the scenario analyses have informed Gold Fields’ business plans and budget allocations. Gold Fields recognises that energy markets have been fundamentally redefined by the global drive to minimise contributions and build resilience to climate change. This affected the types of energy sourced by business, the cost of energy, how energy is procured and how energy is utilised.

Nationally determined commitments

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>RELEVANT COMMITMENT</th>
<th>AREAS OF IMPACT ON OUR BUSINESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>A target of reducing GHG emissions, 26% to 28% below 2005 levels by 2030</td>
<td>Renewable energy – 23% of electricity from renewables by 2020.</td>
</tr>
<tr>
<td></td>
<td>National energy productivity target of 40% improvement between 2015 and 2030</td>
<td>Safeguard mechanism, introduced 1 July 2016, sets baselines and limits emissions.</td>
</tr>
<tr>
<td></td>
<td>30% – 45% reduction of GHG emission intensity (CO₂) per GDP by 2030 against 2007 levels</td>
<td>Renewable energy – national penetration of 20% by 2025.</td>
</tr>
<tr>
<td></td>
<td>Energy efficiency – 20% reduction in energy consumption forecasts by 2025</td>
<td>A tax on US$0.05 CO₂ eq from stationary grid connected source equal to or larger than 50MW (thermal), effective 1 January 2017, targeting the power and industrial sectors.</td>
</tr>
<tr>
<td>Ghana</td>
<td>Reduce GHG emissions by 15% relative to a business-as-usual scenario by 2030</td>
<td>Renewable energy – national penetration of 10% by 2030.</td>
</tr>
<tr>
<td></td>
<td>Integrated water management – equitable distribution and access for communities</td>
<td>Integrated water management – equitable distribution and access for communities.</td>
</tr>
<tr>
<td>Peru</td>
<td>Emissions reduction of 20% – 30% below a business-as-usual scenario by 2030</td>
<td>Water – security of supply and efficient use.</td>
</tr>
<tr>
<td></td>
<td>23% of mitigation goals to be met through energy, industrial, transport and waste sectors.</td>
<td>23% of mitigation goals to be met through energy, industrial, transport and waste sectors.</td>
</tr>
<tr>
<td>South Africa</td>
<td>Emissions reductions of 34% against a business-as-usual scenario by 2030</td>
<td>A carbon tax at R120/t CO₂ eq has been imposed on Scope 1 emissions. This would require the state-owned power utility and fuel producers to pass this tax burden on to users, exacerbating energy costs.</td>
</tr>
<tr>
<td></td>
<td>Renewable energy – national penetration of 10% by 2030.</td>
<td>Renewable energy – national penetration of 10% by 2030.</td>
</tr>
</tbody>
</table>

Representative Concentration Pathways (RCP8.5) scenario vulnerability assessment

In 2016, using the ICMM sponsored climate data tool, we conducted vulnerability and site-specific risk assessments across our operations and developed mitigation plans in areas highlighted as high or medium risk. The tool is based on 15 global climate change models providing climate projections covering a 20-year period.

It is centred around the year 2035, covering a period from 2025 to 2045, with a 1986 to 2005 baseline. The ICMM tool itself is based on the UN’s Intergovernmental Panel on Climate Change RCP8.5 scenario. The resulting climate change risks identified through the tool are assessed and managed by Gold Fields and reported to the Gold Fields Board.

Homepage of the ICMM’s online MiCA toolkit

Climate-related policies

We have noted an increase in climate-related legislations, policies and litigations. A snapshot across our host regions as at December 2018 is indicated below.

Climate-related legal and related risks

Peru
Since 2000:
- Legislation (6)
- Policies (7)
- Litigation (none yet)

Chile
Since 2000:
- Legislation (4, including failure to disclose climate risks)
- Policies (7)
- Litigation (none yet)

South Africa
Since 2008:
- Legislation (5 enacted, 2 pending)
- Policies (2)
- Litigation (3, failure to consider climate change in EIA approvals)

Australia
Since 2008:
- Legislation (9)
- Policies (8)
- Litigation (4, including failure to disclose climate risks, 17 are coal mining related)

Ghana
Since 1997:
- Legislation (6)
- Policies (8)
- Litigation (none yet)
The Integrated Energy and Carbon Management Strategy emphasizes the need for energy efficiencies, both to achieve cost savings but also to reduce our emissions. Between 2013 and 2018, Gold Fields realized cumulative energy savings of 1,685 TJ, equivalent to US$92m in cost savings and avoiding 432,000 tonnes CO2-e in Scope 1 and 2 carbon emissions.

During 2017, we updated our short-term (2020) energy and carbon management strategic objectives:

- Maintain security of supply
- Improve energy efficiencies and reduce energy costs
- Reduce our carbon footprint
- Integrate energy management business fully into the operational scope of our operations.

We also set aspirational targets in 2016 to be achieved by 2020:

- To achieve cumulative Scope 1 and 2 carbon emissions reduction by 800,000t CO2-e, against the projected annual emissions
- To achieve 5% to 10% energy savings a year through investments in energy initiatives
- To achieve alignment with ISO 50001 energy management principles at all our operations.

Since 2017, we started aligning our energy management practices to those of the ISO 50001 Global Energy Management Standard and aim for full adoption by 2020. We have done this by updating our Group Integrated Energy and Carbon Management Guideline to align with ISO 50001. Our Cerro Corona mine in Peru achieved its ISO 50001 certification in 2018, the first gold mine in Peru and, the first in the Gold Fields portfolio.

The adjacent graph shows our Group energy consumption by source and the related carbon emissions by scope type below.

We base our carbon footprint performance targets on Scope 1 and 2 emissions only.
Our Group journey towards low-carbon and renewable energy

Low-carbon emission journey

A key element of our integrated energy and carbon emission strategy is to shift the power source from high-carbon emission sources, such as diesel and coal, to low-carbon emissions, mainly gas, and increasingly renewable energy sources.

The graphics above and alongside captures a summary of our low-carbon electrification strategic initiatives since 2015, indicating a strong shift towards low-carbon energy sources, for projects and operations.

This has meant less reliance on the public grid in Ghana and external suppliers in Australia. In addition to cost benefits, this ensures that we have control over our own energy supply.

We continue to invest in energy efficiency initiatives, fuel switching and renewable energy initiatives across all our operations.

Energy projects: Status mid-2019

- 150MW gas installed, current projects
- 40MW solar under study, 4MW installed, 6MW under construction
- 18MW wind under construction
- 6MW battery under study/construction
- Savings of 200kt CO2-e/year from high impact supply projects

Building energy security through low-carbon technologies in Australia and Ghana

Key developments:

- In 2015, Agnew, Darlot and St Ives were on external grids, which were gas-based, with Granny Smith on 100% diesel (dedicated).
- In 2018, 100% gas on all sites, with only Granny Smith having dedicated supply as yet. (We divested from Darlot in 2018).
- In 2015, the Tarkwa and Damang mines depended 100% on the public grid, of which 23% was hydro and 77% gas. This followed a prolonged drought in Ghana.
- In 2018, the mines depended for 15% of their electricity on the grid, with no dedicated power generation. Our grid electricity was 50% gas and 50% hydro.
- In 2015, the natural gas supply to these plants comes via a dedicated 75km gas pipeline to replace trucked-in liquefied petroleum gas.
Renewable energy is increasingly becoming a viable option for our operations, not only due to the positive impact on carbon emissions but also because the cost of renewables is rapidly decreasing. By mid-2019 renewable energy projects were being finalised at two of our Australian mines:

- At Agnew, a 10,000 panel solar plant, set to produce 4MW of power during the day, a 18MW wind farm and a 13MW/4MWh battery project are set to come online in stages from August 2019 until February 2020 onwards.
- At Granny Smith a 8MW solar farm with 2MW battery storage facility was completed in March 2019.
- At the Gruyere JV, installation of solar powered pumps at the borefields replaced diesel generators.
- At our Johannesburg head office, solar panels on the roof supply 50% of the daytime electricity load.

Renewable energy is set to reach at least 10% of total energy usage for our Australian mines by 2020.

Due to regulatory uncertainty around the use of private power purchase agreements, South Deep has delayed the signing of a 25-year power purchase agreement with an IPP for a 40MW solar photovoltaic facility at the mine. We are exploring ways to develop the facility in line with government’s recent Integrated Resource Plan, which for plants with a generation capacity above 10MW, requires both ministerial exemption and a power generation licence for IPPs.

Gold Fields also remains committed to our target of using renewables for 20% of the energy requirements of new projects over their life-of-mine. Evaluations of the gradual introduction of renewable use at our Salares Norte project in Chile are promising and ongoing.

Three (South Africa, Australia and Peru) of our four regions are declared water stressed by the World Business Council for Sustainable Development. Therefore water management is of strategic importance to us, not only as water scarcity impacts our operations, but also communities living adjacent to our mines.

Given the remote location of most of our operations and the climate change-driven water security impacts to our operations, we also closely monitor our water usage and spending and invest in water security and efficiency initiatives. As a benchmark, we have set a target to recycle or reuse at least 60% of the water we use in our processes. We are committed to the ICMM water position statement and achieved full alignment to it by the end of 2018. We spent US$32m on water management in 2018, of which 45% was on water infrastructure for both our operations and in our communities.

We have updated our Group Water Management Guideline by incorporating the commitments under the ICMM Water Position Statement. Predictive and dynamic water balances are in place at all operations, enabling us to account for the water inputs to and outputs.

Our short-term 2020 water management strategic objectives are:

- Maintain security of supply
- Manage water at operations effectively
- Apply transparent corporate water governance
- Collaborate with stakeholders, particularly host communities, to achieve responsible and sustainable water use
- Achieve water security through a catchment approach.

<table>
<thead>
<tr>
<th>Water withdrawal per tonne processed</th>
<th>Water recycled/reused as percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>1.01</td>
</tr>
</tbody>
</table>

2018 changes in part due to new ICMM water definitions.
### Statistics per region – 2018

The table below indicates the sources of electricity and energy for our operations as well as their climate change and water performances.

#### GROUP

<table>
<thead>
<tr>
<th>GROUP</th>
<th>Total energy consumption (TJ)</th>
<th>Diesel haulage consumption</th>
<th>Electricity</th>
<th>Gas</th>
<th>Coal</th>
<th>Hydro</th>
<th>Diesel (%)</th>
<th>Renewables %</th>
<th>Nuclear %</th>
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<td>SOUTH AFRICA</td>
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<td>26.4%</td>
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<tr>
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<td>0%</td>
<td>6.9%</td>
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<tr>
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<td>4.1%</td>
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<td>14.9%</td>
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#### Emissions

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<tr>
<th>Scope 1-3 emissions (Mt CO₂)</th>
<th>Emission intensity (Scope 1-2 Mt CO₂-e/oz)</th>
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<tr>
<td>1.85</td>
<td>0.66</td>
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<tr>
<td>0.51</td>
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<tr>
<td>0.15</td>
<td>0.28</td>
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#### Water

<table>
<thead>
<tr>
<th>Water withdrawal (GL)</th>
<th>Water recycled/reused (% of total)</th>
<th>Water consumption (kL/oz)</th>
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<tr>
<td>21.2</td>
<td>66%</td>
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<tr>
<td>7.2</td>
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<td>7.3</td>
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<tr>
<td>3.8</td>
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1 EG = Emergency Generators  2 Eskom IAR 2018
## Regional and Group energy and carbon performance

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<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tr>
<td><strong>Electricity purchased (MWh)</strong></td>
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<td><strong>Diesel consumption (kL)</strong></td>
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<td><strong>Total energy consumption (GJ)</strong></td>
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<td><strong>Energy spend (% of opex)</strong></td>
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<tr>
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<td><strong>Carbon emissions (tonnes) (Scope 1-3)</strong></td>
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<td><strong>Carbon emission intensity (tonnes CO2–e/oz)(Scope 1 and 2 only)</strong></td>
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<tr>
<td>Australia</td>
<td>0.37</td>
<td>0.39</td>
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<td>0.40</td>
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<td>0.66</td>
</tr>
</tbody>
</table>
Administration and corporate information

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Taryn Harmse
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Fax: +27 11 562 9829
e-mail: taryn.harmse@goldfields.com

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Fax: +44 20 7796 8645
e-mail: general@corpserv.co.uk

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TRANSFER AGENT
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College Station, TX 77842-3170
Overnight correspondence should be sent to:
BNY Mellon Shareowner Services
211 Quality Circle, Suite 210
College Station, TX 77845
e-mail: shrelations@cpushareownerservices.com
Phone numbers
Tel: 888 269 2377 Domestic
Tel: 201 680 6825 Foreign

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J.P. Morgan Equities South Africa Proprietary Limited

Gold Fields Limited
Incorporated in the Republic of South Africa
Registration number 1968/004880/06
Share code: GFI
Issuer code: GOGOF
ISIN – ZAE000018123

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Tel: 0871 664 0300
Calls cost 12p per minute plus your phone company’s access charge.
If you are outside the United Kingdom, please call +44 371 664 0300.
Calls outside the United Kingdom will be charged at the applicable international rate.
The helpline is open between 9:00am – 5:30pm, Monday to Friday excluding public holidays in England and Wales.
e-mail: enquiries@linkgroup.co.uk

Website
WWW.GOLDFIELDS.COM

Listings
JSE / NYSE / GFI
SIX, GCU

CA Carehal* (Chair) RF Merson* (Deputy Chair) NJ Holland* (Chief Executive Officer) PA Schmidt* (Chief Financial Officer)
A Andani† PJ Bacchus* TP Goodliffe* CJ Letton† P Mahanyele-Dabengwa* SP Peil† YGH Suleman†
*African* Ghanaian
† Independent Director • Non-independent Director