Energy security for mines

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These forward looking statements speak only as of the date of this document. Gold Fields undertakes no obligation to update publicly or release any revisions to these forward looking statements to reflect events or circumstances after the date of this document or to reflect the occurrence of unanticipated events.
Agenda

- Gold Fields – who are we
- Energy security for mines
- Our journey
- Key challenges
Gold Fields Group (2018)

- Listings on the JSE and NYSE
- Total gold output: >2Moz
- Energy spend: US$302m (22% of OPEX)

**Americas region**
- Mine: Cerro Corona (Peru)
- Project: Salares Norte (Chile)
- Production: 314koz
- 10% of GFL total energy

**South Africa region**
- Mine: South Deep
- Production: 157koz
- 18% of GFL total energy

**West Africa region**
- Mines: Tarkwa and Damang
- JV project: Asanko Gold Mine
- Production: 680koz
- 46% of GFL total energy

**Australia region**
- Mines: St Ives, Granny Smith and Agnew
- JV Project: Gruyere
- Production: 886koz
- 26% of GFL total energy
Energy security for miners

Energy challenges facing the global mining industry

- Mines getting more remote, deeper, hotter, longer and harder to access
- Faced with energy price volatilities
- Emerging GHG related regulations and investor expectations
- A transitioning energy supply and demand model
Gold Fields’ electrification journey

Our gradual transition towards low carbon and renewable energy

- Corporate Office 128 kW solar rooftop systems commissioned
- Agnew power options FS
- Genser gas turbines commissioned at Tarkwa (22 MW) and Damang (25 MW)
- Progressing evaluation at Salares Norte “20% renewable energy”
- South Deep 40 MW solar PV FS
- GSM diesel to gas power plant (24 MW) commissioned
- GSM solar power PFS
- Tarkwa 15 MW gas turbine installed
- GSM solar power PFS
- South Deep 40 MW solar PV: Regulatory changes
- Gruyere gas power station (48 MW), ~200km gas pipeline
- Reviewing renewables in Ghana
- Agnew solar/battery power station
- Agnew hybrid power station FS
- Cero Corona ISO 50001 certified
- GSM solar/wind/battery construction complete, positive

Key milestones:
- 2015: Energy security assessments & 5-year regional plans developed
- 2016: South Deep 40 MW solar PV FS
- 2017: Genser gas turbines commissioned at Tarkwa (22 MW) and Damang (25 MW)
- 2018: Tarkwa 15 MW gas turbine installed
- 2019: Reviewing renewables in Ghana

- >40 MW solar under study, 4 MW installed, 7 MW under construction
- >18 MW wind under construction
- 4 MW battery installed, 8 MW under construction
- >200 ktCO2e/year from high impact supply projects

Energy security for mines | Tsakani Mthombeni | October 2019
Recent Gold Fields’ case studies

Captive PPAs with gas as a transitional source of energy

- Agnew hybrid-grid:
  - 18MW through 5 wind turbines
  - 4MW solar plant (10,000 panels)
  - 13MW/4MWhr battery unit
  - 16MW gas plant
  - 25km gas supply pipeline
  - To meet ~54% of Agnew’s power needs
  - GHG emissions reduction ~40 000 t CO₂e

- Granny Smith solar PV:
  - Converted diesel to gas power plant (24MW, 2016)
  - 8MW solar (20,000 panels) and 2MW/1MWh battery
  - Commissioning expected by late 2019
  - GHG emissions reduction ~9,500 t CO₂e
Key challenges

Considerations for captive PPAs

- Life of Mine Uncertainties
- Geography (Land & Resource Potential)
- PPA Price Expectations
- Resource Intermittency ≠ Unpredictability

- Lack of Mining Load Understanding by IPPs
- IFRS Accounting Issues
- Financiers’ Risk Appetite
- Grid Integration Issues

- Regulatory Uncertainty (incl. wheeling, IRP)
- Environmental Regulations
- Social and Community Opportunities
- Cost of Storage
Gold Fields’ inaugural TCFD report

Inaugural report for future disclosures – launched this Monday

Our journey to managing climate change impacts

BASELINE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD) REPORT 2018
Thank you

QUESTIONS AND ANSWERS