Creating **enduring value** beyond mining

GOLD FIELDS
CLIMATE CHANGE REPORT 2021

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

COVER PHOTO
The solar plant at our Granny Smith mine, Western Australia.

Contents

The non-financial statistics in this report are contained in the sustainability performance data spreadsheets on our website at: www.goldfields.com/sustainability-data.php

About this report

This is our **fourth Climate Change report** produced in alignment with the recommendations of the Financial Stability Board's Task Force guidelines on Climate-related Financial Disclosures (TCFD). This report forms part of the 2021 Gold Fields suite of reports and specifically the 2021 Integrated Annual Report.

Gold Fields formally started on its climate change, energy and water journey in 2016, but have reported on our climate change performance since 2010 when we first made an annual submission to the CDP. Since 2018 we have used the TCFD to report on our climate change and related performances, strategies, risk and opportunities.

The TCFD provides companies with a best practice international framework against which to voluntarily report their climate-related information. The scope of our climate-related performance and data covers our eight managed mines (including 100% of Gruyere, but excludes our Asanko Gold JV, since it is a non-managed asset). We provide information about the progress made at our Salares Norte project, but do not include data from the project.

FOR MORE INFORMATION:
Please consult the following reports

INTEGRATED ANNUAL REPORT

Our primary report to stakeholders, detailing the Group's value creation story over short, medium and long term.

REPORT TO STAKEHOLDERS

A high-level outline of our contributions to our key stakeholders, as well as recent developments impacting these relationships.

GRI CONTENT INDEX

The IAR is compiled to comply with the GRI Standards: Core option. The GRI Content Index also cross-references to the ICMM Principles, UNGC Principles, UN SDGs and the Sustainability Accounting Standards Board (SASB), since amalgamated under the Value Reporting Foundation.

Our online IAR portal, which can be accessed at www.goldfields.com/integrated-annual-reports.php

GOLD FIELDS GROUP

2.34Moz attributable gold-eq production (2.46Moz managed gold-eq production)	**13.9PJ** energy consumption	**5.66GJ/oz** energy intensity	**4.3%** renewable electricity (excluding hydro)	**1.71Mt CO_2e** GHG (Scope 1 – 2) emissions	**306kt CO_2e** GHG emissions avoided	**0.70t CO_2e/oz** emission intensity	**9.44GL** freshwater withdrawn	**75%** water recycled/ reused

AMERICAS REGION

Mines: Cerro Corona
Project: Salares Norte

248koz managed gold production
1.23PJ energy consumption
4.94GJ/oz energy intensity
100% renewable electricity
79kt CO_2e GHG (scope 1 – 2) emissions
1.21kt CO_2e emissions abated
0.32t CO_2e/oz emissions intensity
3.7GL freshwater withdrawal
84% water recycled/reused

AUSTRALIA REGION

Mines: St Ives, Granny Smith, Agnew and Gruyere (JV)

1.14Moz managed gold production
5.21PJ energy consumption
4.56GJ/oz energy intensity
10% renewable electricity
531kt CO_2e GHG (scope 1 – 2) emissions
90.3kt CO_2e emissions abated
0.46t CO_2e/oz emissions intensity
0.7GL freshwater withdrawal
37% water recycled/reused

SOUTH AFRICA REGION

Mines: South Deep

293koz managed gold production
1.78PJ energy consumption
6.09GJ/oz energy intensity
0% renewable electricity
502kt CO_2e GHG (scope 1 – 2) emissions
42.6kt CO_2e emissions abated
1.71t CO_2e/oz emissions intensity
1.6GL freshwater withdrawal
80% water recycled/reused

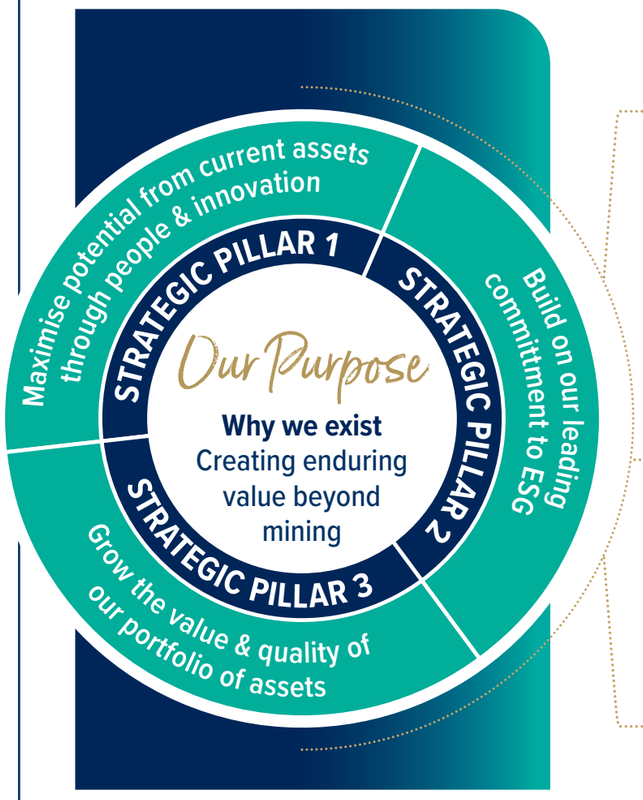
WEST AFRICA REGION

Mines: Tarkwa and Damang

776koz managed gold production
5.69PJ energy consumption
7.32GJ/oz energy intensity
0% renewable electricity
603kt CO_2e GHG (scope 1 – 2) emissions
172kt CO_2e emissions abated
0.78t CO_2e/oz emissions intensity
3.4GL freshwater withdrawal
88% water recycled/reused

Climate change targets and highlights

Gold Fields' purpose is to create enduring value beyond mining and we are guided by our three strategic pillars to achieve this purpose. Our climate change strategy is guided by Pillar 2, namely, to build on our leading commitments to ESG. During 2021, Gold Fields launched 2030 targets for its six ESG priority areas; three of these priorities are directly impacted by climate change, with the remaining indirectly affected. The diagram below sets out the ESG priorities directly affected by climate change, their respective targets and 2021 highlights.



	ESG priorities	2030 targets	Description	2021 targets	2021 highlights
1	**DECARBONISATION**	50% 30%	50% absolute scope 1 and 2 emissions reductions by 2030 against 2016 baseline 30% net scope 1 and 2 emissions reductions by 2030 against 2016 baseline Net zero emissions by 2050	• 18% – Achieve 287kt CO_2e emissions reduction from projects in 2021 business plans • 5% – 657TJ reduction through energy savings initiatives from 2021 business plan • Initiate the South Deep solar plant for completion in 2022	• Achieved all three 2021 targets • Energy provider Kallpa certifies 100% hydroelectricity as clean energy for Cerro Corona • 7.1% TJ reduction through energy savings initiatives (1,208TJ) • 22% carbon emissions reduction from energy savings initiatives • 5.66GJ/oz energy intensity (2020: 5.64GJ/oz) • 0.70t CO_2e/oz GHG emission intensity (2020: 0.69t CO_2e/oz) • Cerro Corona, Tarkwa and Damang ISO 50001 certified. South Deep and Australian sites successfully implemented their energy management systems with audits for ISO 50001 certification planned for 2022 • Three new renewable energy projects: – Gruyere 12MW microgrid by Q2 2022 – South Deep 50MW solar plant by H2 2022 – Salares Norte solar plant by Q1 2023
2	**WATER STEWARDSHIP**	80% 45%	80% water recycled/reused 45% reduction in freshwater use from 2018 baseline	• 68% – recycle/reuse 68% of water use for Group • 3% – Reduce 477ML in freshwater intake from projected 2021 fresh Group water demand as per business plan from 13.3GL to 12.9GL	• 75% water recycled/reused on track to meet 2030 target • 35% reduction in freshwater intake against 2018 baseline
3	**TAILINGS MANAGEMENT**	GISTM conformance 3	Conformance with Global Industry Standard on Tailings Management (GISTM) by 2023 and 2025 Reduce number of active upstream raised TSFs from five to three		• GISTM assessment on track • Made required appointments to key technical positions • Allocated US$325m towards achieving 2030 targets

Climate change leadership and advocacy

The mining and metals industry play a significant part in the transition to a low-carbon future and in providing the required minerals and metals for the low-carbon and zero-carbon energy transition. Therefore, we see industry associations as powerful platforms for collective and impactful action to identify and manage climate-related risks and impacts. We take our responsibility towards addressing climate change seriously and as such have taken leadership roles in some of these associations and are active participants in ESG and climate-related initiatives and projects. Here is a snapshot of some of these initiatives.

ELECTRIC MINE CONSORTIUM

ZERO EMISSION ENERGY · FULLY ELECTRIC FLEET · PEOPLE AND COMMUNITY

Electric Mine Consortium

Working collaboratively towards a zero-emission and zero-particulate mine, through:

1. Resolving key technology choices
2. Shaping the supplier ecosystem
3. Influencing policy
4. Communicating the business case.

Gold Fields/Energy Vault proposed energy storage trial

The trial is intended to be run as a pilot project at the existing high penetration wind and solar power plant at our Agnew mine. The Energy Vault EVx™ energy storage solution is a gravity battery, using blocks made from the onsite tailings' facility. The efficiency of the battery is near to that of lithium batteries (~80%), with no degradation and a 30-year design life, which makes it an ideal low-cost and efficient mine storage solution. It is expected that a pilot of this scale would increase Agnew's renewable energy fraction by approximately two percentage points from current average daily level of 57%.

CHARGE ON™ INNOVATION CHALLENGE

We participate in the **Austmine Charge On** innovation challenge, to provide scalable and interoperable electrification of 220 tonne haul trucks, without impacting the haul cycle time.

ICMM International Council on Mining & Metals

Gold Fields, as an active member of the ICMM, participates in many of its working groups, including biodiversity, mine closure, tailings, water and climate change. We also actively participate in the **Cleaner Safer Vehicles** CEO-led initiative to achieve the following:

- GHG emissions-free surface mining vehicles by 2040
- Minimise the operational impact of diesel exhaust by 2025
- Make vehicle collision avoidance technology available by 2025.

Chief executive officer's statement

"We have a long way to go, but I am confident that, based on our track record and the commitment of our people, we will be able to meet the climate change challenge." Chris Griffith

In December 2021, Gold Fields announced a new strategy comprising three strategic pillars to guide the Company for the next decade. Strategic Pillar 2 commits the Company to build on its leading commitment to environmental, social and governance (ESG) issues.

Nowhere is this ''leading commitment'' more evident than in Gold Fields' investment in decarbonising its operations. We are a leading mining company in addressing our impact on the changing climate through the use of renewable and low-carbon energy sources.

However, we still have a long way to go. We are acutely aware of the severity of climate-related risks, as well as societal expectations that companies should play their part in reducing emissions. Equally, the impacts of climate change on our operations and surrounding communities are real and immediate.

Climate change is affecting our operations through the physical impacts that more severe storms, longer droughts and rising temperatures have on our mines, employees and host communities. Furthermore, governments are also increasing efforts to regulate carbon emissions in most of the jurisdictions in which we operate, often by imposing taxes on non-renewable energy consumption.

As such, our stakeholders expect us not only to take concrete actions to limit our emissions and also ask us to report comprehensively on the impact of climate change on our operations with a particular focus on our energy, water and tailings management. In all these areas climate change has a material impact on how we run our operations. This, our fourth Climate Change Report seeks to provide a comprehensive overview of the risks and opportunities we are facing, how we seek to mitigate them, our performance to date and the targets we have committed to meet.

The November 2021 COP26 held in Glasgow, Scotland, and the most recent Intergovernmental Panel on Climate Change (IPCC) reports have highlighted a clear message from the scientific community: The world is not on track to meet the targets of limiting temperature rises to 1.5°C – 2°C by 2050, the minimum needed to prevent serious climate impacts. All stakeholders – governments, the corporate sector and civil society – need to take drastic action.

One of the few encouraging developments to emerge from COP26 was the mobilisation of more than 5,200 businesses and about 450 financial institutions committed to science-based net-zero targets and increased public-private collaborations to deal with climate change.

Gold Fields is committed to playing our role. We announced a comprehensive set of 2030 targets for our most material ESG priorities in December 2021, headlined by our commitment to decarbonisation in three key targets:

- Reducing our scope 1 and 2 carbon emissions by 30% by 2030 from a 2016 baseline
- Taking cognisance of the fact that we plan to raise our production profile over the same period, this amount to actually targeting 50% emissions reductions by 2030
- Net-zero carbon emissions by 2050 in line with the Paris Agreement

These targets are currently being embedded in our operations and we are planning on spending hundreds of millions of dollars to achieve them. Our management teams are being held accountable to ensure that we are implementing the right electricity solutions, continuing our energy savings initiatives and trialling new ore transportation technologies to enable us to achieve those targets.

We are also working collaboratively with our peers in the ICMM and in other industry associations and initiatives to find common solutions to challenges such as zero emissions vehicles. Finally, we have committed to reporting annually on how we are performing in meeting our 2030 targets, so shareholders and other stakeholders have visibility of our progress.

Rolling out renewable energy, fuel switching and energy efficiency projects has already contributed to emissions savings of 18% between 2016 and 2021 at Group level. The contribution of renewables to the Group electricity mix increased from 0% to 4.3% over the same period. This is largely due to the two completed renewable micro-grids at Granny Smith and Agnew in Western Australia, with the latter receiving, on average, 57% of its electricity requirements from green energy sources, one of the highest at a gold mine anywhere in the world

South Deep and Gruyere are set to launch their solar plants this year and Salares Norte in early 2024, while all our other mines are examining ways of minimising their dependence on fossil fuels to power the operations. The mines are also working out how to reduce their emissions further still.

Beyond renewable energy, we are also looking at reducing emissions from our fleet of diesel-powered vehicles and machines to achieve our targets by trialling and eventually rolling out zero-emission vehicles. Scope 3 emissions are also now in focus and we will set targets for these emissions in 2023.

We have a long way to go, but I am confident that, based on our track record and the commitment of our people, we will be able to meet the challenges that we will inevitably confront as we transition steadily to net zero.

SHSD Committee chairperson's statement

Terence Goodlace

As a Board we have a critical role to play in ensuring that the Company we govern plays its role in addressing the defining challenges societies are facing. At present, the two ESG priorities that have headlined these challenges are gender diversity and climate change.

It is the responsibility of the Safety, Health and Sustainable Development (SHSD) Committee of the Board to ensure that Gold Fields plays its role in addressing the climate change threat. As it is, physical climate changes are already being felt across the globe and impacting our communities and our operations.

I assumed the role of Chair of the SHSD Committee in 2016, when Gold Fields commenced its climate change journey in earnest. The Board first approved a Climate Change Policy Statement for the Company in 2017, updating it in 2020, which committed the Company to identify and assess climate-related risks and opportunities; report and disclose its performance; raise the share of renewable energy; and implement energy and water efficiency initiatives.

Since then, I have witnessed this policy statement translated into action, with Gold Fields introducing operational changes that have seen the Company recognised as a decarbonisation leader in the mining sector. It has done so primarily via its significant investment in renewable electricity and energy savings initiatives, which have had the added benefit of ensuring supply security and more affordable energy for our mines.

Last year, Gold Fields took another step on its climate change journey by making a number of commitments to reducing its net Scope 1 and 2 carbon emissions: by 30% against its 2016 baseline by 2030 and to net zero by 2050. Once again, the Board was integrally involved by providing input into the targets and, ultimately, approving them.

In making its operational changes and its decarbonisation commitments, Gold Fields has not only the welfare of its operations in mind, but also that of our host communities.

In the past year we updated our climate change risk and vulnerability assessments across all our mines, where the focus was on assessing the impact on our operations and communities. The Board will ensure that, in applying the learnings from these assessments, we take account of the needs of our employees, host communities and, of course, our business.

Gold Fields has to date chosen the right path in mitigating its impact on the changing climate. I have every confidence that its people will continue doing so even as the threat of climate change becomes ever more pressing.

Governance and management

Ethical leadership and integrated governance structures and processes are crucial in our strategy in tackling climate change. Our Board of Directors, the Safety, Health and Sustainable Development (SHSD) Sub-Committee, as well as Gold Fields' Executive Committee have committed to dealing with the impacts of climate change and drive the transition to a low-carbon future. We have continued to refine our governance structures with the establishment of an Executive Steering Committee dedicated to guide and monitor the development and implementation of the climate change and decarbonisation strategy. The Committee follows a holistic approach and comprises executives from the relevant functions and departments. It is supported by advisory and technical groups, external consultants and regional leads.

	RESPONSIBILITIES	KEY OUTCOMES
Board	The Board is accountable and ultimately responsible for the oversight over climate-related strategy, implementation, resilience, risks and opportunities	• Approval of South Deep solar plant capacity extension from 40MW to 50MW • Climate change training received • Approval of 2030 decarbonisation targets and net zero by 2050
Board Committees	**SHSD** – Primary Board sub-committee overseeing climate-related strategy and implementation, SHSD strategies, policies and performance **SET** – Stakeholder relations, socio-economic development, human rights, ethics, security **Risk** – Enterprise risk management, including ESG risks **Capital** – Climate-related capital projects	• ESG Charter and targets, especially decarbonisation • Continued implementation of renewable projects, specifically South Deep project • ESG benchmarking
Chief Executive Officer (CEO)	The CEO is responsible to lead his executive and management teams to draft and implement the Company's Board-approved **climate change strategy, including relevant policies and projects** The CEO sets the tone and **a climate-conscious culture** **Climate-related remuneration:** Balanced score card comprises **20%** incentives related to ESG, of which approximately one-third is linked to climate change and decarbonisation performance	• 2030 ESG targets launch and implementation • Climate change sector leadership • International Council on Mining and Metals (ICMM) – participation in Cleaner, Safer Vehicles initiative • Rejoined the World Gold Council (WGC)
Executive Climate Change Steering Committee	**Composition and responsibilities:** Executives responsible for investor engagement and reporting; finance; decarbonisation, climate support, scope 3 emission planning and offsets and climate risk and adaptation Integrated and systemic approach to addressing multifaceted impacts of climate change on company, supply chain and stakeholders	• Decarbonisation priority as part of ESG 2030 targets • Approximately 6% of balanced score card allocated to decarbonisation • Comprehensive decarbonisation strategy with targets and implementation plan
Sustainable development department	Provides a multi-disciplinary specialist function, comprising sustainable development, ESG reporting and assurance, climate change, carbon and energy, water, stakeholder engagement, environmental management, tailings management	• Incorporation of ESG into business strategy • Decarbonisation strategy • Second climate change risk and vulnerability assessments for all regions
Working Committees	**ESG** – develop ESG strategy for Board approval **Water** – continuous development and implementation of the water stewardship strategy **Energy** – continuous development and implementation of the energy and carbon strategy, including decarbonisation strategy	• Board approved ESG Charter, with 2030 targets • Regional water management plans, including targets • Regional 2030 energy and carbon plans, including targets

Gold Fields' climate-related policy statements and commitments

Through our membership of associations such as the International Council on Mining & Metals (ICMM), we have embedded international good practice to address climate-related risks and opportunities throughout its business and operations. The tables below set out our commitments through ICMM, as contained in its most recent Position Statements on Climate Change, Water Stewardship and Tailings Governance, the relevant Gold Fields' Policy statements and commitments, as well as what we are doing to meet these commitments. Assurance of Gold Fields' self-assessments of our implementation of the ICMM Performance Expectations* has been conducted by an independent third party, a summary of which is available in the 2021 Integrated Annual Report.

** The ICMM Performance Expectations are a comprehensive set of requirements setting out the expectations of how ICMM members manage a comprehensive array of ESG issues at corporate and operational levels.*

CLIMATE CHANGE

Applicable SDGs: 7 AFFORDABLE AND CLEAN ENERGY; 13 CLIMATE ACTION

ICMM COMMITMENTS	GOLD FIELDS POLICY STATEMENTS AND COMMITMENTS	KEY IMPLEMENTATION ACTIONS
Scope 1 and 2 emission targets: Net zero by 2050	• Set objectives and targets for carbon emissions reductions, energy savings, energy diversification and water management	• Board approved 2030 targets: – 50% absolute emissions reductions and – 30% net emissions reductions from 2016 base year – Net zero by 2050 • Decarbonisation strategy, including projects and capital commitments
Scope 3 emissions: Targets, leadership, partnership	• Committed to address scope 3 emissions as part of decarbonisation strategy	• A target for scope 3 emission reduction is to be developed by 2023
Targets cover all material sources of emissions	• Legal and other compliance	• The targets cover scope 1, 2, and 3 carbon emissions
Absolute reductions	• Set objectives and targets for carbon emissions reductions, energy savings, energy diversification and water management	• Targets include 50% absolute emissions and 30% net emission reductions by 2030 from the 2016 base year
Robust target-setting methodologies Disclose assumptions	• Paris Agreement-aligned targets towards a 1.5 °C future	• Decarbonisation strategy towards a 1.5 °C future
Integrate climate change in decision-making	• Continual improvement of climate change preparedness, performance and public disclosure	• Decarbonisation is one of the six priorities in our ESG Charter • ESG is one of our three Strategic Pillars • Decarbonisation integrated into the strategy, business planning processes and capital programmes
Adaptation and mitigation	• Regional climate change strategies, including mitigation and adaptation plan	• Second round of regional climate change risk and vulnerability assessments conducted • Decarbonisation strategy includes mitigation plans to reach targets
Supporting community resilience	• Seeking collaboration with host communities towards climate change policies	• Ghana, South Africa and Peru involved in community water provision and educational projects
Transparent disclosure Scope 1 – 3 External verification TCFD-alignment	• Public reporting of GHG emissions footprint and climate-related risks and opportunities	• Mature scope 1 – 3 emissions reporting • External independent assurance • TCFD-aligned climate change report
Engagement	• Collaboration with host communities, governments, peers, investors, NGOs, and business partners	• Active member of the ICMM, rejoined the WGC • Engagement with peers and original equipment manufacturers, e.g. Australian Electric Mine Consortium
Innovation and technology	• Support research, innovation and technology development • Renewable, low-carbon energy solutions; energy efficiency initiatives, including carbon offsets	• Participate in technology working group of the ICMM's Innovation for CSV programme • Decarbonisation strategy underpinned by innovation and technology
Carbon pricing	• Transparent carbon pricing mechanisms, including CO_2e shadow price in all new and life extension projects	• Granny Smith gas power plant earns annual carbon credits from the Australian Emissions Reduction Fund, with carbon credits auctioned for the fifth year, used as shadow price in Australia region

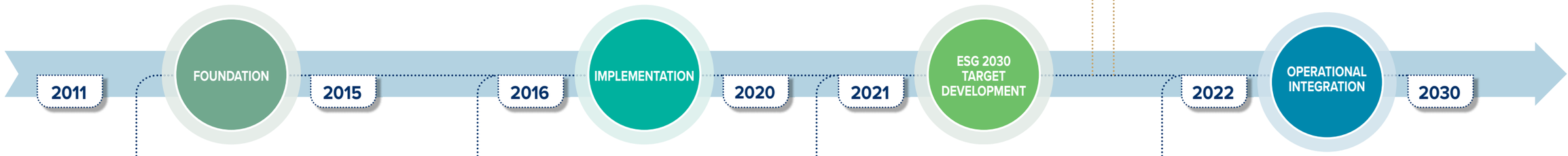
Gold Fields' climate-related policy statements and commitments continued

ICMM COMMITMENTS	GOLD FIELDS POLICY STATEMENTS AND COMMITMENTS	KEY IMPLEMENTATION ACTIONS
WATER STEWARDSHIP — Applicable SDGs: 6 Clean Water and Sanitation; 12 Responsible Consumption		
Corporate water governance • Approach • Responsibilities and accountabilities • Integrate water into business planning • Public reporting	• Legal, regulatory, and voluntary compliance • Corporate water governance: – Responsibilities and accountabilities – Integrate water into business planning – Public reporting	• 2020 – 2025 Group water stewardship strategy, as well as regional water strategies and three-year management plans • Strategy comprises three pillars: – Security of supply – Water efficiency – Catchment management • ISO 14000 certification of all mines
Effective water management • Water balance • Targets and objectives • Water quantity and quality management • Access to clean drinking water and sanitation facilities for all employees	• Effective water management: – Social and environmental risk management – Efficient water utilisation solutions – Employee awareness and training – Context-relevant water performance targets • Security of operational water supply for all catchment users including the natural environment • Access to clean drinking water, gender-appropriate sanitation facilities and workplace hygiene	• Freshwater withdrawal reduction and increased recycling/reuse targets • Water planning embedded into core operational management • Water risk aligned with resourcing over life-of-mine, including water balances • All employees have access to clean drinking water, gender-appropriate sanitation facilities and hygiene at the workplace
Collaboration for sustainable water use • Catchment-level risks and opportunities • Engage stakeholders on external water governance • Water stewardship initiatives	• Collaboration: – Proactive engagement with stakeholders, including host communities – Support water stewardship initiatives • Regular updating of risks, including climate-related for operations	• Context-specific catchment stakeholder engagement • South Deep is collaborating with a neighbouring mine to restore the Leeuspruit river
TAILINGS MANAGEMENT — Applicable SDGs: 9 Industry, Innovation and Infrastructure; 12 Responsible Consumption		
Implement practices of the six elements of the Tailings Governance Framework:	• Zero harm to people and the environment • Zero tolerance for human fatalities	Climate change risks (and opportunities) are addressed thoroughly across the ICMM Position Statement and the Global Industry Standard on Tailings Management, as well as Gold Fields' internal standards and procedures. They include scoping and design, risk management, water management, stormwater management, rehabilitation, closure and post-closure management. In addition, reporting may be found in our Integrated Annual Report, and in a dedicated section of our website: https://www.goldfields.com/environment-tsf.php.
1. Accountability, responsibility and competency	• Uphold Gold Fields vision and values • Accountabilities and responsibilities defined • Key appointments made • Legal and other compliance	
2. Planning and resourcing	• Adequate resources, including human and financial • Collaborate in innovative approaches throughout the life cycle of TSFs, through research and industry initiatives	
3. Risk management	• TSFs are adequately and legally maintained, closed and rehabilitated in a safe and stable state • Critical control management	
4. Change management	• Meaningful stakeholder engagement on all key aspects throughout the TSF life cycle	
5. Emergency preparedness and response	• Emergency preparedness and response planning, including community engagement • Adequate resources available for recovery efforts	
6. Review and assurance	• Open and transparent tailings management practices, including public disclosure	

Our decarbonisation journey

WHERE HAVE WE COME FROM?

WHERE ARE WE GOING?



	1	2	3	4
	Ensure investor **ESG** confidence and reputation protection	Protect **licence to operate** and strengthen ESG reputation	**ESG** 2030 targets	Create **enduring value** beyond mining
ESG CONTEXT	**Vision:** *"To be the global leader in sustainable gold mining"* • ICMM membership • Regulatory and voluntary sustainability framework requirements adherence • First Integrated Annual Report published	**ESG risk identification and mitigation:** - Social licence to operate - Energy security - Water security - Safety and health • ICMM Mining Principles compliance	**2021** Board concept approval for ESG targets, including decarbonisaiton. **Work carried out during the year:** • Regional plans to achieve 30% net emission reductions by 2030 • Conceptual decarbonisation strategy • Board decarbonisation training • 2016 baseline validation and target verification • Capital allocation **1 December 2021** 2030 science-based targets launched for six ESG priorities, headlined by decarbonisation **2022** Commence operational implementation of 2030 ESG target strategies **2023** Programme deployment via project management platform and change management	**New vision:** *"To be the preferred gold mining company delivering sustainable superior value"* • Shift from compliance to sustainable value delivery to all stakeholders • ESG Charter, underpinned by six interconnected key priorities, with strategic intents and targets
CLIMATE CHANGE SPECIFIC	• CDP reporting (carbon) of emissions and performance • Developed a Group integrated energy and carbon management strategy • Implemented energy efficiency initiatives • Reactive water management	• CDP reporting (climate and water) • TCFD-aligned Climate Change Report • Group climate change policy approved and updated • Group water stewardship policy approved • Group TSF policy approved • Regional climate risk and vulnerability assessments • Group and regional water stewardship strategies being developed		• Decarbonisation strategy in line with a 1.5 °C future with 2030 targets, including net zero by 2050, projects and capital budgets and including science-based targets validation by SBTi • Creation of Executive Climate Change Steering Committee guiding development and implementation of decarbonisation strategy • Develop targets for scope 3 emission reduction by 2023 • Updated regional risk and vulnerability assessments • Embedding water stewardship into operational mine plans • Working towards full conformance of the GISTM by 2023 and 2025 respectively

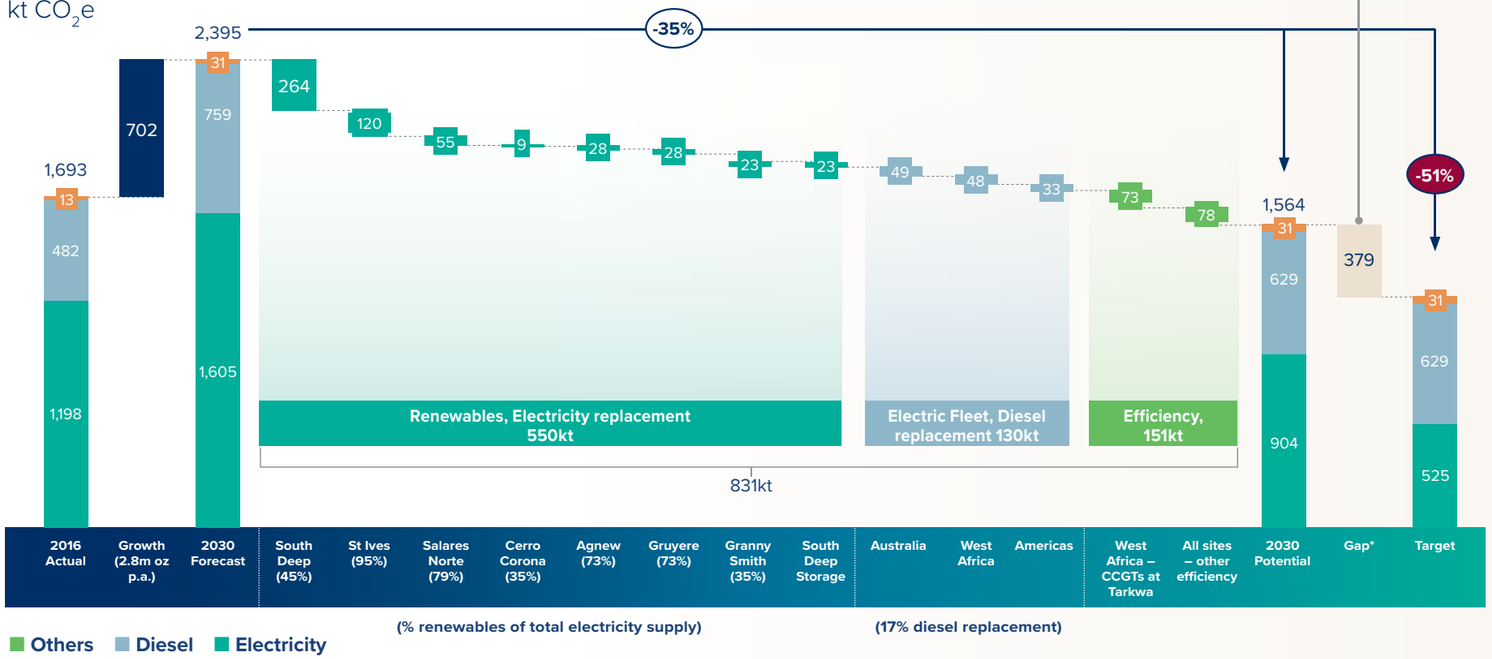
Climate change and decarbonisation strategy

CORE INITIATIVES TO ACHIEVE NET 30% REDUCTION BY 2030

A 30% by 2030 reduction is only possible with multiple stretch initiatives, some of them using technologies that are still being developed, to offset the anticipated growth to 2.8Moz in production and associated emissions

Gold Fields' GHG emissions profile, 2030 – impact of "core" initiatives

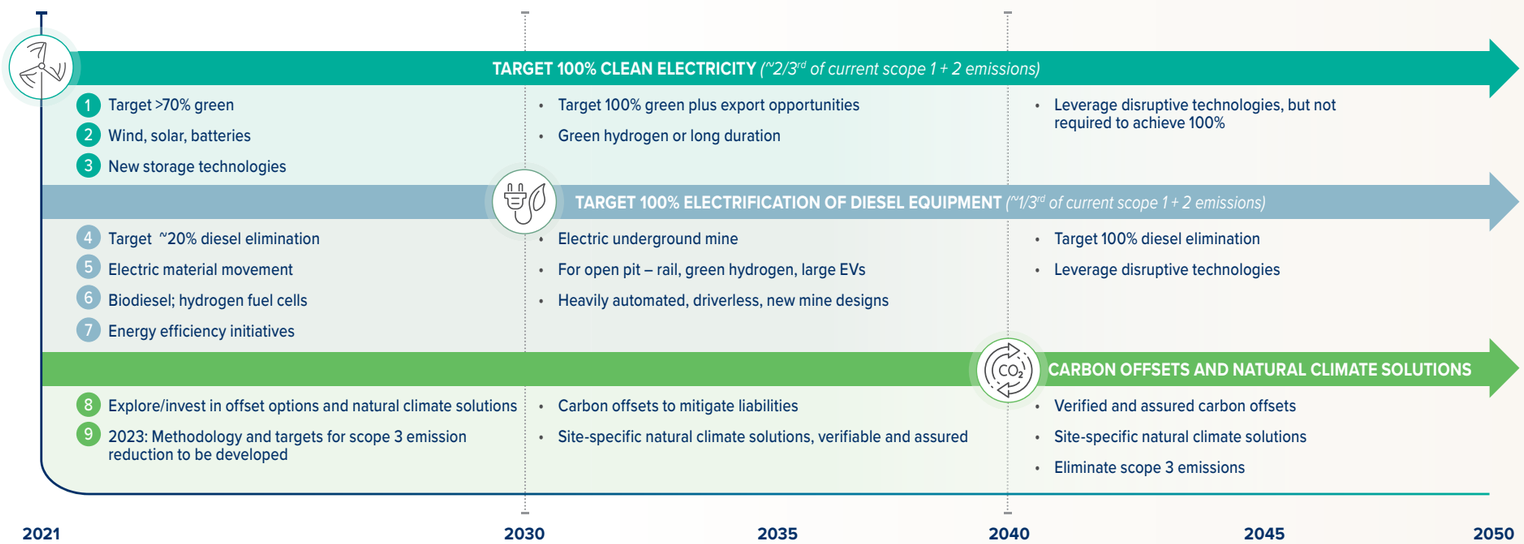
kt CO_2e



Stretch opportunities to fill gap

• South Deep, 100% green electricity:	306kt
• Gruyere, 78% green electricity:	88kt
• Source clean power for Damang:	112kt
• Source clean power for Tarkwa through grid:	42kt
Total	**548kt**

CONCEPTUAL PATHWAY TO NET ZERO 2030 – 2050



CONCEPTUAL PATHWAY TO NET ZERO: 2022 – 2050

Our December 2021 announcement of an ambitious 2030 carbon emissions reduction target and reaffirming our commitment to net zero emissions by 2050, heralded the next stage in our decarbonisation journey. We use 2016 as a base year, as this is when Phase 1 of this journey commenced and we started developing a wide-ranging climate change and energy strategy, programmes and targets.

We are measuring our performance against our target of a 30% reduction of scope 1 and 2 emissions by 2030, which amounts to an effective target of approximately 50% when projected 30% gold production growth to 2.8Moz is taken into account. To date – between 2016-2021 – our emissions increased 1% against the 2016 baseline, despite mining 9% more tonnes and producing 11% more gold. Our 2021 emissions were 18% lower than they would have been in the absence of energy savings initiatives and the renewable microgrids installed at Agnew and Granny Smith in Western Australia.

The top adjacent table outlines how we plan to achieve our 2030 targets. In terms of our net 30% reduction target we will have to reduce our emissions to just under 1.2Mt CO_2e from the 1.7Mt CO_2e in 2016. At the same time we plan to increase gold production to around 2.8Moz a year during the second half of the decade – this would push up emissions to an estimated 2.4Mt CO_2e by 2030 if we did not undertake the aggressive programme we have outlined.

How do we get there? Firstly, we had a look at our emissions profile – approximately two-thirds of our emissions are linked to our electricity usage, with South Deep by far the highest emitter in the company. The remaining third of our emissions is linked to diesel emissions by our fleet of mining vehicles.

If we increase emissions in line with our production forecast, we foresee that the electricity/diesel split remains the same. For the next few years, therefore, our focus will be on replacing our gas and coal-fired electricity with renewables, as highlighted in the turquoise section of the graph. This shows how much of each mine's electricity is intended to be derived from renewables by 2030.

Our diesel reduction efforts will initially be focused on introducing zero emission vehicles at our mines. We are currently carrying out internal trials, as well as working with peers in ICMM and the Electric Mine Consortium to develop cleaner, safer vehicles. But we are at an early stage and a meaningful impact is still a few years away.

A third emissions reduction component will be from continuing to improve energy efficiencies at our operations, with a switch from open to closed cycle gas turbines at Tarkwa mine providing a significant kicker.

As the graph shows, our current planned projects will not be enough, and we have identified several stretch opportunities to fill the gaps – such as those displayed in the beige box in the graphic.

The nine key initiatives outlined in the graph will be the focus of our decarbonisation work from now until 2030.

Looking beyond 2030 to the net zero target by 2050, the picture is less clear, but we know the high-level initiatives needed to take us there and these are depicted in the bottom graphic. By 2050, all the electricity used by our mines will be clean electricity, with 70% of that target to be achieved by 2030.

For diesel consumption, our high-level target is to eliminate 20% in the first 10 years and then accelerate this programme until 100% elimination is achieved by 2050. Carbon offset programmes are a last resort if we fall short.

We will also have to tackle scope 3 emissions, those from our supplier and upstream base, as our targets are currently limited to scope 1 and 2 emissions. Over the next two years we will be working with our peers in the ICMM and with our suppliers to look at ways of reducing these emissions and will announce our first scope 3 targets before the end of 2023, in line with ICMM timelines.

Gold Fields has been measuring and reporting its scope 3 emissions since 2008 and is aligned with the rest of the gold industry: research by the World Gold Council has found that upstream scope 3 emissions account for approximately 20% of the industry's total emissions. During 2024, Gold Fields' scope 3 emissions accounted for 23% of our total emissions. On the plus side we also know that compared to other metals and minerals gold has a relatively low carbon footprint, though that does not absolve us from our responsibility towards minimising our impact as best as we can.

Renewable energy

The decarbonisation strategy includes a significant lever: green energy. In all, 75% of the 2030 target will be reached through renewable energy use and storage. Gold Fields' emission reduction drive started in 2016 with approximately US$400m investments in completed energy projects by 2020 (GFL US$93m; Independent Power Producers (IPPs) via power purchasing agreements (PPAs) US$307m).

This has resulted in 18% absolute net group emission reductions to date. Renewables now account for 4.3% of the Group's electricity mix (excluding hydro) in 2021 (2016: <1%) rising by 14% by 2025. If hydroelectricity from Cerro Corona is included, renewables currently account for 12.5% of our electricity mix, improving to approximately 22% by 2025.

AUSTRALIA – *Agnew*
Completed 2021

- IPP: EDL
- 18MW wind, 4MW solar, 13MW/4MWh battery storage, 18MW gas, 3MW diesel
- 50% – 60% renewable energy fraction, up to 85% during ideal conditions
- 42% net mine emissions reduction
- Total cost: US$80m (IPP: US$58m; ARENA: US$10m)
- First large-scale Australian microgrid to incorporate wind turbines
- Planned 73% renewable energy by 2030

AUSTRALIA – *Granny Smith*
Completed 2020

- IPP: Aggreko
- 8MW solar, 2MW/1MWh battery storage, 35MW gas, 5MW diesel
- 9% renewable energy fraction (electricity)
- 7% net mine emissions reduction
- Total cost: US$28m (IPP: US$26m)
- Planned 35% renewable energy by 2030, comprising 28MW wind, 18MW/9MWh battery storage

AUSTRALIA – *Gruyere*
Expected commissioning Q2 2022

- IPP: APA
- 12MW solar, 4.4 MW/4.4MWh battery storage, 53MW gas, 3MW diesel
- 10% renewable energy fraction (electricity)
- 7% net mine emissions reduction
- Total cost: US$20m (IPP: US$20m (renewables only))
- Plan to achieve 25% renewable energy by 2030, increasing by 20MW solar

AUSTRALIA – *St Ives*

- Existing power purchase agreement in place until end 2023, with electricity supply of 100% natural gas
- Feasibility study for a standalone power solution underway
- Planned 75% – 85% renewable energy by 2025, which will comprise wind, solar, diesel back-up and battery storage

GHANA – *Tarkwa*

- IPP: Genser Energy
- Installed turbines and infrastructure
- Generator upgrade in 2025
- Gas transition from diesel to LPG (2016) to natural gas (2020)
- Gas transport via pipeline

GHANA – *Damang*

- IPP: Genser Energy
- Installed turbines and infrastructure
- Generator upgrade in 2026
- Gas transition from diesel to LPG (2016) to natural gas (2020)
- Gas transport via pipeline

SOUTH AFRICA – *South Deep*
Expected commissioning H2 2022

- 50MW solar plant (previously 40MW)
- To provide 24% of mine's electricity
- R123m/year saving
- 109kt net emissions reduction per year
- Total cost: R715m (US$45m) (previously R660m)
- Ambition is to achieve 45% renewable energy with storage capacity
- 50MW solar will save ~ 167 000kl of water consumed by Eskom
- Successfully relocated protected plant species during construction

CHILE – *Salares Norte project*
Expected commissioning Q1 2024

- IPP: Aggreko
- 27MW diesel, solar microgrid of which solar to provide 10MW
- Total cost: US$19m (IPP: US$13m)
- Planned 79% renewables comprising 20MW solar, 10MW wind and storage by 2030

PERU – *Cerro Corona*

- Energy provider Kallpa's 100% hydroelectricity is certified as clean energy by the International REC Standard. As such, 100% of the mine's electricity is classified as renewable
- Planned additional renewable energy sources by 2030
- 6MW bought from the grid

Climate change risks and opportunities

CLIMATE CHANGE-RELATED RISKS

The World Economic Forum's 2022 Global Risk Report identifies climate action failure, extreme weather and biodiversity loss as one of the top three most severe risks on a global scale over the next 10 years. Human environmental damage and natural resource crises are seventh and eighth respectively. The WEF Report warns of a systemic risk of exacerbated global inequalities as a result of a disorderly climate transition. No sector, business, person or region will be able to avoid the impacts of climate change.

Gold Fields has incorporated climate-related risks and opportunities into our enterprise risk management and strategy processes at Group and regional levels. Each region conducted its second five-yearly climate change risk and vulnerability assessments during 2021, with the Salares Norte project conducting its first assessment. Focused climate change risk and vulnerability assessments have been initiated for the Group's tailings storage facilities (TSFs) and water infrastructure as well. National and international climate-related regulatory and legislative requirements are reviewed continually to ensure that associated risks are managed and potential opportunities leveraged.

GOLD FIELDS' 2021 CLIMATE-RELATED TOP STRATEGIC GROUP RISKS

Rating	Group risks	Context	Mitigating actions	Opportunities
8 (2020: 9)	Failure to implement **climate change** adaptation measures	Stakeholders are increasing expectations of climate change leadership through, inter alia, robust climate change adaptation. We are already experiencing extreme weather events. Climate-related policy, legislation and regulations are becoming more stringent to reflect the increased country ambitions pledged at COP26 and thereafter.	Gold Fields is actively implementing measures to increase our resilience to climate change impacts. These include regional climate change risk and vulnerability assessments, with adaptation and mitigation plans monitored quarterly, as well as collaboration initiatives with peers and industry associations.	Natural climate solutions can assist us in reaching net zero, contribute to biodiversity and enhance social and regulatory licences to operate.
12 (2020: 13)	**Water security**	Water security for both Gold Fields and other water catchment users is affected by water pollution, freshwater use and water recycling/reuse. The majority of our regions are water scarce, while Ghana must deal with excess water, especially during floods and storms.	The Gold Fields 2020 – 2025 water stewardship strategy, aligned to ICMM good practice, is implemented through three-year regional water management plans. ISO 14001 certification at all operations ensures sound water stewardship governance.	Improve water security for communities and the environment and improve community relations in water-stressed regions. Achieve cost savings and reduce reliance on utility companies.
15 (new)	**ESG: Stakeholder expectations**	The incorporation of ESG into business strategy and practice is rapidly gaining traction amid increased investor expectations. Hollow "feel-good" ESG corporate statements and unsubstantiated targets are being called out as greenwashing and could impact reputation. Purposeful ESG integration requires capital and expertise skill sets.	The ESG Charter, with six priorities and clear and measurable targets, based on international best practice, is being implemented. The first part of the decarbonisation strategy to achieve 30% net emission reductions by 2030, dealing with scope 1 and 2 emissions, has been developed, with scope 3 emissions targets and actions to follow by 2023. The ambitious decarbonisation strategy includes renewable energy, energy efficiency and diesel replacement initiatives. The 2025 water stewardship strategy implementation is progressing ahead of targets.	Vastly reduced carbon footprint, more compelling investment case and improved reputation. Showing leadership in renewable energy and technology adoption can prompt greater collaboration with other industry players and peers.

GOLD FIELDS' 2021 CLIMATE-RELATED TOP CATASTROPHIC GROUP RISKS

Rating	Risks	Context	Mitigations
1	Tailings dam failure	Catastrophic TSF failure could cause loss of life and environmental and property damage. There could be many triggers for failure, of which climate change, including extreme weather events, is one.	Robust and stringent TSF management governance, including processes, procedures and controls, based on ICMM guidance and GISTM. We are further strengthening governance by ensuring conformance of all TSFs with "extreme" or "very high" consequence classifications with the GISTM by August 2023 and all other TSFs by August 2025.
2	Flooding (major incident causing loss of life and property damage)	The recent IPCC reports indicated with a high level of certainty that the volatility and extremity of weather events will increase and that global warming is affecting a change in the global water system. Extreme flooding could result in damage to and collapse of infrastructure, including power supply, compromising pumping ability.	Climate risk and vulnerability assessments conducted for all regions, with adaptation plans being implemented. Various policies, processes and procedures based on ICMM and other guidance such as the ICMM's Critical Control Management Programme. Robust enterprise risk management, including emergency evacuation and flooding procedures and emergency response plans.

One of the five wind turbines at our Agnew mine in Western Australia

Unpacking transitionary risks

The outcomes of the recent COP26 held in Glasgow, Scotland, in November 2021 look set to increase legislative and policy transitionary risks for companies. These include the completion of the Paris Rulebook, which *inter alia* deals with stricter emissions disclosures and the exponential development in transparent disclosure and reporting. This has been given further impetus with the establishment of the IFRS International Sustainability Standards Board and the consolidation of various accounting and sustainability frameworks. More than 5,200 businesses, including Gold Fields, and about 450 financial institutions have to date committed to science-based net zero targets and there has been a marked increase in public-private collaborations to deal with climate change impacts.

During 2022, a focus at Group level will be on aligning our disclosure with new rules by the US Securities Exchange Commission (SEC) entitled: The enhancement and standardisation of climate-related disclosures for investors. These are set to be unveiled in mid-2022. Similarly, we will seek to align with the Johannesburg Stock Exchange's (JSE) voluntary JSE Sustainability and Climate Disclosure Guidance.

CLIMATE-RELATED LEGISLATION, POLICIES AND NDCS

	CHILE	PERU	AUSTRALIA	SOUTH AFRICA	GHANA
Key legislation	• Carbon Tax Law • Framework Law on Climate Change being developed • Promotion of expansion of energy matrix through unconventional renewable energies	• Framework Law on Climate Change, 2018 • Energy Efficiency Act, 2007	• Clean Energy Finance Corporation Act, 2012 • Proposed Greenhouse Gas Storage and Transport Bill for Western Australia	• National Climate Change Bill • Carbon Tax Act, 19 of 2019	• Renewable Energy Act, 2011
Policy and regulations	• Long-Term Climate Strategy (ECLP) • National Green Hydrogen Strategy, 2020 • Sectoral mitigation and adaptation plans	• 2015 National Climate Change strategy (ENCC) • National Forestry and Climate Change strategy • Voluntary carbon footprint reporting • Proposed Registry of Emissions and Transfers of Pollutants	• Clean Energy Finance Corporation Investment Mandate Direction 2020 • Climate Solutions Package, 2019 • National Hydrogen Strategy, 2019 • Emissions Reduction Fund and Safeguard Mechanism	• National Climate Change Adaptation Strategy, 2020 • Sectoral emission targets framework and company-level carbon budget allocations expected 2023	• National Climate Change Policy, 2013 • Ghana Renewable Energy Master Plan, 2019 • National Adaptation Plan Framework, 2018
Carbon tax	• Carbon tax of US$5/t CO_2e to apply to entities that emit 25 00t CO_2e and/or 100t of PM from combustion processes from 2023			• Phase 1 of Carbon tax regime taxes primary emissions, with no liability to date • Phase 1 extended until end 2025 • Pass-through tax on cement	
NDCs[1]	**Carbon neutrality by 2050** GHG emissions of no more than 1,100Mt CO_2e between 2020 and 2030, with a peak by 2025 and GHG level of 95Mt CO_2e by 2030	**Fixed level target** Range of 208,8Mt CO_2e (unconditional) and 179,0Mt (conditional) by 2030	**Target of net zero emissions by 2050** Reduce GHG emissions by 26% – 28% below 2005 levels by 2030	**Fixed level target** Range of 398Mt – 510Mt CO_2e for 2025; 350Mt – 420Mt CO_2e for 2030 (in line with Paris Agreement)	**Fixed level target** Range of 26.9% and 12% reduction by 2025 and 14.9% and 44.9% by 2030 against business-as-usual levels
Gold Fields response	• Salares Norte's energy will consist of a 27MW hybrid microgrid with 10MW of solar	• Renewable energy procured from grid • Hydro-power allocation classified as renewable energy by the International REC Standard	• Continued implementation of renewable energy plants at all four mines • Participation in Electric Mine Consortium • Trial of zero-emission vehicles	• 40MW solar PV plant upgraded to 50MW, to be commissioned end 2022 • Approval to increase capacity to 60MW received • Trial of zero-emission vehicles	• Upgrade of turbines to combined cycle gas turbines at Tarkwa • Electric fleet and diesel replacement

[1] *Source: Climate Watch (climatewatchdata.org)*

Energy and carbon management

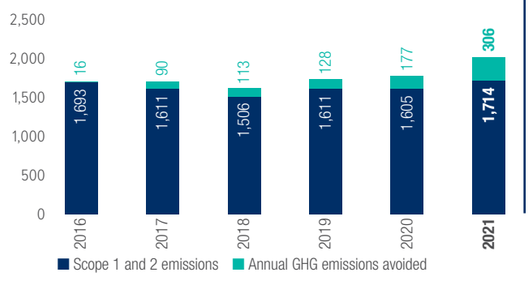
Energy management is Gold Fields' key lever in reducing our GHG emissions and transitioning to a low-carbon future. To ensure integrated climate change leadership and governance, we have established an Executive Steering Committee to oversee our climate change response, of which our decarbonisation strategy forms a significant part. International best practice, such as the recently revised ICMM Position Statement on Climate Change and implementation of ISO 50001-certified energy management systems at all sites by 2023, will provide the framework in which our decarbonisation journey will take place.

SDGs: 7 AFFORDABLE AND CLEAN ENERGY; 13 CLIMATE ACTION

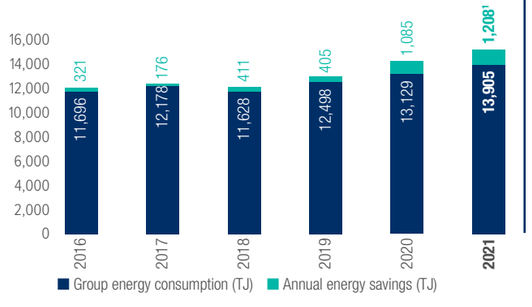
PERFORMANCE ANALYSIS 2021

1. **Total energy consumption** increased by 6% to 13.9PJ (2020: 13.1PJ), mainly as a result of a 10% increase in tonnes mined. The energy mix comprises 51% haulage diesel, 48% electricity and less than 1% of other fuels
2. **Energy intensity** remained virtually unchanged at 5.66GJ/oz (2020: 5.64GJ/oz)
3. **Energy savings** increased to 1.21PJ (2020: 1.09PJ), translating into long-term cost savings of US$34m, equal to US$14/oz. Our 2017 Energy and Carbon Management Strategy has delivered cumulative energy savings of 3.3PJ and combined cost savings of about US$140m up to 2021
4. **Energy spend** increased by 25% during 2021 to US$341m (2020: US$257m) on the back of higher oil prices and increased consumption
5. **Scope 1 and 2 emissions** were 7% higher at 1.7Mt CO_2e than the previous year (1.6Mt CO_2e), despite a 10% increase in tonnes mined
6. **Emissions intensity** increased slightly to 0.70t CO_2e/oz (2020: 0.69t CO_2e/oz)
7. We exceeded our annual target of 287kt CO_2e in **emissions reductions** from savings initiatives during 2021 by 7%, achieving 306kt CO_2e (2020: 253kt CO_2e)

EMISSIONS AND REDUCTIONS ACHIEVED



GROUP ENERGY USE AND SAVINGS ACHIEVED



[1] *Of the Tarkwa mine's 2021 total energy savings, 5.6TJ (11.2%) were derived from initiatives that deviate from Gold Fields' reporting criteria.*

As these initiatives resulted in cost and energy savings, they have been recognised as exceptional savings by the Gold Fields Group Head of Energy and Carbon.

KEY REGIONAL ENERGY INITIATIVES

		Total cost savings Cost reductions CO_2e savings
AMERICAS REGION	**Cerro Corona's carbon footprint is the lowest in Gold Fields. The mine has been ISO 50001 certified since 2018.** • Optimising haulage process and reduction of diesel consumption • LED light towers • Continuation of LED lighting rollout • Commissioning of 10MW solar plant at the Salares Norte project in Chile in Q2 2024	US$0.4m US$1.71/oz 1,212 CO_2e
AUSTRALIA REGION	**Australia is Gold Fields' leading renewable energy region, with Agnew's hybrid microgrid supplying 57% renewable electricity** • Improve haulage efficiency and diesel reduction • Installed a power line to reduce diesel consumption • Installation of capacitor banks to reduce reactive power • Gas waste heat recovery • Commissioning of renewables microgrid at Gruyere in Q2 2022	US$8.7m US$7.63/oz 90,274 CO_2e
SOUTH AFRICA REGION	**As 93% of South Deep's carbon footprint is fossil-fuel electricity based, its energy efficiency initiatives are electricity grid-related.** • Commissioning of 50MW solar plant in H2 2022 • Switch off one 3MW compressor and run one compressor at 4MW • Pumping station optimisation and recirculation of water • Replacement of fans with new energy efficient fans • Fan systems optimisation	US$3.9m US$13,38/oz 42,638 CO_2e
WEST AFRICA REGION	**Installation of gas turbines supplied by a pipeline has improved energy security, improved road safety and reduced costs and emissions.** • Electric pumps to replace diesel pumps for dewatering • Installation of variable speed drives at tailings pumps • Mining equipment optimisation, including eco driver training • Carbon-in-leach elution fuel change	US$21.1m US$27,16/oz 172,008 CO_2e

Water stewardship

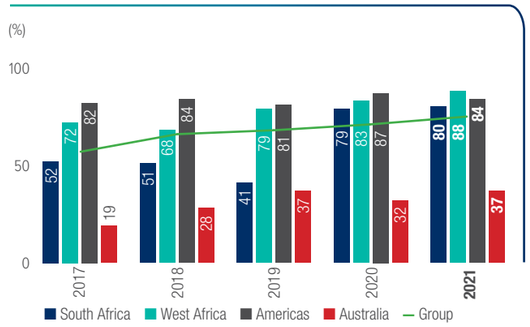
Gold Fields continued to participate in CDP water disclosure and achieved an **A- rating** for 2021.

The 6th Assessment Reports issued by the IPCC confirm that the climate crisis is a water crisis, resulting in too much, too little or too polluted water, or a combination of these. Our water stewardship approach is that of inclusive management of a commonly shared scarce and valuable resource, acknowledging that access to water is a fundamental human right and indispensable to the proper functioning of all natural ecosystems. We are also very aware that most of our operations are situated in water-stressed areas. Gold Fields' five-year water stewardship strategy is closely aligned to the ICMM Water Position Statement and follows an integrated water resource management approach, including catchment management informed by risk and opportunity analyses. As water risks are local, each region identified its key risks and opportunities to develop its regional water management plan. We also started a process to assess the impact of climate change on the integrity of all water management structures across the Group.

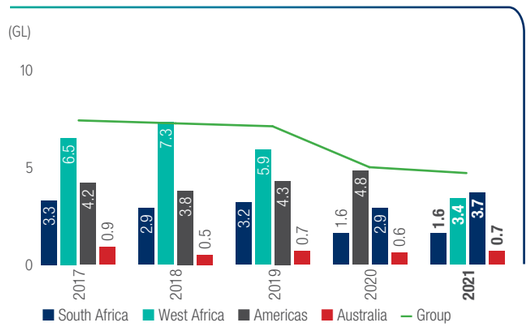
WATER STEWARDSHIP STRATEGY PERFORMANCE

	Efficient water user	Responsible operator	Engaged operator	Community projects/initiatives
PERU	• Integrated data management software for water quality monitoring data • Water resource risk assessment	• Feasibility study for a TSF water treatment plant completed	• Provision of water monitoring reports to host communities • Workshops with communities were postponed due to Covid-19 restrictions	• Rainwater harvesting • Optimisation of potable water system in Hualgayoc • Construction of a water treatment plant to provide drinking water to communities
SOUTH AFRICA	• Aim to eliminate Rand Water (utility) consumption to zero by 2050 • Water conservation and demand management plan • Exceeded both water targets	• Received the approved amendment to the 2018 water use licence • The old return water dam was desilted and designs for an upgraded lining completed	• Active engagement with the Rietspruit Catchment Forum with instream water quality results shared • Shared-value projects	• Collaborated with government agencies to raise awareness of the importance of trees and water during Arbor Day and planting trees at three schools • Starting water management education programmes in schools
AUSTRALIA	• Water balance reviewed • Identified water projects, e.g. commissioned seepage transfer station at the TSF to capture and recycle seepage water	• Water management risk assessments completed, with water management plans for all sites to be completed during 2022	• Identified key water stakeholders • Engaged with all the local shires on the impacts of climate change, how to mitigate the effects of drought etc.	• Participation in the Goldfields Voluntary Organisation of Councils comprising 10 local governments to discuss issues in the Goldfields region of Western Australia
GHANA	• Commissioned clarification plant at Tarkwa	• Site water management plans completed	• Catchment and water source-based risk assessments and controls	• Host community water committees re-formed • Watershed mapping completed

WATER RECYCLED/REUSED



FRESHWATER USE/WITHDRAWN



Our focus remains on continual improvement of our water management practices, pollution prevention, recycling and water conservation. Water stewardship is one of six priorities of the Gold Fields ESG Charter, with 2030 targets to **recycle and reuse at least 80% of water** and **reduce freshwater use at least 45%** from a 2018 baseline. During 2021, Gold Fields spent US$32m on water management and projects (2020: US$25m). We met all our water-related targets during 2021.

SDG: 6 CLEAN WATER AND SANITATION

PERFORMANCE DATA

The primary gains were achieved at Tarkwa and South Deep. Tarkwa installed a micro-filtration unit on a clarifier return line to the carbon-in-leach plant and reused process water for cooling at the power plant and to mix explosives and some chemicals

TARGET	PERFORMANCE IN 2021
Recycle/reuse 80% of total water use by 2030	75%

South Deep continued to recycle treated sewage effluent and upgraded its potable water pipeline, reducing losses

TARGET	PERFORMANCE IN 2021
45% reduction of freshwater use from a 2018 baseline by 2030	35%

ICMM issued an updated Water Reporting Guideline and we updated our internal guideline accordingly.

Tailings storage facilities

SDGs:

MANAGEMENT OF TAILINGS DAMS

TAILINGS MANAGEMENT STRATEGY

Gold Fields' Tailings Storage Facility (TSF) Management Policy Statement commits us to ensure that our TSFs cause zero harm or damage to our people and the natural environment. At the industry and company level, we are pursuing two broad strategies to further strengthen the technical management and governance of the 37 tailings facilities at our operations and joint ventures.

As a member of the ICMM, Gold Fields has been integrally part of the development of the Global Industry Standard on Tailings Management (GISTM) as an international imperative to prevent TSF failures, such as those that had occurred over the past few years at the Brumadinho and Samarco TSFs in Brazil, both resulting in major losses of lives, and the Mount Polley TSF in Canada. This global best practice standard sets out how companies can ensure that tailings facility risks are managed appropriately, consistently and transparently.

At a company level, Gold Fields has publicly endorsed and committed to conforming to the GISTM. We have also aligned our tailings management practices to the ICMM position statement on tailings management. In 2021, Gold Fields launched a review of each of our major water management structures, including TSFs, to evaluate their status, identify opportunities for improvement and assess the potential impact of climate change on their integrity.

CLIMATE CHANGE RISK AND VULNERABILITY ASSESSMENTS

We appreciate that risk management and, specifically, a deep understanding of the climate change resilience and vulnerability of our TSFs is an integral part of our TSF strategy. Therefore, we have initiated a process to amplify the recently completed regional risk and vulnerability assessments (see p16 – 20) to include a specific focus on our TSFs and water management structures. In addition, we will follow the ICMM Tailings Best Practice Guide in relation to TSF design for climate change as part of our process towards conformance to the GISTM. The actions to achieve this include the following:

- Ensure that the hydrological parameters are current
- Estimate the potential changes in Annual Exceedance Probability (AEP) and Probable Maximum Precipitation (PMP) events due to climate change at each operation
- Update water balances and hydrological and hydrogeological models for all operations
- Develop a water-retaining structure design guideline or standard.

SOUTH DEEP DOORNPOORT TSF CLIMATE RISK ASSESSMENT

We initiated the first regional assessment of the Doornpoort TSF at South Deep during 2021, with the assistance of external specialists. The assessment continued the recent regional risk and vulnerability assessment and the 2019 dam break assessment. The assessment is based on a climate change scenario of an increase in the mean temperature, a decrease in rainfall and an increase in rainfall variability. The two main hazards in connection with TSF failure are slope instability and overtopping, which could lead to the uncontrolled release of tailings and water in the form of a flow slide. These flow failures, in turn, could lead to serious environmental impacts and potential impacts on nearby residential settlements. However, both overtopping failure and slope instability are unlikely due to adequate water management and performance monitoring.

The tailings dam at Cerro Corona in Peru

OUR TSF MANAGEMENT TIMELINE

2015
ICMM review of Samarco and Mt Polley failures

2018
Gold Fields TSF Management Guideline updated

2020
Gold Fields Incident Standard developed; Gold Fields TSF audits conducted; AMIRA Research Project launched; GISTM launched through ICMM

2023
Tarkwa and Cerro Corona GISTM conformance exercise to be completed

2025
All other TSFs GISTM conformance studies to be completed

2030
Target to reduce active upstream TSFs from five to three

Climate change risk and vulnerability assessment

A second round of climate change risk and vulnerability assessments was conducted at all our mines during 2021, other than at the Salares Notre project, which conducted its first assessment. The initial assessments followed the ICMM methodology to increase the resilience of Gold Fields, our operations, the value chain and local communities, as set out in the "Adapting to a changing climate" 2013 ICMM Report. In 2019, the ICMM released an update to the report, entitled "Adapting to a changing climate: building resilience in the mining and metals industry", following the same methodology.

The updated assessments followed this methodology and classified the impacts of climate change on the core operations, the value chain and the broader network comprising the social and natural environment. Risk is determined by the severity and the probability of an uncertain future event occurring. Vulnerability evaluates the degree to which a system is incapable of coping with adverse effects of climate change. The vulnerability of a system is determined by the exposure to the climate change impact, the sensitivity of the system, and its capacity to adapt. The vulnerability of each risk is classified as low, medium or high, according to the consideration of the exposure to climate change and its sensitivity, followed by an adjustment according to the adaptive capacity of the system to climate change.

CHILE – Salares Norte Project

NATIONAL PROJECTIONS

- Increased temperature
- Decreased snow
- Decreased annual rainfall
- Increased storm frequency and intensity
- Increased water stress

LOCAL PROJECTIONS/ FACTORS

4,500m altitude, extreme wind and snow, open pit mining

This is the first risk and vulnerability assessment completed for the Salares Norte project in Chile, covering the currently expected life-of-mine of the project of 11.5 years. The assessment focused on gaining an understanding of the extent of the risks and the project's vulnerability over the life-of-mine. The next phase of the process, within the next two years, will entail developing adaptation measures to address these risks and increase the resilience of the project.

	Business process/stakeholder	Climate change impact	Risk	Vulnerability
CORE OPERATIONS	Processing		Disruption to operations	Medium
			Reduced available quantity of process water	Medium
			Communication failure	Medium
			Increased electricity costs due to low PV efficiency	Low
	Transport		Disruption in transport system and damage to internal roads	Medium
	Health and safety		Increased cooling/heating costs and potential heat/cold stress	Medium
			Decreased productivity due to lower temperatures	Medium
			Increased discomfort experienced by mine employees	Low
VALUE CHAIN	Suppliers		Disruption to core services and supplies and delays in transport of materials, critical equipment and spares	Medium
			Increased costs of upstream products	Low
	Contractor workforce		Disruption to operations	Medium
			Movement of personnel to sites and interruptions	Medium
BROADER NETWORK	Social environment		Reputational impact due to the impact on the "Salar de Pedernales" (Salt lake)	Medium
			Increased tension in communities due to living conditions and lack of access to safe water	Medium
			Increased vulnerability of host communities	Medium
			Increased dependency of host communities on Gold Fields	Low
	Regulatory		Increased restrictions on GHG emissions and restriction on the use of fresh water for mining	Medium
			Carbon tax and increased reporting	Low
	Infrastructure		Increase in flooding and damage to public roads	Medium
	Natural environment/ biodiversity		Reduced availability of water and food for fauna (chinchilla)	Low

Drought · Flooding · Ocean swells · Storms · Water scarcity · Landslides · Temperature · Water stress · Snow · Wind · Heat/cold stress · Carbon tax · Negative investor perceptions

Climate change risk and vulnerability assessment continued

PERU – Cerro Corona

NATIONAL PROJECTIONS

Increased temperature | Increased rainfall variability | Increased extreme weather events | Increased rainfall

LOCAL PROJECTIONS/ FACTORS

Open pit mining, 3,600 – 4,000m altitude, extreme rainfalls that could disrupt the route to the harbour

	Business process/stakeholder	Climate change impact	Risk	Vulnerability	Adaptation measures
CORE OPERATIONS	Waste disposal		TSF slope stability and integrity	High	• Alignment with GISTM • Slope stability monitoring system in place • Monitoring of ground water levels, piezometric ground water pressure, pumping capacity, water treatment capacity and TSF capacity
	Extraction		Decreased productivity during heavy rainfall events	High	• Pit dewatering system, including backup pumps
			Opencast mine slope stability	High	• Slope stability monitoring system in place
			Pit flooding compromising the pumping systems and threatening the quality of water being discharged	High	• Pit dewatering system, including pumping wells, channels for drainage and collection and ponds for storage and pumping • Monitoring of groundwater levels
			Interruption in production due to decrease in available water due to increased evaporation caused by increased temperature	Medium	• Short and long-term water balance models and decisions on water transfers
	Health and safety		Unsafe working conditions for field workers due to increased lightning storms	High	• Early storm warning system to alert workers of electrical storms • Shelter provided for field workers
	Transport		Cessation of operations caused by interruption of concentrate transport to port	High	• Increase of concentrate storage capacity on-site and at the port
			Damage to roads due to flooding and excessive rainfall	Medium	• Use of crushed rock on the surface of the road • Frequent maintenance of the roads
	Mine closure		Negative impact on natural vegetation process affecting closure and post-closure	Medium	• Feasible revegetation plan as part of the mine closure plan
VALUE CHAIN	Supply chain		Disruption in supply chain and the interruption of the provision of supplies	High	• Available alternative routes are in fairly good condition for the delivery of products • Increased stock level of diesels up to approximately 10 days in the event of a disruption • Construction works at the dam wall are postponed during the rainy season and resumed during the dry season
	Port infrastructure		Damage to port infrastructure could cause logistics and supply chain delays	High	• Investigations of an alternative port for shipping of concentrate
	Electricity supply		Interruption of electricity supply due to impact on hydropower from melting glaciers	Medium	• Back-up energy supply
	Transport and supply chain		Disruption of supplies due to road damage	Medium	• Alternative routes have been identified and on-site stock supply for operations
BROADER NETWORK	Social environment		Poverty and literacy levels may hamper the ability of host communities to build resilience to the impacts of climate change	Medium	• Training and awareness on the impacts of climate change • Implementation of projects to improve the water supply to the host communities including water treatment and rainwater harvesting
			Increased vulnerability of food provision and food prices for coastal communities	Medium	• Increased engagement with communities and investment in agricultural projects
			Migration trend inland into the direct area of influence of the mine as demands for jobs increase	Medium	• Focus on host community employment and non-mining jobs
			Spread of water pollution and water borne diseases affecting host communities due to change in water flow	Medium	• Community-based initiatives to build community resilience • Shared Value Strategy
	Natural environment/ biodiversity		Change in ecosystem services due to the impacts of climate change	Low	• Investigate options to enhance the resilience of ecosystem services to host communities

Heavy rainfall | Flooding | Extreme weather events | Lightning | Storms | Evaporation | Temperature | Landslides | Rockfalls | Drought | Glacier melting | Sea level rise | Storm surges | Increased rainfall

Climate change risk and vulnerability assessment continued

AUSTRALIA – St Ives, Granny Smith, Gruyere and Agnew

NATIONAL PROJECTIONS

- Increased temperature
- Reduced rainfall
- Increased extreme weather events
- Increased bushfires
- Legislation and policy changes

LOCAL PROJECTIONS/ FACTORS

Mostly underground mining with some surface mining in remote, arid and mostly hot areas with high evaporation.

Extremely infertile soils with saline to hypersaline groundwater.

Increase in temperature, decrease in annual rainfall, increase in the intensity and the number of hot days, increase in droughts, increase in bushfires.

	Business process/stakeholder	Climate change impact	Risk	Vulnerability	Adaptation measures
CORE OPERATIONS	**Extraction**	Storms, Flooding	Adequacy of flood management and storage capacities to safeguard personnel	Medium	• Align flood management protocols to a critical control management approach • Review surge capacity in light of in-pit waste rock disposal • Integrated long-term modelling into closure planning for appropriate structures
	Mineral processing	Water scarcity, Temperature, Evaporation	Declining availability of process water	Medium	• Life of mine water risk assessments for all sites • Water included into strategic plans • Water source and capacity studies at all operations
	Waste disposal	Storms, Flooding, Extreme weather events	TSF stability during periods of extreme rainfall	Medium	• Complete buttress works at the Granny Smith TSF • Complete drainage works at the Gruyere TSF • Utilise in-pit tailings where possible • Align to the GISTM • Closure modelling scenarios to include long-term stability assessments
	Health and safety	Temperature	Increase in ventilation requirements as mines move deeper and ambient temperature increases	Medium	• Innovation and technology strategy • Participate and provide input into the Electric Mine Consortium • Investigate and trial battery electric vehicles for the underground operations • Continue with investigations and deployment of remote technologies and ventilation-on-demand technologies
		Bushfires, Temperature, Drought	Bushfire impact to infrastructure, supply and safety	Medium	• Review site critical hazard standards to ensure appropriate coverage of bushfire risk • Review site-based fire management plans • Identify at risk infrastructure • Mutual aid agreements at all sites to ensure regional responses • Participation in Goldfields Voluntary Regional Organisation of Councils work on climate change
		Temperature	Energy consumption increase for cooling of equipment and workplaces	Medium	• Align to ISO 50001 • Energy management plans for all sites, inclusive of a focus on energy efficiency • Implement technology strategy to reduce heat loading • Transition energy sources to renewable energy
VALUE CHAIN	**Policy and regulatory**	Regulations	Government restricting access to water	Medium	• Implementation of the three-year water management strategies • Broaden water balance focus to mining activity with linked water management plans • Identify all potential water sources with a view towards regulatory approval • Water included into strategic plans
BROADER NETWORK	**Social environment**	Social licence to operate	Societal pressure to address climate change	Medium	• Develop a plan for 30% emissions reductions by 2030 • Continue with renewable energy projects • Utilise the existing government engagement plan to emphasise Gold Fields' approaches and successes to tackle climate change • Participate in the Chamber of Minerals and Energy structures and ensure Gold Fields content within the social positioning campaigns

Storms · Flooding · Water scarcity · Extreme weather events · Temperature · Evaporation · Bushfires · Drought · Regulations · Social licence to operate

Climate change risk and vulnerability assessment continued

SOUTH AFRICA – South Deep

NATIONAL PROJECTIONS

- Increased temperature
- Increased rainfall variability
- Decreased annual rainfall
- Increased storms
- Increased water stress and prolonged drought

LOCAL PROJECTIONS/ FACTORS

Deep underground mining up to 2,995 metres below ground level and surface mining.

	Business process/stakeholder	Climate change impact	Risk	Vulnerability	Adaptation measures
CORE OPERATIONS	**Underground**	Temperature	Increased electricity consumption and costs, due to more cooling requirements	High	• 50MW solar PV project • Energy efficiency initiatives, including energy efficient vent fans
	Processing	Water stress, Drought	Reduced onsite water flows resulting in increased demand for water from Rand Water and Rand Water's inability to provide sufficient quantity of water	High	• Redirected sewerage effluent into process water system for reuse • Increased on-site water storage, with water storage reticulation projects • Additional boreholes drilled with water conservation schemes • Developed scavenger wellfields
	Health and safety	Temperature, Heatwaves	Employee heat exhaustion and dehydration, specifically at surface operations	Medium	• Various projects implemented in terms of fan efficiency increase in the cooling system • Increased awareness related to heat stress incorporated into health and safety programmes • Updated heat stress and dehydration strategies
	Waste management	Extreme weather events, Flash floods	TSF slope stability during periods of high rainfall	Medium	• Implementation of GISTM • Incorporation of climate change into TSF design and modelling
	Mine closure	Drought, Air quality	Negative impact on natural revegetation process as part of rehabilitation process	Low	• Continual evaluation of the mine closure plan
VALUE CHAIN	**Electricity infrastructure**	Water stress, Drought, Flash floods	Increased electricity costs or disruption of supply	Medium	• 50MW solar PV project • Investigations into further renewable energy projects • Implementation of energy efficient vent fans
	Suppliers	Carbon tax	Increased price of upstream products due to carbon tax	Medium	• Engagement with suppliers about carbon tax
BROADER NETWORK	**Social environment**	Temperature, Flash floods	Increased tension in host communities due to poor municipal service delivery and living conditions	High	• Initiatives to build adaptive capacity of the host communities, including social investments to increase economic diversification, education, training, health and wellbeing • Continual engagement with host communities
		Temperature, Water stress, Drought, Extreme weather events	Increased dependency of host communities on Gold Fields for service provision, especially water provisioning	Medium	• Consider water infrastructure upgrade projects at host communities • Increased local procurement through a local poultry farm and the Gold Alliance Agricultural Programme (GAAP) • Continual engagement with host communities

Temperature · Water stress · Drought · Heatwaves · Extreme weather events · Air quality · Flash floods · Carbon tax

Climate change risk and vulnerability assessment continued

GHANA – Tarkwa and Damang

NATIONAL PROJECTIONS

Increased temperature | Increased rainfall variability | Increased extreme weather events | Increased very hot days | Sea level rise

LOCAL PROJECTIONS/ FACTORS

Open pit mining – high flood risk, extremely high risk of untreated water and wastewater discharge, high risk of drinking water shortage, extremely high risk of unimproved/no sanitation, high risk of drought, high risk of tailings and infrastructure failures, stringent regulation.

	Business process/stakeholder	Climate change impact	Risk	Vulnerability	Adaptation measures
CORE OPERATIONS	**Extraction**		Larger volumes of mine water and increased pit flooding and pumping with associated increased operational costs	High	• Undertake a mine wide flood risk assessment and modelling to assess hotspots or flush points for planning • Continue to mine deeper in the dry season to compensate for wet season limitations • Increase stockpiling to ~28 days, as per longest period of consecutive days of rainfall • Divert excess run-off water away from pit • Upgrade pumps and secure back ups • Drainage channels enhancement • Continued on-site water quality testing and permitting for discharge
			Decreased water quality available for processing purposes	High	• Increase water recycling and treatment to improve water quality
			Increased operational costs due to maintenance of roads	High	• Continue to raise or elevate roads with adequate terrain and gradient • Line haul roads with crushed waste rock for operational continuity on rainy days • Continue to divert run-offs away from road networks
	Materials handling and processing		TSF and infrastructure failure	High	TSFs: • Continue to implement effective GISTM programmes • Ensure mine is ICMI certified at all times • Ensure all TSFs have overflow outlet paths/spill ways, especially during high rainfall periods and emergencies • Erosion resilient material used in constructing TSF walls Mine infrastructure: • Undertake infrastructure resilience study • Increase the frequency and condition monitoring programmes and implement corrections where needed • Use climate resilient materials for construction/building structures on the mine
	Health and safety		Increased discomfort experienced & risk of heat-related illnesses	High	• Provide for increased operating cost from energy usage in hot seasons • Invest in solar hybrid air conditioners for onsite offices • Employee training on heat stress/climate change and health issues, including malaria and heat stress monitoring programme, including frequent health checks • Enhanced employee wellbeing programmes
			Increased spread of vector-borne diseases such as malaria, cholera, etc.	High	• Malaria control and insect bite prevention programme • Employee training
SUPPLY CHAIN	**Suppliers**		Weather-related delays in transport of materials, critical equipment and spares	High	• Critical spares pre-ordered and stocked considering potential downtimes • Green/sustainable procurement practices • Regular monitoring of roadside waterways, including storm water diversion • Regular storm water drains maintenance and desilting
	Regulatory		Increased legislative and other requirements, including renewable energy and biodiversity protection	High	• Continued monitoring of regulatory developments, including updated NDC • Continue to Implement a dynamic and effective climate change strategy • Prioritise compliance obligations • Consider climate offset projects (such as waste-to-energy, solar project, forest protection/conservation etc.) and work closely with communities, government/regulators
BROADER NETWORK	**Social environment**		Increased vulnerability of host communities due to impacts of climate change, including increased dependency on Gold Fields for service provision and financial support during crises	High	• Continued community education on climate change impacts • Community shared value programmes, including rehabilitation of household ablution and water facilities • Assisting municipalities with providing basic service delivery, including electricity, potable water, and ablution facilities • Extensive collaboration with NGOs in areas of sanitation, water • Water and Sanitation Committee to continue • Dynamic emergency preparedness and response awareness
			Decreased food security, increased spread of tropical diseases worsening community health and poverty, induce migration, contribute to civil unrest, and increase conflict over natural resources.	High	• Effective host community procurement and job creation • Farmer education and studies to investigate harvesting trends in line with climatic conditions • Continued support to improve community economic performance through various programmes (e.g. YouHOP, Cocoa growing)
	Investor perceptions		Increased pressure from investors, lenders, and insurers to minimize carbon liabilities and develop adaptation plans.	Medium	• Effective decarbonisation programmes, including offset projects • Good environmental stewardship practices • Effective implementation of sustainable mining plans/strategy • Closure costs and bonds in place
	Insurance providers		Climate-related damage may raise premiums or make insurers unwilling to provide insurance or re-insurance.	Medium	• Effective climate change strategy and implementation • Increase financial provisions for insurance
	Natural environment		Increased difficultly to reestablish vegetative cover	High	• Develop closure designs that support survival of flora/fauna under adverse conditions • Biodiversity management plans to include climate resilient vegetation strategies • Implement effective biodiversity management programmes

Drought | Flooding | Storms | Stringent regulation | Water scarcity | Temperature | Sea level rise | Extremely uncomfortable days

Regional and Group energy carbon performance

	2021	2020	2019	2018	2017	2016
ELECTRICITY PURCHASED (GWh)						
Peru	152	147	148	150	151	153
Australia	189	174	211	247	282	287
South Africa	465	399	436	450	498	526
Ghana	474	476	457	437	435	434
Group	**1,280**	**1,197**	**1,253**	**1,284**	**1,366**	**1,400**
DIESEL CONSUMPTION (ML)						
Peru	19	14	17	15	12	13
Australia	64	54	56	52	59	71
South Africa	3	2	2	2	3	3
Ghana	107	115	115	114	113	97
Group	**193**	**185**	**190**	**184**	**188**	**183**
TOTAL ENERGY CONSUMPTION (PJ)						
Peru	1.23	1.02	1.15	1.08	1.00	1.01
Australia	5.21	4.70	3.91	3.14	3.63	3.60
South Africa	1.78	1.52	1.65	1.69	1.90	2.01
Ghana	5.69	5.89	5.79	5.71	5.65	5.07
Group	**13.90**	**13.13**	**12.50**	**11.63**	**12.18**	**11.70**
ENERGY INTENSITY (GJ/oz PRODUCED)						
Peru	4.94	4.92	3.93	3.45	3.25	3.75
Australia	4.94	4.10	4.05	3.56	3.89	3.82
South Africa	6.10	6.69	7.42	10.76	6.77	6.91
Ghana	7.33	7.86	7.96	8.10	7.95	7.09
Group	**5.66**	**5.64**	**5.67**	**5.64**	**5.46**	**5.27**
TOTAL ENERGY COSTS (US$m)						
Peru	30	23	29	26	22	21
Australia	124[1]	84	81	78	81	84
South Africa	43	29	32	33	34	32
Ghana	144	121	158	164	120	153
Group	**341**	**257**	**300**	**302**	**258**	**289**
ENERGY SPEND (% OF OPEX)						
Peru	16%	15%	17%	16%	15%	14%
Australia	15%	12%	13%	15%	15%	14%
South Africa	14%	12%	13%	13%	11%	12%
Ghana	25%	23%	33%	37%	26%	32%
Group	**14%**	**16%**	**20%**	**21%**	**17%**	**20%**
SCOPE 1 CO_2 EMISSIONS (kt)[2]						
Peru	52	29	33	29	28	29
Australia	425	364	282	215	235	233
South Africa	9	7	6	6	9	9
Ghana	302	357	361	349	434	448
Group	**788**	**756**	**682**	**599**	**705**	**719**
SCOPE 2 CO_2e EMISSIONS (kt)[2]						
Peru	27	33	39	33	33	39
Australia	106	97	120	141	160	166
South Africa	493	415	463	436	493	526
Ghana	302	304	307	297	234	241
Group	**927**	**850**	**929**	**907**	**919**	**972**
SCOPE 3 CO_2e EMISSIONS (kt)[2]						
Peru	54	41	61	63	49	45
Australia	245	232	171	152	168	167
South Africa	34	29	27	25	28	35
Ghana	209	216	225	243	240	203
Group	**542**	**518**	**484**	**484**	**485**	**450**
EMISSIONS INTENSITY (TONNES CO_2e/oz) (SCOPE 1 AND 2)[2]						
Peru	317	299	246	197	199	253
Australia	460	400	420	400	420	430
South Africa	1,710	1,870	2,111	2,813	1,780	1,920
Ghana	777	882	918	915	939	963
Group	**697**	**690**	**730**	**730**	**732**	**763**

[1] *Includes 100% energy costs for Gruyere, previously 50% was included.*
[2] *Emission factors 2016 to 2020 for West Africa and Americas restated in line with ISO 14064.*

Gold Fields' carbon footprint – 2021

Scope 1 – 2 emissions (tCO_2e) – 2021

Operation	Diesel: haulage and other	Diesel: power generation	Petrol	Liquid petroleum gas	Gas for power LNG	Blasting agents	Gas for process (pipeline natural gas)	Acetylene	Total scope 1 emissions	Total scope 2 emissions	Total scope 1 and 2 emissions
SOUTH AFRICAN REGION INCLUDING OFFICES	**8,592**					**318**		**15**	**8,924**	**493,117**	**502,041**
South Deep Joint Venture	8,587					318		15	8,920	493,050	501,970
Gold Fields Group Service	5								5	66	71
WEST AFRICAN REGION INCLUDING OFFICES	**288,605**	**2,166**	**140**	**3,180**		**4,976**	**2,613**	**20**	**301,699**	**301,656**	**603,355**
Tarkwa Gold Mine	207,040			323		4,119	2,613	10	214,105	204,617	418,722
Damang Gold Mine	81,481	2,166		2,856		857		10	87,369	96,791	184,160
Accra office	84		140	1					225	247	472
AUSTRALIAN REGION INCLUDING OFFICES	**169,220**	**2,867**		**2,828**	**245,812**	**2,924**	**1,339**	**7**	**424,998**	**105,641**	**530,639**
St Ives Gold Mine	50,529			1,198		196		2	51,925	105,539	157,464
Agnew Gold Mine	24,910	317		750	32,209	402		1	58,588	0	58,588
Gold Fields DHC Proprietary Limited											
Granny Smith Gold Mine	32,882	704		861	84,706	377	(0)	1	119,531	0	119,531
Gruyere Management Proprietary Limited	60,899	1,846		20	128,897	1,949	1,339	3	194,953	0	194,953
Perth office										102	102
SOUTH AMERICAN REGION INCLUDING OFFICES	**50,483**		**78**	**213**		**1,479**		**3**	**52,255**	**26,554**	**78,810**
Cerro Corona Gold Mine	50,456		78	213		1,479		3	52,228	26,554	78,783
Lima office	27								27		27
GROUP TOTAL	**516,899**	**5,033**	**218**	**6,221**	**245,812**	**9,697**	**3,952**	**45**	**787,877**	**926,968**	**1,714,845**

Scope 3 emissions (tCO_2e) – 2021

Operation	Total purchased goods and services	Total fuel and energy-related activities	Upstream transport and distribution	Waste generated	Total business travel	Employee commuting	Downstream transport and distribution	Processing of sold products	End-of-life treatment of sold product	Total scope 3 emissions
SOUTH AFRICAN REGION INCLUDING OFFICES	**15,759**	**15,986**	**171**	**344**	**66**	**1,013**	**27**	**100**	**200**	**33,665**
South Deep Joint Venture	15,757	15,984	171	344	44	1,013	27	100	200	33,639
Gold Fields Group Service	1	2	0		22	0				26
WEST AFRICAN REGION INCLUDING OFFICES	**61,259**	**142,710**	**2,980**	**774**	**336**	**481**	**6**	**143**	**286**	**208,974**
Tarkwa Gold Mine	47,001	110,464	2,221	686	268	298	4	96	192	161,229
Damang Gold Mine	14,236	32,185	757	88	67	184	2	47	94	47,659
Accra office	22	61	1		1	0				86
AUSTRALIAN REGION INCLUDING OFFICES	**111,677**	**120,991**	**3,322**	**501**	**6,505**	**869**	**22**	**210**	**419**	**244,516**
St Ives Gold Mine	43,318	18,618	992	248	364	210	8	72	144	63,974
Agnew Gold Mine	19,913	16,317	601	18	1,686	127	4	41	82	38,790
Gold Fields DHC Proprietary Limited						0				0
Granny Smith Gold Mine	14,115	24,990	566	102	2,228	239	5	51	103	42,399
Gruyere Management Proprietary Limited	34,332	61,063	1,162	133	2,227	72	5	45	91	99,129
Perth office		3				221				224
SOUTH AMERICAN REGION INCLUDING OFFICES	**15,454**	**37,049**	**925**	**120**	**424**	**168**	**8**	**24**	**48**	**54,221**
Cerro Corona Gold Mine	15,454	37,043	925	120	424	168	8	24	48	54,214
Lima office		6	0			0				6
GROUP TOTAL	**204,149**	**316,737**	**7,397**	**1,739**	**7,330**	**2,531**	**62**	**477**	**953**	**541,375**

The following categories of Scope 3 emissions are zero

Category	Comment
Capital goods	This is reported as zero as it is not applicable for reporting
Upstream leased assets	
Use of sold products	This is reported as zero because energy use after refining of gold is assumed to be negligible
Downstream leased assets	
Franchises	No franchises, therefore zero
Investments	No franchises, therefore zero

TCFD Index

TCFD RECOMMENDATION	WHERE DISCLOSED IN THIS REPORT	PAGES	OTHER LINKAGES[1]
GOVERNANCE **– Disclose the organisation's governance around climate-related risks and opportunities**			
a. Describe the Board's oversight of climate-related risks and opportunities.	• Climate change leadership and advocacy • CEO's statement • SHSD Chair's statement • Governance and management	3 – 5	IAR – Governance and Leadership AFR – Responsibilities of the SHSD Committee
b. Describe management's role in assessing and managing climate-related risk and opportunities.	• Climate change targets and highlights • Climate change leadership and advocacy • Governance and management • Gold Fields' climate-related policy statements and commitments • Our decarbonisation journey • Renewable energy • Climate change risks and opportunities • Climate change risk and vulnerability assessments	3, 5 – 12, 16 – 20	IAR – Risks and opportunities IAR – CEO's report IAR – Our ESG priorities and 2030 targets IAR – Environmental stewardship IAR – Water management IAR – Climate change and energy management IAR – Tailings Management www.goldfields.com/energy-and-climate-change.php
STRATEGY **– Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning where such information is material**			
a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term.	• Renewable energy • Climate change risks and opportunities • Transitionary risks • Climate change risk and vulnerability assessments	10, 12, 16 – 20	IAR – Risks and opportunities IAR – CEO's report IAR – Water management IAR – Climate change and energy management IAR – Tailings Management
b. Describe the impact of climate-related risks and opportunities on the organisation's business, strategy and financial planning.	• CEO's statement • SHSD Chair's statement • Renewable energy • Climate change risks and opportunities • Transitionary risks • Climate change risk and vulnerability assessments	10 – 20	IAR – Risks and opportunities IAR – CEO's report www.goldfields.com/energy-and-climate-change.php
c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	• CEO's statement • SHSD Chair's statement • Our decarbonisation journey	4, 8 – 9	IAR – Climate change and energy management
RISK MANAGEMENT **– Disclose how the organisation identifies, assesses and manages climate-related risks**			
a. Describe the organisation's process for identifying and assessing climate-related risks.	• Climate change risks and opportunities • Transitionary risks • Climate change risk and vulnerability assessments	16 – 20	IAR – Risks and opportunities www.goldfields.com/risk-materiality.php
b. Describe the organisation's processes for managing climate-related risks	• Climate change risks and opportunities • Transitionary risks • Climate change risk and vulnerability assessments	16 – 20	IAR – Risks and opportunities www.goldfields.com/risk-materiality.php
c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	• Climate change risks and opportunities • Transitionary risks • Climate change risk and vulnerability assessments • Water stewardship • Tailings storage facilities	14 – 20	IAR – Risks and opportunities www.goldfields.com/risk-materiality.php
METRICS AND TARGETS			
a. Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	• Climate change targets and highlights • Gold Fields' climate-related policy statements and commitments • Our decarbonisation journey • Energy and carbon management • Water stewardship • Regional and Group energy carbon performance • Gold Fields' carbon footprint – 2021	3, 6 – 9, 13 – 14, 21 – 22	IAR – Risks and opportunities www.goldfields.com/risk-materiality.php www.goldfields.com/energy-and-climate-change.php
b. Disclose scope 1, 2 and if appropriate scope 3 GHG emissions and the related risks	• Energy and carbon management • Regional and Group energy carbon performance • Gold Fields' carbon footprint – 2021	13, 21 – 22	IAR – Environmental stewardship IAR – Climate change and energy management
c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	• Climate change targets and highlights • CEO's statement • Governance and management • Gold Fields' climate-related policy statements and commitments • Our decarbonisation journey • Energy and carbon management • Water stewardship	3 – 9, 13 – 14, 21 – 22	IAR – Environmental stewardship IAR – Climate change and energy management www.goldfields.com/energy-and-climate-change.php

[1] *IAR = 2021 Integrated Annual Report; AFR = 2021 Annual Financial Report (including Governance Report); GRI = Global Reporting Initiative Content Index*

External assurance statement

INDEPENDENT ASSURANCE STATEMENT TO THE BOARD OF DIRECTORS OF GOLD FIELDS LIMITED

ERM Southern Africa (Pty) Ltd ('ERM') was engaged by Gold Fields Limited ('Gold Fields') to provide reasonable assurance in relation to selected sustainability information set out below and presented in Gold Fields' 2021 Climate Change Report for the year ended 31 December 2021 (the 'Report').

Engagement summary

ASSURANCE SCOPE	Whether the 2021 data, for the period 1 January 2021 to 31 December 2021, for the following selected performance indicators disclosed in the Report are fairly presented, in all material respects, with the reporting criteria: • Electricity Purchased [GWh] – page 21 • Diesel Consumption [ML] – page 21 • Total Energy Consumed [PJ] – page 21 • Total CO_2-equivalent emissions, scope 1,2 and 3 [kt CO_2e] – page 21 – 22 • Total CO_2-equivalent emissions avoided from initiatives [kt CO_2e] – page 13 • Total energy saved from initiatives [TJ] – page 13 • Total water consumed (withdrawal – discharge) [GL] – page 14 • Total water recycled/re-used per annum [GL] – page 14
REPORTING CRITERIA	• Gold Fields GRI Standards Sustainability Reporting Guideline, V28 (October 2021) • Gold Fields Group Protocol for Energy and Carbon Performance Data Management, V4 (October 2021)
ASSURANCE STANDARD	ERM CVS' assurance methodology, based on the International Standard on Assurance Engagements (ISAE) 3000 (Revised) and ISAE 3410 (for GHG Statements)
LEVEL OF ASSURANCE	Reasonable Assurance
RESPECTIVE RESPONSIBILITIES	Gold Fields is responsible for preparing the Report, including the collection and presentation of the disclosures covered by the scope of our engagement, the design, implementation and maintenance of related internal controls over the information and data, as well as the integrity of its website. ERM's responsibility is to provide an opinion on the selected information based on the evidence we have obtained and exercising our professional judgement, on whether the information covered by the scope of our engagement has been prepared in accordance with the stated criteria. ERM disclaims any liability for any decision a person or entity may make based on this Assurance Statement.

OUR ASSURANCE ACTIVITIES

We planned and performed our work to obtain all the information and explanations that we believe were necessary to reduce the risk of material misstatement to low, and therefore provide a basis for our assurance opinion. A multi-disciplinary team of sustainability and assurance specialists performed the assurance activities, including, amongst others:

- Testing the processes and systems, including internal controls, used to generate, consolidate and report the selected sustainability information;
- Reviewing the suitability of the internal reporting guidelines, including conversion factors used;
- In-person visits to interview responsible staff and verify source data and other evidence at the following sites:
  - Agnew Mine, Australia; and
  - Granny Smith Mine, Australia
- Remote reviews to verify source data for the following sites:
  - Gruyere Mine, Australia;
  - St Ives Mine, Australia;
  - Cerro Corona Mine, Peru;
  - South Deep Mine, South Africa;
  - Tarkwa Mine, West Africa; and
  - Damang Mine, West Africa
- An analytical review of the year-end data submitted by the sites listed above, and testing of the accuracy and completeness of the consolidated 2021 Group data for the selected indicators; and
- Reviewing the presentation of information relevant to the scope of our work in the Report to ensure consistency with our findings.

[1] *ERM's assurance coverage of Scope 3 emissions included the following categories: Purchased Goods & Services, Fuel & Energy Related Activities, and Business Travel; representing a coverage of 97% of total Scope 3 emissions. ERM also verified the overall Scope 3 emissions consolidation.*

OUR ASSURANCE OPINION

In our opinion, the selected sustainability performance information included in the Assurance Scope and presented in the Report, are prepared, in all material respects, in accordance with the Reporting Criteria.

EMPHASIS OF MATTER

Without affecting our opinion, we draw attention to the explanatory notes provided by Gold Fields on page 13 of the Report relating to the total energy savings for Tarkwa mine and their recognition as exceptional savings by the Gold Fields Group Head of Energy and Carbon.

THE LIMITATIONS OF OUR ENGAGEMENT

The reliability of the assured data is subject to inherent uncertainties given the methods for determining, calculating or estimating the underlying information. It is important to understand our assurance opinions in this context. Our independent Assurance Statement provides no assurance on:

- The maintenance and integrity of Gold Fields' website, including controls used to achieve this integrity, and in particular, whether any changes may have occurred to the information since it was first published; or
- Any other information in the Report or on Gold Fields' website for the current reporting period; or on the baseline values used for presenting performance against targets; or prospective information including ambitions, plans, expectations or their achievability.

FORCE MAJEURE – COVID-19

As a result of travel restrictions arising from the current global pandemic, we were unable to carry out certain assurance activities as originally planned and agreed with Gold Fields. In-person visits to selected operations and the head office were replaced with remote reviews via teleconference and video calls for this year's assurance engagement. While we believe these changes do not affect our reasonable assurance opinions above, we draw attention to the possibility that if we had undertaken in-person visits we may have identified errors and omissions in the assured information that we did not discover through the alternative approach.

OUR OBSERVATIONS

We have provided Gold Fields with a separate detailed Management Report. Without affecting the opinion presented above, we have the following observations:

- Operations were found to have improved documentation retention processes for emissions avoided and energy saved from their initiatives, although there is an opportunity for Gold Fields to apply an improved and consistent approach to the definition and calculation approach for these indicators, in line with good practice for energy measurement and verification.
- Attention should be given to improving the implementation of change management processes at selected Australian sites to maintain continuity in data management and reporting processes across environmental subject matters, especially when there are changes in personnel involved in these processes.

Jonathan van Gool
Engagement Partner, ERM Southern Africa

29 March 2022

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29 March 2022

ERM

ERM Southern Africa (Pty) Ltd and ERM Certification and Verification Services (CVS) are members of the ERM Group. All employees are subject to **ERM's Global Code of Business Conduct and Ethics**. ERM CVS is accredited by the United Kingdom Accreditation Service (UKAS) and our operating system is designed to comply with ISO 17021:2011. We have **policies** and procedures in place covering quality, independence and competency. In line with established best practice for nonfinancial assurance, this engagement was undertaken by a team of assurance and sustainability professionals. The work that ERM CVS conducts for clients is solely related to independent assurance activities and auditor training. Our established management processes are designed and implemented to ensure the work we undertake with clients is free from organisational and personal conflicts of interest or bias. The ERM and ERM CVS staff that have undertaken this assurance engagement provide no consultancy related services to Gold Fields Limited in any respect.

Glossary, administration, corporate information, forward-looking statement and disclaimer

GLOSSARY

This glossary contains key definitions based on the IPCC's Working Group II Report, Summary for Policymakers as contribution to the Sixth Assessment Report (IPCC 2022, pages SPM 4 and 5).

Adaptation	Human systems adapt by adjusting to actual or expected climate and its effects to lessen harm or take advantage of beneficial opportunities. Ecological systems adapt by adjusting to the actual climate and its effects, which may be facilitated by human intervention.
Adaptation limits	The point at which the needs of human or ecological systems can no longer be secured from intolerable risks through adaptive actions. Two limits can be distinguished: • Hard adaptation limit: the intolerable risks can no longer be avoided through adaptation actions • Soft adaptation limit: intolerable risk can be avoided through options, but these are currently not available
Exposure	The existence of people, economic, social or cultural assets, infrastructure, livelihoods, ecosystems and their functions and the like, in places and settings that could be negatively affected.
Hazard	The potential for the occurrence of a natural or human-induced physical event or trend with adverse effects, such as loss of life, injury or health impacts, loss and damage to property, ecosystems and environmental resources.
Resilience	Any system's ability to bounce back, cope and return to a previous state after a disturbance in order to maintain its essential function, identity and structure and to still be able to adapt, learn and transform.
Risk	Risk can be used as a valuable framework to understand the interlinked and increasingly severe impacts of climate change on human systems, ecosystems and biodiversity. Risk is the potential for negative consequences for human or ecological systems, cognisant of the array of values and objectives underlying these systems. The interactions between climate-related hazards, and the exposure and vulnerability of affected human and ecological systems gives rise to risk.
Vulnerability	The tendency, or exposure to be negatively affected, determined by a system's level of sensitivity to harm and its lack of capacity to cope and adapt.

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FORWARD-LOOKING STATEMENTS

This report, or the documents referred to herein, contains forward-looking statements within the meaning of section 27A of the U.S. Securities Act of 1933 (the Securities Act) and section 21E of the US Securities Exchange Act of 1934 (the Exchange Act) with respect to Gold Fields' financial condition, results of operations, business strategies, operating efficiencies, competitive position, growth opportunities for existing services, plans and objectives of management, markets for stock and other matters. Such forward-looking statements can be identified by the use of forward-looking terminology, including the terms "believes", "estimates", "plans", "anticipates", "aims", "continues", "expects", "hopes", "may", "will", "would" or "could" or, in each case, their negative or other various or comparable terminology. These forward-looking statements, including, among others, those relating to Gold Fields' future business prospects, revenues and income, and including any climate change-related statements, targets and metrics, wherever they may occur in this report, or the documents referred to herein, are necessary estimates reflecting the best judgement of Gold Fields' senior management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. Consequently, these forward-looking statements should be considered in light of various important factors, including those outlined in this report, or the documents referred to herein. Gold Fields undertakes no obligation to publicly update or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this report or to reflect the occurrence of unanticipated events. Refer to Gold Fields' comprehensive forward-looking statements on www.goldfields.com.

DISCLAIMER

This report is focused on climate-related risks and opportunities and aims to follow the TCFD recommendations. It includes information on scope 1 and 2 carbon emissions. Climate related data is not yet of the same quality as data available in the context of other financial information and over time is likely to improve. Understanding of approaches to climate transition and physical risk is rapidly evolving. Some of the content of this report is forward looking and developed based on current information and belief and is subject to future risks, dependencies and uncertainties. Gold Fields also publish corporate sustainability disclosure on other sustainability topics in its 2021 Integrated Annual Report.

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GOLD FIELDS

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