THE ROLE OF ALTERNATIVE ENERGY IN ADDRESSING MINING’S ENERGY CHALLENGES: OUR EXPERIENCE

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In particular, the forward looking statements in this document include among others those relating to the Damang Exploration Target Statement; the Far Southeast Exploration Target Statement; commodity prices; demand for gold and other metals and minerals; interest rate expectations; exploration and production costs; levels of expected production; Gold Fields’ growth pipeline; levels and expected benefits of current and planned capital expenditures; future reserve, resource and other mineralisation levels; and the extent of cost efficiencies and savings to be achieved. Such forward looking statements involve known and unknown risks, uncertainties and other important factors that could cause the actual results, performance or achievements of the company to be materially different from the future results, performance or achievements expressed or implied by such forward looking statements. Such risks, uncertainties and other important factors include among others: economic, business and political conditions in South Africa, Ghana, Australia, Peru and elsewhere; the ability to achieve anticipated efficiencies and other cost savings in connection with past and future acquisitions, exploration and development activities; decreases in the market price of gold and/or copper; hazards associated with underground and surface gold mining; labour disruptions; availability terms and deployment of capital or credit; changes in government regulations, particularly taxation and environmental regulations; and new legislation affecting mining and mineral rights; changes in exchange rates; currency devaluations; the availability and cost of raw and finished materials; the cost of energy and water; inflation and other macro-economic factors, industrial action, temporary stoppages of mines for safety and unplanned maintenance reasons; and the impact of the AIDS and other occupational health risks experienced by Gold Fields’ employees.

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.
OUTLINE

- Africa’s energy challenges
- Global trends in solar developments
- Gold Fields - who we are
- Our energy and carbon management journey
- What drives us
- The South Deep solar project
- Our experience with captive PPAs for renewables
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Source: Raw Material Group; Ernst & Young; US Geological Survey; The Economist
AFRICA’S ENERGY OPPORTUNITIES

DIVERSITY IN MINERALS AND ENERGY RESOURCES

Home to 6 of the 10 top fastest growing economies

World’s supplier of raw materials

Energy usage peaked at 3.3% of global total (2015)

Africa’s challenges: Lack of energy infrastructure

Mining energy demand set to triple by 2020

Demand tied to commodity cycles

Only a third of the population have access to energy

Only 3.6% of global CO₂ emissions

Unpredictable and expensive energy costs

Mining demand impacts on non-mining demand

CAN AFRICA REDEFINE THE RENEWABLE ENERGY LANDSCAPE?

World Bank: The power of the mine: A transformative opportunity for sub-Saharan Africa
GLOBAL TRENDS IN SOLAR PPAS

Source: Bloomberg New Energy Finance
LATEST GLOBAL DEVELOPMENTS ON SOLAR PV PPA PRICES

- **U.S.**: 5-8c/kWh
  - 2015: 40 year PPA

- **Mexico**: 4.5c/kWh
  - Apr 2016

- **Peru**: 4.8c/kWh
  - Feb 2016

- **Chile**: 7.1c/kWh
  - 2015

- **Zambia**: 6c/kWh
  - 2016: Flat rate for 25 years

- **UAE**: 3c/kWh
  - May 2016

- **SA**: 7c/kWh
  - 2015: 20 year PPA

- **India**: 6-8c/kWh
  - H1 2016

90% COST REDUCTION SINCE 2009
Observations on latest global developments on solar PV PPA prices:

- High solar resource regions harnessing energy
- Developing nations catching up
- How long before we see prices below $20/MWh?
- Even with oil at $50/bbl, solar appears to be thriving
- Innovative PPA structures

“Objects in the mirror are closer than they appear”
BACKGROUND TO GOLD FIELDS

GOLD FIELDS LIMITED (GFL)

An unhedged, globally diversified producer of gold

Operations in 4 countries: Australia, Ghana, Peru & South Africa, project in Chile

Annual gold production of approximately 2.1 million ounces

Listed on the JSE, NYSE and SWX

OUR VISION IS TO BE THE ‘GLOBAL LEADER IN SUSTAINABLE GOLD MINING’

• Carbon and energy management are key
GOLD FIELDS’ ENERGY AND CARBON PROFILE

OUR 2015 ENERGY AND CARBON FOOTPRINT

GROUP
- Energy usage: 11,240 TJ
- Energy spend: US$311m (21% of OPEX)
- Carbon emissions: 0.59 tCO₂-e/oz

WEST AFRICA REGION
- Energy use: 5,141 TJ (46% of group)
- Energy spend: US$163m
- Carbon emissions: 0.49 tCO₂-e/oz

AMERICAS REGION
- Energy use: 1,012 TJ (9% of group)
- Energy spend: US$21m
- Carbon emissions: 0.27 tCO₂-e/oz

SOUTH AFRICA REGION
- Energy use: 1,835 TJ (16% of group)
- Energy spend: US$31m
- Carbon emissions: 2.73 tCO₂-e/oz

AUSTRALIA REGION
- Energy use: 3,250 TJ (29% of group)
- Energy spend: US$96m
- Carbon emissions: 0.39 tCO₂-e/oz
WHAT DRIVES US

ENERGY SECURITY, ENERGY COSTS AND THE GLOBAL CHALLENGE OF CLIMATE CHANGE

ADAPTING TO THE PHYSICAL IMPACTS OF CLIMATE CHANGE ON OUR ASSETS AND HOST COMMUNITIES

REDUCE CARBON FOOTPRINT

ENERGY COSTS

ENERGY SECURITY

- Development of a climate viewer tool
- Climate change vulnerability risk assessments
- Support the climate change statement

Signed the Paris Pledge for Action

Numerous recognition awards for our long term leadership in climate disclosure and performance

- 10 years of CDP submissions with regular recognition for disclosure and mitigating actions
- 2016: On the CDP A-List

- 3-year regional integrated carbon emission and energy efficiency targets to 2016 & revised Group 2020 targets
- Over US$40m in cost savings from energy efficiency/optimisation initiatives since Jan 2014

Two renewable energy NGOs - Knowledge partners in our South Deep PV project
“Rising energy costs, supply constraints and carbon emission standards are some of the challenges we need to address, through, among others increased energy efficiency, use of renewable energy forms and energy storage systems.”

Nick Holland, CEO, “Gold Mining Company of the Future” Presentation 2015
GOLD FIELDS’ ENERGY INITIATIVES
TAKING A LONG-TERM VIEW
SOLAR PANELS AT GFL JOHANNESBURG HEAD OFFICE

COMMISSIONED IN NOVEMBER 2015

Reduction in grid electricity consumption by 60% between H1 2015 and H1 2016

Reduction in grid electricity costs by 36% between H1 2015 and H1 2016
Commissioned a 24 MW gas-powered plant at our Granny Smith mine, Australia

PPA model
Commissioning of new gas plants in November by Genser Power at our Tarkwa and Damang mines in Ghana to supply 40 MW

PPA model
Commitment to 20% renewable energy at our new mines

Salares Norte, Chile
Appointment of an IPP for the 40MW solar PV plant at the South Deep mine in South Africa
BACKGROUND TO THE SOUTH DEEP PV PROJECT

SOUTH DEEP MINE

Grid connected (Eskom), 95% of electricity from coal

Energy spend is 13% of operating spend

Average load 55 MW, to peak at 80 MW

Life of Mine: +70 years

Global Horizontal Index (GHI) of 2061 kWh/m²
BACKGROUND TO THE SOUTH DEEP PV PROJECT

THE PROCUREMENT PROCESS

- **EOI**: Expressions of interest
- **RFP**: Request for proposals
- **FINAL PROPOSALS**: 10 bids
- **PPA**: with chosen supplier

**Summary:**
- BMO model under a ~20 year PPA
- Some 150,000 panels to be installed
- Produces ~20% of annual electricity
- ~100,000 tCO₂-e / year avoided
- Socio-economic initiatives for our host communities:
  - Job creation
  - Skills development
  - Local procurement
  - Community investment initiatives
CONSIDERATIONS FOR CAPTIVE RENEWABLE PPAs IN AFRICA

- Life of Mine
- Prevailing and Future Grid Energy Tariffs
- Geography (Land & RE potential)
- PPA Price Expectations
- Resource intermittency ≠ unpredictability
- Load Profile Influences the PPA
- Betting on Future Grid Instability
- IFRS Accounting Issues
- Weather Profile
- Financiers Risk Appetite
- Grid Integration Issues
- Force Majeure Clauses
- Environmental Regulations
- Social and Community Opportunities
- Cost of Storage

BASED ON OUR AFRICAN EXPERIENCE ON REACHING AN ECONOMIC AND TECHNICAL FEASIBILITY FOR A CAPTIVE PPA

Low risk
Medium risk
High risk
RENEWABLES HAVE A ROLE IN THE MODERNISATION OF AFRICA'S ENERGY SUPPLY MIX

- **Security of supply is key for the mining industry.**
- **LoM uncertainty could be a driver for innovation.**
- **Industry must be part of the solution to Africa’s energy challenges.**
- **Raising capital can be difficult and/or expensive due to sovereign ratings.**
- **Governments need to provide an enabling environment.**
- **Mining companies need to embrace Shared Value concepts.**
- **Renewables can offer industry power cost relief and security of supply.**
- **Mines could run off renewables and low-carbon alternatives, while reducing their carbon footprint.**