

# TONGON GOLD MINE

PRODUCED

**288 680<sub>oz</sub>**  
**↑11%**

DIRECT CONTRIBUTION TO COMMUNITY DEVELOPMENT

**\$1.15 million**

PROFIT FROM MINING ACTIVITY<sup>1</sup>

**\$171.2 million**  
**↑41%**

**LTIFR 0.84**

TOTAL CASH COST PER OUNCE<sup>1</sup>

**\$676/oz ↓12%**

MALARIA INCIDENCE RATE

**33%**

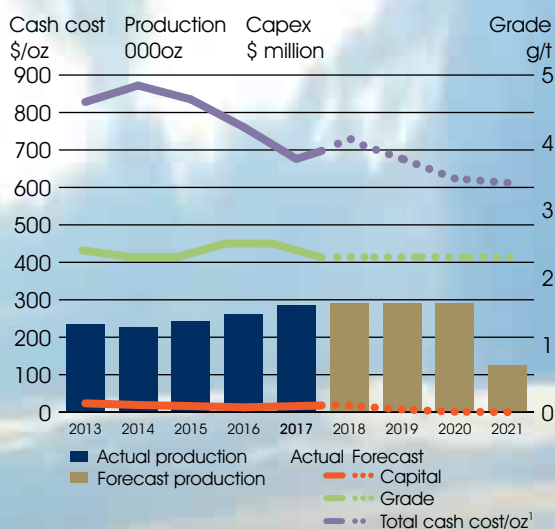
TOTAL RESERVES

**1.2Moz**



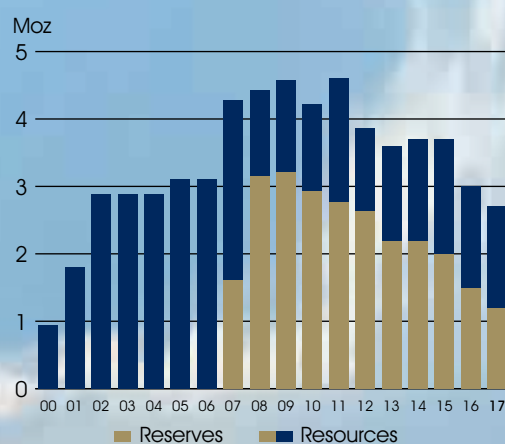
The Tongon gold mine is located within the Nielle mining permit, 628 kilometres north of the Côte d'Ivoire port city of Abidjan and 55 kilometres south of the border with Mali. The Tongon gold mine and associated mining permit is owned by Société des Mines de Tongon SA (Tongon), in which Randgold has an 89.7% interest, the State of Côte d'Ivoire 10% and 0.3% is held by Ivorian investors.

### TONGON PRODUCTION AND FIVE YEAR FORECAST



<sup>1</sup> Refer to explanation of non-GAAP measures provided on page F-41 of this annual report.

### TONGON TOTAL MINERAL RESOURCES AND ORE RESERVES<sup>2</sup>



<sup>2</sup> Refer to the notes to the annual resources and reserves declaration on page 107 of this annual report.



TONGON KEY RESULTS

12 months ended 31 December	2017	2016
<b>Mining</b>		
Tonnes mined (000)	24 536	27 547
Ore tonnes mined (000)	4 334	4 195
<b>Milling</b>		
Tonnes processed (000)	4 360	3 853
Head grade milled (g/t)	2.5	2.5
Recovery (%)	83.8	83.7
Ounces produced	288 680	260 556
Ounces sold	292 322	255 942
Average price received (\$/oz)	1 262	1 247
Cash operating costs' (\$/oz)	638	734
Total cash costs' (\$/oz)	676	771
Gold on hand at period end <sup>2</sup> (\$000)	3 188	7 070
Profit from mining activity <sup>1</sup> (\$000)	171 202	121 847
Gold sales <sup>1</sup> (\$000)	368 765	319 249

Randgold owns 89.7% of Tongon, with the State of Côte d'Ivoire and outside shareholders owning 10% and 0.3% respectively. Randgold consolidates 100% of Tongon and shows the non-controlling interest separately.

<sup>1</sup> Refer to explanation of non-GAAP measures provided on page F-41 of this annual report.

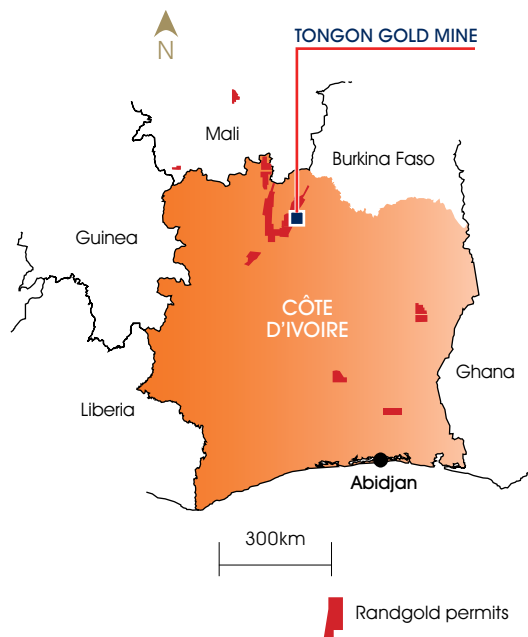
<sup>2</sup> Gold on hand represents gold in doré at the mine multiplied by the prevailing spot gold price at the end of the period.

# ACHIEVED IN 2017

- 11% increase in gold production to 288 680oz
- 12% reduction in total cash costs to \$676/oz
- 13% increase in tonnes treated
- Full crushing circuit optimised after completion of 4th stage crushing circuit
- 4th stage rougher flotation cell installed, operation optimised and recovery increased
- Upgraded oxygen plant capacity by 20 tonnes
- Tertiary crushers rebuilt by installing new top and bottom shell components
- Mill throughput improved with installation of 8MW motor and discharge liner grating system
- Power supply Busbar reconfiguration and capacitor installation completed to improve stability
- Utilisation of grid power improved
- OHSAS 18001 and ISO 14001 certifications maintained
- Localisation of workforce continued to over 97.5% Ivorian
- Investment continued in development of educational programmes, community health and agricultural projects to provide post-mining employment

# TARGETED FOR 2018

- Produce 290 000oz of gold
- Continue reduction of total cash cost/oz of production
- Improve mill throughput following the installation of 8MW motor and discharge liner grating
- Recommission tailings thickener to ensure increased tonnage and volumes
- Optimise rougher flotation operation to further improve recovery
- Maintain OHSAS 18001 and ISO 14001 certification
- Reduce malaria incidence rate
- Achieve zero class 1 and 2 environmental incidents
- Maintain and improve community relations, communication and social development
- Continue with localisation of workforce and upgrading of skills base
- Identify additional one years' life of mine through brownfields exploration





## Mineral resources and ore reserves

The Tongon mineral resources and open pit designs were updated during the year, principally with additional data from grade control drilling. This has resulted in gains of 23koz within the ore reserve from increased grade of down dip ore intersections in the Northern Zone (NZ) and Southern Zone (SZ) orebodies, partially replenishing depletion.

A feasibility study has been completed on the Sedou South and Sekala satellite deposits within haulage distance of the plant. The studies have confirmed their viability at \$1 000/oz gold price and, together with small grade control gains in the main Tongon pits, have contributed to partially offsetting depletion from mining. Sekala contributes 432kt @ 1.8g/t for 25koz of additional oxide ore reserve and Seydou contains 614kt @ 2.0g/t for 40koz of ore reserve.

Work continues on a third satellite, Tongon West, to the southwest of the SZ pit and additional incremental ounces are likely to be defined here during 2018.

With the capital of the Tongon mine paid off, opportunities to extend the main pits are being investigated.

## Operations

Tongon mine comprises two open pit operations, the SZ and NZ, and based on current reserves, has just over three years LoM.

The mine produced 288 680oz of gold in 2017, a 9.7% increase year on year, as a result of an 11.6% improvement in tonnes processed, a small improvement in recovery and a slightly higher head grade. The installation of an 8MW motor on Mill No 1, lower profile mill liners and the conversion of Mill No 1 discharge end liners to a grate and pebble port discharge liner system, contributed to the throughput increase. The operation of the fourth flotation cell and the installation of an additional 20 tonne oxygen plant in Q4 were significantly responsible for sustaining the gold recovery.

## TONGON MINERAL RESOURCES AND ORE RESERVES

		Tonnes (Mt)		Grade (g/t)		Gold (Moz)		Attributable gold (Moz) <sup>3</sup>	
at 31 December	Category	2017	2016	2017	2016	2017	2016	2017	2016
<b>MINERAL RESOURCES<sup>1</sup></b>									
■ Stockpiles	Measured	2.9	2.4	1.6	1.4	0.15	0.11	0.13	0.10
■ Open pits	Measured	5.1	5.6	2.7	2.8	0.44	0.51	0.39	0.45
	Indicated	16	15	2.6	2.6	1.3	1.3	1.2	1.1
	Inferred	2.8	5.6	2.5	2.5	0.22	0.46	0.20	0.41
■ Underground	Inferred	6.4	6.9	2.8	2.9	0.58	0.65	0.52	0.58
<b>TOTAL MINERAL RESOURCES</b>									
	Measured and indicated	24	23	2.5	2.5	1.9	1.9	1.7	1.7
	Inferred	9.2	13	2.7	2.8	0.80	1.1	0.72	1.0
<b>ORE RESERVES<sup>2</sup></b>									
■ Stockpiles	Proved	2.9	2.4	1.6	1.4	0.15	0.11	0.13	0.10
■ Open pits	Proved	4.1	5.0	2.5	2.6	0.34	0.42	0.30	0.37
	Probable	9.3	12	2.5	2.5	0.74	0.95	0.66	0.84
<b>TOTAL ORE RESERVES</b>									
	Proved and probable	16	19	2.3	2.4	1.2	1.5	1.1	1.3

<sup>1</sup> Open pit mineral resources are the in situ mineral resources falling within the \$1 500/oz pit shell reported at an average cut-off of 0.6g/t. Underground mineral resources are those in situ mineral resources below the NZ, \$1 500/oz pit shell reported at a 2.0g/t cut-off. All Tongon mineral resources were generated by Mamadou Ly, an officer of the company under the supervision of Simon Bottoms, an officer of the company and competent person.

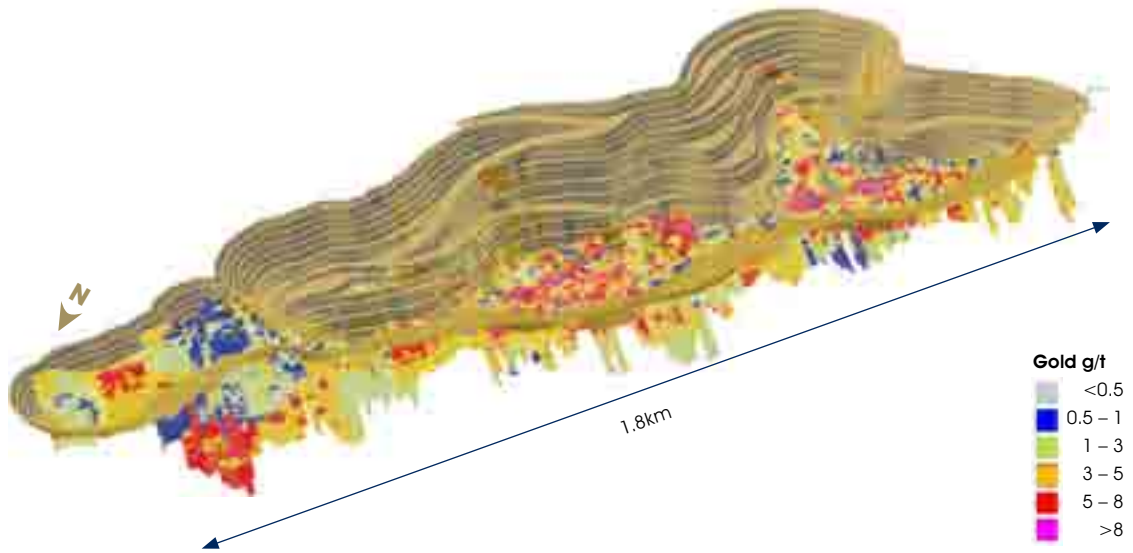
<sup>2</sup> Open pit ore reserves are reported at a gold price of \$1 000/oz and at an average cut-off of 0.8g/t cut-off, including both dilution and ore loss factors. Open pit ore reserves were calculated by Shaun Gillespie, an officer of the company and competent person.

<sup>3</sup> Attributable gold (Moz) refers to the quantity attributed to Randgold based in its 89.7% interest in Tongon SA.

Mineral resource and ore reserve numbers are reported as per JORC 2012 and as such are reported to the second significant digit. All mineral resource tabulations are reported inclusive of that material which is then modified to form ore reserves. Refer to the notes to the annual resources and reserves declaration on page 107 of this annual report.

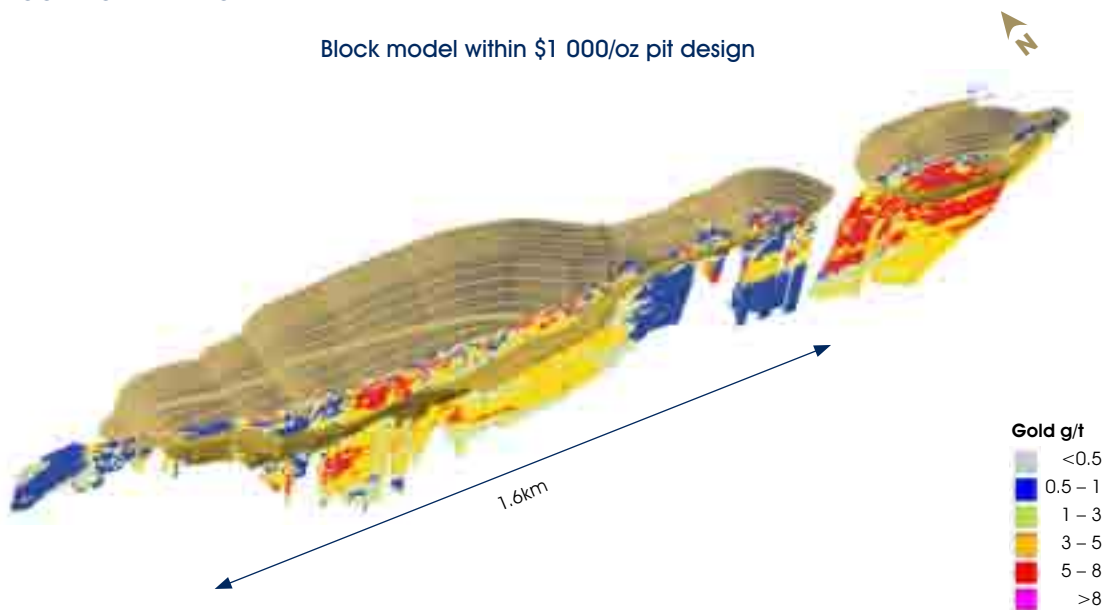
TONGON SOUTHERN ZONE

Block model within \$1 000/oz pit design



TONGON NORTHERN ZONE

Block model within \$1 000/oz pit design



In Q2 2017, optimisation of the tertiary and quaternary crusher circuits continued with the installation of a recycling screen to close the circuit and the operation of an additional new quaternary crusher. By Q3 2017, the debottlenecking of Mill No 1 discharge grate liner system with the insertion of pebble ports had been completed. Based on the throughput gain achieved in Mill No 1, the same grating system will be adopted in Mill No 2 and this is expected to be completed by Q2 2018. The installation of the fourth flotation rougher cell should ensure sufficient pulp residence time, mass pull and hence flotation recovery with the expected increase in milling rate. Extensive training, the improvement of operator skills and localisation of the workforce continued in 2017.

Gold sales increased year on year to \$368.8 million at a total cash cost of \$676/oz, resulting in a profit from mining activities, before interest, tax and depreciation, of \$171.2 million. Capital expenditure for the year totalled \$20.0 million, mainly for mining fleet rebuild activities (\$9.9 million), the naked crusher CH660 purchase and installation (\$1.9 million), installation of the fourth flotation rougher cell (\$1.2 million), exploration activities (\$1.1 million), TSF piping phase 3 and standby line installation (\$1.0 million) and the double busbar reconfiguration (\$0.9 million).

During the year, Tongon paid a total of \$101 million in dividends, including withholding tax, to its shareholders and the State of Côte d'Ivoire.

### Mining and production

Mining operations took place in both SZ and NZ pits in the period under review. The SZ pit remained the main fresh sulphide ore source for the process plant within three active zones, namely the pit bottom, southern and western pushbacks. NZ pit mining activities were focused primarily on higher level oxide benches and transitional ore, which added flexibility regarding ore feed to the process plant during Q1 and Q2, with stripping continuing throughout the year.

As in 2017, mining activities for 2018 will focus on both the NZ and SZ pits, mining both ore and waste.

The LoM schedule is summarised as follows:

- Mining in the SZ pit started in 2010 and will continue to 2020, with southern and western pushback while the oxide pit extension of SZ is planned to be mined from 2019.
- Mining in the NZ pit started in 2011 and will continue to 2020; mining of the NZ satellite pit has been included in the mine plan and is scheduled to start in 2019.

Total material mined in 2017 of 24.5Mt was less than the prior year (2016: 27.5 Mt). Total ore mined at 4 333kt was slightly above the prior year (2016: 4.2Mt) resulting in a lower strip ratio for the year at 4.7, in line with the LoM plan.



Dewatering remains an integral part of Tongon's mining strategy as the pits lie in the catchment area of an old river system and are downstream of the water storage dam. Mining schedules and plans are developed with a view to ensuring there are two low spots (sumps) in the pit at any one time and ahead of the mining cycle, to allow mining to take place in dry ground while the water is pumped away from the sumps. Borehole pumps are permanently pumping on the perimeter of the pits. Sumps and trenches around the pits and waste dumps are in place to capture surface water for ex-pit dewatering. The rainy season preparation and action plan for 2018 is already in place.

## Processing, plant and engineering

### Processing

Ore tonnes treated in 2017 at 4 360kt was 11.6% above the previous year's performance, following the installation of an 8MW motor and the conversion of Mill No 1 from an overflow to a grate liner discharge system in Q2 2017. By Q3 2017 the optimisation of the Mill No 1 grate discharge system with the insertion of pebble ports was completed. During Q4 2017, optimisation of the total crushing plant, inclusive of the primary, tertiary, secondary and quaternary circuits, was completed along with the commissioning of the quaternary recycle screen and the installation and operation of the fourth quaternary crusher.

These changes contributed to the increase of Mill No 1's power draw from 6.3MW to 7.0MW and resulted in a 7% increase in milling rate from 523 to 562tph. The same changes, which will be duplicated in Mill No 2, are expected to be completed by Q2 2018, and coupled with the recommissioning of the final tails thickener to reduce slurry tailings volumes pumped to the TSF, should ensure achievement of an overall targeted mill tonnage throughput of 4.5Mtpa for 2018.

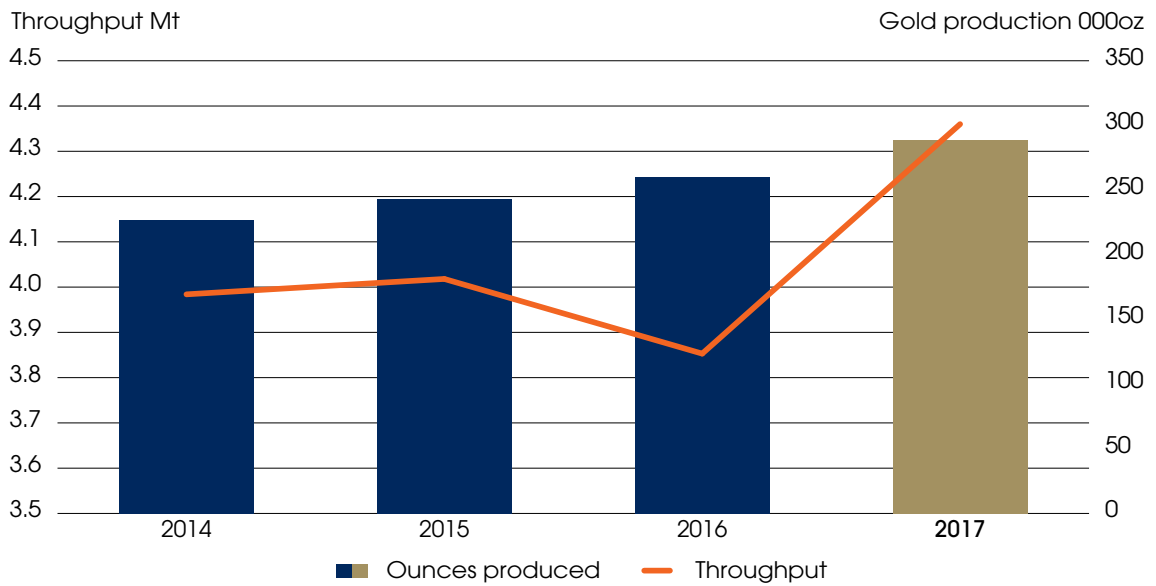
Year on year, gold recovery improved by 0.2% to 83.8% and by December 2017 had improved to +84.5%. This was achieved mainly by increasing the flotation pulp residence with the installation of the fourth flotation rougher cell, optimising the ultra fine grinding circuit and improving dissolved oxygen levels with the commissioning of an additional 20 tonnes of oxygen capacity. Further recovery gains are expected from a combination of:

- Optimisation of the flotation circuits through prior assessment of reagent needs from advanced grade control and metallurgical test work in order to recover all the arsenopyrite associated gold.
- Addition of 20 tonnes of oxygen capacity to satisfy the leach dissolved oxygen requirements.

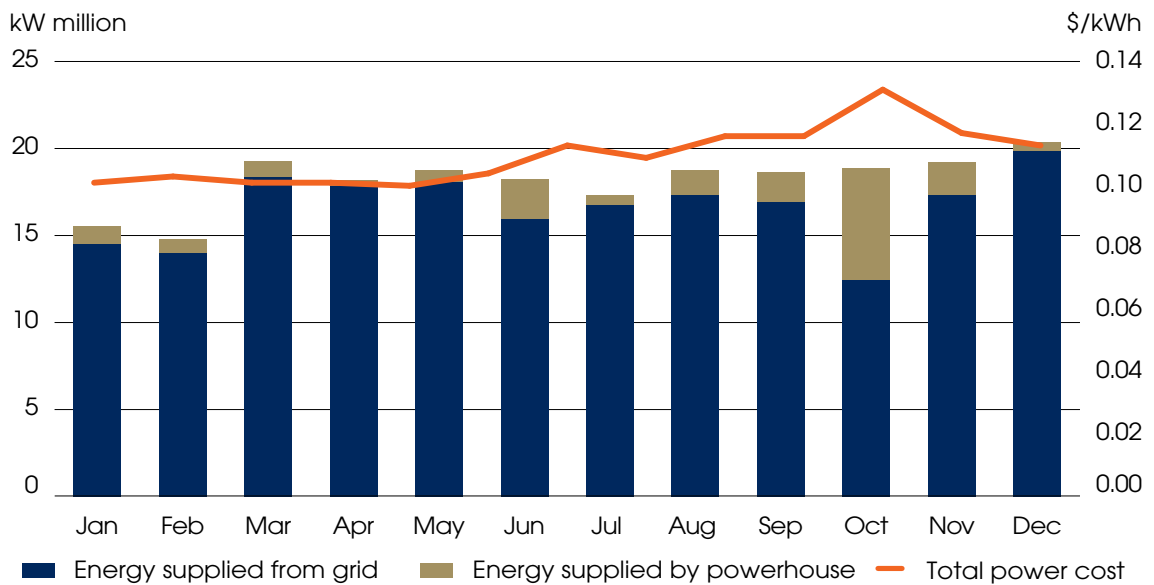
This should enable the attainment of the targeted 86% recovery which is in line with the feasibility specification.



**TONGON: GOLD PRODUCTION WITH IMPROVED THROUGHPUT**



**TONGON: SOURCE OF POWER FROM NATIONAL GRID AND POWER PLANT WITH SUPPLY COST 2017**







### Engineering and power supply

Overall mill runtime for 2017 was 88.5%, up 4.7% from 2016. Mill runtime improved significantly quarter on quarter as minor items were addressed, such as installing a new still-well in the tails thickener and the replacement of the tails and concentrate thickener auto dilution tanks. Run time was also aided by the increased grid power supply and improved power management, using the newly installed double Busbar system to selectively run thermal power to augment supply during periods of grid power instability.

The grid power to generated power ratio improved to 91:9 in 2017 from the 89:11 achieved in 2016. Fewer grid power interruptions were experienced in 2017 mainly as a result of improved liaison with the national power utility (CIE) and improvement of the mine's total power supply facilities and their management.

The completion of the CIE 225kV grid power ring line, passing from Leboa to Ferkessédougou, is key to future stabilisation of the grid power supply to the mine and is expected to be completed by the end of Q3 2018.

Power demand consumption increased from 23.2MW to an average of 26.5MW in 2017. Mine consumption increased in line with the raised operational availability and utilisation, and an increase in demand from new equipment such as the 8MW mill motor, the fourth quaternary crusher and fourth rougher flotation cell which were commissioned during the year. During 2017, CIE increased the tariff for grid power supply to \$0.12/kWh compared to the \$0.11kWh in 2016.

### Exploration

The exploration team has continued to pursue the dual strategy of working to replace depletion at the mine with further drilling in and around the Tongon pits while also searching for a new deposit on the Nielle permit, balancing a brownfields focus and intensive greenfields activities. Work included re-evaluating the Nielle permit geology with a renewed focus on replacing ounces or throughput tonnes for the Tongon plant. This has resulted in opening up additional areas for exploration particularly around the competent core intrusive of the Tongon Transfer Zone. Closer to the mine, extensive work was undertaken to evaluate the possibility for an economic underground operation at the Tongon NZ. Drilling in the fourth quarter indicated that at current gold prices this is unlikely. However, it did determine a geologically definable high grade component to the Central Zone (CZ) of the deposit. Work is ongoing to determine if this new model will have a material impact on deepening the \$1 000/oz pit and adding additional ounces to Tongon.

A detailed summary of the exploration work completed during the year can be found in the exploration section of this annual report.

### Health and safety

Four LTIs were recorded in 2017 resulting in a LTIFR of 0.84 per million hours worked compared to 0.21 for 2016. The LTIs were fully investigated and corrective and preventative measures were implemented. The mine's 10 'safety lifesaving rules', visible leadership and risk assessments prior to work done were emphasised.

The mine maintained its OHSAS 18001 certification after a successful audit in November 2017. The safety skills and knowledge of 60 mine personnel were further enhanced with training in the NEBOSH system, which equipped the team to identify risks effectively and improve the management of safety in their respective work areas. Risk assessments were again reinforced as the key prerequisite at the start of every task on the mine.

Twenty safety personnel across the Randgold group mines attended the NEBOSH IGC course held at Tongon and were certificated as part of their capacity building, enabling the team to perform more effectively in their various roles.

An intervention was made in malaria management and control as the MIR of 33% remained the same year on year. Following the 2017 entomological study recommendations, the strategy was modified as follows:

- Changing the chemical spray used to prevent parasite resistance,
- Extending the spraying programme to the surrounding eight villages, and
- Stepping up the distribution of quantity of long-lasting impregnated mosquito nets to the mine's employees and community members.

### Environment

Tongon mine maintained its ISO 14001 certification after a successful surveillance audit in November 2017. No major or significant environmental incidents occurred during the year.

As part of Tongon's biodiversity offset strategy, the mine visited Comoe Park (a UNESCO listed national park in Côte d'Ivoire), to explore ways to contribute towards its conservation programme. Following this visit, a biodiversity consultancy was appointed to assist the mine personnel to conduct a gap analysis and provide recommendations for its implementation. The consultancy brief was extended to develop a roadmap for Tongon's biodiversity strategy. Interim results indicated that most steps required to align with international good practice and Randgold's biodiversity commitment were already in place, and several more could readily be achieved with additional work and investment.

The mine progressed with its rehabilitation programme on available areas in 2017 while mining operations continued, rather than leaving this to the end of the mine's life.

An extensive and passive natural wetland system was established and commissioned in the SZ pit area to improve the control of arsenic levels in solution. Results show a reduction in nitrates via the natural vegetation planted, a drop in sediments via the many still-pools installed and decreased arsenic in the water discharged into the environment via the natural occurring iron-containing laterite gravel, within permitted levels. The mine continues to monitor arsenic levels at the TSF and from both pits' water discharge to the environment.

Further details on the environmental initiatives are provided in the sustainability section of this annual report.

**Human resources and industrial relations**

Tongon's recruitment and localisation strategy is designed to minimise the influx of outsiders into the area and any disruption to community life, while maximising the benefits of the mine's operations for the communities surrounding the mine. The principle of employing locally first and spreading recruitment between local villages is fundamental to the mine's recruitment and localisation policy. This is evident in the percentage of Ivoirians employed by the mine, now up to 97%. Currently 80% of the operational labour is from local villages. Tongon employs 659 personnel, excluding people employed by contractors, while the total manpower including contract workers is 1 756.

In January 2017, the mine experienced an illegal sit-in which took place over a week, with employees demanding annual ex gratia payments. The incident ended after management, supported by the local and national authorities, came to an agreement and negotiated a settlement with the workers. Tongon has, throughout its history, had to deal with the social and political complexities in the north of the country arising from a decade and half of conflict. In its ongoing efforts to heal some of the associated social challenges, the mine continued with its initiatives involving open engagement between Tongon's workforce, the union, management and the community, in order to encourage a constructive and integrated social and work environment.

Tongon's In-Reach programme continued during the year as part of the overall Randgold strategy of reaching inwards to all mine employees including contractors, and building a 'One Team, One Mission' mindset and culture. The In-Reach programmes objectives have been shared with all mine employees and contractors, and social events and actions are being rolled out. As part of this programme, a social climate survey was conducted to review and improve internal communications, relations and work conditions. A code of good conduct was adopted by Tongon's management team, union members and signed by all employees. There is now an initiative to share with sub-contractors to obtain their workers' commitment to this initiative.



As part of Tongon’s succession plan, several training workshops were held for workers. These consisted mainly of engineering employees identified for promotion to higher levels of responsibility. In addition, all lower level employees were moved up in category following successful skills assessments.

The Tongon manpower complement increased mainly due to temporary workers, such as samplers and workers for the wetland project, and partly due to recruitment of key skilled Ivorian personnel. This coincided with the decrease in expatriate contractor numbers at the mine.

### Community

Three minor grievances were recorded and resolved with the help of local authorities and the community.

The investment in the community for the year was primarily focused on the supply of potable water infrastructure in partnership with the government, mainly directed at Tongon village which received the largest water supply provision. In addition to this, since each community village now has a primary school, the focus in the field of education was on the construction of nursery schools with two being completed at Pougbe and Mbengue villages.

Tongon’s goal that each of the eight surrounding villages should have a medical health clinic was realised with the establishment of a clinic at Kationron. The construction of the Mbengue surgical unit was completed during the year, and the NGO CURE was engaged to supply the required medical and surgical equipment.

Revenue generating projects, including the Tongon restaurant and bar and the Pougbe abattoir and butchers shop, are both nearing completion and formed part of the mine’s ongoing investment in the surrounding community.

Agribusiness infrastructure development continued with the supply of tractors and related garages, the installation of feed processing units to support poultry farming, egg production and pig breeding, as well as a maize farming project.

The partnership with Yamoussoukro golf academy is progressing well with the introduction of a computer literacy programme and donations of stationery and school uniforms for students.

Further details of Tongon’s sustainability initiatives are provided in the sustainability section of this annual report.

### TONGON MANPOWER

at 31 December	2017			2016		
	Expats	Nationals	Total	Expats	Nationals	Total
Employees	15	644	659	17	625	640
Contractors	26	1 071	1 097	29	1 067	1 096
<b>TOTAL</b>	<b>41</b>	<b>1 715</b>	<b>1 756</b>	<b>44</b>	<b>1 692</b>	<b>1 736</b>

### TONGON SAFETY (LTIFR)

