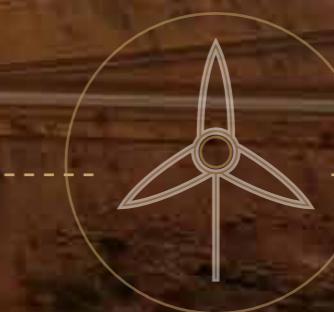




GOLD FIELDS

Our 2019 **climate** change report

Aligned with recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)



ABOUT GOLD FIELDS

Gold Fields is a globally diversified gold producer with nine operating mines in Australia, Peru, South Africa and Ghana (including the Asanko JV), as well as one project in Chile. The Company's attributable annual gold-equivalent production is 2.2Moz, and it has attributable gold-equivalent Mineral Resources of 115.7Moz and Mineral Reserves of 51.3Moz. Our shares are listed on the Johannesburg Stock Exchange (JSE) and our American depositary shares trade on the New York Stock Exchange (NYSE).



Mine: Cerro Corona in Peru – Copper, Gold – open pit mine
Project: Salares Norte in Chile



Mines: Tarkwa, Damang and Asanko Gold (45%) in Ghana – open pit mines



Mine: South Deep – underground mine



Mines: St Ives, Granny Smith, Agnew and Gruyere (50%) in Western Australia – open pit and underground mines

Delivering **value** for a sustainable future

ABOUT THIS REPORT

This is our second Climate Change Report compiled in line with the recommendations of the Financial Services Board's Task Force on Climate-related Financial Disclosures (TCFD). It is released as a companion to our 2019 Integrated Annual Report (IAR).

In 2018, Gold Fields became only the second South African company and the first South African mining company to publicly endorse the TCFD recommendations. The TCFD recommendations are backed by most financial regulators around the world and encourage companies to release details about their climate-related financial risks and opportunities to provide consistent information to investors, lenders, insurers, and other stakeholders. Our TCFD report replaced our previous annual submissions under the Carbon Disclosure Project (CDP).

The TCFD voluntary guidelines provide for strategic, comparable and reliable disclosure of climate-related information, which companies commit to publish at least once a year. The scope of our climate change performance and data covers our eight managed mines (including 100% of the new Gruyere mine, but excluding our Asanko Gold JV). While we report on relevant developments at our Salares Norte project in Chile, we do not include data from the project.

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CHIEF EXECUTIVE OFFICER'S STATEMENT



Managing climate change at Gold Fields

"We seek to understand our exposure to climate-related risks, with the aim of improving our disclosures, preparedness and performance"

NICK HOLLAND
Chief Executive Officer



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 host communities.

We continue to respond 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 or aluminium, gold mining's carbon emission intensity per unit value is among 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 and mine closure.

In 2017 the Board approved a Climate Change Policy Statement, committing us to identify and assess climate-related risks and opportunities; report and disclose our performance via various reporting frameworks; raise the proportion of renewable energy; and implement energy and water efficiency initiatives.

Understanding the risks and adapting to climate change

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 are set to increase both operational and capital costs. At the same time though, opportunities have also emerged through improved water and energy consumption efficiencies and transitioning towards lower carbon energy sources, with associated financial benefits. Unless managed appropriately, the negative impacts of climate change could create resource tensions with host communities, thus affecting our social licence to operate.

The processes for identifying and assessing climate-related risks are integrated into Gold Fields' risk management systems. These risks and mitigating actions are integrated into business strategy – from planning through to operations.

Business planning includes consideration of the following risks: water availability, shifts in rainfall patterns, higher temperatures, changing legislative landscapes pertaining to carbon emissions management, the increasing need to find alternatives to traditional energy provision, and improved energy and water efficiencies. Our regional offices monitor regulatory changes, including climate change-related ones. We have also included climate-related risk assessments in our capital projects studies.

At an operational level, Gold Fields completes detailed operation-specific climate risk vulnerability assessments every five years (since 2016). In addition, operations review site-level climate-related risks on a quarterly basis.

Climate change-related risks are reflected in our top 20 risks either directly, through flooding and droughts and increased energy consumption, or, indirectly, through their impact on water supply and costs as well as regulatory changes. Water risks have been identified over the short, medium and long term, particularly at our operations in South Africa, Peru and Australia, which the World Business Council for Sustainable Development classifies as water-stressed.

Gold Fields' processes are aligned to the ICMM's Sustainable Development framework.

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.

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

- Greater energy and water efficiencies
- Increased use of low carbon and renewable energy sources
- Security of water and energy supplies
- Responsible 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.

Our next steps

Improving performance: As we strive to improve our water, energy and carbon emissions performance, we will be conducting studies for strategic interventions.

Risk assessments: During 2021, we will be updating our regional vulnerability and site risk assessments to inform our next five-year mitigation and adaptation plans, and integrating them with our business strategies.

Planning: Using assessments, we will be aiming to further improve our integration of climate change considerations into operational management.

Stakeholder engagements: We will seek to include climate-related challenges and developments into our key stakeholder engagements to discuss the impact of climate-related risks.

OUR CLIMATE CHANGE COMMITMENTS

Gold Fields' Climate Change Policy Statement

Gold Fields Limited recognises that climate change is a serious challenge globally to society at large, our host communities and our operations. The Group's 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' global commitments on climate change



2019 ICMM Position Statement on Climate Change

Recognition statements

ICMM members recognise:

1. The need for an urgent global response to the threat of climate change, across all areas of society and the economy.
2. The need to support the goals of the Paris Agreement to limit the increase in the global average temperature to 2°C and pursue efforts to limit the increase to 1.5°C.
3. The need to reduce emissions from the extraction and use of mining products, and support collaborative market-based approaches to accelerate the use of low-emission technologies as part of a transition to a low carbon energy mix. At the same time, we also recognise the practical challenges that some less developed countries with domestic supplies of fossil fuels will face in making that transition.
4. That climate and energy policy should be technology neutral and rely on market-based approaches to enable least cost abatement solutions.
5. The vital role that a broad-based, predictable, long-term carbon pricing can play, alongside other market mechanisms to drive reduction of greenhouse gas emissions and incentivise innovation.
6. The importance of providing climate-related disclosure in order for all stakeholders to measure and respond to climate change risks and opportunities, including the transparency around climate-related risks the TCFD has brought.
7. The role of natural climate solutions and offsets in providing low cost options to address global greenhouse gas emissions.

Commitments

In addition to existing commitments under the ICMM Sustainable Development Framework, ICMM member companies commit to being part of the solution by:

Individually:

- Implement governance, engagement and disclosure processes to ensure climate change risks and opportunities are considered in business decision-making.
- Advance operational level adaptation and mitigation solutions, taking in consideration local opportunities and challenges.
- Engage with host communities on our shared climate change risks and opportunities and help host communities understand how they can adapt to the physical impact of climate change.
- Disclose scope 1 and 2 greenhouse gas emissions on an annual basis and set emissions reduction targets at a corporate level.

Collectively:

- Support the global transition to a low carbon economy by continuing to contribute to the sustainable production of commodities essential to the energy and mobility transition, working with our partners and key suppliers along our value chains.
- Engage with external parties to determine a preferred approach to reporting scope 3 emissions.

Either collectively or individually:

- Engage with governments, peers, and others to support the development of effective climate change policies.
- Support efforts to mitigate greenhouse gas emissions, in collaboration with our peers by promoting innovation, developing and deploying low emissions technology, and implementing projects that improve energy efficiency and incorporate renewable energy supply in our energy mix.

Support carbon pricing and other market mechanisms, that drive the reduction of greenhouse gas emissions, deliver the least costly pathway to emissions reductions and support predictable long-term pricing that incentivise innovation.

BUILDING CLIMATE CHANGE RESILIENCE

Our governance processes around climate-related risks

Oversight over climate change-related strategy, performance and risks is held at Board level. The Board sets the strategic direction and approves policies that are relevant to the management of energy, carbon emissions, water and climate change.

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 robust risk management strategies are in place.

The Safety, Health and Sustainable Development (SHSD) Committee of the Board reviews performance against climate-related strategies on a quarterly basis.

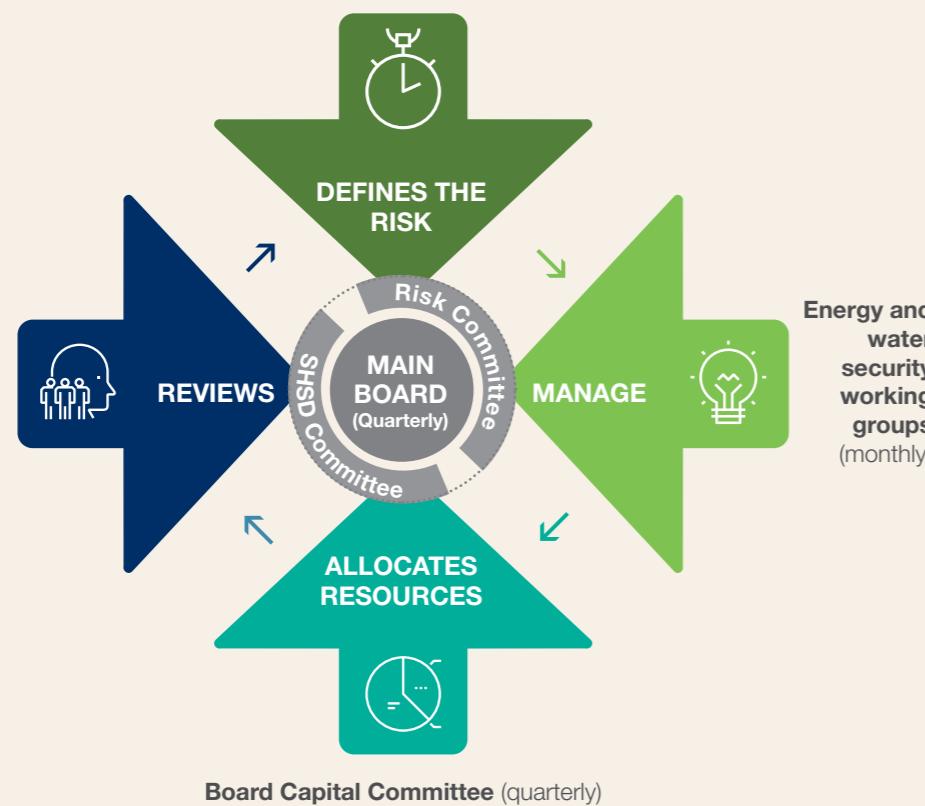
The Capital Projects, Control and Review Committee is responsible for capital allocation. Project deliverables include assessment of climate risks and opportunities.

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 of the Board, while the Risk Committee reviews updates to the risk register.

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, carbon emissions, environment, energy and climate change-related risks.

Climate-related risks are identified and ranked in accordance with Gold Fields' Enterprise-wide Risk Management (ERM) process, which is aligned with the ISO 31000 global risk management standard. At regional level, strategic and operational risk registers include contingencies for climate events such as floods, droughts, severe storms and regulatory changes.

ERM risk assessment (annual and quarterly)



Climate change and Gold Fields' strategy



Annual business plans

- Annual business and operational plans, from which performance scorecards are drawn, include energy, water, carbon emissions and environmental aspects
- Regulatory and policy changes are considered when developing business plans

Strategic planning

- Ensure that we quantify water, energy and carbon footprints for the various strategic business scenarios
- Incorporate the impact of changing rain patterns in our mine plans
- Quantify risk levels and, if necessary, adjust risk thresholds

Life-of-mine planning

For the long term, in consideration of each assets' life-of-mine, we seek to understand and quantify the longer-term climate change impacts on our mines. We also assess and consider post-closure risks and opportunities in our portfolio reviews

Gold Fields' controls, policies and strategies



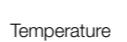
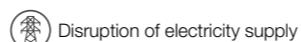
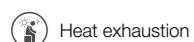
CLIMATE CHANGE RISK AND VULNERABILITY ASSESSMENT

Gold Fields – South Africa

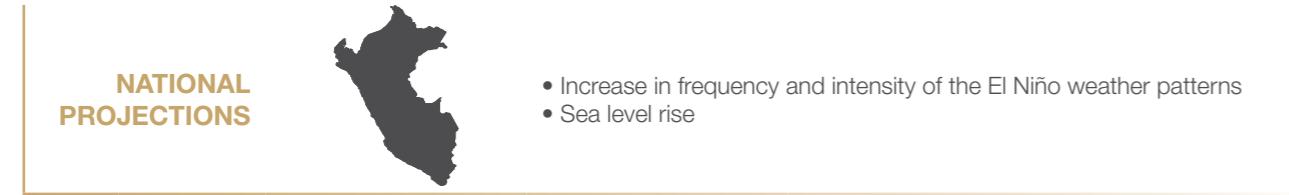
NATIONAL PROJECTIONS		<ul style="list-style-type: none"> Increased rainfall variability 3-5°C increase in temperatures by 2035 (forecast from climate models) 			
LOCAL PROJECTIONS		 Temperature increase	 Decrease in annual rainfall	 Increase in storms	 Increased water stress
		Climate change impact	Risk	Vulnerability	Adaptations
CORE OPERATIONS	Underground		Increased electricity costs	● High	<ul style="list-style-type: none"> Potential for off-grid renewable energy systems, new mine ventilation and cooling technologies
	Processing		Reduced onsite water flows	● High	<ul style="list-style-type: none"> Improved water storage, increased water recycling and reduced water consumption
	Health and safety		Employee heat exhaustion and dehydration	● Medium	<ul style="list-style-type: none"> Optimise mine ventilation and cooling systems; heat stress management programmes
VALUE CHAIN	Suppliers		Increased price of upstream products due to carbon tax	● Medium	<ul style="list-style-type: none"> Budget for price increases and engage with suppliers
	Workforce		Disruption to operations	● Medium	<ul style="list-style-type: none"> Employee redeployment and training
	Investors		Reduced share price or investor interest	● Low	<ul style="list-style-type: none"> Publish South Deep's climate change plans and achievements and increase awareness
BROADER NETWORK	Communities		Increased tension in community around service delivery and living conditions	● High	<ul style="list-style-type: none"> Investments in host communities
	National infrastructure		Disruption in electricity supply; increased electricity costs	● Low	<ul style="list-style-type: none"> Potential for off-grid renewable energy systems
	Regulatory		Carbon-emission related tax/levies and reporting requirements	● Medium	<ul style="list-style-type: none"> Regularly review policy changes to ensure compliance Participate in industry bodies to shape policy

Gold Fields – Australia

NATIONAL PROJECTIONS		<ul style="list-style-type: none"> Increase in frequency and intensity of extreme events Reduced rainfall Temperature increases 			
LOCAL PROJECTIONS		 Temperature increase	 Decrease in annual rainfall	 Intense storms	
		Climate change impact	Risk	Vulnerability	Adaptations
CORE OPERATIONS	Extraction		Adequacy of flood management and storage capacities to safeguard personnel	● Medium	<ul style="list-style-type: none"> Continually review flood management and storage capacities
	Materials handling		Declining availability of process water in terms of suitable quality and quantity	● Medium	<ul style="list-style-type: none"> Develop life-of-mine water balances that are dynamic, predictive and probabilistic
	Transport		Interruptions to the movement of waste and ore	● Low	<ul style="list-style-type: none"> Flood prevention measures and vehicle safety protocols in high rainfall events
VALUE CHAIN	Waste disposal		Tailings dam stability during periods of high rainfall	● Medium	<ul style="list-style-type: none"> Apply the Group guideline to tailings storage facilities with an emphasis on critical control management
	Health and safety		Increased cooling costs and potential heat stress	● Medium	<ul style="list-style-type: none"> Alignment to the new proposed Global Tailings Standard Utilise in-pit tailings disposal where possible
	Post-closure		Inability to achieve closure objectives due to arid conditions	● Low	<ul style="list-style-type: none"> Implement energy and cost management plans per site Develop detailed mine closure plans for all sites
BROADER NETWORK	Suppliers		Delays to transport of supplies	● Low	<ul style="list-style-type: none"> Review strategic consumables and spares plans
	Workforce		Movement of personnel to sites and interruptions to flight schedules	● Low	<ul style="list-style-type: none"> Ensure alternative transport facilities are available
BROADER NETWORK	Communities		Potable water cost with increased competition and declining availability	● Low	<ul style="list-style-type: none"> Maintain current community relations strategy
	Regulatory		Taxation on emissions, aggressive abatement requirements and removal of rebates	● Medium	<ul style="list-style-type: none"> Maintain current stakeholder engagement strategy and representation on industry bodies



Gold Fields – Peru

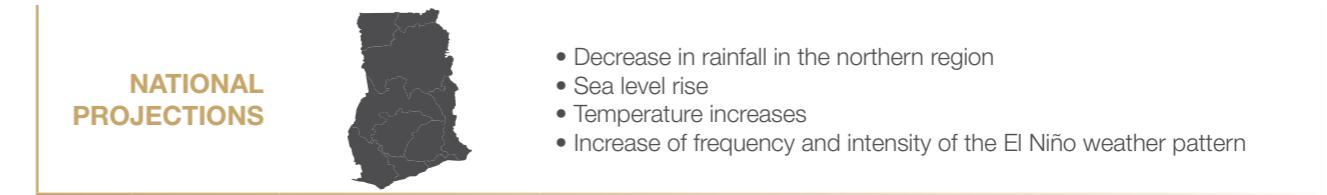


	Climate change impact		Risk	Vulnerability	Adaptation
Extraction and deposition			Intense rains exceed pumping and treatment capacity, potentially compromising slope stability near open-cast mines	● Low	<ul style="list-style-type: none"> Implement leading practices for flood prevention, pit slope stability and TSF construction and operation
Materials handling			Reduced water supply for operations. Higher moisture content of the ore	● Low	<ul style="list-style-type: none"> Increase water recycling and reduce water withdrawal
Transport			Interruptions to the transport system leading to bottlenecks in the storage of concentrates	● High	<ul style="list-style-type: none"> Increase the storage capacity at mine warehouse and port Study alternate roads for concentrate transport
Port operations			Interruption of cargo operations	● Medium	<ul style="list-style-type: none"> Increase storage capacity at port and scheduling logistics
Health and safety			Increase of respiratory illnesses	● Low	<ul style="list-style-type: none"> Application of safety and health policies
Post-closure			Increase energy demand for pumping requirements	● Low	<ul style="list-style-type: none"> Consider renewable energy for water pumping at post-closure

	Climate change impact		Risk	Vulnerability	Adaptation
Suppliers		Interruptions of the transport system	● Low	<ul style="list-style-type: none"> Monitoring and maintenance of roads and assessing alternate routes to the port 	
Workforce		Abandoning of agriculture practices. Increase in demand for jobs from people relocating to mine area	● Low	<ul style="list-style-type: none"> Engagement with public institutions for infrastructure improvements on alternative roads Continuing shared value programmes 	

	Climate change impact		Risk	Vulnerability	Adaptation
Communities		Water quality compromised. Poor agriculture productivity and food provision	● High	<ul style="list-style-type: none"> Entrenching shared value programmes, communicating good practices and strict control over water discharges 	
National infrastructure		Decrease in water availability for electricity generation	● Low	<ul style="list-style-type: none"> Strong supply chain systems to enable sourcing of temporary power generation 	

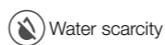
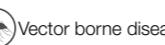
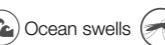
Gold Fields – West Africa



	Climate change impact		Risk	Vulnerability	Adaptation
Extraction			Reduced production due to wet haul roads	● Low	<ul style="list-style-type: none"> Further increase pumping capacity and effective pit dewatering strategies to address flooding or heavy rainfall
Transport			Larger volumes of mine water	● Medium	<ul style="list-style-type: none"> Continue mining the deeper areas within the pit to create sumps which allows for excess water to be collected and pumped out
Materials handling			Increased operational costs linked to maintenance of roads and more frequent replacement of truck tyres	● High	<ul style="list-style-type: none"> Continue sheeting of haul roads to allow for operations to continue during wet periods
Health and safety			Heat stress on mine employees	● High	<ul style="list-style-type: none"> Consideration for augmenting engine operated air conditioning units in trucks with battery operated units to prevent operators idling to keep cabins cool
			Favourable conditions for vector born diseases spread	● High	<ul style="list-style-type: none"> Implement heat stress management programmes

	Climate change impact		Risk	Vulnerability	Adaptation
Electricity provision			Disruption of electricity supply from hydro schemes	● Medium	<ul style="list-style-type: none"> Reduced reliance on the unstable national grid, through the commissioning of the two Genser Energy gas-fired power plants
Key materials and supplies			Weather-related delays in the transport of fuel	● Medium	<ul style="list-style-type: none"> Gas pipeline developed to mines

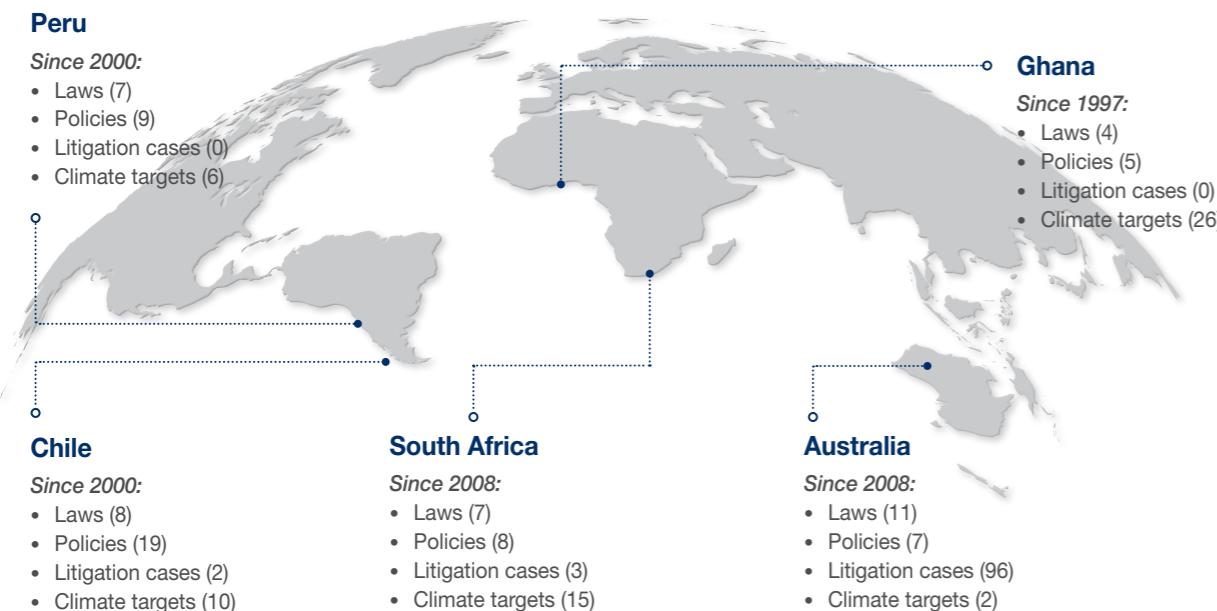
	Climate change impact		Risk	Vulnerability	Adaptation
Workforce			Increasing demand for jobs from people relocating to the mine area	● Low	<ul style="list-style-type: none"> Gas pipeline developed to mines
Communities			Vulnerable or disgruntled communities could put the social licence to operate at risk	● Medium	<ul style="list-style-type: none"> Educate local communities on climate-related issues to reduce community vulnerabilities and increase resilience
			Food insecurity, service incapacity and climatic impacts on subsistence based livelihoods leading to migration	● High	<ul style="list-style-type: none"> Infrastructure investments in our Tarkwa and Damang communities Reducing community vulnerability through youth employment in agriculture, health, sanitation and water supply projects



Tracking climate-related policies and laws

We have noted an increase in climate-related legislation, policies and litigations in the jurisdictions in which we operate. A snapshot across our host regions as at December 2019 is indicated in the map below:

CLIMATE-RELATED LEGAL AND RELATED RISKS



Source: www.climate.laws.org/

MONITORING NATIONALLY DETERMINED COMMITMENTS (NDC)

Gold Fields uses the NDC scenarios to ensure close alignment of our strategies with those of the relevant national programmes and policies to address climate change. The parameters (and timeframes) used in these scenario analyses are geographically tailored to include the commitments of the various countries in which Gold Fields operates.

The NDC analyses are also considered across all 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 has affected the types of energy sourced by business, the cost of energy, how energy is procured and how energy is utilised.

HOST COUNTRY	COUNTRY COMMITMENT	COUNTRY POLICIES THAT IMPACT ON OUR BUSINESS	OUR KEY RESPONSES
Australia	A target of reducing GHG emissions, 26% to 28% below 2005 levels by 2030	<ul style="list-style-type: none"> Renewable energy – 23% of electricity from renewables by 2020 National energy productivity target of 40% improvement between 2015 and 2030 Safeguard mechanism, introduced 1 July 2016, sets baselines and limits emissions 	Increasing use of renewable energy at Granny Smith and Agnew
Chile	30% – 45% reduction of GHG emission intensity ($\text{CO}_2\text{-e}$ per GDP) by 2030 against 2007 levels	<ul style="list-style-type: none"> Renewable energy – national penetration of 20% by 2025 Energy efficiency – 20% reduction in energy consumption forecasts by 2025 A carbon tax of US\$5/t $\text{CO}_2\text{-e}$ from stationary grid-connected sources equal or larger than 50MW (thermal), effective 1 January 2017, targeting the power and industrial sectors 	Salares Norte project to be initially powered by 15% solar power
Ghana	Reduce GHG emissions by 15% relative to a business-as-usual scenario by 2030	<ul style="list-style-type: none"> Renewable energy – national penetration of 10% by 2030 Energy efficiency improvements – 20% across industrial facilities Integrated water management – equitable distribution and access for communities 	Assessing 10% renewable supply for our mines
Peru	Emissions reduction of 20% – 30% below a business-as-usual scenario in 2030	<ul style="list-style-type: none"> Water – security of supply and efficient use 23% of mitigation goals to be met through energy, industrial, transport and waste sectors 	Assessing feasibility for floating solar power plant
South Africa	Emissions reductions of 34% against a business-as-usual scenario by 2020	<ul style="list-style-type: none"> A carbon tax at R120/t $\text{CO}_2\text{-e}$ 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 	Developing a 40MW solar power plant, pending state approval

Tracking our performance – energy and carbon emissions

Our Energy and Carbon management strategy drives energy efficiency initiatives and use of low-carbon energy, both to achieve cost savings but also to reduce our emissions. Between 2013 and 2019, Gold Fields realised cumulative energy savings of 2,090 TJ, nearly 3% of energy consumption over this period, equivalent to US\$119m in cost savings and avoiding 474,000 tonnes $\text{CO}_2\text{-e}$ in scope 1 and scope 2 carbon emissions, equivalent to 7% of carbon emissions during this period.

Our strategic initiatives include:

- Fuel switching** to low-carbon energy sources
- Assessing and installing **renewable energy options**
- Re-negotiating energy contracts with suppliers
- Investing** in energy efficiency initiatives
- Aligning our guidelines and certifying our operations to the **ISO 50001** energy management system

In 2017, we set the following aspirational energy and carbon emissions reductions targets for the period 2017 to 2020:

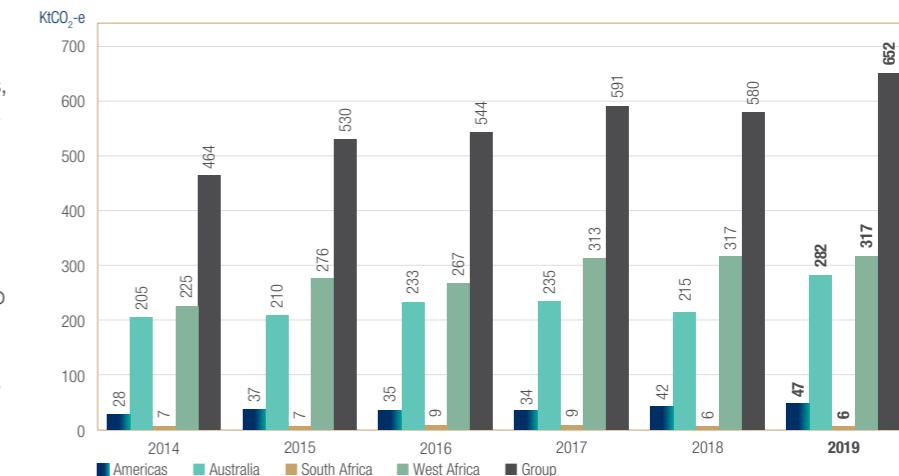
- Cumulative scope 1 and 2 carbon emissions reductions by 800,000t $\text{CO}_2\text{-e}$, against projected annual carbon emissions; by end 2019, we had achieved nearly 50% of this target, with significant reductions expected in 2020 from our renewable energy projects in Australia
- 5% to 10% energy savings per year through investments in energy initiatives. Each year we have performed mostly in line with these targets
- Alignment with ISO 50001 energy management principles at all our operations. The Cerro Corona mine achieved certification in 2018, and Tarkwa and Damang in March 2020. Our other mines are currently conducting gap analyses with the aim of achieving certification by 2023 at the latest

Gold Fields' energy spending combines our electricity and fuel spend and is the second largest cost item in the Group after human resources. In 2019, total energy spend was US\$300m, equivalent to approximately US\$134/oz, comprising 20% of operating costs.

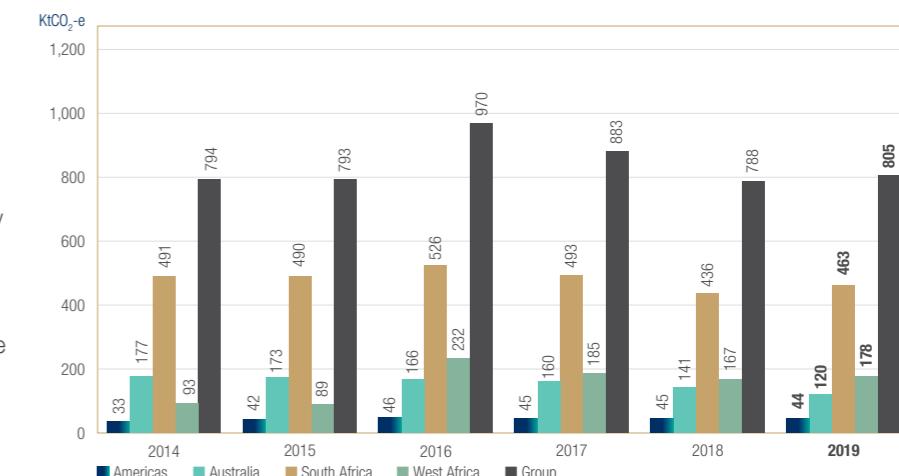
The graph below shows Group energy consumption by source and the related carbon emissions by scope type are detailed in the adjacent graphs.

Group and regional carbon emissions

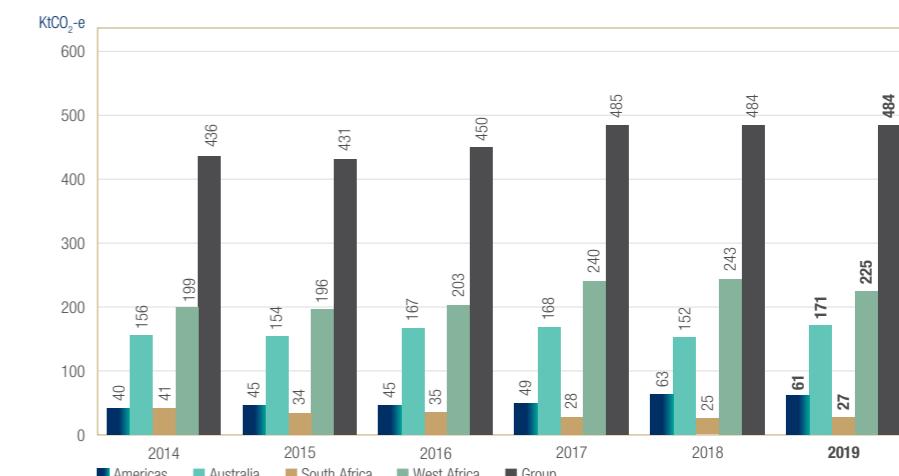
Scope 1 emissions



Scope 2 emissions



Scope 3 emissions



Scope 1 emissions are those arising directly from sources managed by the Company; scope 2 emissions are indirect emissions generated in the production of electricity used by the Company; scope 3 emissions arise as a consequence of the activities of the Company

Tracking our performance – renewable energy

In our quest to strengthen security of supply and decarbonise our energy sources, while at the same time creating resilience against oil price volatility, we have started incorporating renewable energy into our energy supply mix. Two of our Australian mines, Agnew and Granny Smith, have installed renewables and storage solutions. In 2019 renewables accounted for 1% of our Australian mines and less than 1% of our Group energy consumption. By the end of 2020, we project that renewable energy will account for approximately 10% of the total energy usage in our Australian region and 2% of Group consumption.

Our other mines around the world are also looking at raising the renewable energy portion of their energy consumption. The South Deep mine in South Africa is preparing to develop a 40MW solar plant, pending regulatory approval, while our mines in Ghana are investigating the feasibility of renewable energy supplies in line with legislation expected in the near future.

Following are profiles of our three key renewable energy initiatives:



- At Agnew, we commissioned a 10,000 panel solar photovoltaic plant, generating 4MW of power (on sunny days reaching up to 25% of mining demand). By December 2019, Agnew had 8% of its electricity demand met by the solar farm to complement power from its gas plant. An 18MW wind farm (made up of five 3.75MW wind turbines) and a 13MW/4MWh battery energy storage system are coming online from March 2020 onwards. This A\$112m project was supported by A\$13m from the Australian government's renewable fund to enable the wind and battery systems. The Agnew micro-grid will reduce our carbon footprint by some 45,000t CO₂-e per year



- At Granny Smith, in 2016, we commissioned a 24MW gas power plant, to replace a diesel power plant; and in 2019 added a 20,000 panel 8MW solar farm with 2MW battery energy storage system facility, which was commissioned in March 2020. The Granny Smith mine solar power plant will reduce our carbon footprint by some 10,000t CO₂-e per year



- Following our public commitment to have at least 20% renewable energy in all new mines, we completed evaluations at our recently approved Salares Norte project in Chile, located in the Atacama desert. We are planning to ramp up by 2023 with 15% of electricity supplied by a solar power plant, with future energy studies to be undertaken to increase this level

Tracking our performance – water stewardship

Three of the regions in which we operate, South Africa, Australia and Peru, are considered water stressed. Climate change impacts our operations and communities in a number of ways – severe rainfall, shifts in rainfall patterns and prolonged droughts, among others – and responsible and effective water management is increasingly critical to Gold Fields.

Not only will water scarcity or excessive rainfall adversely impact operations, as water is a vital resource for our mining and ore processing activities, it is also an essential need for our host communities – particularly where agriculture is an important economic activity. Managing our impacts on water catchment areas – by ensuring that we do not denude the quality of water or reduce the volume thereof – and is therefore key to maintaining our social licence to operate.

In early 2020, we finalised our 2020 – 2025 Group water stewardship strategy, which includes regional water strategies and three-year management plans, many of them taking cognisance of the impact of climate change. The strategy has three objectives:

- To be a water efficient operator, which requires that we reduce our demand for freshwater from the catchment areas as much as possible due to the probability of water supply shortfalls and communities' water requirements.
- To apply a proactive and risk-based approach to water management. As such, we are embedding water planning into core operational management, empowering informed management decisions and aligning water risks with resourcing over the life of our operations.
- To work with stakeholders in the catchment areas around our mines so that collaborative water actions can be identified and realised. These approaches will be different in each region. The diagram illustrates our long-term strategy:



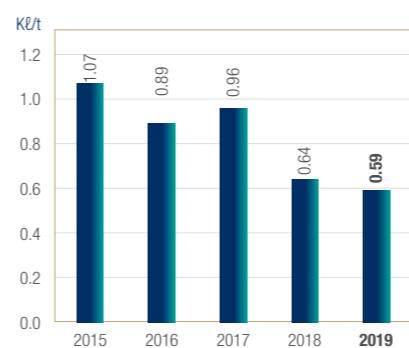
In the short-term, the water management strategic objectives for 2020 comprise:

- Maintaining security of supply
- Effectively managing water at our operations
- Applying transparent corporate water governance
- Adopting a catchment approach to water management

During 2019, Gold Fields spent US\$27m on water management by investing in methods to improve our water management practices, including pollution prevention, recycling and water conservation initiatives.

Predictive and dynamic water balances are in place at all operations, enabling us to account for water inputs and outputs. Furthermore, we have set a target to recycle or reuse at least 66% of the water we use in our processes. In 2019, we achieved 68%. The graphs below highlight our key water management performance indicators.

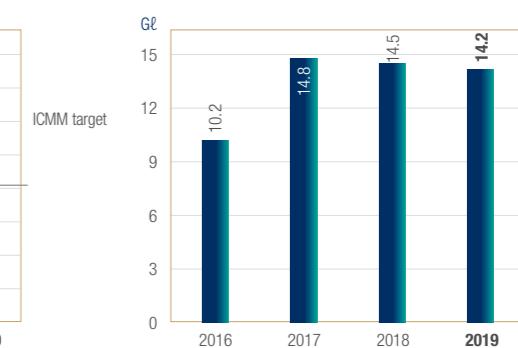
Water withdrawal per tonne processed



Water recycled/reused as percentage of total



Fresh water withdrawal



Regional and Group energy and carbon performance

	2015	2016	2017	2018	2019
ELECTRICITY PURCHASED (MWH)					
Americas	145,361	153,379	151,056	150,443	148,235
Australia	277,521	287,480	282,330	247,204	211,204
South Africa	484,256	525,749	497,814	449,728	436,441
West Africa	415,215	433,814	434,886	436,564	457,458
Group	1,322,353	1,400,422	1,366,086	1,283,940	1,253,338
DIESEL CONSUMPTION (KL)					
Americas	13,455	12,713	12,486	14,927	17,027
Australia	76,867	71,057	59,206	52,190	55,987
South Africa	2,457	3,060	3,019	1,961	2,106
West Africa	99,739	96,669	113,430	114,442	114,601
Group	192,518	183,498	188,140	183,520	189,721
TOTAL ENERGY CONSUMPTION (GJ)					
Americas	1,012,363	1,014,336	997,030	1,082,421,404	1,150,338.953
Australia	3,250,575	3,604,448	3,631,526	3,142,462,658	3,907,976.275
South Africa	1,835,467	2,005,575	1,902,705	1,690,253,177	1,647,636.779
West Africa	5,141,964	5,073,537	5,646,855	5,712,920,595	5,791,655.997
Group	11,240,369	11,697,895	12,178,116	11,628,058	12,497,608
ENERGY INTENSITY (GJ/OZ PRODUCED)					
Americas	3.42	3.75	3.25	3.45	3.93
Australia	3.28	3.82	3.89	3.56	4.05
South Africa	9.27	6.91	6.77	10.76	7.42
West Africa	6.82	7.09	7.95	8.10	7.96
Group	5.02	5.27	5.46	5.64	5.67
TOTAL ENERGY COSTS (US\$M)					
Americas	21.08	20.68	22.07	25.79	28.50
Australia	96.43	83.90	80.78	78.18	81.01
South Africa	31.00	31.55	34.40	33.15	32.45
West Africa	163.16	153.19	120.29	164.43	157.83
Group	311.67	289.32	257.54	301.55	299.79
ENERGY SPEND (% OF OPEX)					
Americas	15%	14%	15%	16%	17%
Australia	18%	14%	15%	15%	13%
South Africa	13%	12%	11%	13%	13%
West Africa	31%	32%	26%	37%	33%
Group	22%	20%	17%	21%	20%
CO₂ EMISSIONS (TONNES) (SCOPE 1 – 3)					
Americas	124,030	126,096	128,106	149,819	152,313
Australia	536,782	565,544	563,409	508,359	572,867
South Africa	531,078	569,401	529,607	467,174	495,826
West Africa	561,273	702,718	737,914	726,838	720,383
Group	1,753,163	1,963,759	1,959,035	1,852,190	1,941,389
CARBON EMISSION INTENSITY (TONNES CO₂-E/OZ) (SCOPE 1 AND 2 ONLY)					
Americas	0.27	0.31	0.26	0.28	0.31
Australia	0.39	0.43	0.42	0.40	0.42
South Africa	2.50	1.92	1.78	2.81	2.11
West Africa	0.48	0.697	0.71	0.69	0.68
Group	0.59	0.69	0.66	0.66	0.66

Gold Fields' carbon footprint – 2019

Operation	Scope 1 emissions							Scope 2 emissions	Total scope 1 and 2 emissions						
	Diesel: haulage and other	Diesel: power generation	Petrol	LPG	Natural gas	Blasting agents	Acetylene								
SOUTH AFRICA	5,964	0	30	0	0	197	18	6,208	462,922						
South Deep	5,960	0	30	0	0	197	18	6,205	462,627						
Sandton office	4	0	0	0	0	0	0	4	468,832						
WEST AFRICA	304,713	3,327	110	2,897	0	5,733	21	316,802	178,255						
Tarkwa Gold Mine	215,905	0	0	324	0	4,302	9	220,540	128,962						
Damang Gold Mine	88,697	3,327	0	2,570	0	1,431	12	96,038	48,995						
Accra office	112	0	110	3	0	0	0	224	145,033						
AUSTRALASIA	135,343	15,093	26	2,530	127,318	1,400	6	281,716	120,040						
St Ives Gold Mine	64,162	0	0	849	0	294	2	65,307	86,025						
Agnew Gold Mine	25,903	13,872	26	720	16,073	355	1	56,951	33,895						
Granny Smith Gold Mine	26,139	1,002	0	955	62,813	340	2	91,251	0						
Gruyere Joint Venture	19,139	218	0	6	48,432	411	1	68,208	68,208						
Perth office	0	0	0	0	0	0	0	120	120						
SOUTH AMERICA	45,793	0	30	227	0	1,415	1	47,465	44,039						
Cerro Corona Gold Mine	45,751	0	30	227	0	1,415	1	47,423	44,026						
Lima office	42	0	0	0	0	0	0	42	91,449						
GROUP	491,813	18,420	195	5,654	127,318	8,745	45	652,191	805,256						
Scope 3 emissions															
Operation	3.1: Purchased goods and services	3.3: Fuel-and energy-related activities (not included in scope 1 or 2)	3.4: Upstream transportation and distribution	3.5: Waste generated in operations	3.6: Business travel	3.7: Employee commuting	3.8: Upstream leased assets	3.9: Downstream transportation and distribution	3.10: Processing of sold products	3.11: Use of sold product	3.12: End-of-life treatment of sold products	3.13: Downstream leased assets	3.14: Franchises	3.15: Investments	Total scope 3 emissions
SOUTH AFRICA	11,026	13,129	129	379	725	1,054	0	20	77	0	155	0	0	0	26,695
South Deep	11,022	13,123	129	379	132	1,013	0	20	77	0	155	0	0	0	26,050
Sandton office	4	6	0	0	593	42	0	0	0	0	0	0	0	0	645
WEST AFRICA	58,762	160,939	3,247	890	486	538	0	62	134	0	268	0	0	0	225,326
Tarkwa Gold Mine	45,687	117,907	2,351	784	379	333	0	44	96	0	191	0	0	0	167,772
Damang Gold Mine	13,063	42,966	894	106	107	205	0	18	38	0	77	0	0	0	57,474
Accra office	12	65	2	0	1	0	0	0	0	0	0	0	0	0	80
AUSTRALASIA	106,008	54,164	3,720	856	4,952	855	0	19	179	0	358	0	0	0	171,112
St Ives Gold Mine	54,139	19,471	1,246	151	729	248	0	7	69	0	138	0	0	0	76,198
Agnew Gold Mine	21,822	11,634	752	15	1,816	173	0	4	41	0	81	0	0	0	36,338
Granny Smith Gold Mine	12,441	11,940	902	97	2,386	279	0	5	51	0	102	0	0	0	28,203
Gruyere Joint Venture	17,606	11,116	820	593	21	75	0	2	18	0	37	0	0	0	30,288
Perth office	0	4	0	0	0	79	0	0	0	0	0	0	0	0	84
SOUTH AMERICA	17,843	31,970	982	53	589	192	0	9,095	29	0	57	0	0	0	60,809
Cerro Corona Gold Mine	17,843	31,959	981	53	589	192	0	9,095	29	0	57	0	0	0	60,798
Lima office	0	11	0	0	0	0	0	0	0	0	0	0	0	0	11
GROUP	193,639	260,202	8,078	2,179	6,752	2,639	0	9,197	419	0	837	0	0	0	483,941

The following categories of scope 3 emissions are zero.

CATEGORY	Value	Comment
3.8: Upstream leased assets		
3.11: Use of sold products	Zero	This is reported as zero because energy use after refining of gold is assumed to be negligible
3.13: Downstream leased assets		
3.14: Franchises	Zero	No franchises, therefore zero
3.15: Investments	Zero	No franchises, therefore zero

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A Andani*° PJ Bacchus° TP Goodlace° C Letton° P Mahanyele-Dabengwa* SP Reid° YGH Suleman°

*Australian * British # Ghanaian

°Independent director • Non-independent director



GOLD FIELDS

Our **climate** change report

Aligned with recommendations of the task force on climate-related financial disclosures (TCFD)

