Barrick’s sustainability vision is to create long-term value for all our stakeholders. We contribute to the social and economic development of our host countries and communities. We protect the safety and health of our workforce. We respect human rights. And we manage our impacts on the natural environment, both today and with future generations in mind.

All sites to have ISO 14001:2015 certified environmental management systems by the end of 2020

84% of water used at our mines located in areas of high water stress recycled/reused

6 levels of surety, to put safety at the centre of tailings management

64% of energy needs at Kibali in the DRC met by clean hydropower, site-level energy plans to help manage climate risk

$4.3 million spent on biodiversity conservation programs, with concurrent rehabilitation at all sites

2.8 million GJ of renewable energy used by combined legacy companies
Strong environmental management is a crucial building block of our business. Environmental issues with the greatest potential impact on the health and safety of local communities, such as how we use water, prevent incidents and manage tailings, are at the top of our agenda.

Grant Beringer, Sustainability Executive

Mining impacts the physical environment including the land, air, water and other important resources that we share with others. Our stakeholders expect us to manage and minimize any negative impacts our operations may have on the environment and we are committed to do so. That is not just the right thing to do, it makes sound business sense; poor environmental management can cause long-term damage to community relations, incur legal penalties and erode a company’s reputation.

We see this as a fundamental responsibility of any modern mining company.

ENVIRONMENTAL IMPACTS
Management approach
Our Environmental Policy outlines our commitment to use natural resources efficiently and to protect, restore and enrich the local environment where possible, with the overarching aim of avoiding environmental incidents. It is informed by international best practice including the IFC Performance Standards.

We commission independent consultants to conduct environmental and social impact assessments (ESIAs) at the prefeasibility or feasibility stages of every new project to understand the environmental impacts and risks of a potential mine. For projects which progress to construction and operation, the ESIA forms the basis of the site-specific environmental management system (EMS).

All our operations have an EMS in place to monitor and improve environmental performance. Under the supervision of the site General Manager, and executed by the site Environmental Managers, the EMS implements our corporate Environmental Policy in the local context, taking local regulations and permit requirements into account. Guidance is provided by regional and executive-level leads and every EMS is reviewed annually with assistance from external auditors as appropriate.

We have set a corporate goal for all sites to have their EMS certified to the ISO 14001:2015 standard by the end of 2020. Currently, all operations, except the Jabal Sayid Mine in Saudi Arabia and the Lumwana Mine in Zambia (88% of operational sites), are certified to this standard.
Environmental incidents are a key indicator of our performance, and should an environmental incident occur, each mine’s EMS supports a coordinated response, to identify and promptly correct the fault and improve systems to avoid a fault or occurrence being repeated. We use the same procedures and systems to identify, log and disseminate learnings from environmental incidents as we do with health and safety incidents.

Legacy Barrick and former Randgold sites used different classifications for environmental incidents. In early 2019, we updated and aligned the classification system for the expanded Group using a transparent and impact-based approach. We have also set a target for: Zero ‘Class 1 – High Significance’ environmental incidents (the most severe type) in 2019.

2018 Performance
Neither of the legacy Companies had a high significance environmental incident in 2018, or in the previous two years.

Both legacy Barrick and former Randgold sites reduced the number of medium significance incidents in 2018 (classed as ‘Reportable Environmental Incidents’ by Barrick, and ‘Class 2’ by Randgold).

Across the combined Group there were four significant spills, with a total significant spill volume in 2018 of 30m$^3$ of fuel.

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1 Randgold Class 1 incidents, defined as major incidents that result in death or injury of people or destruction of community property or husbandry.
R ngold Class 2 incidents, defined as medium incidents involving material disruption to production or uncontrolled release of contaminated effluent outside the boundary fence of an operation.
Barrick Significant Environmental Incidents, defined as those incidents with the highest negative impacts on human health, the environment or associated financial costs.
Barrick Reportable Environmental Incidents (REI), defined as incidents that have a ‘high’ ranking on Barrick’s REI Severity Index and usually require immediate reporting to relevant Government authorities.
<table>
<thead>
<tr>
<th>Location</th>
<th>Details of incident</th>
<th>Remedial measure taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel Plate</td>
<td>An unauthorized discharge from the closed tailings storage facility to a nearby creek when seepage water exceeded the site’s emergency effluent storage capacity.</td>
<td>Corrective actions included enhanced controls over critical equipment spares and improved backup genset capacity.</td>
</tr>
<tr>
<td>Goldstrike</td>
<td>Mercury air emissions at the Goldstrike roaster exceeded compliance levels as a result of instrument errors in the facility.</td>
<td>Standard operating procedures were updated to implement more robust procedures for determining mercury concentrations.</td>
</tr>
<tr>
<td>Cortez</td>
<td>A rock released <strong>3,600 liters</strong> of diesel onto a haul road; no impact to any watercourse, flora or fauna.</td>
<td>Training practices and procedures for improved fuel hose inspection and maintenance were implemented.</td>
</tr>
<tr>
<td>Veladero</td>
<td>A shovel was struck by a boulder which had rolled down from the muck pile causing a puncture in the fuel tank. As a result, approximately <strong>3,000 liters</strong> of diesel spilled into the pit. The spill did not impact any watercourse, flora or fauna.</td>
<td>The emergency response team was dispatched and the impacted area was remediated.</td>
</tr>
<tr>
<td>Veladero</td>
<td>Approximately <strong>3,000 liters</strong> of diesel fuel was spilled on a haul road following an incident in which a fuel tanker detached from the truck chassis and cracked. The spill was controlled and contained in the area. The spill did not impact any watercourse, flora or fauna.</td>
<td>The emergency response team was dispatched and the impacted area was remediated.</td>
</tr>
<tr>
<td>Pierina</td>
<td>Following a power outage and subsequent electrical system failure, the pumps which recirculated leaching solution from the plant to the leach pad failed, resulting in the drainage and accumulation of cyanide-bearing solution in the plant containment area and the process platform (industrial area). There were no impacts on downstream watercourses, flora or fauna.</td>
<td>All containment barriers downstream of the mine were activated prior to accumulation. Continuous monitoring of downstream water points was conducted during and after the incident.</td>
</tr>
<tr>
<td>PJV</td>
<td>A malfunction of the system that controls cyanide addition to the leach circuit led to an elevated concentration of cyanide within the leach circuit. This subsequently led to an elevated concentration of cyanide in the tailings discharge which was in excess of the site-based internal performance targets. The incident did not constitute a non-compliance with environmental permit conditions and there were no impacts found to people or the environment.</td>
<td>Engineering controls and standard operating procedures were updated following a comprehensive investigation. The site monitored the downstream environment and commissioned an independent health risk assessment of the incident which confirmed no impacts to people or the environment.</td>
</tr>
<tr>
<td>Tongon</td>
<td>A contractor’s truck over turned on the way to the mine spilling over <strong>21,000 liters</strong> of diesel onto the road.</td>
<td>All polluted soil collected and sent for safe disposal. Additional driver training on safe driving implemented and new reflective safety equipment for trucks deployed.</td>
</tr>
</tbody>
</table>
TECHNICAL EXPERTISE AND TRANSPARENT MANAGEMENT HELPING RE-BUILD TRUST AT VELADERO

In March 2017, the monitoring system at our Veladero site in west-central Argentina detected a rupture of a pipe carrying gold-bearing solution. The spill was contained within the operating site and the spill did not reach either the diversion channels or enter any watercourses. All affected soil was promptly excavated and placed on the leach pad. Although appropriate corrective measures were taken quickly, this was the third cyanide-related incident reported in three years at Veladero.

Thus, it became a critical priority for our site environment team to strengthen management in 2018, working together with Shandong, our joint-venture partner at the mine.

We identified both technical and management improvements at the site and have taken a twin-track and fully transparent, approach to fixing both of these.

Enhanced containment
The first priority following the March 2017 incident was to put additional investment into the leach pad and pumping systems and since then Barrick has invested over $12 million to improve containment around the leach pad and to reinforce all pipelines.

This has included the development of a new containment channel as an additional buffer against leakages at the south perimeter, the installation of more heat- and pressure-resistant pipes from the leach pad and burying these pipes in line with international best practice.

Also, the future pipeline roadway location has been redesigned in the center of the leach pad so that if a spill occurs in the future, it will fall within the lined collection system, reducing the hazard risk.

Change at the top
On the management side, there has been a comprehensive overhaul of the management team at Veladero since 2017, with new executives in place throughout the senior team. An updated management system that is certified to the International Cyanide Management Code is in place and the mine continues to use the international ISO 14001 environmental management standard.

In an effort to rebuild trust with local stakeholders, the new management team at Veladero has enabled local authorities to conduct technical audits of the relevant facilities every week. The mine now also puts all relevant operating data on a live online feed so that regulators, local communities and others can monitor the system.

Lots done, lots still to do
We are highly encouraged that there have been no further cyanide-related incidents at Veladero since this work began and that community perception surveys are showing more positive opinions of the mine. It is also reassuring that the Argentine Government has recently approved testing to increase our permit limit and production rate at Veladero.

Trust however takes a long time to rebuild and we are committed to not letting complacency creep in at the operation. We continue to closely monitor, manage and improve all aspects of environmental management at the site.
Since the merger we have introduced a new Environmental Incident Reporting and Investigation Standard to define the classification, reporting, responsibility and investigation of environmental incidents at Barrick sites.

A key part of this is the establishment and maintenance of a new process for incident classification that creates a uniform approach to environmental incident reporting. The classification is based on the impact of the incident and aims to utilize the expertise of on-site environmental teams. An impact severity matrix is used to determine the classification, which categorizes the duration, extent and scale of harm following investigation by qualified professionals. Classifications are overseen by Group-level management.

The three levels of environmental incidents are:

- **Class 1 – High Significance.** An environmental incident is considered Class 1 if it:
  - Causes significant negative impact on human health or the environment
  - Extends onto publicly accessible land and has the potential to cause significant adverse impact to surrounding communities, livestock or wildlife
  - Results in a breach of license conditions, environmental regulations and standards
  - Results in a release of cyanide above a defined level to any surface water that leaves the site boundaries or any groundwater aquifer

- **Class 2 - Medium Significance.** An environmental incident is considered Class 2 if it:
  - Has the potential to cause negative impact on human health or the environment but is reasonably anticipated to result in only localized and short-term environmental or community impact requiring minor remediation
  - Has the potential to breach license conditions (convention conditions and law) or prescribed operational or regulatory threshold but does not require immediate regulatory notification

- **Class 3 – Low Significance.** An environmental incident is considered Class 3 if it:
  - Has minimal on-site impacts that do not adversely affect human health or the environment
  - Does not require immediate reporting and will be dealt with by existing Standard Operating Procedures
TARGETS FOR 2019 AND BEYOND

Certify all operational mines to ISO 14001: 2015 environmental management standard by the end of 2020

Zero ‘Class 1 – High Significance’ environmental incidents

MANAGING WATER RESPONSIBLY

Managing water responsibly is one of the most important challenges facing the mining industry – and Barrick – today. Water is essential to the health and well-being of local communities near our mines and access to water is a human right that must be respected. Water is also an essential input for mining activities at every stage of the Life of Mine. This interdependence means that if not properly managed our water use can have a direct impact on the livelihoods and rights of local stakeholders. On the other hand, we also believe that our commitment to sustainable development brings an opportunity to expand and improve access to water near our mines.

Our management approach

Our focus is on disciplined water management throughout the mine lifecycle by, understanding our water-related risks, conserving water and controlling our impacts on water quality, and being transparent about our use of water resources. We support the International Council on Mining and Metals (ICMM) Position Statement on Water Stewardship, with its holistic view of water as a shared resource and its focus on collaboration and transparency.
We put all our effort and resources into protecting the water quality through our best operational practices and our monitoring programs, for the water that flows through the mine and our areas of influence.

Carlomagno Bazán, Manager, Health, Safety, Environment and Permits, Andina del Sol, Veladero mine

Understanding water-related risks
Barrick operates in highly diverse operational contexts across multiple jurisdictions. Some mines may operate in places where there is little water due to their geographical location, extreme weather events, or changing climatic conditions. Others may have to manage an excess of water. The nature of each operation’s orebodies or processes can also bring a number of risks as this has an impact on the sources of water we can draw on and the range of operational uses we have for water. Because of this, our strategy puts a priority on first understanding site-level risks and potential impacts, so that we can then properly plan, manage, and mitigate them.

Water risks are incorporated into Barrick’s operational risk registers and rolled up into the corporate risk register. Risks may vary from managing excess water supplies in high rainfall regions to maintaining access to water in arid regions to regulatory risks related to legal regimes governing water use.

To consider site water stress, our risk registers are supplemented by external frameworks and tools that help us assess and understand the broader context. These included the Global Monthly Water Scarcity map, which is linked to the Water Footprint Network, to assess stress at watershed level; the WWF Water Risk Filter to evaluate social-related water risks; and the World Resources Institute Aqueduct tool to map and measure water risks. Following this process, we have identified six of our operations (Cortez, Goldstrike, Golden Sunlight, Turquoise Ridge, Pierina and Jabal Sayid) to be located in areas of high water stress. In 2019, we plan to continue to improve and better standardize this process across the expanded Group.
Conserving water and controlling quality

Every Barrick-operated site has a site plan for managing water which addresses the most important water-related risks. The regular tracking of active water balances on a weekly and monthly basis are at the heart of these plans. These balances help our sites better understand water use and identify opportunities for improvements. For example, at the Loulo mine in Mali, regular reviews of our water balance helped us increase recycling rates by identifying increases in water stored at the TSF. This also helped to keep the size of the pool retained by the TSF low which supports dam stability. Similarly, at Tongon in Côte d’Ivoire, improved water balance monitoring has reduced the need to pump water from the freshwater dam which, in turn, has preserved supplies for local communities.

In water scarce regions, water management plans take particular care to account for the reduced supply of freshwater for local communities and ecosystems. Where possible, we only use low quality water as inputs and recycle or reuse water from our processes. For example, at our mine in Saudi Arabia, we use municipal wastewater in our processes and only use freshwater for drinking and sanitation. We also use process techniques, such as use of heap leaching, or alternative tailings disposal methods such as paste tails, where feasible to reduce freshwater consumption at several sites.

In regions where there is excess water, our sites face different water management challenges. Sites with positive water balances must manage high precipitation volumes and store and treat contact water. Water used for processing or encountered in mining must be thoroughly treated before being put back into the environment. Our mines have also established water-monitoring networks to monitor the quantity and quality of the basin water resources. This is done according to strict standards and we continuously monitor the quality and quantity of any discharged water. Permit limits or legal standards govern the concentrations of certain constituents that can be discharged in the water. We also monitor the performance of our site water management systems, detect and act on any deviations and pursue improvement opportunities.

In areas of high water stress, where conservation is especially critical, we recycle or reuse 84% of water. At other operations, we have positive water balances and managing surplus water in a responsible manner is a priority. In such contexts, our water use efficiency is lower. Overall, we reuse or recycle 68% of the water we withdraw at our mining operations. We have set a corporate target to reuse or recycle 70% of water across our operations in 2019.
Transparency
We have aligned our corporate processes to leading international disclosure standards. In 2018, Barrick updated its processes for water data consolidation and reporting to the ICMM Water Accounting Framework. This marks a significant advancement in the way much of the industry reports water by introducing consistent, comparable metrics that have been adopted by leading companies. Shortly after the merger, and following feedback from ICMM to the mining industry on the use of this terminology, we worked to align the 2018 historic data for the former Randgold sites to these definitions to provide a clear baseline for the new Group. Unfortunately, as these definitions differ from the terms used in earlier reporting by our legacy Companies, data is non-comparable to previous years.

In addition, in 2019 we will complete the CDP Water questionnaire. This will make further detail on our water management publicly available as part of our commitment to transparency.
WATER AS A HUMAN RIGHT

We recognize that access to water is a basic human right.

We carefully monitor water use in and around our mines to ensure high quality drinking water is available and not inhibited by our activity. We use a variety of tools to track water availability including ultrasonic flow meters, mapping across a series of boreholes to check for over pumping and cone of depression modeling to identify lowering of the water table.

Since it opened in 1990, the Porgera Joint Venture (PJV) has been the subject of various water-related concerns. This includes concerns over the use of riverine tailings (see waste management section for more details) and access to water more generally. These concerns were recently documented in a March 2019 report entitled Red Water1 which alleged that Porgera was failing to respect the local communities’ right to water.

In April 2019, PJV responded to the report. While the study claimed that the operation of the Porgera mine infringed on other users’ rights to water, PJV provided important context to these allegations, as they had during the course of the original study in 2017, including:

- Rainwater has historically always been the main source of drinking water in Porgera, a region which receives 4,000-4,500mm of rainfall per year. The study did not find high concentrations of heavy metals in collected rainwater. Dissolved metal concentrations are well within the World Health Organization (WHO) drinking water guidelines at all water sources, except in undiluted tailings which are not a source of potable water in the community.
- Water associated with the site is closely monitored, with scrutiny from independent experts and regulatory authorities. In addition, we work in partnership with community representatives from the Porgera Land Owners Association (PLOA) and representatives of Village Water Committees (VWCs) to take samples of drinking water at sites of their choice on an annual basis. These are sent for analysis at two independent, reputable laboratories and the results shared and discussed with the community.
- Investment in community development at Porgera has played its part in attracting migrants to the area, and this inevitably leads to greater strain on local water supplies. In partnership with local communities, the PJV-Barrick Access to Water Program provides additional potable water. We are working together to build and maintain rainwater catchment and reticulation systems. Since 2011, 114 water tanks have been installed, with a total capacity of 550,000 liters.

We will continue to support the development of the Porgera region and its communities and will respond in a constructive and transparent way to any concerns raised in good faith.

1 Published by The Columbia Law School Human Rights Clinic and the Advanced Consortium on Cooperation, Conflict, and Complexity at Columbia University.
A FOCUS ON FRESHWATER AND WATER CONSERVATION AT LOULO

Our Loulo mine in Mali borders a semi-arid climate zone where evaporation rates often exceed rainfall. In 2018, the evaporation rate was 1,400mm, but the area only experienced 1,034mm of rain. Our site water management plan prioritizes water conservation and sets freshwater water consumption reduction targets for the processing plant and underground mining.

In 2018, we increased water recycling rates by 10% by increasing our use of water stored at the TSF for mining processes that do not require freshwater such as ore processing and running the slurry plant. For an investment of $600,000 in new plumbing and equipment, we managed to halve our daily processing freshwater usage from approximately 5,000m³ to 2,500m³.

Our water conservation efforts help ensure we do not reduce the water available to other users. Going further, we recognize that clean water availability in the region is naturally limited and so we have built 57 water access points for villages around the mine. $94,000 was invested in community potable water this year alone. The community was involved in the whole process and a water management committee is established in every village to sustainably manage the water points.

“The Bantankoto village chief stated that he is very happy with the construction of these water points which improve the general living conditions of the area and particularly ease the life of local women as they previously had to queue for hours for water from a source several kilometers away. The water was unclean and caused health problems. The Mahinamine village chief stated that they know how the mine benefited local people, even beyond the drinking water issue, because they remember what life was like before the mine came.”

Mohammed Keita,
Environmental Superintendent responsible for water, Loulo
WATER MANAGEMENT IN A WATER STRESSED AREA

As Nevada is a water stressed state, maintaining awareness of the National Integrated Drought Information System (NIDIS) is an integral part of our site-level risk analysis. It is our goal to improve our fresh water consumption efficiencies and maximize reuse and recycling of water in all of our processing facilities. Consequently, with all of the water at our Nevada mine sites being sourced from underground aquifers via deep production wells, all excess mine water is discharged to underground aquifers via rapid infiltration basins or various irrigation programs at Barrick-owned ranches.

In order to prevent contamination of clean waters, all process solutions are managed separately from the water management system and are never discharged offsite unless they meet the strictest water quality standards and promote improved water recycling. For example, at our Goldstrike Mine, excess process water was being routed to a tailings facility where the water was subject to entrainment or being lost to evaporation. A plan was developed for a water treatment plant that ultimately recovered about 25% of this excess water and used it for other mining activities, including dust suppression. As water quality and water quantity are consistently recognized as major environmental risks during Company risk assessments conducted at our Nevada mine sites, these water management strategies are implemented to minimize threats to water quality in proximity to metal processing facilities and to promote open pit highwall stability and safe underground mining activities while encouraging responsible water stewardship.

“These water management responsibilities extend beyond our active mining operations and are practiced at our sites currently in closure. For instance, the Bullfrog open pit was backfilled in 2018 to a level above the existing water table. This ultimately prevented the formation of a lake which could have increased water loss through evaporation and exposed the groundwater system to contaminants from the surface. In Nevada’s arid climate, water maintains a higher value than it would in a less water-stressed community. Therefore, it is our responsibility, priority and privilege to manage our water with the highest standard of care and efficiency.”

Amy Allen, Chief Water Resources Engineer, Nevada
Goldstrike’s Tailings Storage Facility.
CLEAN DRINKING WATER FOR DURBA IN THE DRC

Access to clean drinking water is essential for social and economic development. The stomach bugs and diarrhoea caused by drinking dirty water prevent children going to school and adults from going to work or taking part in community activities.

Since construction began at our Kibali mine in the DRC, we have drilled more than 100 new boreholes and upgraded many more to provide ready access to clean water for the communities closest to Kibali’s operations. However, with a rapidly growing population and large impact zone, access to water remains a priority issue for Kibali communities, and particularly for residents of the cities of Durba and Watsa. In these growing cities water is either supplied by private vendors at a cost beyond the means of most residents, or a long walk to the river is necessary. In 2017, Kibali management entered into an agreement with the local Community Development Committee and in close consultation with local authorities, to invest in a water distribution project for Durba’s estimated +300,000 residents.

As illustrated, the new water distribution system pumps and purifies water from nearby hills to a network of 40 water fountains in the city.

The contract for the management of the water network has been allocated to a local company and each fountain employs a monitor to supervise water collection and collect payment. The managing company is also responsible for maintenance of the system. The system was built by a network of 13 local suppliers and a local NGO, thereby multiplying the benefits delivered by the project. A local study of the impacts of the project found that 71% of residents say their children no longer miss school due to water collection chores, 73% say their children do not get sick as often and 84% say they now have extra time to work or start other income generating activities.
**2018 Performance**

The consolidated total water consumption of the legacy Companies in 2018 was 99,948ML\(^2\). Our main consumptive uses are evaporation at 57% of total consumption; most of the remainder is entrained in tailings storage facilities. These are uses that are difficult to reduce due to the local environments in which we are located and the nature of the materials we extract. At our operational facilities, we consumed an average of 0.0008ML per tonne of ore processed.

Our consolidated total water withdrawal in 2018 was 218,326ML. Surface water is the largest source of withdrawal of water for our operations, comprising 89% of total withdrawals, followed by groundwater. In addition, we drew down water stored on our facilities by 3,818ML. In total, 96% of the water we withdrew in 2018 was from high quality sources, primarily precipitation and runoff. At our operational facilities, we withdrew an average of 0.0016ML per tonne of ore processed.

The consolidated total water discharge of the legacy Companies in 2018 was 122,195ML. 96% of our discharge was to surface water. Discharge volumes are greatest at our higher rainfall sites such as Pueblo Viejo in the Dominican Republic, Porgera in Papua New Guinea and Kibali in the DRC. In total, 60% of the water we discharge is high quality water suitable for agricultural or potable use. Of the low quality water we discharge, 99% is related to the Porgera mine where tailings are discharged to surface water as permitted by the PNG Government.

At former Randgold sites there was a marked improvement in water use in 2018. Total water abstraction in 2018, when calculating water use according to their previous methodology to compare like-to-like, was almost 40% lower than in 2017. Similarly, the water recycling rate increased to 75% in 2018, meeting a 2020 target two years early. The sites also met former Randgold’s target of keeping water withdrawals below 0.5m\(^3\) per tonne\(^1\) and used only 0.32m\(^3\) of freshwater per tonne of ore processed, a 35% improvement against the previous year. Overall freshwater abstraction was reduced by 33%. Randgold received full marks and an industry best score from Dow Jones Sustainability Index for its approach to water management in 2018.

\(^1\) In previous reporting, the former Randgold referred to this target as their ‘efficiency’ target. As we are now adopting the ICMM definition of ‘efficiency’, data is not comparable between years.

\(^2\) One megaliter = one million liters

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**TARGETS FOR 2019 AND BEYOND**

- Improve and better standardize the water risk assessment process across the expanded Group
- Reuse or recycle 70% of water across our operations in 2019
### FIGURE 22: ICMM WATER REPORTING METRICS

<table>
<thead>
<tr>
<th></th>
<th>ML</th>
<th>Legacy Barrick</th>
<th>Former Randgold</th>
<th>Consolidated operational facilities</th>
<th>Consolidated areas with water stress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Withdrawals</strong></td>
<td>High quality</td>
<td>Surface water</td>
<td>132,747</td>
<td>56,734</td>
<td>189,480</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ground water</td>
<td>16,503</td>
<td>4,009</td>
<td>20,511</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Third party water</td>
<td>408</td>
<td></td>
<td>408</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>149,657</td>
<td>60,742</td>
<td>210,399</td>
</tr>
<tr>
<td><strong>Low quality</strong></td>
<td>Surface water</td>
<td>1,215</td>
<td>1,215</td>
<td></td>
<td>1,215</td>
</tr>
<tr>
<td></td>
<td>Ground water</td>
<td>5,754</td>
<td>5,754</td>
<td>3,603</td>
<td>3,218</td>
</tr>
<tr>
<td></td>
<td>Seawater</td>
<td>-</td>
<td>-</td>
<td>338</td>
<td>338</td>
</tr>
<tr>
<td></td>
<td>Third party water</td>
<td>958</td>
<td>958</td>
<td>958</td>
<td>958</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>7,927</td>
<td>7,927</td>
<td>6,494</td>
<td>2,936</td>
</tr>
<tr>
<td><strong>Total withdrawal</strong></td>
<td></td>
<td>157,584</td>
<td>60,742</td>
<td>218,326</td>
<td>203,932</td>
</tr>
<tr>
<td><strong>Change in storage</strong></td>
<td></td>
<td>(3,818)</td>
<td>-</td>
<td>(3,818)</td>
<td>(3,873)</td>
</tr>
<tr>
<td><strong>Discharge</strong></td>
<td>High quality</td>
<td>Surface water</td>
<td>37,481</td>
<td>31,309</td>
<td>68,789</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ground water</td>
<td>386</td>
<td>3,218</td>
<td>3,603</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Third party water</td>
<td>338</td>
<td></td>
<td>338</td>
</tr>
<tr>
<td><strong>Total discharge</strong></td>
<td></td>
<td>37,866</td>
<td>34,864</td>
<td>72,731</td>
<td>59,004</td>
</tr>
<tr>
<td><strong>Low quality</strong></td>
<td>Surface water</td>
<td>48,758</td>
<td>48,758</td>
<td></td>
<td>48,758</td>
</tr>
<tr>
<td></td>
<td>Ground water</td>
<td>691</td>
<td>691</td>
<td></td>
<td>691</td>
</tr>
<tr>
<td></td>
<td>Seawater</td>
<td>-</td>
<td>-</td>
<td>691</td>
<td>691</td>
</tr>
<tr>
<td></td>
<td>Third party water</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total discharge</strong></td>
<td></td>
<td>87,331</td>
<td>34,864</td>
<td>122,195</td>
<td>108,469</td>
</tr>
<tr>
<td><strong>Consumption</strong></td>
<td>High quality</td>
<td>Evaporation</td>
<td>41,289</td>
<td>6,934</td>
<td>48,223</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entrainment</td>
<td>13,368</td>
<td>591</td>
<td>13,959</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
<td>348</td>
<td>18,352</td>
<td>18,700</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>55,004</td>
<td>25,877</td>
<td>80,882</td>
<td>80,270</td>
</tr>
<tr>
<td><strong>Low quality</strong></td>
<td>Evaporation</td>
<td>9,221</td>
<td>9,221</td>
<td>9,221</td>
<td>9,221</td>
</tr>
<tr>
<td></td>
<td>Entrainment</td>
<td>8,531</td>
<td>8,531</td>
<td>8,531</td>
<td>8,531</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>19,066</td>
<td>19,066</td>
<td>19,066</td>
<td>19,066</td>
</tr>
<tr>
<td><strong>Total consumption</strong></td>
<td></td>
<td>74,071</td>
<td>25,877</td>
<td>99,948</td>
<td>99,336</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intensity</strong></td>
<td></td>
<td>Withdrawals per ounce</td>
<td>0.0292</td>
<td>0.0343</td>
<td>0.0306</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Withdrawals per tonne ore processed</td>
<td>0.0014</td>
<td>0.0025</td>
<td>0.0016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumption per ounce</td>
<td>0.0125</td>
<td>0.0146</td>
<td>0.0131</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumption per tonne ore processed</td>
<td>0.0007</td>
<td>0.0011</td>
<td>0.0007</td>
</tr>
</tbody>
</table>

*Efficiency is calculated as the total volume of both untreated and treated water used in tasks which has already been worked by the site (ie previously used and recovered) as a percentage (%) of the total volume of all water used in tasks (ML).*

*Lumwana and Jabal Sayid are copper mines and, as such, their water intensity metrics are not directly comparable to Barrick’s other properties. Data for these properties are provided in ML/thousand pounds of copper. The intensity total per ounce of gold produced for Legacy Barrick and the Consolidated total does not include water withdrawn or consumed at the copper mines.*

*Site-by-site disclosure metrics are available in the appendices.*

*Totals may not add up due to rounding.*
As a native Nevadan who was born and raised in Elko, the proper management of waste is extremely important to me because I want to ensure that future generations can experience the same wonders of our natural world that I am able too. Through proper waste management and recycling, hazardous waste is effectively and safely disposed of and stays out of landfills.

Alan Klebenow, Environmental Engineer, Goldstrike Mine

WASTE MANAGEMENT

Careful management of mine waste is essential to safeguard local communities and minimize environmental damage. This includes the management of large volumes of waste rock, which may contain metals and elements, either because the rock contained them naturally or because chemical reagents were introduced through the mining process.

After ore is mined, it must be processed to extract the target mineral (eg gold). Higher grade ores are often ground into small particles to increase recovery. Once the finely ground ore has been processed, the remaining material is commonly referred to as ‘tailings’. After milling and processing is complete, tailings are either incorporated into materials used to backfill pits or underground voids created by mining, or pumped in a slurry form into an engineered repository. Such a repository is called a TSF.
"I’ve said we’re obsessive about tailings dam safety. We must maintain constant vigilance - the tragedy at Vale’s Brumadinho dam in January 2019 demonstrates what is at stake. Although we use third party inspectors and follow international practice, the responsibility never leaves the executive team. So a healthy dose of obsession on this issue helps ensure we are constantly checking our facilities and keeping community safety front of mind."

Mark Bristow, President and CEO
RESPONSIBLE TAILINGS AND DAM MANAGEMENT

Management approach

We are committed to leading practice in all aspects of tailings and dam management. We manage a total of 55 TSFs: 13 of these (24%) are operating, while 42 (76%) are closed; as well as a riverine tailings disposal system at Porgera. All TSFs are carefully engineered for stability, closely monitored and frequently inspected.

Our Tailing and Heap Leach Management Standard puts safety at the centre of tailings management. The Standard governs how all TSFs and heap leaches are located, designed, constructed, operated and closed. It designates the key roles required, such as an Engineer of Record (EoR) and a Responsible Person for each TSF. The Responsible Person manages key documentation such as the compliance plan, risk assessment and manuals and ensures an emergency response plan is in place and communicated to all affected people. A review of our Standard is being undertaken in 2019 to ensure it is applicable to the full range of seismic and hydrological characteristics in the expanded Group.

For the construction of any new TSF or heap leach, our Tailing and Heap Leach Management Standard stipulates that the technical specifications will meet all national requirements and follow international good practice including World Bank Standards, Canadian Dam Association Safety guidelines and the Mining Association of Canada’s (MAC) Guide to the Management of Tailings Facilities.

For existing and closed facilities, the Standard outlines six levels of safety oversight (six levels of surety) that must be undertaken, with full documentation at each stage:

- **Monitoring technology**
  - Our operating sites employ monitoring systems such as vibrating wire piezometers, inclinometers, drone surveys, satellite surveys and imagery, static prisms for movement detection, drainage monitoring and other technologies to monitor TSFs, abutments, natural slopes and water levels.

- **Routine inspection**
  - Conducted by suitably qualified and experienced site personnel, in compliance with Operation, Maintenance and Surveillance (OMS) Manual requirements. Intended to confirm that the TSF is operating within prescribed parameters.

- **Engineer of Record / Dam safety inspection**
  - Conducted by the EoR responsible for the design of the current TSF phase, or by a suitably qualified and experienced Geotechnical Engineer outside of Barrick with a comprehensive understanding of the current TSF phase. Intended to verify that the existing or anticipated TSF conditions follow design intent and that site-specific performance objectives are being met.

- **Dam safety review**
  - Conducted by a suitably qualified and experienced Geotechnical Engineer outside of Barrick who is neither the EoR nor a representative of the TSF operation or closure design consulting firm and who has a comprehensive understanding of the current TSF phase. Intended to provide a detailed, independent assessment of the safety and operational stewardship of the TSF.

- **Assurance audit**
  - Conducted by our internal Corporate Technical Specialists. Expected audit frequency of one to three years, based in part on compliance level and previous findings. Intended to confirm that the existing or anticipated TSF conditions and management procedures comply with Barrick’s corporate Tailings Management Standard.

- **Independent Tailings Review Committee**
  - Conducted by one or more qualified and internationally recognized experts outside of Barrick and not involved with the preparation of the TSF design. Intended to provide an expert, independent opinion as to whether or not the TSF design and current and/or anticipated performance demonstrate an acceptable level of care, from geotechnical, hydrotechnical and environmental perspectives and with reference to accepted international practice.
We conduct independent reviews of at least three TSFs each year, so that 100% of TSFs at operational sites are independently reviewed in a five-year cycle. In 2019, we plan to complete independent third party reviews of TSFs at the Goldstrike, Cortez, Pueblo Viejo and Hemlo operations and at the Giant Nickel, Nickel Plate and El Indio closure sites.

**2018 Performance**

Some of the TSFs we manage are older facilities, built prior to recent advances in standards and technology. Following the merger, we therefore reviewed the technical specifications of all our TSFs (operating, closed and inactive) against our Tailing and Heap Leach Management Standard. Based on this review, we generated a prioritized list of improvements, ranging from adding a simple buttress to a wall, to introducing the latest technologies such as wire piezometers for monitoring wall stability.

We are open and transparent about our tailings management and you can find a full list of our TSFs and their technical specifications in the tailings section of our website [www.barrick.com](http://www.barrick.com).

In 2018, we conducted independent reviews of our TSFs at Bicroft and Nickel Plate (closed sites), Lumwana and Pueblo Viejo. We also conducted an earth block movement review at Golden Sunlight and attended a third-party review organized by Newmont of the TSF at Kalgoorlie.

**FIGURE 24: CONSOLIDATED WASTE DATA**

<table>
<thead>
<tr>
<th></th>
<th>Legacy Barrick</th>
<th>Former Randgold</th>
<th>Consolidated data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total amount of tailings material deposited</td>
<td>55,935</td>
<td>21,495</td>
<td>77,430</td>
</tr>
<tr>
<td>Total amount of waste rock deposited</td>
<td>236,843</td>
<td>76,865</td>
<td>313,708</td>
</tr>
<tr>
<td>Waste rock mined</td>
<td>319,216</td>
<td>76,865</td>
<td>396,081</td>
</tr>
<tr>
<td>Proportion of waste that is potentially geochemically reactive</td>
<td>108,260 (29%)</td>
<td>0 (0%)</td>
<td>108,260 (23%)</td>
</tr>
<tr>
<td>Mercury produced as a by-product/co-product</td>
<td>0.204</td>
<td>0</td>
<td>0.204</td>
</tr>
</tbody>
</table>
RIVERINE TAILINGS AT PORGERA

We would not consider a riverine tailings disposal option if a safer disposal solution can be found when planning a new mine.

In 2006, however, Barrick acquired the Porgera mine (PJV) in Papua New Guinea with an existing riverine tailings disposal system. A comprehensive study found no feasible alternative disposal method. The steep terrain, frequent landslides and seismic activity at Porgera mean that controlled disposal to local waterways is the most viable approach from a technical and safety standpoint.

We have resolved to maintain the existing system but with careful pre-treatment of all tailings to improve the physical and chemical properties and rigorous monitoring of downstream water quality. We have built a tailings paste plant so that some of the material can be cemented back into the underground workings, reducing the amount of sediment entering the river by approximately 13% since 2011. Our expanded Group has also committed to investigating options to further reduce sediment loads. Additionally, plans to increase ore production from the underground mine will result in an opportunity to store more tailings in the underground voids in the mine as backfill, thus diverting further tailings from the river.

Results of our extensive environmental monitoring program to date show that the river system is operating as predicted and downstream of the mixing zone water quality and sediment quality are consistent with metal limits for ecosystem protection established by the Australia and New Zealand Environment and Conservation Council (ANZECC). PJV’s Annual Environmental Reports have confirmed that dissolved concentrations of all relevant trace metals at monitoring points on the river were lower than the respective criteria. The PJV Annual Environmental Reports are publicly available and independently reviewed by external experts.

To date, the Porgera mine has never exceeded the set thresholds at the compliance point or further downstream and our diligent ecosystem monitoring has shown that there has been very little change in species diversity or abundance.

For more information on Porgera’s riverine tailings management please see our website (here and here).
MANAGING HAZARDOUS WASTE

Hazardous chemicals, including cyanide, are a key input for mining processes. We use a risk-based approach to chemicals management, in accordance with each site’s EMS, and its Health and Safety Management System.

Management approach

Cyanide

As a signatory to the International Cyanide Management (ICM) Code and member of the International Cyanide Management Institute (ICMI) we follow the prescribed best practices for transporting, storing, using and disposing of cyanide.

All legacy Barrick sites are certified to the ICM Code and all former Randgold sites, which were previously governed by an internal cyanide code, will be certified to it by the end of 2020. Sites are required to re-certify compliance with the ICM Code every three years. We also require all relevant suppliers to be certified.

We conduct regular audits against the ICM Code – this includes testing water discharges and local waterbodies for traces of cyanide and tracking all environmental and health incidents linked to, or potentially linked to, cyanide. We have updated our practices at all sites in accordance with the new requirements from the ICM Code to introduce a red dye into high-strength cyanide solutions so that leaks or spills are more visible. We are fully committed to the safe use of our sodium cyanide product and believe that the changes made by ICMI will contribute to safer handling and use of this substance.

All employees and contractors who handle, transport and dispose of cyanide are provided with specialized training on the safe handling of cyanide. All onsite emergency response teams also receive specialist training and equipment so that any incidents involving cyanide can be safely cleaned up.

Mercury

Mercury occurs naturally in the rock at some of our operations and can be released from the ore during processing. Exposure to mercury can seriously damage human health and can even be fatal. We use a variety of controls, including retorts, scrubbers, condensation towers and activated carbon filters to trap mercury vapor before it can be discharged to the atmosphere. Mercury condensation and safe storage are part of our safe practices on site and each relevant site’s EMS is aligned with the ICMM position statement on mercury risk management.

Mercury compounds are disposed of at licensed hazardous waste facilities in compliance with the law. Strict handling, packaging and transportation procedures are in place to help protect both people and the environment against mercury exposure during shipping. In 2019, we made our first shipment of stabilized elemental mercury for underground disposal in inactive salt mines in Germany.
STABILIZING MERCURY FOR SAFE DISPOSAL

The management of mercury is strictly controlled by local and international laws. The Minamata Convention, signed in 2013, further limits the production, use and export of mercury. Barrick has been looking at alternative disposal methods for many years. One of the challenges is the instability of elemental mercury.

In 2017, we selected a company with proven mercury stabilization technology to take responsibility for shipping the mercury across the Atlantic for processing in Europe and then transporting it for final disposal.

After an extensive due diligence process and the completion of risk assessment and permitting processes, the new supplier received the first metal flasks in early 2019 from our Pierina and Lagunas Norte mines in Peru (88Mt Hg) and Veladero mine (430Mt Hg) in Argentina. The mercury was safely transported without any incidents at any stage of the process.

This mercury will be converted to cinnabar in Europe with independent auditors SGS verifying the process. This wet process does not produce air emissions and has benefits for worker safety and the environment over the alternative options. The non-hazardous cinnabar will be packed into steel drums for permanent storage in decommissioned parts of a salt mine where it can be safely stored.

NON-PROCESSING WASTE

We generate a relatively small amount of non-processing hazardous waste each year, such as batteries, fluorescent lights, waste oils, solvents, electronic waste and laboratory assay wastes. We seek to minimize the amount of non-processing hazardous waste we produce. We look for alternatives to hazardous chemicals and we recycle or use local businesses to facilitate recycling.

Non-hazardous waste streams such as oil, tires or office waste are recycled if facilities are available. However, the remoteness of some of our sites and the lack of recycling infrastructure in many of our host countries means that waste may be sent to landfill or incinerated, either on or off-site.

One of Barrick’s commitments is to apply the ‘avoid, reduce, re-use and recycle’ hierarchy to our non-mine waste. This includes exploring opportunities to increase our recycling, particularly using community-based commercial enterprise that can also create economic opportunities.
CASE STUDY

TACKLING PLASTIC WASTE ONE BRICK AT A TIME

The problems that plastic, and in particular single-use plastics, cause for waterways and the creatures that inhabit them received global attention in 2018. Plastic pollution is also a problem on our mines, where plastic bottles and plastic packaging make up a significant proportion of our general waste stream. Unfortunately, there are no plastic recycling facilities in sub-Saharan Africa, and much of the continent’s plastic waste is sent to landfill. In response, three of our mines in this region started work in 2018 to combat the issue – both by devising ways to reduce the plastic waste we produce and working to develop plastic recycling and repurposing programs.

For example, at our Loulo-Gounkoto mine in Mali, we have focused on how to recycle plastic into products that meet community needs. The aim is to not only reduce the amount of plastic sent to landfill but also to create a sustainable community development project and business.

During 2018, we worked with members of the community to smelt the plastic packaging from the lime used on site and combine it with sand to create paving stones and building bricks for use in construction. Resistance tests showed that our plastic and sand bricks weigh approximately 9.3kg and have a resistance of almost 198 Kilo Newton (KN). Remarkably, this makes them lighter yet significantly stronger than regular bricks. Full safety precautions are taken so that workers are not exposed to noxious fumes or put at risk from burns during the process.

The next phase of this project is to assess the economic and health risks of plastic bricks compared to cement bricks, before working to scale up the project and facilitate the development of a community enterprise.

At the same time, we will use the plastic bricks to build an example show home.
2018 Performance
In total, the two legacy Companies used 29,369 tonnes of cyanide in 2018. There were no breaches of either the ICM Code used at legacy Barrick sites, or of the internal cyanide code followed at former Randgold sites.

In 2018, legacy Barrick captured and stored 203.77 tonnes of mercury at our mine sites.

FIGURE 25: TOTAL WASTE BY TYPE

<table>
<thead>
<tr>
<th></th>
<th>Former Randgold sites¹</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total waste generated</strong></td>
<td>16,400</td>
</tr>
<tr>
<td>Hazardous waste</td>
<td>7,200</td>
</tr>
<tr>
<td>Organic waste</td>
<td>1,580</td>
</tr>
<tr>
<td>Inorganic waste</td>
<td>7,620</td>
</tr>
<tr>
<td><strong>Total waste sent for final disposal</strong></td>
<td>221,830</td>
</tr>
<tr>
<td>Recycled (including stored waste)</td>
<td>215,820</td>
</tr>
<tr>
<td>Landfilled</td>
<td>2,690</td>
</tr>
<tr>
<td>Incinerated</td>
<td>3,320</td>
</tr>
</tbody>
</table>

¹ Legacy Barrick sites did not gather non-processing waste data at a Group level. For the consolidated Company, we will report data on non-processing waste in 2019.

TARGETS FOR 2019 AND BEYOND

Certify all sites to the International Cyanide Management Code (ICMI) by end of 2020

Apply the ‘avoid, reduce, re-use and recycle’ hierarchy to our non-mine waste to drive up recycling rates at each mine

Update the Barrick Tailing and Heap Leach Management Standard to ensure its relevance to the expanded Group

Complete at least 3 independent third party reviews of TSFs per year
CLIMATE CHANGE

Climate change and the transition to a low carbon future bring physical, regulatory and reputational risks for us and for the mining industry in general. More severe weather events could affect the stability of infrastructure, and changes in climate-related regulation affect the cost of water and energy supplies. Climate change brings opportunities too, with significant cost advantages from reducing our energy usage or maximizing renewables.

Management approach

We understand the important link between energy use and climate change. By effectively managing our energy use, we are able to reduce our greenhouse gas (GHG) emissions, achieve more efficient production, reduce our draw from local energy grids and save a significant proportion of our direct mining costs. Managing our energy use is therefore a business imperative.

Each site has in place an energy plan tailored to its needs and location. The main types of activity implemented by these plans include:

- Improving energy efficiency and reducing energy waste. For example:
  - Employing fewer energy-intensive processing technologies such as replacing trommel screens with vibrating screens at our Loulo-Gounkoto complex
  - Installing sensors underground at Kibali and Loulo-Gounkoto to automatically switch off lighting and ventilation when no workers or machinery are present

- Increasing use of renewable energy. For example:
  - Enabling 64% of the energy needs of our Kibali mine to be met by three hydropower stations, in a region where water is abundant
  - Introducing solar power to our Loulo-Gounkoto complex

- Use of energy sources with lower greenhouse gas emissions. For example:
  - Connecting the Veladero site in Argentina to the Chilean national grid (with its large renewables component) via Pascua-Lama
  - Optimizing energy infrastructure at our Tongon mine to increase draw and stability of supply from the national grid (which has a large hydropower component) and therefore reduce reliance on back-up generators run on diesel
  - Using waste heat recovery systems to achieve higher efficiencies from the natural gas-fired generators at our Nevada site and at the Pueblo Viejo off-site power plant

Tongon draws on a connection to Côte d’Ivoire’s national grid which is 50% hydro and 50% gas power sourced.
As part of our approach to climate change, we are committed to assessing and understanding our climate-related risks and opportunities.

A Company-wide risk assessment by Barrick before the merger identified our key climate-related risks as an increase in extended duration precipitation events and greater regulation to curb greenhouse gas emissions. In addition, we identified increased global investment in innovation and low-carbon technologies as a key opportunity. The climate-risk assessment will be repeated in 2019 as part of the process to update our climate change targets to reflect our new portfolio.

As part of our ongoing commitment to manage our climate-related impacts, in 2019 we aim to set a greenhouse gas emissions reduction target for our expanded Group based on climate science. We want to contribute our fair share of the carbon reductions needed to avoid catastrophic climate change while also accommodating the economic development and poverty reduction needs of our developing world host countries. This will be a significant undertaking for our Company and will require detailed data analysis and scenario modeling.

Hydropower reduces Barrick’s costs and carbon emissions.
FIGURE 26: SUMMARY OF THE RISK AND OPPORTUNITY ASSESSMENTS CONDUCTED ON LEGACY BARRICK SITES

<table>
<thead>
<tr>
<th>Risk</th>
<th>Rating</th>
<th>What could happen</th>
<th>What could it lead to</th>
<th>Sample mitigating activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VERY HIGH</td>
<td>Increase in extended duration (monthly) extreme precipitation events</td>
<td>- Process/storm water/tailings pond overflow or complete failure - Injuries/fatalities, asset/infrastructure damage, environmental damage - Leach pad acidification (dewatering issues) - Power shortages/production disruptions - Supply chain disruptions - Pit slope failure; landslides</td>
<td>- Expand storm surge pond capacity - Update water balance models - Geotechnical monitoring of leach pads and waste dumps - Concurrent closure and remediation activities</td>
</tr>
<tr>
<td></td>
<td>VERY HIGH</td>
<td>Increase in climate change regulations to limit greenhouse gas emissions in countries where Barrick operates</td>
<td>- Increased operational costs related to fuel and electricity consumption - Increased costs of raw materials - Compliance and reporting requirements to regulators</td>
<td>- Monitoring legislative developments in host countries - Lower carbon intensity of mining operations - Adopted internal shadow price of carbon of $25/tonne</td>
</tr>
<tr>
<td></td>
<td>HIGH</td>
<td>Opportunity for increase in global investment in innovation and low carbon technologies</td>
<td>- Barrick benefits from decreased cost to deploy innovative low-carbon technologies (eg electrification, biofuels, renewable, in-situ leaching) - Increased capital availability to invest in low-carbon technologies (eg climate change funds) - Research and development in low carbon technologies for the mining sector</td>
<td>- Monitor trends in low-carbon technologies</td>
</tr>
</tbody>
</table>

FIGURE 27: WHERE DO OUR EMISSIONS COME FROM?
Approximately 89% of our greenhouse emissions are “Scope 1” emissions - ie direct emissions from our burning of fuel or processes such as the manufacture of lime to neutralize acidic ores or roasting of carbon-containing ores. We also have “Scope 2” emissions – ie indirect emissions associated with the electricity we purchase from national grids.

**SOURCES OF GREENHOUSE GAS EMISSIONS**

<table>
<thead>
<tr>
<th>000 tonnes CO₂e</th>
<th>Legacy Barrick</th>
<th>Former Randgold</th>
<th>Consolidated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel</td>
<td>1,235</td>
<td>630</td>
<td>1,865</td>
</tr>
<tr>
<td>Industrial processes</td>
<td>1,306</td>
<td>-</td>
<td>1,306</td>
</tr>
<tr>
<td>Heavy fuel oil</td>
<td>801</td>
<td>191</td>
<td>992</td>
</tr>
<tr>
<td>Natural gas</td>
<td>577</td>
<td>-</td>
<td>577</td>
</tr>
<tr>
<td>Purchased electricity</td>
<td>572</td>
<td>52</td>
<td>624</td>
</tr>
<tr>
<td>Other</td>
<td>52</td>
<td>35</td>
<td>87</td>
</tr>
<tr>
<td>Propane</td>
<td>26</td>
<td>-</td>
<td>26</td>
</tr>
<tr>
<td>Light fuel oil</td>
<td>-</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Waste</td>
<td>-</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Explosives</td>
<td>11</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Gasoline</td>
<td>9</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>Biodiesel</td>
<td>6</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total emissions</strong></td>
<td><strong>4,595</strong></td>
<td><strong>943</strong></td>
<td><strong>5,538</strong></td>
</tr>
</tbody>
</table>
The Pueblo Viejo mine in the Dominican Republic is our biggest single source of emissions, accounting for 43% of the consolidated Group’s total Scope 1 emissions. The mine is one of the largest in the world and is powered by an off-site heavy fuel oil power plant.

The power plant is being converted to run on natural gas by the end of 2019. This should assist the mine to reduce greenhouse gas emissions by more than a hundred thousand tonnes of CO₂e per year, as well as cutting energy costs. Since the plant also serves the national grid, this change will also help to reduce the carbon intensity of the country as a whole.

Disclosure

We are committed to transparency on climate issues. One of our first reporting activities as a merged Company will be to complete the CDP emissions questionnaire in 2019 which makes investor-relevant climate data widely available. The CDP also aligns with the reporting recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD).

We are committed to making these disclosures on an annual basis while continuously improving public disclosures.
INVESTING IN HYDROPOWER IN THE DRC

Our Kibali mine in the north-east of the DRC is located far beyond the reach of the limited national grid. But this tropical region does have numerous rivers and an eight-month annual rainy season, making hydropower an attractive energy source. We have built three ‘run of the river’ hydropower stations, which use the natural flow of the river rather than containing it behind a dam.

These provide up to 42MW of electricity in the rainy season and about 14MW during the dry season. Overall, approximately 65% of Kibali’s total annual energy needs are met by hydropower, with the remainder by diesel generators. As a result of the hydropower, the average cost of power at Kibali has fallen by 74%.

After the mine ceases to operate, the hydropower stations will be transferred to the Government and integrated into the national grid.
THREE-YEAR PAYBACK PERIOD MAKES SOLAR VIABLE AT LOULO

Our Loulo-Gounkoto complex is situated near the Senegalese border in the west of Mali. As the mine is too remote to be connected to the Malian electricity grid, energy is provided by heavy fuel oil and diesel-fired thermal generators.

The area receives plenty of sunlight and the falling costs of photovoltaic panels means a solar energy plant can now satisfy our investment criteria of 20% IRR. A project to build a 24MW solar power plant went to tender at the end of 2018, with the aim to have it running by 2020. The project is expected to cost $20 million, with a payback period of barely three years.

We expect the solar plant will meet approximately 40% of Loulo-Gounkoto’s energy needs during the day, and 12% of the site’s overall energy demand. The site’s energy bill will be cut by around 2 cents/kWh and 11.5ML of fuel will be saved over the Life of Mine.

These efforts will reduce our annual greenhouse gas emissions by approximately 11,000Mt of CO₂e per annum and reduce our diesel bill by $6.7 million each year.

2018 Performance

Energy
The total energy use of the two legacy Companies in 2018 was calculated at 63.4 million GJ. Taken together the two legacy Companies also used more than 2.8 million GJ of renewable energy¹ in 2018 (4% of energy consumed). Total energy use per tonnes of ore processed was 0.48GJ. In addition, Barrick sold more than 25,000GJ of non-renewable electricity back to the grid.

The former Randgold’s usage of hydropower increased from 16% to 21% of its total energy consumption during 2018, as a third run-of-the-river station at the Kibali mine came on line. 12% of the total power used by former Randgold was drawn from the national grid, down from 29% in 2017. This was due to grid instability issues at the Tongon mine, which resulted in a significant increase in the use of back-up diesel generators. In late December 2018, a second power line through western Côte d’Ivoire was installed which should improve national grid stability and reduce the need for back-up generators at Tongon in the future.

¹ Includes renewable electricity produced and consumed, renewable fuels and purchased electricity offset with Portfolio Energy Credits in Nevada.
Figure 29: Energy Consumption

Barrick’s Climate Change Strategy before the merger set a goal to keep Scope 1 and 2 emissions flat in the short term, and to achieve a 30% reduction by 2030, against a 2016 baseline. In 2018, its Scope 1 emissions were 3,971,000Mt Co2e and its Scope 2 emissions were 0.57Mt; these emissions were comparable with 2017 and in line with the target. More detail on the former strategy is available in the Company’s quarterly financial filings from 2018, which included information reported in accordance with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations.

At former Randgold sites, total greenhouse gas emissions increased by 4% during 2018. This reflects the issues identified in the energy section, where the emission reductions achieved through the use of hydropower at Kibali were offset by the increased use of diesel generators and an increase in the volume of ore processed. Despite this increase, the Company did achieve a 3% improvement year-on-year in the emissions intensity per tonne of ore processed and a 7% reduction against their base year target of 46.15 CO2e/kt ore processed.

Greenhouse gas emissions

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At former Randgold sites, total greenhouse gas emissions increased by 4% during 2018. This reflects the issues identified in the energy section, where the emission reductions achieved through the use of hydropower at Kibali were offset by the increased use of diesel generators and an increase in the volume of ore processed. Despite this increase, the Company did achieve a 3% improvement year-on-year in the emissions intensity per tonne of ore processed and a 7% reduction against their base year target of 46.15 CO2e/kt ore processed.
### FIGURE 30: SCOPE 1 AND 2 EMISSIONS, COMBINED COMPANIES

<table>
<thead>
<tr>
<th>Site</th>
<th>000 tonnes CO₂e</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morila</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tongon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lumwana</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lagunas Norte</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jabal Sayid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierina</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemlo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turquoise Ridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golden Sunlight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other ancillary props</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5,361</td>
<td>5,414</td>
<td>5,451</td>
<td></td>
</tr>
</tbody>
</table>

1. Scope 2 emissions are reported using the location-based approach. Using the market-based approach, which takes account of Portfolio Energy Credits in the state of Nevada, legacy Barrick emissions would be 571 kt in 2018. Former Randgold Scope 2 emissions are the same under either approach. Additionally, both legacy Barrick and former Randgold had “outside of scopes” emissions associated with consumption of biofuels. For 2018, these were 17,990 and 1,923 tonnes of CO₂e, respectively.

2. Please note Barrick restated its historical data following changes to the methodology to capture a wider scope of industrial emissions, updated conversion factors and to include emissions from smaller contributors (such as gasoline). Certain joint venture properties were also not included in Barrick’s previous reporting. Following these changes and comparing like-to-like total 2018 emissions were 4.543 Mt CO₂e and 2017 emissions were 4.544 Mt CO₂e.

### FIGURE 31: GREENHOUSE GAS EMISSIONS (SCOPE 1 AND 2), COMBINED COMPANIES

In 2018, legacy Barrick only reported Scope 3 emissions for corporate flights booked through a central travel agency, the ‘well-to-tank’ emissions relating to production of the fuels we use and the transition and distribution of electricity. In 2019, we intend to expand our Scope 3 greenhouse gas reporting. Considering emissions in our value chain which are not under the operational control of the Company, we will focus on ‘upstream’ emissions associated with our suppliers and identify the largest contributors to our overall carbon footprint. Going forward, we will work with suppliers and other third parties to reduce emissions based on this prioritization.

**FIGURE 32: SCOPE 3 EMISSIONS**

<table>
<thead>
<tr>
<th>000 tonnes CO₂e</th>
<th>Legacy Barrick</th>
<th>Former Randgold</th>
<th>Consolidated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upstream transportation and distribution</td>
<td>Not reported</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Fuel and energy related activities</td>
<td>580</td>
<td>Not reported</td>
<td>580</td>
</tr>
<tr>
<td>Business travel</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Purchased goods and services</td>
<td>Not reported</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Reported Scope 3</td>
<td>585</td>
<td>125</td>
<td>710</td>
</tr>
</tbody>
</table>

**TARGETS FOR 2019 AND BEYOND**

- Set a greenhouse gas emissions reduction target for our expanded Group based on climate science
- Complete conversion of the Pueblo Viejo power plant to natural gas
- Construct and commission the Loulo-Gounkoto solar power plant project
- Respond to CDP Carbon questionnaire
The areas around many of our sites are teeming with wildlife such as monkeys, frogs, bats, birds and lizards, some of which are threatened. It’s only right that we strive to protect the habitats these animals rely on.

Gail Ross, Group Biodiversity Manager

BIODIVERSITY

Biodiversity, that is the rich variety of plant and animal life, is crucial for many of the natural services our mines and surrounding communities rely on, from purifying water to regulating the climate. Biodiversity is also a key concern for our employees and the wider local community, for whom the indigenous flora and fauna are an integral part of their identity. But mining has an undeniable impact on the natural environment that we are committed to managing and minimizing.

At a biodiversity strategy session held shortly after the merger, key biodiversity risks identified included reductions in water quality or quantity, impacts on protected species and areas and habitat fragmentation. Such risks could affect our social license to operate and reputation. Opportunities identified included supporting training for local people on habitat management such as alternative farming techniques, attracting wildlife back to our mine sites, providing an alternative livelihood to hunting protected species and intensive logging together with contributing to the pool of knowledge on the local ecology.

Management approach

We place a high priority on biodiversity. Our vision is to play a positive role in the management of the biodiversity in the areas in which we operate, and our approach is set out in an updated Biodiversity Policy. The policy explicitly restricts us from exploring, mining, drilling or otherwise operating in declared natural World Heritage Sites and places tight controls on activities in adjacent areas.

Our approach is informed by international best practice, such as the guidelines set by the International Union for Conservation of Nature (IUCN) and ICMM and we use a mitigation hierarchy to minimize biodiversity impacts. This guides our decision-making process for any new project or significant expansion.
Offset: use off-site projects that either restore degraded natural habitat or prevent the imminent degradation or loss of natural habitat to compensate for the loss of biodiversity features in the project footprint. Offsets should be used as a last resort to compensate for those residual adverse impacts that cannot be addressed through avoidance, minimization and rehabilitation.

Rehabilitation: replace or reverse the degradation of impacted ecosystems.

Minimization: reduce the duration, intensity and/or extent of impacts that cannot be completely avoided.

Avoidance: locate the project elsewhere to protect key biodiversity features.
Key features of our management of biodiversity include:

- Before we develop a new site or significantly expand an existing one, we screen the area for Key Biodiversity Features (see callout). This sets the ‘biodiversity baseline’ against which impacts can be measured. We are supported in this by independent consultants, as part of the Environmental & Social Impacts Assessment process undertaken for any new project. We then conduct a formal risk assessment of direct and indirect impacts of our planned operations on these features.

- We implement measures to manage key risks in accordance with the mitigation hierarchy, as well as any measures required by regulation.

- We strive for concurrent rehabilitation. That is, we remediate areas as we go along at operational mines. At some sites this includes establishing nurseries of native trees and storing topsoil for site restoration.

- We identify opportunities to promote biodiversity conservation in the local landscapes and implement appropriate measures in partnership with local authorities, communities and conservation groups.

- We conduct ongoing monitoring of key biodiversity features and regularly evaluate our approach. In 2018, for example, our environmental teams at Veladero in Argentina and exploration sites in Chile started tracking outbreaks of mange – a skin disease - in guanacos (a member of the llama family) to assist in the understanding of an outbreak of the disease.

- To implement our Biodiversity Policy each of our sites will formulate a Biodiversity Action Plan (BAP) in the coming years. These BAPs will contain an inventory of Key Biodiversity Features and species present around a site, set a ‘biodiversity baseline’ if one can be established, and targets for biodiversity protection and habitat rehabilitation. They will also specify the resources required to put the plan into action and will identify key institutional and local community partnerships that will aid the implementation and review of the plan.

- All former Randgold sites already have detailed BAPs in place to manage local biodiversity protection and restoration. Based on the sensitivity of the local environment, we have prioritized four legacy Barrick sites (Pueblo Viejo, Cortez, Goldstrike and Lumwana) where we will develop and implement BAPs in 2019. We have set a corporate target to have BAPs in place for all of our operational sites by the end of 2021.

- In 2019 we will develop refresher training for site environmental managers, tailored to the local conditions, on the new Biodiversity Policy. This will include guidance on how the implementation hierarchy should be implemented and fully documented, together with the process to be followed when conducting annual aquatic assessments.
KEY BIODIVERSITY FEATURES (KBFs)

KBFs are species, habitats or ecosystem services of conservation priority. For example, species of conservation priority are those identified as threatened on national or state lists of threatened species, the IUCN Red List, or where globally significant concentrations of species utilize the site. We take a precautionary approach; for example, our work with sage-grouse in Nevada supports a species that has experienced declining numbers but is not currently listed as threatened.

WHAT IS A NET NEUTRAL BIODIVERSITY IMPACT?

Our corporate Biodiversity Policy states that where practicably possible we will seek to achieve a net neutral biodiversity impact for any ecologically sensitive environments we affect.

Net neutral biodiversity impact may be a simple concept in principle - ‘no overall loss of biodiversity due to our activities’ but it is complicated to implement in practice. The idea is that, after passing through all stages of the Mitigation Hierarchy - avoid, minimise, rehabilitate - any remaining unavoidable impacts our activities have on the KBFs near one of our sites will be balanced by an ‘equal’ amount of biodiversity being restored or protected elsewhere, an ‘offset’.

We adopt the IUCN’s (2016) definition of biodiversity offsets as, ‘measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation actions have been taken’. When we start planning operations at a new location, we work to establish a baseline and account for potential impacts to Key Biodiversity Features. We are then able to offset losses, as a last resort.

However, older sites may lack sufficient baseline data from which to measure losses and so instead we must look for opportunities to improve other aspects of biodiversity in the region. The uncertainty due to the lack of data leads us to implement Additional Conservation Actions, striving to over compensate rather than risk taking too little action. Additional Conservation Actions, as defined by the Cross-Sector Biodiversity Initiative (2015), are interventions that are beneficial to biodiversity in general, but are not necessarily measurable or target the same type of biodiversity as has been impacted by the project. An example of these programs would be where we are supporting protected areas such as the Garamba National Park in the DRC.

Our in-house biodiversity experts are working to determine exactly what net neutrality means for us. There are no easy answers, but we are committed to the principle of doing no overall harm to the unique features of our natural world.

2018 Performance

We did not have any major wildlife mortality events at our operations in 2018¹. At the end of 2018, the total amount of land disturbed but not yet rehabilitated at mine sites across both legacy Companies combined was more than 48,000 hectares. Approximately 795 hectares were rehabilitated during the year, some with native plants grown in onsite nurseries, such as at Loulo-Gounkoto and Pueblo Viejo.

Former Randgold planted more than 52,000 native and endemic trees as part of rehabilitation efforts. The Company also continued to develop its support for biodiversity conservation programs at the Garamba National Park in the DRC, Nickolo Koba Park in Senegal, the Comoe National park in Côte d’Ivoire and the Mali Elephant project.

¹ ‘Major’ is defined as an event in which five or more wildlife mortalities occur due to a single unwanted event or a single mortality occurs five or more times during a calendar year due to mine-related circumstances that are similar.
Members of the Barrick team on a biodiversity assessment near Pueblo Viejo.

Revegetation of natural flora at Porgera.
**FIGURE 35: AREA OF LAND DISTURBED OR REHABILITATED**

<table>
<thead>
<tr>
<th></th>
<th>Legacy Barrick</th>
<th>Former Randgold</th>
<th>Consolidated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total land disturbed and not yet rehabilitated at start of reporting period</td>
<td>28,084</td>
<td>16,825</td>
<td>44,909</td>
</tr>
<tr>
<td>Total amount of land newly disturbed within reporting period</td>
<td>4,240</td>
<td>129</td>
<td>4,369</td>
</tr>
<tr>
<td>Total amount of land newly rehabilitated within reporting period</td>
<td>(546)</td>
<td>(249)</td>
<td>(795)</td>
</tr>
<tr>
<td>Total land disturbed and not yet rehabilitated at end of reporting period</td>
<td>31,778</td>
<td>16,705</td>
<td>48,483</td>
</tr>
</tbody>
</table>

**FIGURE 36: OPERATIONS NEAR PROTECTED AREAS OR AREAS OF HIGH BIODIVERSITY VALUE**

<table>
<thead>
<tr>
<th>Site</th>
<th>Protected areas</th>
<th>Areas of high biodiversity value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alturas</td>
<td>Within 15km of the San Guillermo Man and Biosphere Reserve</td>
<td></td>
</tr>
<tr>
<td>Hemlo</td>
<td>10-15km from White Lake Provincial Park (IUCN Cat II)</td>
<td></td>
</tr>
<tr>
<td>Lagunas Norte</td>
<td>Both are in the multi-use area of San Guillermo Man and Biosphere Reserve. The nucleus of the Reserve is also an IUCN Cat II Protected Area</td>
<td>Within a Biodiversity Hotspot and Endemic Bird Area</td>
</tr>
<tr>
<td>Lama; Veladero</td>
<td>Within a Key Biodiversity Area</td>
<td></td>
</tr>
<tr>
<td>Lumwana</td>
<td>Within 10km of the Acres Forest Reserve (IUCN unclassified Protected Area)</td>
<td>Within a High Biodiversity Wilderness Area</td>
</tr>
<tr>
<td>Pierina</td>
<td>Between 5-10km from the Huascaran National Park declared in 2009</td>
<td>Within a Biodiversity Hotspot Endemic Bird Area</td>
</tr>
<tr>
<td>Pueblo Viejo</td>
<td>Infrastructure crosses Aniana Vargas National Park declared 2009</td>
<td>Within a Biodiversity Hotspot and Endemic Bird Area</td>
</tr>
<tr>
<td>Turquoise Ridge</td>
<td>Between 5-10km from the Osgood Mountain Milkvetch Habitat (IUCN Cat V)</td>
<td>Within an Endemic Bird Area and High Biodiversity Wilderness Area</td>
</tr>
<tr>
<td>Porgera</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PARTNERSHIPS FOR PROTECTION

We work with environmental groups, local authorities and communities to deliver positive biodiversity impacts. Over the last six years the legacy Companies have invested over $4.3 million in biodiversity conservation projects in the US and Africa.

**Conserving sage-grouse habitats in the US**

Barrick has been developing a program with the US Department of the Interior to offset the loss of sage-grouse habitat resulting from our operations. We pinpoint key areas for restoration using a process developed by The Nature Conservancy, an environmental NGO, under the terms of the Bank Enabling Agreement (BEA) signed in 2015. In accordance with this agreement, over the next 35 years, we will maintain habitat for sage-grouse and other wildlife across more than 400,000 acres of land which we manage.

During 2018, Barrick restored over 4,000 acres of land to improve habitat for sage-grouse in Nevada. Restoration actions included tree thinning, seeding and planting, treating weeds, protecting meadows and installing fuel breaks. In total we spent $1.8 million in 2018 on conservation actions under the BEA.

This solution brings substantial benefits to support the conservation of this ‘near threatened’ bird, and regulatory assurances to our Company.

“Right now, we lose a lot more habitat in the Great Basin each year to unnatural wildfires and invasive weeds than we’re able to restore,” says Liz Munn, the Conservancy’s Nevada Sagebrush Ecosystems Program Director. “Dramatically increasing the scope and scale of restoration in the sagebrush sea is one of our top priorities, but it’s something we definitely can’t do alone. Seeing a landowner implement a project of this size gives me hope. The reality is this project is the first of many that will be needed across the landscape, and it will take a collaborative effort to make a lasting difference.”

**Supporting the Garamba National Park in DRC**

We are proud to continue Kibali’s legacy as the only major corporate funder of the Garamba National Park in the DRC. Garamba is one of Africa’s oldest national parks, designated in 1938, and in 1980 was declared a UNESCO World Heritage Site.

Garamba is home to the country’s largest population of elephants and its only remaining Kordofan giraffe, a critically endangered species. With its mix of grassland savannah and dense dry forest, the park also has buffalo, hartebeest, hippos, leopards, chimpanzees and more than 340 species of birds.
Incursions by heavily armed illegal poachers in this war-torn region pose a constant threat to the park’s wildlife and local communities. Providing training for park rangers and tracking technology to enable rangers and researchers to monitor animal movements are key tools in combating poaching. Since 2014, we have provided more than $1 million in support of projects to protect wildlife in the park some of which include:

- $240,000 for elephant tracking collars and anti-poaching flights
- $250,000 to fund a Kordofan giraffe monitoring team
- $360,000 to support construction of bridges and infrastructure within the park to improve ranger access and emergency response rate and to support sustainable tourism

The results speak for themselves. Through the efforts of the rangers and researchers, elephant poaching is down by 98% since 2016 and no giraffe has been poached since 2017. There are now 55 Kordofan giraffes in the park, up from 38 in 2016.

In 2018, Kibali drilled water boreholes for the local community and provided logistics for helicopter ranger patrols. In 2019 we will be helping the park’s management team set up cocoa as a sustainable source of income for the local people, in addition to assisting with an expansion of the elephant collaring and monitoring program.

Helping safeguard natural world heritage

Niokolo Koba Park (PNKK) is a world heritage site located in the south east of Senegal near to our Massawa project. The park is home to a remarkable range of flora and fauna including an estimated:

- 70 species of mammal
- More than 300 types of bird
- 36 species of reptile
- 20 species of amphibian
- More than 1,500 important plant species
- 78% of Senegal’s gallery forest

It is also home to lions, elephants, leopards, chimpanzees and African wild dogs, as well as the Derby Eland – the largest antelope in the world. However, under-investment and general degradation has meant that since 2007 the park has been listed as an endangered world heritage site.

Alongside the development of a Biodiversity Action Plan for our Massawa site, we have been investigating potential support for projects at PNKK. No aerial survey of the park had been conducted since 2006, inhibiting understanding of the distribution of species and the overall state of the park. During 2018 we worked with park authorities to commission an independent and integrated aerial and ground survey of the park, to count animal species and numbers and better understand the threats to the park. We provided $100,000 of funding, providing for an aerial survey of 4,306km, a camera survey with 77 traps, a ground vehicle survey of 1,737km and a ground foot survey involving 15 teams.
The survey found that a good diversity of wildlife remains at PNKK, particularly of large mammals, although no elephants were sighted and the wild dog population seems to be in decline. It also showed the park faces significant threats from poaching and illegal mining. Bushfires remain a serious problem, with 36 fires spotted by the aerial survey. Plotting human and animal population densities on a map reveals the stark impact of human activity.

These findings are helping various park stakeholders assess the effectiveness of the current conservation programs. The data will also be used by the IUCN to evaluate the progress of the park towards being removed from the endangered list and it will inform the Senegalese Government’s response to the IUCN’s recommendations. The report will also be integrated into the Massawa site’s Environmental and Social Impact Assessment.

**Headwaters of the Strickland and Kaijende Highlands conservation areas**

As part of a public-private partnership in Papua New Guinea, we have been supporting work to recognize the Headwaters of the Strickland and the Kaijende Highlands as two conservation areas.

The Headwaters of the Strickland area spans 182,000 hectares of lower montane forest, while the Kaijende Highlands cover 144,000 hectares of montane forest and sub-alpine grassland. Biodiversity surveys sponsored by Barrick Niugini Limited (BNL) have identified more than 75 plant and animal species previously unknown to science. Both areas have been identified as being of global significance and as conservation priorities for Papua New Guinea.

Both areas are managed in accordance with the Papuan Forest Stewards Initiative, a conservation-based development program designed and implemented by American anthropologist Dr William H Thomas and the local landowners. It combines traditional environmental knowledge, cultural stewardship and partnership with local, national and international institutions.
TARGETS FOR 2019 AND BEYOND

Develop and implement **Biodiversity Action Plans (BAPs)** at priority sites of Pueblo Viejo, Cortez, Goldstrike and Lumwana

Develop and implement **BAPs** at all sites by 2021
AIR EMISSIONS

Mining can create high levels of dust in the air which can cause breathing issues and eye irritation. Mining can also produce other air pollutants including sulphur dioxide, nitrogen oxides, carbon monoxide and mercury, many of which are tightly regulated by our host countries. We are committed to robust air pollution management to ensure we maintain our relationships with local communities, keep our employees healthy and to satisfy our permit and license requirements.

Management approach

Dust

Dust is the main air pollutant at mining sites with levels and strategies to deal with dust varying between sites. We reduce dust by spraying water to suppress dust at roads, crushers and conveyor belt systems; applying natural or synthetic dust suppression products where suitable and enforcing speed limits to reduce dust picked up by vehicles, particularly on heavy use haul roads.

Other air emissions

Sulphur dioxide (SOx), nitrous oxide (NOx) and particulate (PM10) emissions are produced in the combustion engines of our vehicles and on-site generators and from processing certain ores. Depending on the site and ambient air quality, we adopt a range of measures to reduce these emissions and comply with local air quality standards. These measures include low NOx burners, selective catalytic reduction (SCR) for stationary sources and scrubbers.
2018 Performance
Air quality is closely monitored in areas where dust levels are high, in line with IFC guidelines. Dust from roads has been a source of tension with local communities around our Loulo-Gounkoto complex, and former Randgold trialed different approaches to reduce dust. At the end of 2018 we started to apply bitumen to the haul road between the Loulo and Gounkoto parts of the complex to reduce the amount of dust thrown up by large vehicles. This also helps to reduce the amount of water needed for road wetting.

FIGURE 37: AIR EMISSIONS - DATA FROM LEGACY BARRICK SITES ONLY

<table>
<thead>
<tr>
<th>Emissions type (tonnes)</th>
<th>Legacy Barrick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury air emissions</td>
<td>0.2</td>
</tr>
<tr>
<td>NOx emissions to air</td>
<td>17,560</td>
</tr>
<tr>
<td>PM10 emissions</td>
<td>1,638</td>
</tr>
<tr>
<td>Sulphur dioxide (SO₂) Emissions</td>
<td>1,172</td>
</tr>
</tbody>
</table>

1 Only includes sites where reporting is required by Government regulation.

INTEGRATING THE SUSTAINABLE DEVELOPMENT GOALS

We are committed to responsible water management. All water discharged from our mines is returned to its source at the same or better quality.

More than 1.1 million GJ of renewable energy produced or used by the legacy companies in 2018. We are committed to tackling climate change through reducing our emissions.

We support biodiversity through concurrent rehabilitation of land at operational mines. Over $4.3 million invested in programs to support conservation in Mali, the DRC, Côte d’Ivoire and the US.

Former Randgold invested over $760,000 in 2018 to improve access to potable water in Africa, including new community water systems in Durba (DRC) and Tongon village (Côte d’Ivoire). Near Veladero in Argentina we approved the construction of 11 water treatment units in the Iglesia region.

We approved a project to build a 24MW solar power plant in Mali that will power 40% of Loulo-Gounkoto’s mine’s energy needs during the day. Zaldivar in Chile will be the country’s first mine to be 100% powered by renewables. Hydro, solar and wind sources should save around 350,000 tonnes of GHGs per year.

Our support for the Garamba National Park in the DRC has helped the rangers and researchers reduce elephant poaching by 98% since 2016 and increase the numbers of the critically endangered Kordofan giraffe in the park, from 38 in 2016 to 55 in 2018.