Southern African expansions set to meet growing platinum demand

PDAC
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Overview

• Historical platinum and palladium demand and supply
• Outlook for platinum demand
• How growing platinum demand will be met?
Historical platinum and palladium demand and supply

Platinum demand

Automotive
- Spread of emission legislation and adoption of stricter standards

Emission Limits (g/m)
Platinum demand

**Automotive (cont)**
- Diesel share of European new car sales

![Graph showing diesel share of European new car sales (1994-2003)](image)

Source: Schmidt

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Platinum demand

**Total Automotive demand**

![Graph showing total automotive demand (1994-2003)](image)
Platinum demand

Jewellery
- Consumer desire for white metal

Platinum demand (cont)
- New markets

[Graph showing platinum demand in '000 oz from 1994 to 2003 for China and North America]
Platinum demand

Other
- Industrial
  - Expanding applications
  - Economic growth
- Investment
  - Price sensitive
Platinum demand

![Graph showing platinum demand from 1994 to 2003, with categories for Automotive, Jewellery, and Other.](image1)

![Graph showing platinum demand from 1994 to 2003, with categories for Automotive, Jewellery, and Other.](image2)
Platinum supply

Southern Africa
- South African expansions
- Emergence of Zimbabwe

![Graph showing platinum supply in Southern Africa for 1994 to 2003, with South Africa and Zimbabwe data]

Platinum supply

Russia
- Sales erratic

![Graph showing Russian sales for 1994 to 2003]

Russia Sales
Platinum supply

Secondary
- Increase in recycling

North America
- Combination of primary and by-product output
Automotive

- Legislation
- Substitution for platinum

Palladium demand

- oz per vehicle

Palladium demand

- 0'000 oz

Automotive
Palladium demand

Electronics

- Substitution by nickel in MLCC’s

Electronics (cont)
Outlook for platinum demand

Automotive

• Adoption of stricter legislation

![Graph showing emission limits (g/m) for Tier 1, NLEV, and Tier 2 from 1994 to 2008]
Outlook for platinum demand

Automotive (cont)
- Ongoing expansion of light duty diesel market
- New legislation covers heavy duty vehicles - mainly diesel
- Growth in rest of world vehicle sales

Outlook for platinum demand

Jewellery
- Resilient market underpinned by strong consumer demand
- New market development
  - India
  - South East Asia
  - Middle East
- Bridal
Outlook for platinum demand

Fuel cells
• Commercialisation starting

Platinum demand

[Graph showing platinum demand from 1994 to 2008 for Automotive, Jewellery, and Other sectors]
How will growing platinum demand be met?

by Southern African expansions

South Africa/Zimbabwe operations
Bushveld Complex
South Africa - existing operations

Bushveld Complex
South Africa - expansion projects
Great Dyke
Zimbabwe - existing operations

Great Dyke
Zimbabwe - expansion projects
Southern African platinum supply

Bushveld Complex
South Africa - expansion projects
Great Dyke
Zimbabwe - expansion projects

Feasibility study
Exploration

Global platinum supply

Southern Africa ROW
Platinum supply/demand balance

Outlook for palladium demand

Automotive
- Legislation
- Substitution of platinum

Electronics
- Ongoing miniaturisation and thrifting
Palladium supply/demand balance

Conclusion

Platinum
- Fundamentals remain firm
- Growing demand met by Southern African expansions

Palladium
- Increasing demand in automotive industry and new applications provide positive longer term outlook
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