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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See online for further information in the 2018 TCFD report **www.goldfields.com**.

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.

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 combatting it.

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

- The physical impacts of climate change on the Group's operations and surrounding communities
- Increasing regulation and policy changes around carbon emissions
- Direct and indirect carbon taxes and levies imposed by governments to disincentivise non-renewable energy consumption
- Growing interest by investors to understand the impacts of climate change on their portfolios

Our climate change programme objectives are to improve preparedness and build operational resilience to climate-related risks, reduce the use of natural resources and improve climate reporting and disclosure.

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)
- Harnessing innovation and technology to reduce our carbon footprint while managing regulatory risks

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.

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 sustainability 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.

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.

Granny Smith solar panel

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.

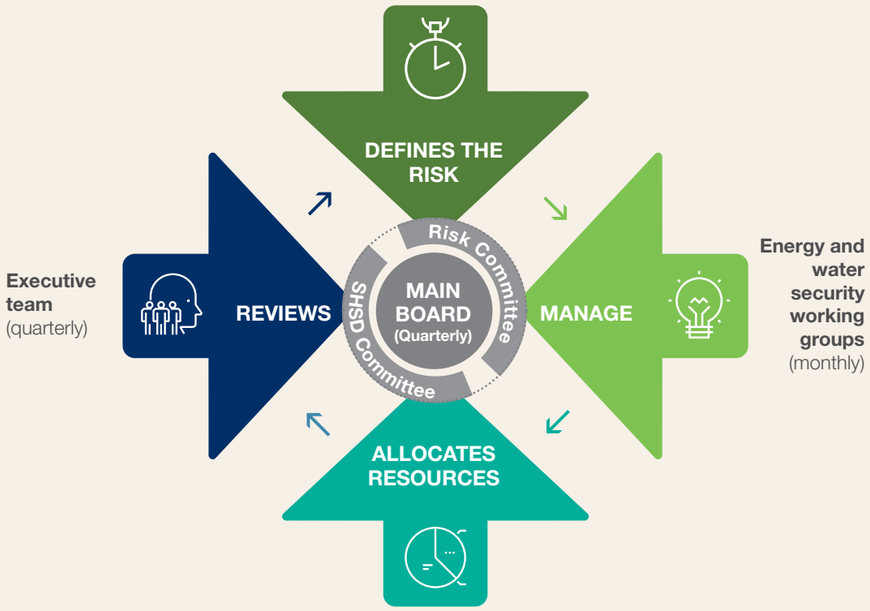
The Capital Projects, Control and Review Committee is responsible for capital allocation. Project deliverables include assessment of climate risks and opportunities.

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-relate 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)



Board Capital Committee (quarterly)

Climate change and Gold Fields' strategy

Integrating management of climate-related risks into Gold Fields' strategy

Climate-related risk mitigation and adaptation measures are integrated into Gold Fields' operational and strategic planning processes across short-, medium- and long-term planning horizons

SHORT TERM

MEDIUM TERM

LONG TERM

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

We continuously seek to improve our embedded controls, policies, strategies and integration disclosure

Gold Fields' Vision	– To be the global leader in sustainable gold mining	
Policy	– Water Management Policy (2019) – Three-year regional water plans developed (2019)	– Group Climate Change Policy (2017)
Strategy	– Integrated water management plans (2016) – Climate change adaption plans (2016) – Energy security plans (2015)	– Integrated energy and carbon management strategy (2017) – Water management strategy (2020)
Standards, systems and guidelines	– Updated water management guidelines to ICMM level (2019) – Included climate change in water and tailings guidelines (2017)	– Included in Project Study Standards (2017) – Updated Energy & Carbon Guideline to ISO 50001 (2016)
Risk management	– Review by the Board, SHSD, Risk, Audit Committees – Align programme with ICMM standards	– Group risk register item (since 2009) – Part of Group ERM (as far back as 2009)
Indicators and targets	– Energy, water and carbon emissions targets	
Reporting and communication	– Included in our investor relations roadshows – CDP and CDP Water disclosure since 2007 and 2013, respectively	– DJSI submissions – Integrated Annual Reports – Use of GRI standard
External assurance	– Data integrated into the non-financial data portal	– Independent external assurance of data

CLIMATE CHANGE RISK AND VULNERABILITY ASSESSMENT

Gold Fields – **South Africa**

NATIONAL PROJECTIONS

- Increased rainfall variability
- 3-5ºC 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	• Potential for off-grid renewable energy systems, new mine ventilation and cooling technologies
	Processing	Reduced onsite water flows	High	• Improved water storage, increased water recycling and reduced water consumption
	Health and safety	Employee heat exhaustion and dehydration	Medium	• Optimise mine ventilation and cooling systems; heat stress management programmes
VALUE CHAIN	Suppliers	Increased price of upstream products due to carbon tax	Medium	• Budget for price increases and engage with suppliers
	Workforce	Disruption to operations	Medium	• Employee redeployment and training
	Investors	Reduced share price or investor interest	Low	• 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	• Investments in host communities
	National infrastructure	Disruption in electricity supply; increased electricity costs	Low	• Potential for off-grid renewable energy systems
	Regulatory	Carbon-emission related tax/levies and reporting requirements	Medium	• Regularly review policy changes to ensure compliance • Participate in industry bodies to shape policy

Gold Fields – **Australia**

NATIONAL PROJECTIONS

- 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	• Continually review flood management and storage capacities
	Materials handling	Declining availability of process water in terms of suitable quality and quantity	Medium	• Develop life-of-mine water balances that are dynamic, predictive and probabilistic
	Transport	Interruptions to the movement of waste and ore	Low	• Flood prevention measures and vehicle safety protocols in high rainfall events
	Waste disposal	Tailings dam stability during periods of high rainfall	Medium	• Apply the Group guideline to tailings storage facilities with an emphasis on critical control management • Alignment to the new proposed Global Tailings Standard • Utilise in-pit tailings disposal where possible
	Health and safety	Increased cooling costs and potential heat stress	Medium	• Implement energy and cost management plans per site
	Post-closure	Inability to achieve closure objectives due to arid conditions	Low	• Develop detailed mine closure plans for all sites
VALUE CHAIN	Suppliers	Delays to transport of supplies	Low	• Review strategic consumables and spares plans
	Workforce	Movement of personnel to sites and interruptions to flight schedules	Low	• Ensure alternative transport facilities are available
BROADER NETWORK	Communities	Potable water cost with increased competition and declining availability	Low	• Maintain current community relations strategy
	Regulatory	Taxation on emissions, aggressive abatement requirements and removal of rebates	Medium	• Maintain current stakeholder engagement strategy and representation on industry bodies

Heat exhaustion | Drought | Flooding | Increased cooling requirements | Negative investor perceptions | Disruption of electricity supply | Economic volatility | Storms | Temperature | Regulatory | Water scarcity

Gold Fields – **Peru**

NATIONAL PROJECTIONS

- Increase in frequency and intensity of the El Niño weather patterns
- Sea level rise

LOCAL PROJECTIONS

Temperature increase | Decrease in annual rainfall | Increase in storms | Land slides

		Climate change impact	Risk	Vulnerability	Adaptation
CORE OPERATIONS	Extraction and deposition		Intense rains exceed pumping and treatment capacity, potentially compromising slope stability near open-cast mines	Low	• 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	• Increase water recycling and reduce water withdrawal
	Transport		Interruptions to the transport system leading to bottlenecks in the storage of concentrates	High	• Increase the storage capacity at mine warehouse and port • Study alternate roads for concentrate transport
	Port operations		Interruption of cargo operations	Medium	• Increase storage capacity at port and scheduling logistics
	Health and safety		Increase of respiratory illnesses	Low	• Application of safety and health policies
	Post-closure		Increase energy demand for pumping requirements	Low	• Consider renewable energy for water pumping at post-closure
VALUE CHAIN	Suppliers		Interruptions of the transport system	Low	• Monitoring and maintenance of roads and assessing alternate routes to the port • Engagement with public institutions for infrastructure improvements on alternative roads • Continuing shared value programmes
	Workforce		Abandoning of agriculture practices. Increase in demand for jobs from people relocating to mine area	Low	
BROADER NETWORK	Communities		Water quality compromised. Poor agriculture productivity and food provision	High	• Entrenching shared value programmes, communicating good practices and strict control over water discharges • Strong supply chain systems to enable sourcing of temporary power generation
	National infrastructure		Decrease in water availability for electricity generation	Low	

Gold Fields – **West Africa**

NATIONAL PROJECTIONS

- Decrease in rainfall in the northern region
- Sea level rise
- Temperature increases
- Increase of frequency and intensity of the El Niño weather pattern

LOCAL PROJECTIONS

Temperature increase | Shifting of rain seasons | Intense storms | Increase in number of wet days

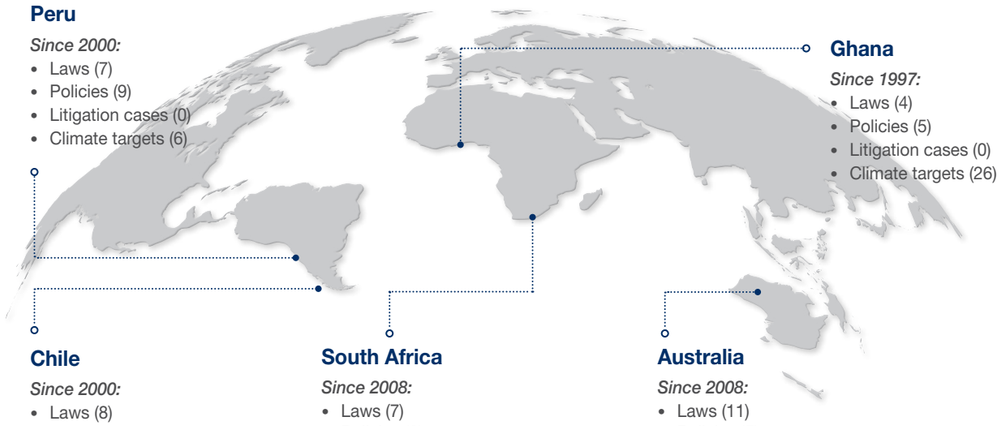
		Climate change impact	Risk	Vulnerability	Adaptation
CORE OPERATIONS	Extraction		Reduced production due to wet haul roads	Low	• Further increase pumping capacity and effective pit dewatering strategies to address flooding or heavy rainfall • Continue mining the deeper areas within the pit to create sumps which allows for excess water to be collected and pumped out
			Larger volumes of mine water	Medium	
	Transport Materials handling		Increased operational costs linked to maintenance of roads and more frequent replacement of truck tyres	High	• Continue sheeting of haul roads to allow for operations to continue during wet periods • Consideration for augmenting engine operated air conditioning units in trucks with battery operated units to prevent operators idling to keep cabins cool
	Health and safety		Heat stress on mine employees	High	• Implement heat stress management programmes
			Favourable conditions for vector born diseases spread	High	• Malaria management programmes
VALUE CHAIN	Electricity provision		Disruption of electricity supply from hydro schemes	Medium	• Reduced reliance on the unstable national grid, through the commissioning of the two Genser Energy gas-fired power plants • Gas pipeline developed to mines
	Key materials and supplies		Weather-related delays in the transport of fuel	Medium	
	Workforce		Increasing demand for jobs from people relocating to the mine area	Low	
BROADER NETWORK	Communities		Vulnerable or disgruntled communities could put the social licence to operate at risk	Medium	• Educate local communities on climate-related issues to reduce community vulnerabilities and increase resilience • Infrastructure investments in our Tarkwa and Damang communities
			Food insecurity, service incapacity and climatic impacts on subsistence based livelihoods leading to migration	High	• Reducing community vulnerability through youth employment in agriculture, health, sanitation and water supply projects

Heat waves | Drought | Wet driving conditions | Ocean swells | Vector borne disease | Respiratory illness | Water stress | Migration | Storm | Regulatory | Water scarcity | Land slides | Glacier melting

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	• 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 (CO_2-e per GDP) by 2030 against 2007 levels	• 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 CO_2-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	• 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	• 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	• A carbon tax at R120/t CO_2-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 2,090TJ, nearly 3% of energy consumption over this period, equivalent to US$119m in cost savings and avoiding 474,000 tonnes CO_2-e in scope 1 and scope 2 carbon emissions, equivalent to 7% of carbon emissions during this period.

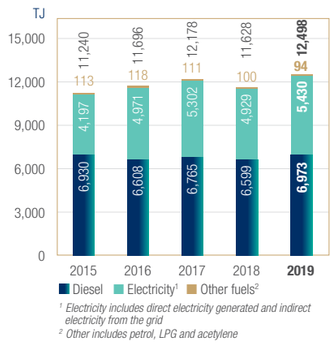
Our strategic initiatives include:
- **Fuel switching** to low-carbon energy sources
- Assessing and installing **renewable energy options**
- **Re-negotiating** energy contracts with suppliers
- **Investing** in energy efficiency initiatives
- Aligning our guidelines and certifying our operations to 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 CO_2-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.

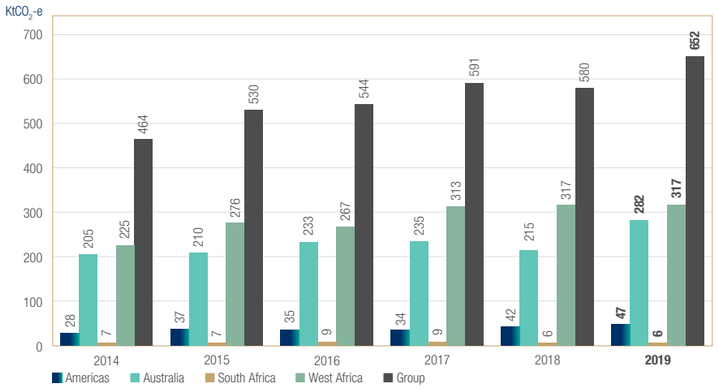
Group energy consumption



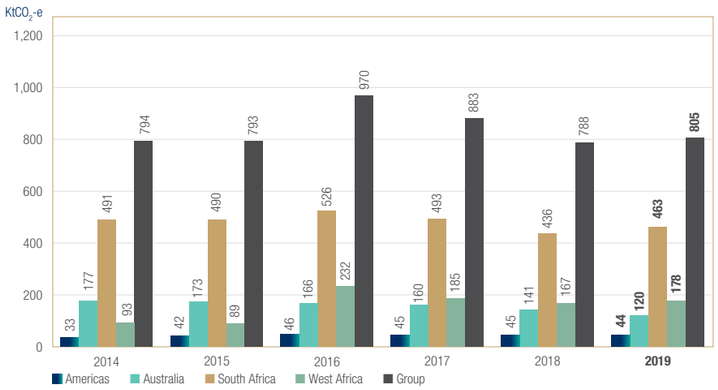
[1] *Electricity includes direct electricity generated and indirect electricity from the grid*
[2] *Other includes petrol, LPG and acetylene*

Group and regional carbon emissions

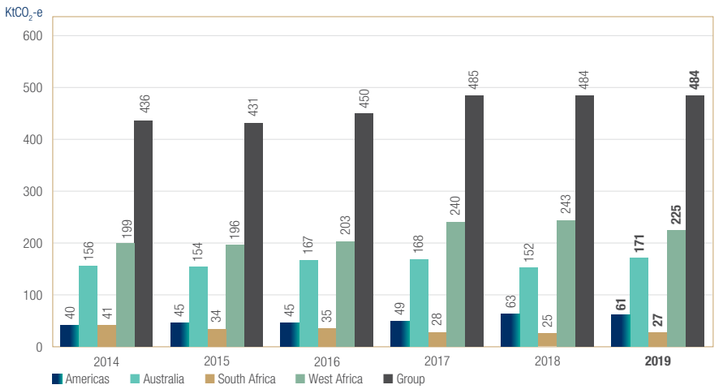
Scope 1 emissions



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 CO_2-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 CO_2-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

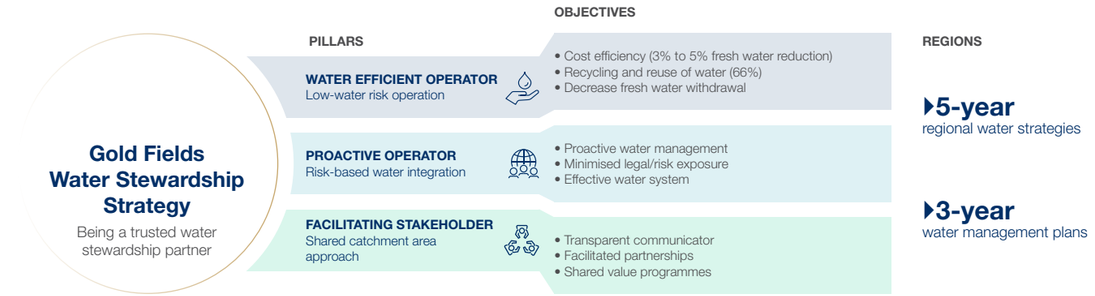
Tracking our performance – water stewardship

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:



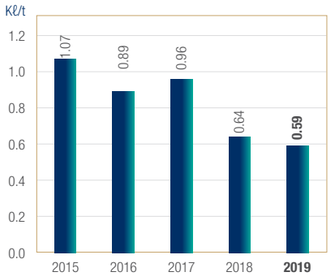
In the short-term, the water management strategic objectives for 2020 comprise:

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

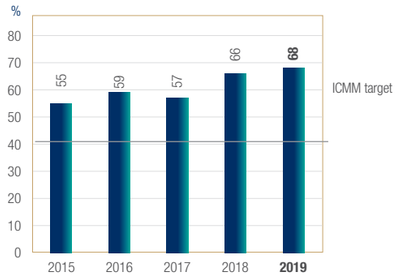
During 2019, Gold Fields spent US$27m on water management by investing in methods to improve our water management practices, including pollution prevention, recycling and water conservation initiatives.

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.

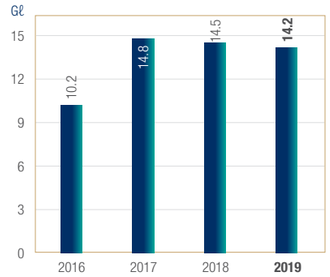
Water withdrawal per tonne processed



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%**
CO_2 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 CO_2-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

	Scope 1 emissions								Scope 2 emissions	Total scope 1 and 2 emissions
Operation	**Diesel: haulage and other**	**Diesel: power generation**	**Petrol**	**LPG**	**Natural gas**	**Blasting agents**	**Acetylene**	**Total scope 1 emissions**	**Electricity**	
SOUTH AFRICA	**5,964**	**0**	**30**	**0**	**0**	**197**	**18**	**6,208**	**462,922**	**469,130**
South Deep	5,960	0	30	0	0	197	18	6,205	462,627	468,832
Sandton office	4	0	0	0	0	0	0	4	295	298
WEST AFRICA	**304,713**	**3,327**	**110**	**2,897**	**0**	**5,733**	**21**	**316,802**	**178,255**	**495,058**
Tarkwa Gold Mine	215,905	0	0	324	0	4,302	9	220,540	128,962	349,502
Damang Gold Mine	88,697	3,327	0	2,570	0	1,431	12	96,038	48,995	145,033
Accra office	112	0	110	3	0	0	0	224	298	522
AUSTRALASIA	**135,343**	**15,093**	**26**	**2,530**	**127,318**	**1,400**	**6**	**281,716**	**120,040**	**401,755**
St Ives Gold Mine	64,162	0	0	849	0	294	2	65,307	86,025	151,331
Agnew Gold Mine	25,903	13,872	26	720	16,073	355	1	56,951	33,895	90,846
Granny Smith Gold Mine	26,139	1,002	0	955	62,813	340	2	91,251	0	91,251
Gruyere Joint Venture	19,139	218	0	6	48,432	411	1	68,208	0	68,208
Perth office	0	0	0	0	0	0	0	0	120	120
SOUTH AMERICA	**45,793**	**0**	**30**	**227**	**0**	**1,415**	**1**	**47,465**	**44,039**	**91,504**
Cerro Corona Gold Mine	45,751	0	30	227	0	1,415	1	47,423	44,026	91,449
Lima office	42	0	0	0	0	0	0	42	13	55
GROUP	**491,813**	**18,420**	**195**	**5,654**	**127,318**	**8,745**	**45**	**652,191**	**805,256**	**1,457,448**

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

	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**

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GOLD FIELDS

Our **climate** change report

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