

# PLATINUM QUARTERLY PRESENTATION Q1 2022

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London

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# AGENDA: PLATINUM QUARTERLY: Q1 2022 AND FULL YEAR 2022

## 1. Introduction

*Paul Wilson, CEO*

## 2. Platinum Quarterly, fundamentals review

*Trevor Raymond*

## 3. Security of supply concerns

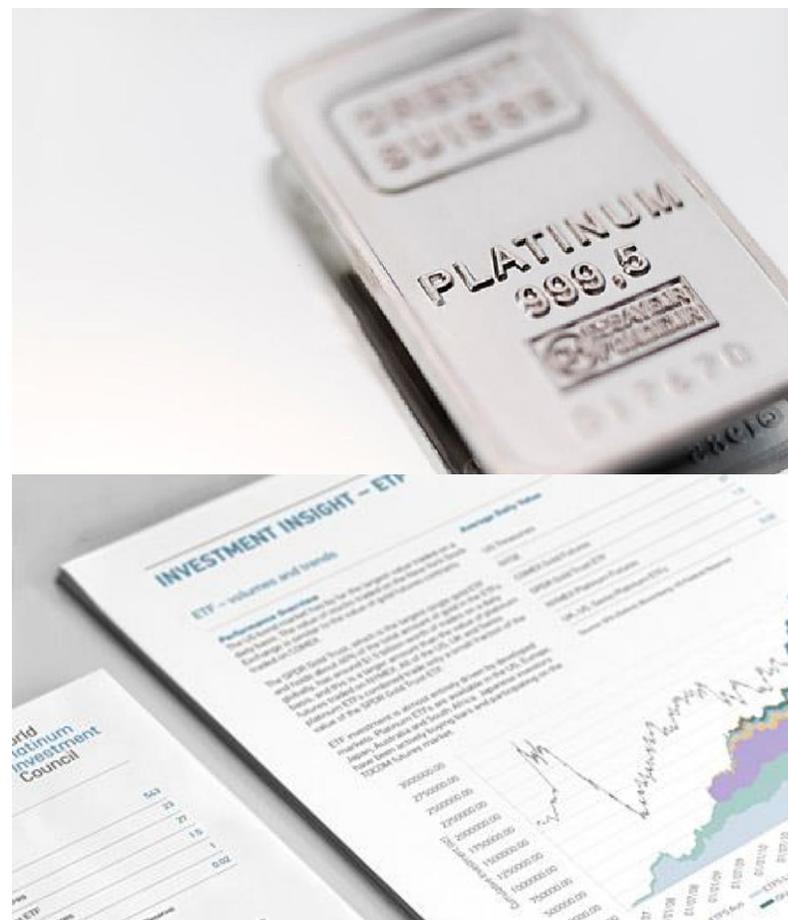
*Edward Sterck*

## 4. Questions

*Paul Wilson*

*Trevor Raymond*

*Edward Sterck*



# AGENDA: PLATINUM QUARTERLY: Q1 2022 AND FULL YEAR 2022

## 1. Introduction

*Paul Wilson*

## 2. Platinum Quarterly, fundamentals review

- Supply, demand and balance: Q1'22 and full year 2022 estimates

*Trevor Raymond, Director of Research*

## 3. Security of supply concerns

*Edward Sterck*

## 4. Questions

*Paul Wilson*

*Trevor Raymond*

*Edward Sterck*



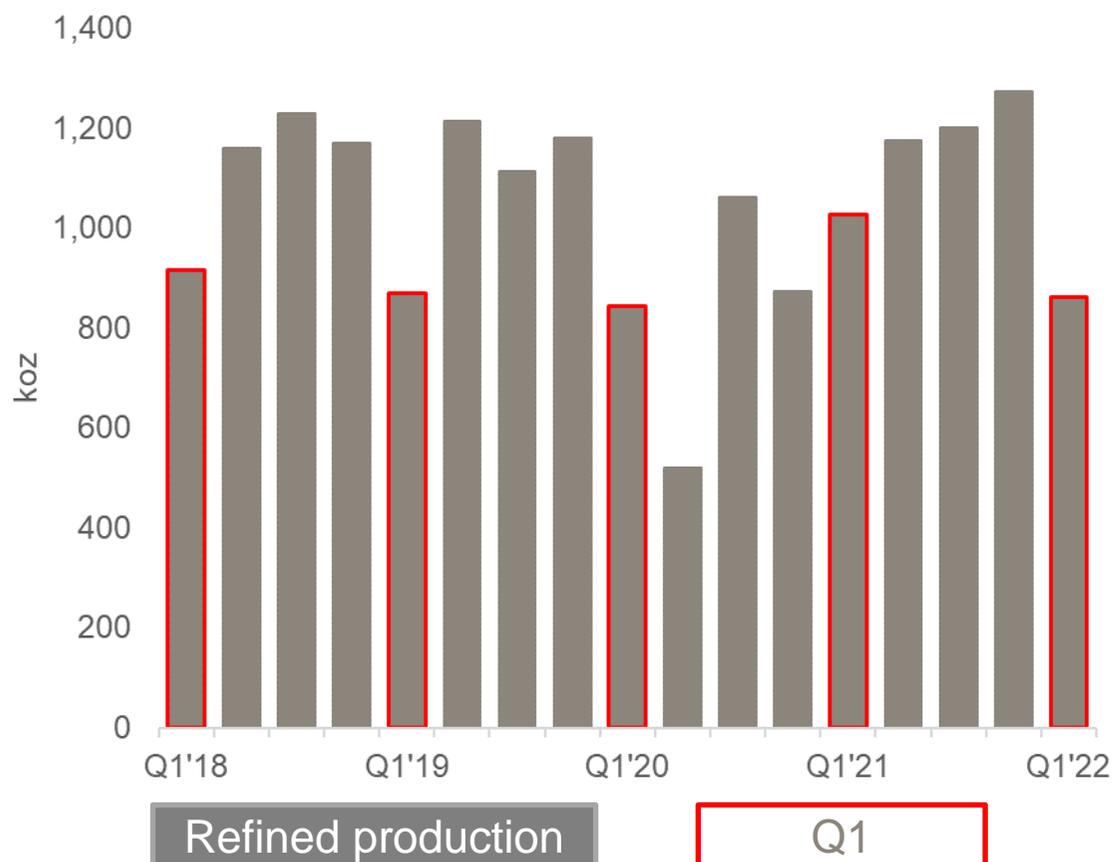
# Q1 2022 SUPPLY: TOTAL SUPPLY DOWN 13% ON MINE CHALLENGES AND REDUCED VEHICLE SCRAPPAGE

SUPPLY	Q1 2021	Q4 2021	Q1 2022
<b>Refined Production</b>	<b>1,465</b>	<b>1,695</b>	<b>1,279</b>
South Africa	1,028	1,274	861
Zimbabwe	118	127	121
North America	83	64	84
Russia	184	178	163
Other	52	52	51
Inc(-)/Dec(+) in Producer Inventory	-29	-39	+0
<b>Total Mining Supply</b>	<b>1,435</b>	<b>1,656</b>	<b>1,279</b>
<b>Recycling</b>	<b>518</b>	<b>453</b>	<b>415</b>
Autocatalyst	384	333	299
Jewellery	118	102	99
Industrial	16	17	17
<b>Total Supply</b>	<b>1,953</b>	<b>2,109</b>	<b>1,695</b>

- Refined mine supply down 13% YoY (-185 koz) on production challenges in South Africa and Russia
- Recycling supply down 20% (-103 koz) YoY on cars being run for longer due to lower new vehicle production
- Overall Q4 supply down 13% YoY (-259 koz)

# Q1 2022 SOUTH AFRICAN MINE SUPPLY: DOWN 16% YOY ON PRODUCTION CHALLENGES

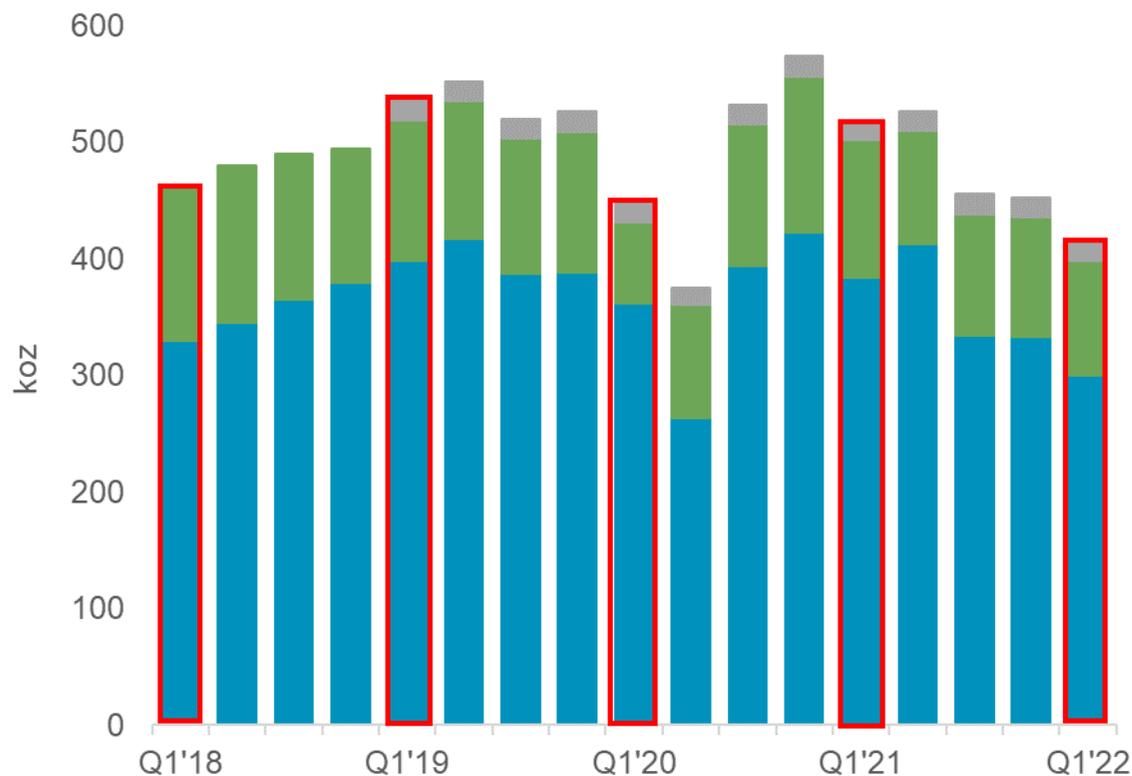
## South African refined mine production (koz)



- South Africa refined supply down 16% YoY (-167 koz) due to:
  - Safety stoppages
  - COVID disruptions
  - Labour shortages
  - Furnace rebuilds
  - Eskom power outages

# Q1 2022 RECYCLING: DOWN 20% ON REDUCED VEHICLE SCRAPPAGE AND JEWELLERY TRADE-INS

Recycling (koz)



- Recycling was down 20% YoY and 8% QoQ
- Downward trajectory continues with fewer end-of-life vehicles due to lower new vehicle production
- Jewellery trade-ins were lacklustre on muted demand for new jewellery in China

Autocatalyst

Jewellery

Industrial

Q1

# Q1 2022 DEMAND: SURPRISINGLY STRONG AUTO OFFSET BY LOWER INDUSTRIAL AND ETF LIQUIDATIONS

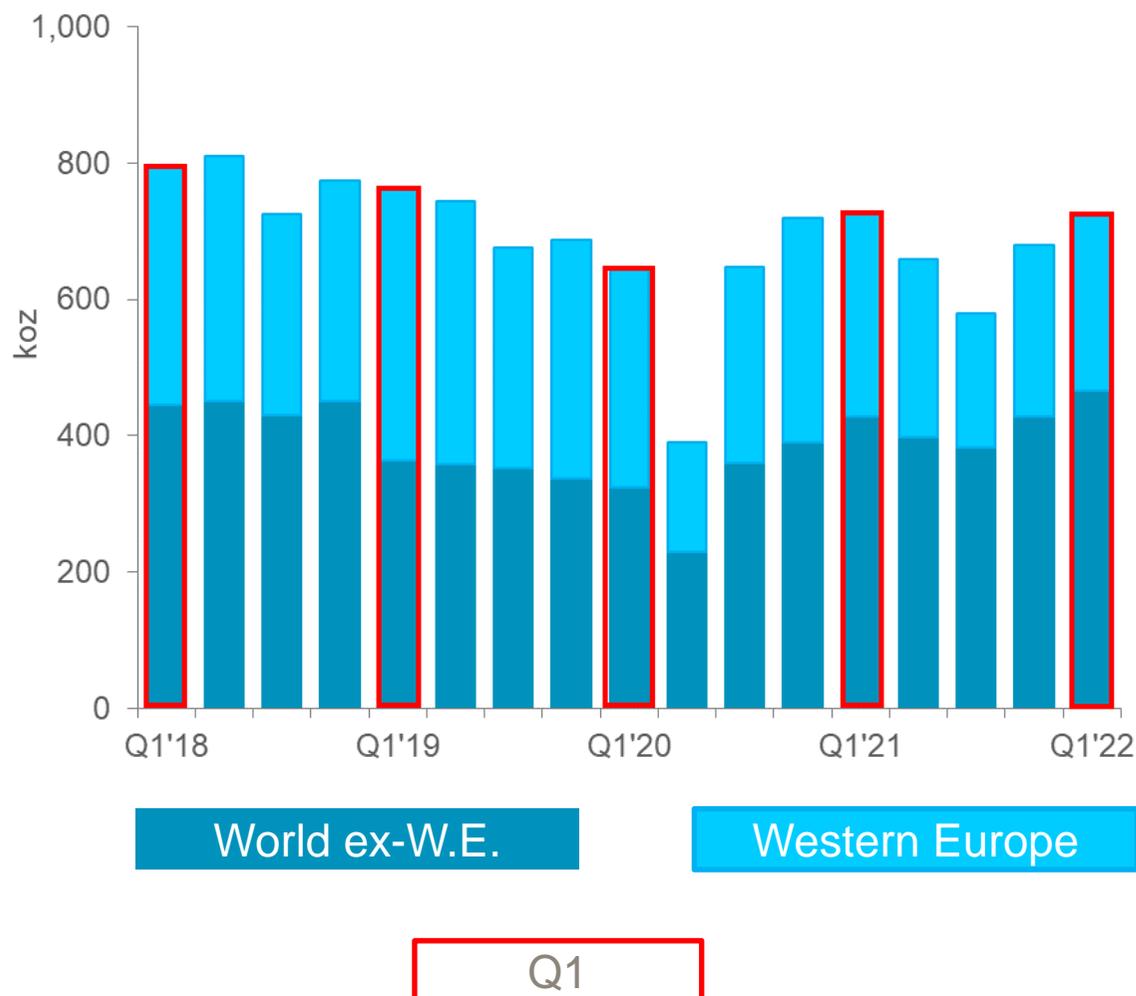
DEMAND	Q1 2021	Q4 2021	Q1 2022
<b>Automotive</b>	<b>724</b>	<b>680</b>	<b>725</b>
Autocatalyst	724	680	725
Non-road	†	†	†
<b>Jewellery</b>	<b>479</b>	<b>499</b>	<b>437</b>
<b>Industrial</b>	<b>707</b>	<b>624</b>	<b>533</b>
Chemical	119	200	111
Petroleum	37	57	44
Electrical	33	32	30
Glass	318	121	138
Medical & Biomedical	57	67	65
Other	143	147	144
<b>Investment</b>	<b>159</b>	<b>-108</b>	<b>-167</b>
Change in Bars, Coins	<b>21</b>	95	<b>60</b>
Change in ETF Holdings	<b>105</b>	-155	<b>-169</b>
Change in Stocks Held by Exchanges	<b>33</b>	-48	<b>-58</b>
<b>Total Demand</b>	<b>2,069</b>	<b>1,695</b>	<b>1,528</b>
<b>Balance</b>	<b>-116</b>	<b>413</b>	<b>167</b>

Q1 demand changes YoY

- Automotive flat despite challenges
- Jewellery cut 9% (-42 koz)
- Industrial down 25% (-175 koz)
- Investment lower by -325 koz
  - Bar and coin almost doubles (+40 koz)
  - ETF liquidations of -274 koz
  - NYMEX outflows of -91 koz
- Market surplus of 167 koz

# Q1 2022 AUTOMOTIVE: DOWN ON CONTINUED SEMICONDUCTOR CHALLENGES AND DRIVETRAIN MIX

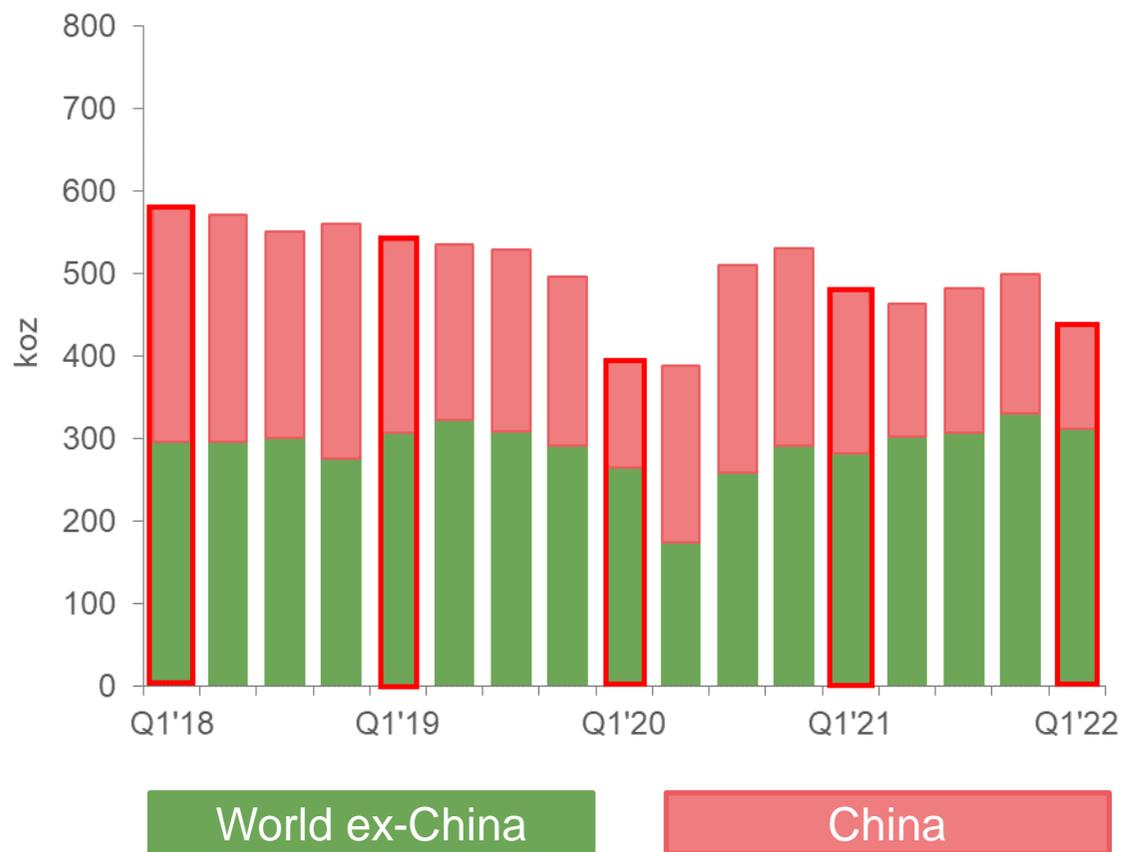
Automotive demand (koz)



- Automotive platinum demand flat YoY at 725 koz as supply chain challenges were offset by higher loadings and substitution
- LDV production off 4% YoY on semiconductor shortage, zero-COVID efforts in China and Russia's invasion of Ukraine
- HDV production down 27% YoY, including down 51% in China after significant pre-buying of China V vehicles in 2021

# Q1 2022 JEWELLERY: DOWN 9% YOY AS WEAK DEMAND IN CHINA OFFSETS R.O.W. STRENGTH

Jewellery demand (koz)

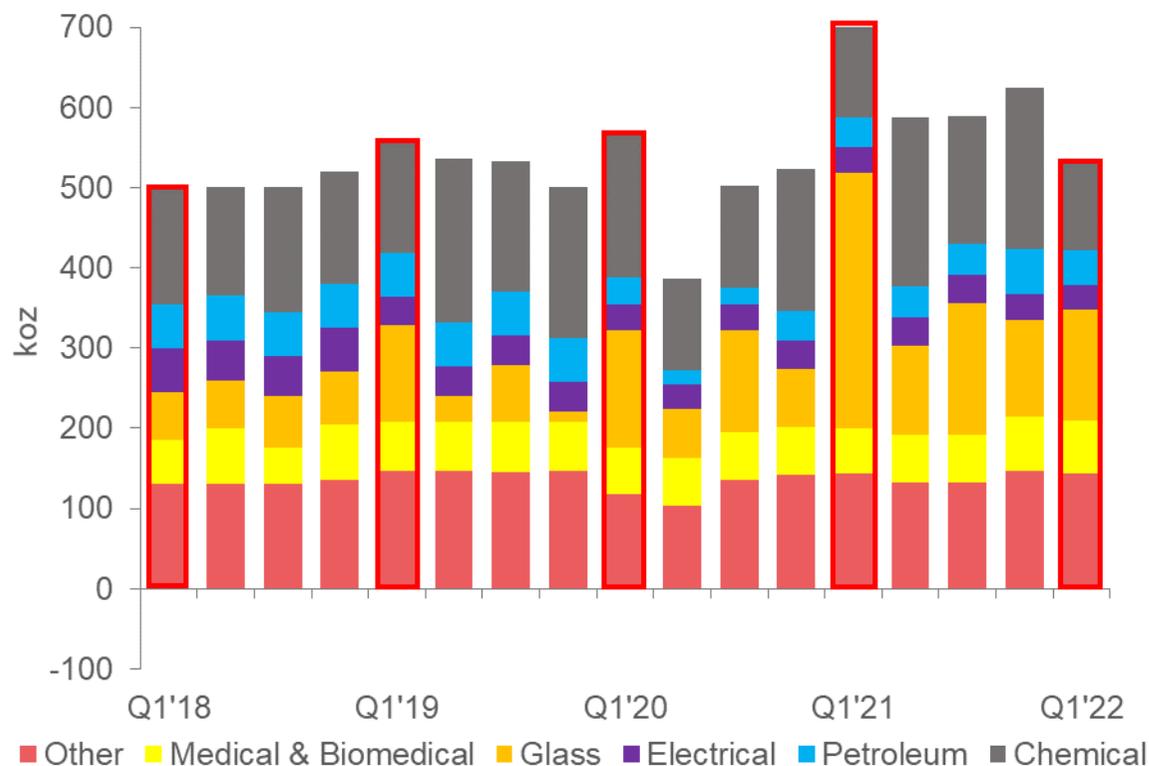


- Jewellery down 9% (-42 koz) YoY and down 12% QoQ (-62 koz) to 437 koz
- Continued strength in demand in North America +16% YoY, Europe +12%, supported by strong bridal market, retailer restocking and the price differential to gold
- China fabrication down more than a third YoY due to competition with gold and zero COVID lockdowns

Q1

# Q1 2022 INDUSTRIAL DEMAND: DOWN 25% YOY FROM RECORD 2021 BUT STILL THIRD STRONGEST YEAR

Industrial demand by category (koz)

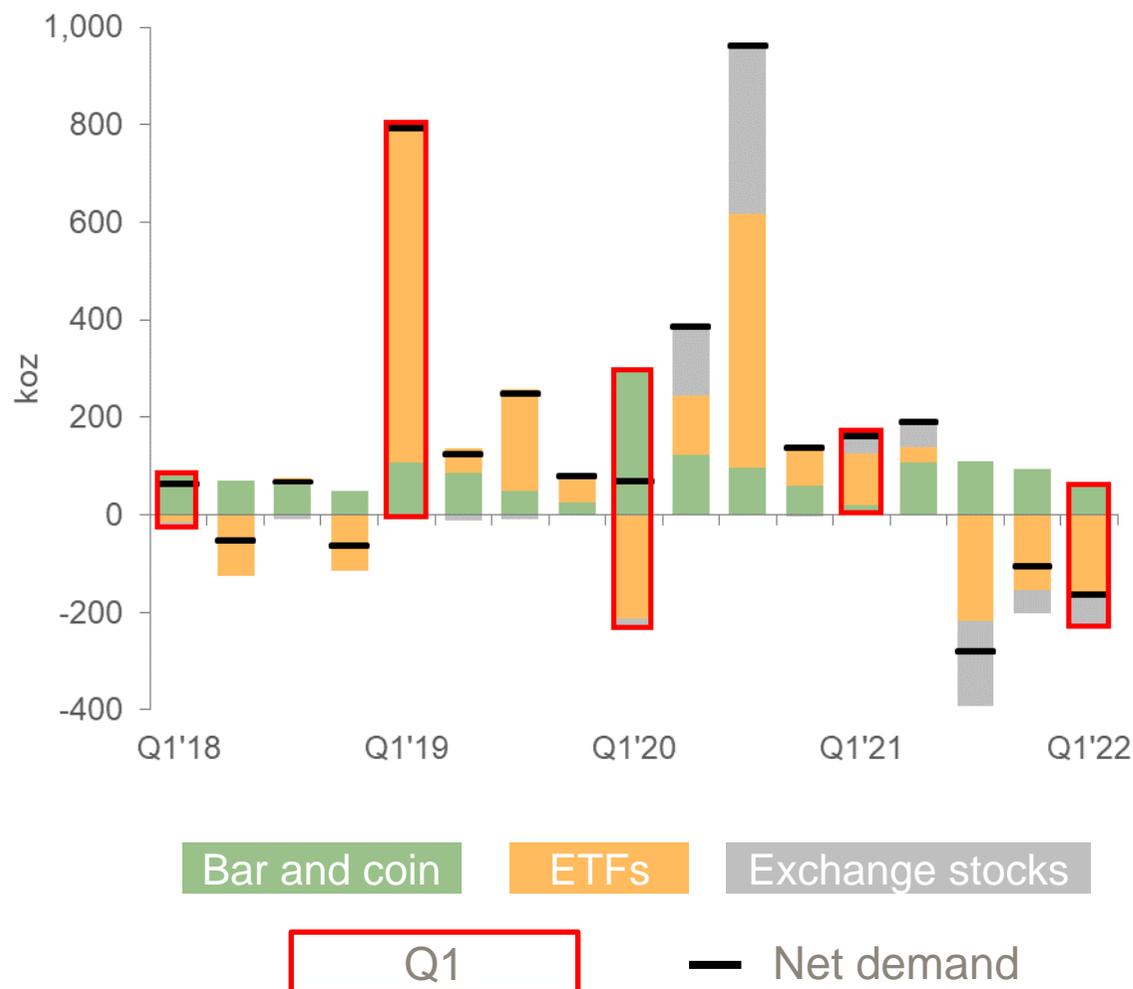


Q1

- Industrial demand pulled back -25% (-175 koz) YoY and -15% (-92 koz) QoQ
- Petroleum demand +21% (+8 koz) YoY to 44 koz
- Chemical demand -7% (-9 koz) YoY on fewer capacity additions in China
- Glass -56% (-179 koz) YoY versus record capacity additions in China during 2021
- Medical +15%, Electrical -9%, Other Industrial flat YoY

# Q1 2022 INVESTMENT DEMAND: OUTFLOWS FROM ETF AND EXCHANGE STOCKS BUT FIRMER BAR AND COIN

Investment demand by category (koz)



- Q1'22 investment demand declined -167 koz YoY
- Continued strength in bar and coin demand in all regions except Japan, +192% YoY (+40 koz)
- Negative ETF demand of -169 koz including -105 koz from one European issuer with similar liquidations in gold and silver
- NYMEX stock draw-downs of -58 koz despite inflows towards quarter end

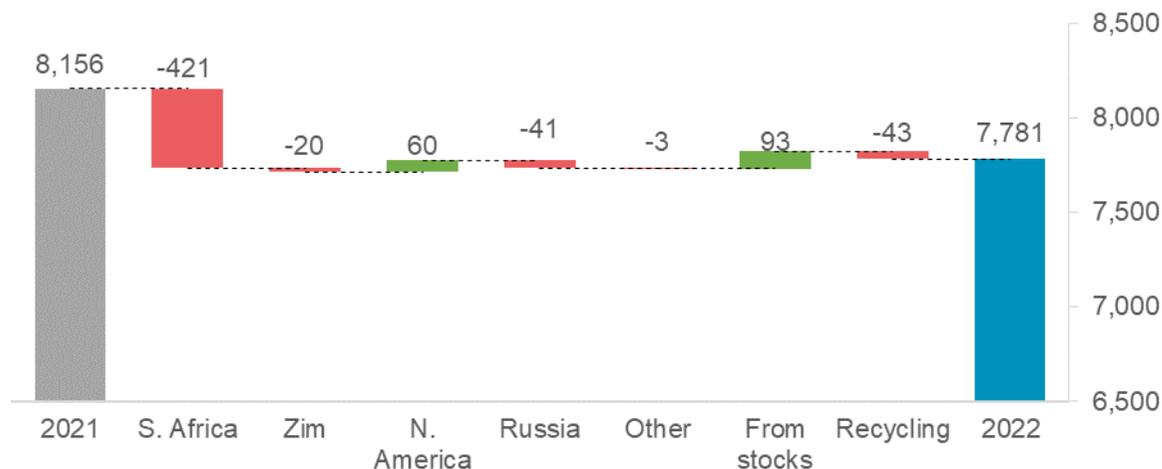
# 2022 FULL YEAR: REDUCED SURPLUS AFTER WEAKER DEMAND OFFSET BY SUPPLY DOWNGRADES

SUPPLY	2021	2022f	YoY, oz	YoY, %
<b>Refined Production</b>	<b>6,297</b>	<b>5,872</b>	<b>-425</b>	<b>-7%</b>
South Africa	4,678	4,258	-421	-9%
Zimbabwe	485	465	-20	-4%
North America	273	333	60	22%
Russia	652	611	-41	-6%
Other	208	205	-3	-1%
Inc (-)/Dec (+) in Producer Inventory	-93	+0	93	N/A
<b>Total Mining Supply</b>	<b>6,204</b>	<b>5,872</b>	<b>-332</b>	<b>-5%</b>
<b>Recycling</b>	<b>1,953</b>	<b>1,909</b>	<b>-43</b>	<b>-2%</b>
Autocatalyst	1,464	1,418	-45	-3%
Jewellery	422	422	0	0%
Industrial	67	69	2	3%
<b>Total Supply</b>	<b>8,156</b>	<b>7,781</b>	<b>-375</b>	<b>-5%</b>
<b>DEMAND</b>				
Automotive	2,643	3,055	412	16%
Jewellery	1,923	1,886	-37	-2%
Industrial	2,508	2,109	-399	-16%
Investment	-45	104	149	N/A
<b>Total Demand</b>	<b>7,029</b>	<b>7,155</b>	<b>126</b>	<b>2%</b>
<b>Balance</b>	<b>1,128</b>	<b>627</b>	<b>-</b>	<b>-44%</b>
<b>Above Ground Stocks</b>	<b>3,752</b>	<b>4,379</b>	<b>627</b>	<b>17%</b>

- Refined production down 7% (-425 koz)
- Recycling down 2% (-43 koz)
- Strong growth in automotive demand (+16%, +412 koz)
- Industrial demand -16% (-399 koz)
- Investment demand swing of +149 koz
- Market surplus of 627 koz (-44% YoY), down from 652 koz previously

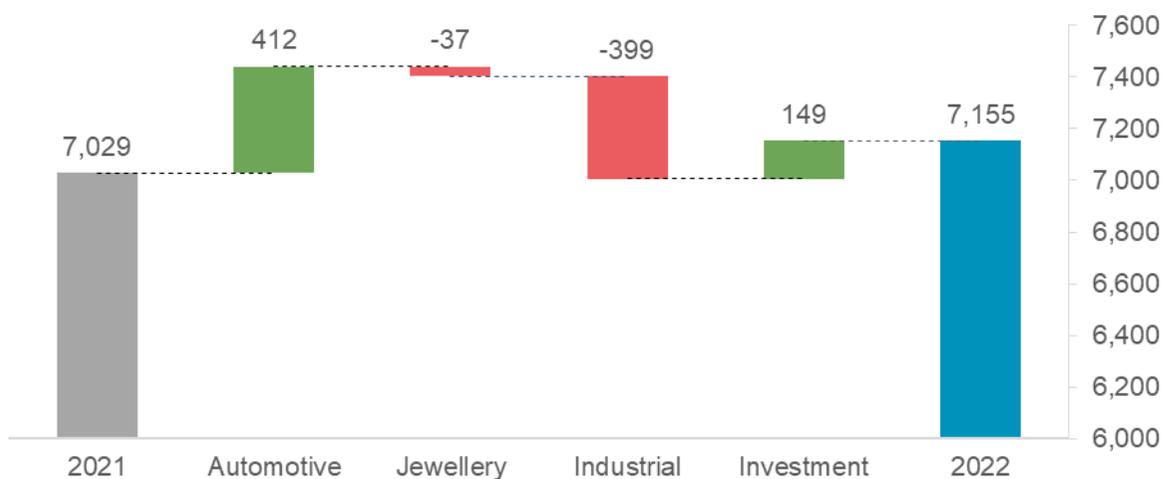
# 2022 OUTLOOK: CHALLENGES TO BOTH SUPPLY AND DEMAND TRIM SURPLUS

## Annual total supply and changes 2021 to 2022f (koz)

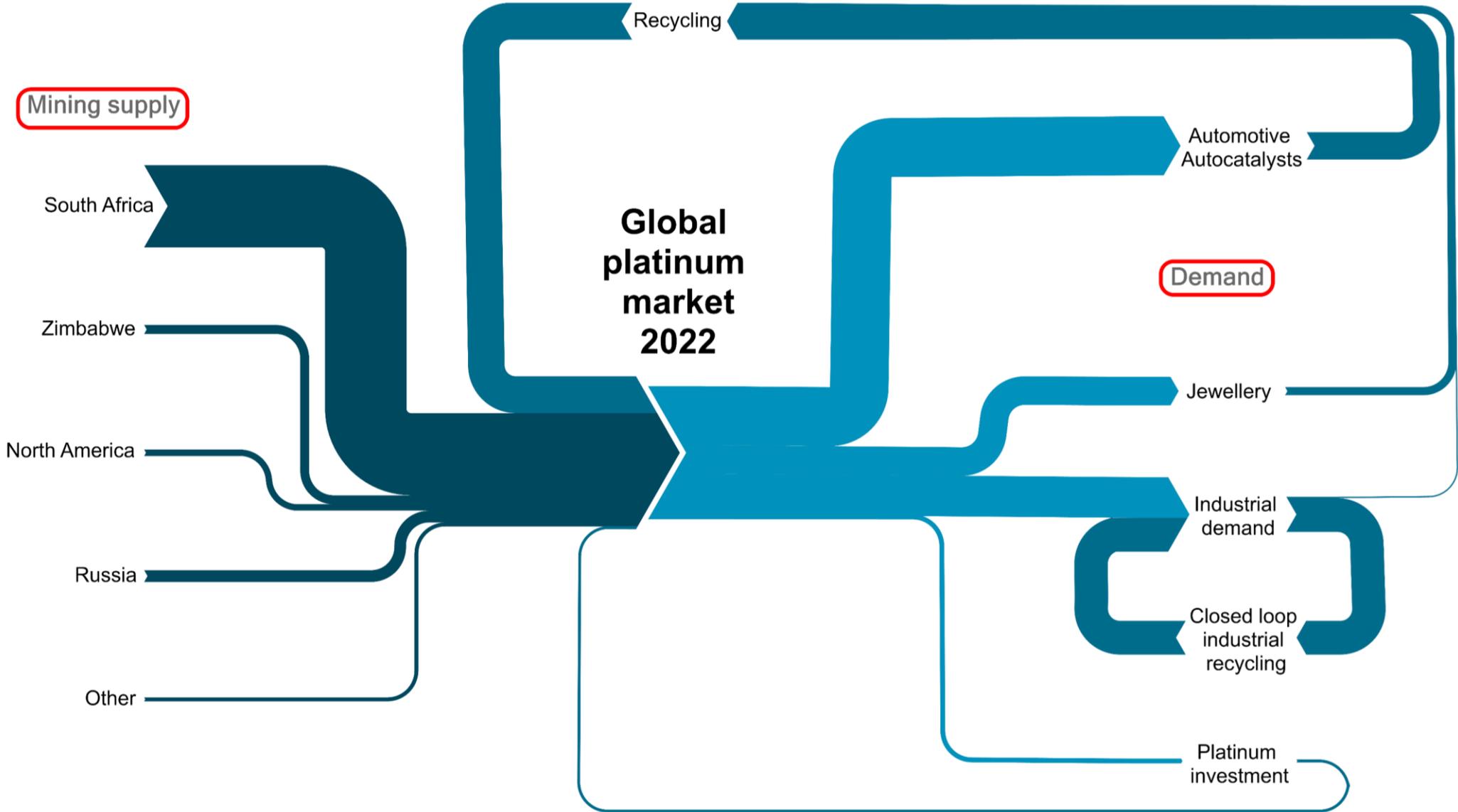


- South African refined production down 9% (-421 koz) YoY at 4,258 koz
- Recycling supply down 2% (-43 koz) on an assumption that scrapped car supply will improve through balance of the year
- Auto demand up 16% (+412 koz) with supply chain challenges compensated by higher loadings and Pt for Pd substitution
- Industrial demand cyclically down 16% from record 2021, but still third highest annual demand ever
- Investment +149 koz YoY on reduced ETF outflows

## Annual total demand and changes 2021 to 2022f (koz)

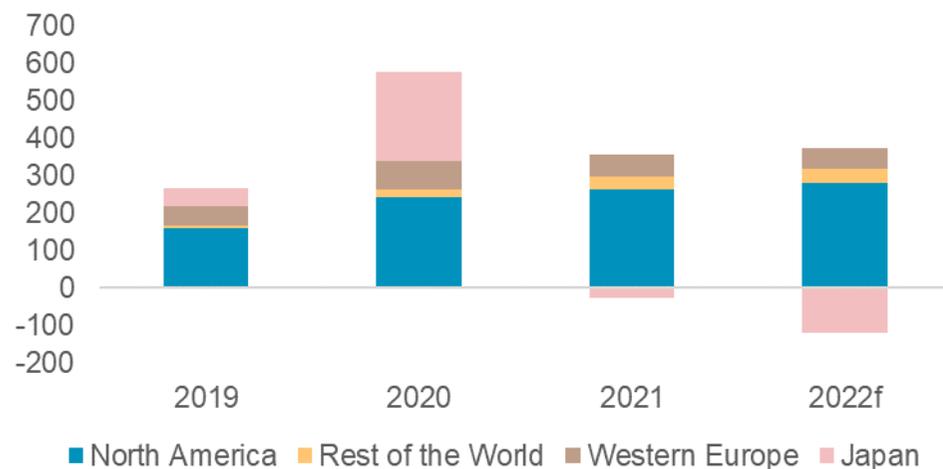


# EXPECTED PLATINUM FLOWS FROM MINERS TO DEMAND SEGMENTS AND RECYCLING RETURNS: ANNUAL 2022F



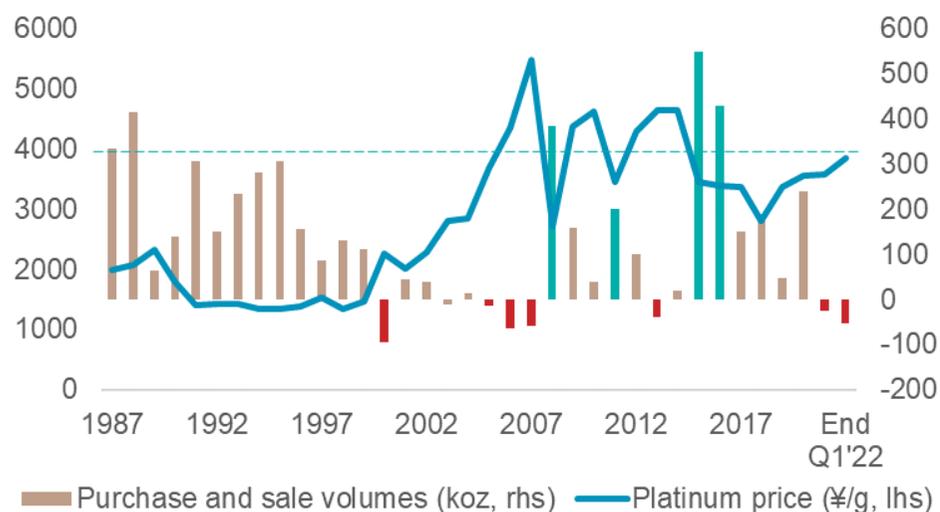
# FURTHER UNPACKING Q1: STRONG GLOBAL BAR AND COIN GROWTH TEMPERED BY SELLING IN JAPAN

## Bar and coin investment has grown strongly ex-Japan



- Strong bar and coin demand growth has continued, particularly in North America, assisted by our product partnerships

## Where investment is more price sensitive



- Japanese bar and coin retail investors historically more reactive to platinum price movements in yen terms
- ¥4,000/g trigger level post 2008 GFC
- Anecdotally, inflation concerns are changing behaviour

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*Trevor Raymond*

## 3. Security of supply concerns

- Contracting and inventory management
- Substitution
- Green hydrogen
- Excess China purchases

*Edward Sterck, Analyst*

## 4. Questions

*Paul Wilson*

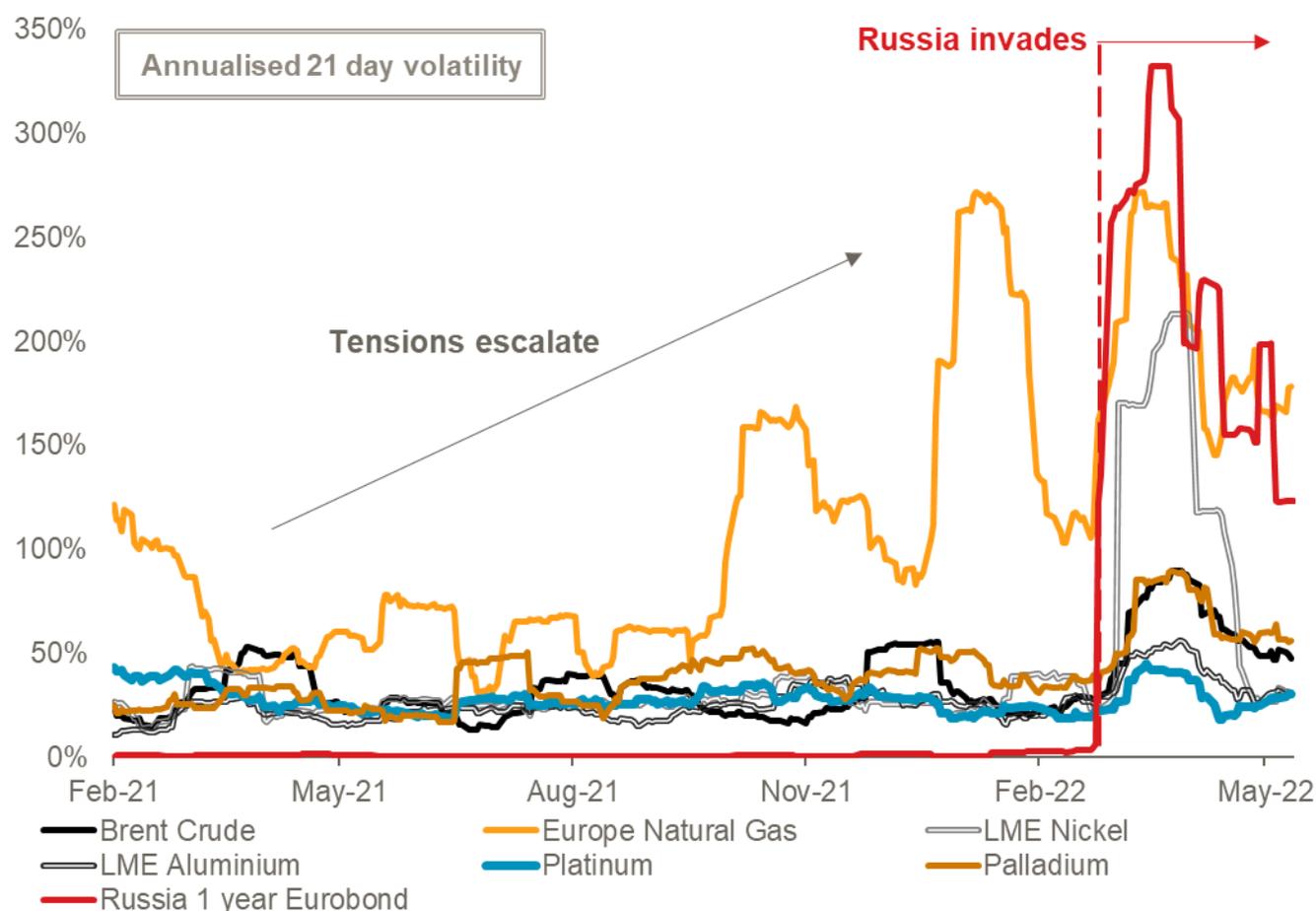
*Trevor Raymond*

*Edward Sterck*



# SECURITY OF SUPPLY CONCERNS: SANCTIONS, INFLATION AND OTHER MATTERS

Russia's invasion of Ukraine has engendered significant economic uncertainty across global markets

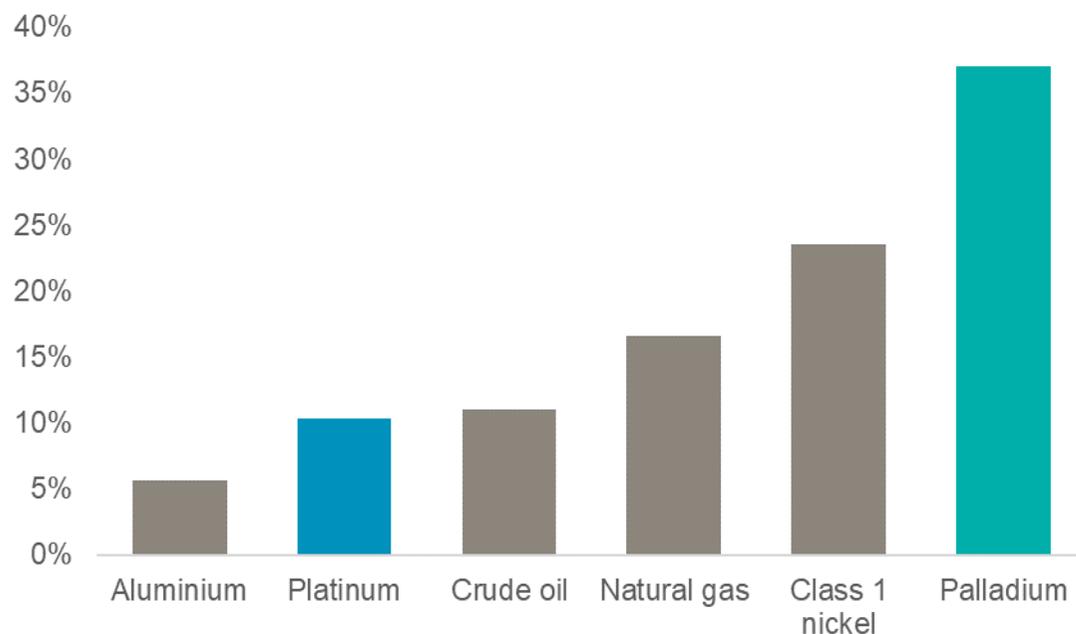


The main security of supply areas of concern:

- Russia and sanctions
- Global raw material flows
- South African production challenges
- Economic uncertainty
- Inflationary risks

# SECURITY OF SUPPLY CONCERNS: THE RUSSIA QUESTION

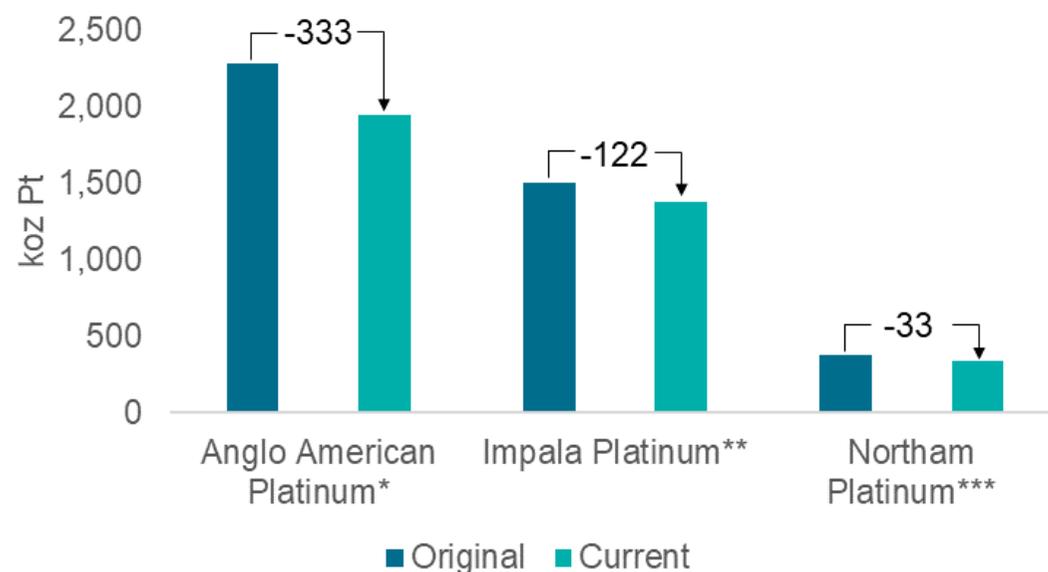
Russia's share of select global commodity markets



- Russia produces around 40% of global mined palladium supply and 10% of mined platinum supply
- Possible payment challenges
- Risking Russian entity contractual non-performance
- Sanction risks? UK import tariffs
- Unilateral Russian export bans
- Moral questions?

# SECURITY OF SUPPLY CONCERNS: PUBLISHED PRODUCTION GUIDANCE DOWNGRADES

## Production challenges have prompted downgrades to company production guidance to the market



Source: WPIC Research, company reports

\*Anglo American Platinum calendar 2022 guidance taken as the mid-point of refined 4E production guidance on 26/07/2021 and 21/04/2022 adjusted by the ratio of Pt:4E guidance for metals in concentrate production issued on the same dates

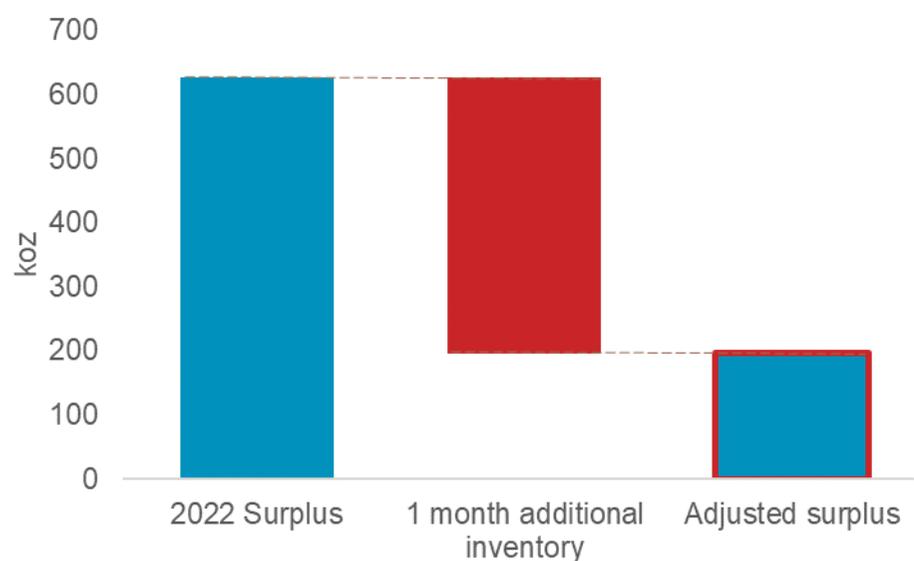
\*\* Impala Platinum fiscal 2022 guidance (June 2022 year end) taken as the mid-point of refined 6E production guidance on 02/08/2021 and 03/01/2022 adjusted by the average Pt:6E production ratio over the years FY'18 through FY'21

\*\*\* Northam Platinum fiscal 2022 guidance (June 2022 year end) taken as the mid-point of 4E sales guidance on 30/09/2021 and 31/03/2022 adjusted by the average Pt:4E production ratio over the years FY'18 through FY'21

- Several mining companies have lowered published production guidance due to production challenges in South Africa
- Challenges include:
  - Safety stoppages
  - COVID disruptions
  - Labour shortages
  - Furnace rebuilds
  - ESKOM load shedding
- Unit cost guidance increases of 2-14% in rand terms

# SECURITY OF SUPPLY CONCERNS: DELIVERY RISK AND INVENTORY MANAGEMENT

## Inventory management could reduce projected surplus



## Active supply management:

- Security of supply concerns could push automotive and industrial users of platinum and their financiers to review supply arrangements
- Potential for buffer inventory build
- Adding one month of requirements to inventory for automotive and industrial users would reduce the surplus to less than 200 koz platinum

# SECURITY OF SUPPLY CONCERNS: ACCELERATED PLATINUM FOR PALLADIUM SUBSTITUTION

**Palladium is trading at a sustained premium of >US\$1,300/oz vs. platinum**



**Significant financial and origin of supply incentives to drive platinum for palladium substitution**

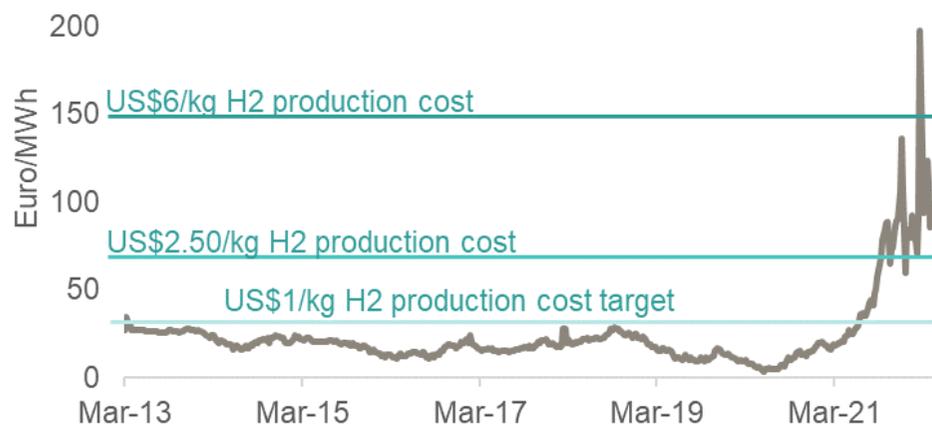
Gasoline vehicles (M)	Annual Pd demand (koz)	Annual newly launched models (%)	Pt for Pd substitution level (%)	Total annual Pt impact (koz)	Automaker savings (US\$M)
58.6	8,529	20%	30%	512	671
			50%	853	1,118

- Platinum for palladium substitution makes economic and strategic sense at current prices
- Russia palladium supply risks only add to the substitution argument
- c.20% of annual vehicle production is newly launched vehicles
- Substitution in newly launched vehicles could save automakers US\$671M – US\$1,118M p.a.

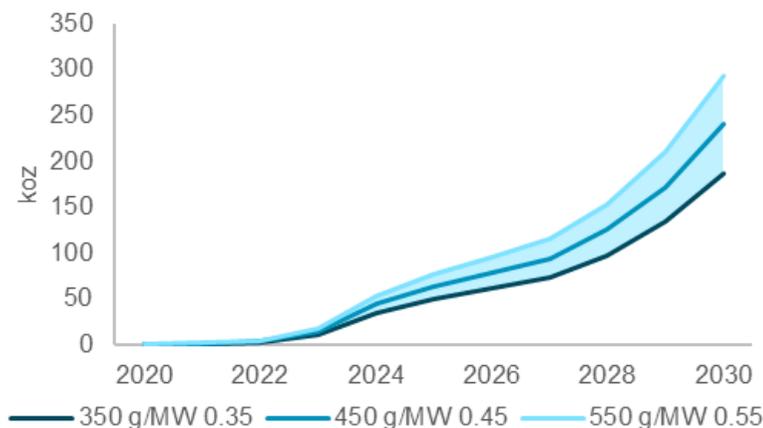
**Report link: [Platinum for palladium substitution makes economic and strategic sense and could take platinum into deficit](#)**

# SECURITY OF SUPPLY CONCERNS: REDUCING RELIANCE ON RUSSIAN GAS POSITIVE FOR GREEN HYDROGEN

**Green hydrogen is economically competitive at current natural gas prices**



**115 GW of electrolyser capacity adds 240 koz p.a. of platinum demand in 2030**

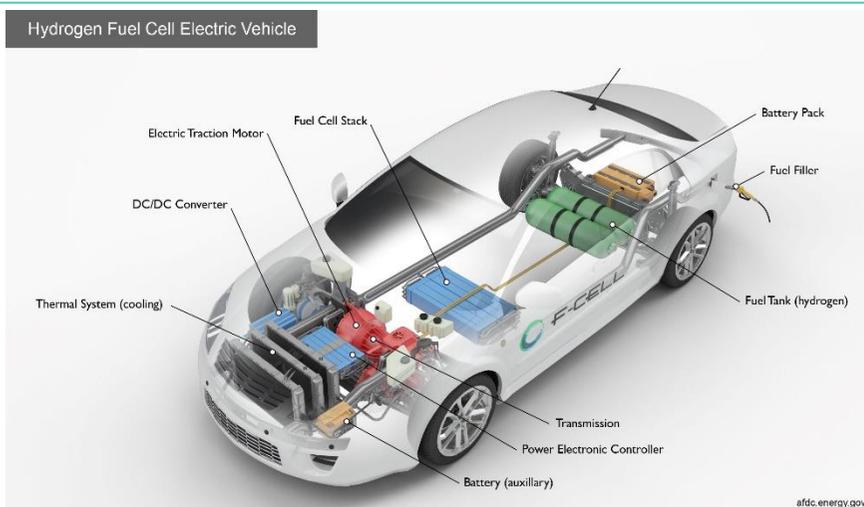


- Europe aiming to replace 20-50 Bm<sup>3</sup> of Russian gas with green hydrogen by 2030 to improve energy security
- Electrolyser needs add incremental platinum demand
- Development of hydrogen production and distribution network; highly supportive of commercial FCEV adoption

**Report link: [European efforts to reduce reliance on Russian gas will accelerate hydrogen use and platinum demand](#)**

# SECURITY OF SUPPLY CONCERNS: HYDROGEN INFRASTRUCTURE SUPPORTS FCEV ADOPTION

## FCEV architecture similar to BEV



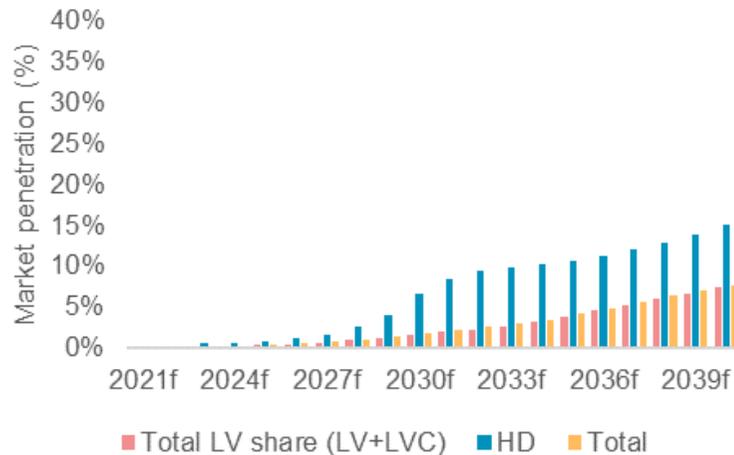
## Hyundai FCEV Xcient truck in service since 2020



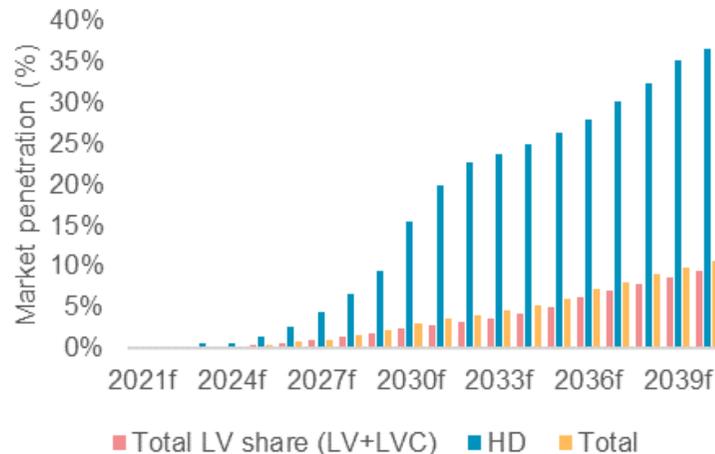
- FCEVs complimentary to BEVs
- FCEVs better suited to long-distance/high-capacity utilisation roles and ones with weight limitations
- FCEVs implementing mature fuel cell technology – economies of scale drive cost competitiveness

# SECURITY OF SUPPLY CONCERNS: FCEV PENETRATION RATES HINGE UPON POLICY SUPPORT & ECONOMICS

## FCEV market penetration rates of 5-15% under policy supported scenario



## Penetration rates reaching 40% for HD under commercial adoption scenario



## Two scenarios for FCEV adoption

### 1) Policy supported:

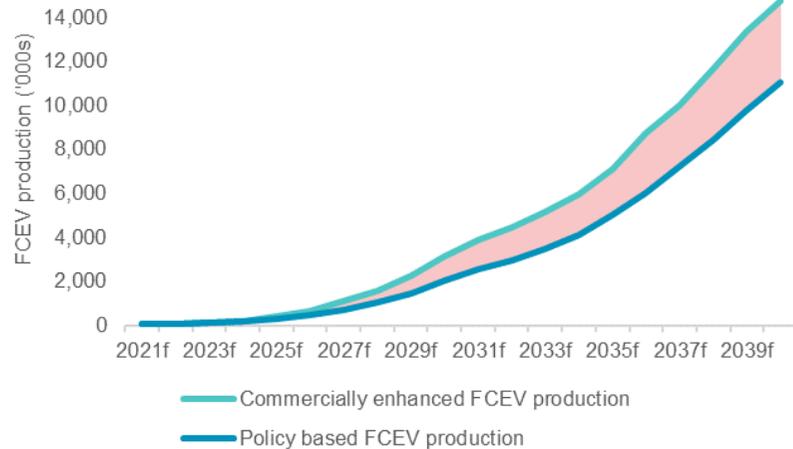
- Government incentive programmes needed for deployment
- Slower rate of adoption, biased to 2030s

### 2) Broad-based commercial adoption

- Widespread and low-cost hydrogen availability
- Production economies of scale make FCEV cost competitive
- FCEV's broadly adopted on economically attractive grounds

# SECURITY OF SUPPLY CONCERNS: FCEV DEMAND FOR PLATINUM COULD BE SUBSTANTIAL

## FCEV production rates of 2-4 million vehicles by 2030

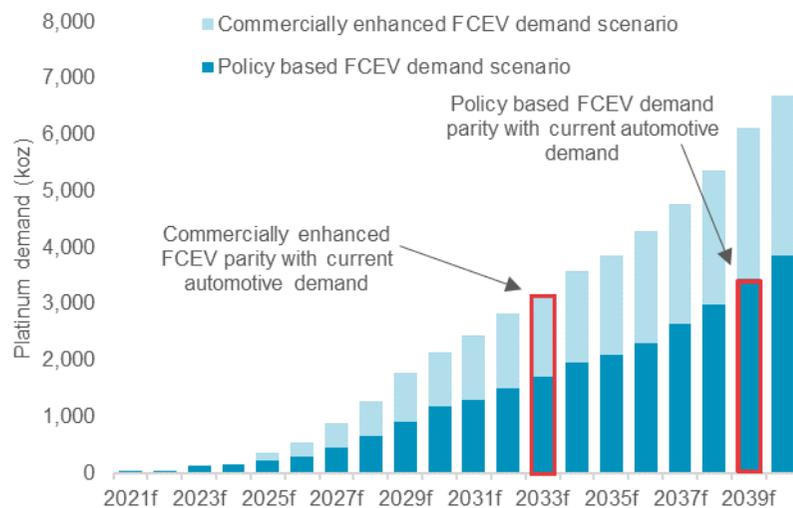


## Two scenarios for FCEV adoption

### 1) Policy supported:

- FCEV demand for platinum matches current automotive demand by 2039

## Demand for platinum could match automotive by 2033



### 2) Broad-based commercial adoption

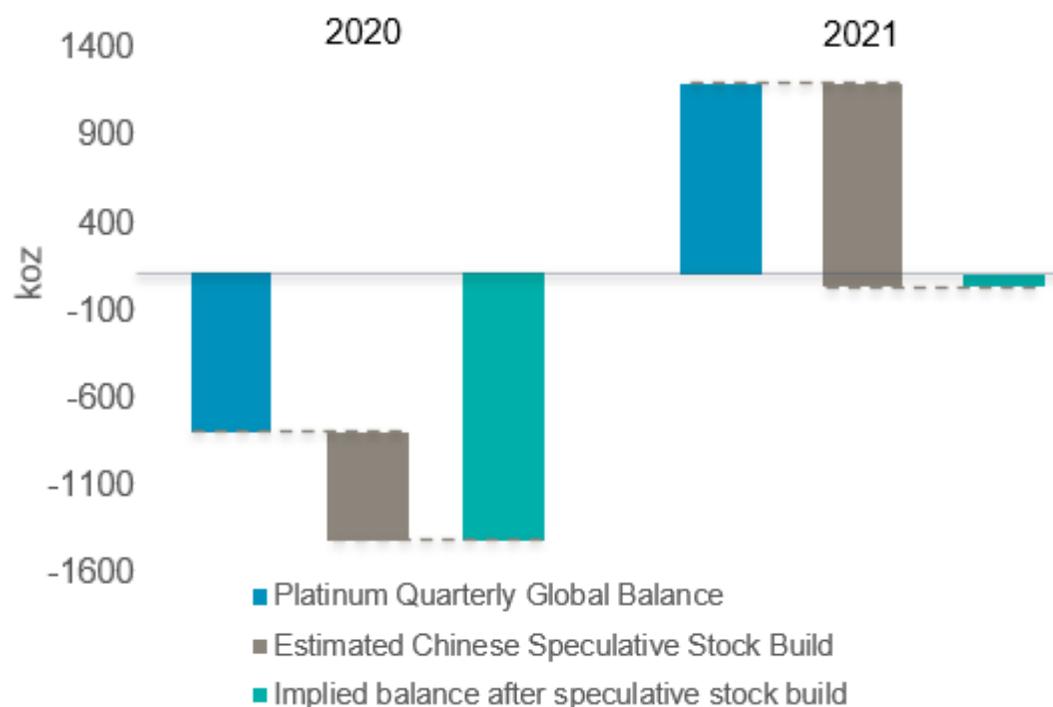
- FCEV demand for platinum matches current automotive demand by 2033

**Report link:** [Fuel cell electric vehicles are forecast to be a key driver of material long-term demand growth for platinum](#)

# SECURITY OF SUPPLY CONCERNS: SUPPORTIVE OF FURTHER CHINA EXCESS PLATINUM IMPORTS?

## China platinum imports in 2021 absorbed market surplus

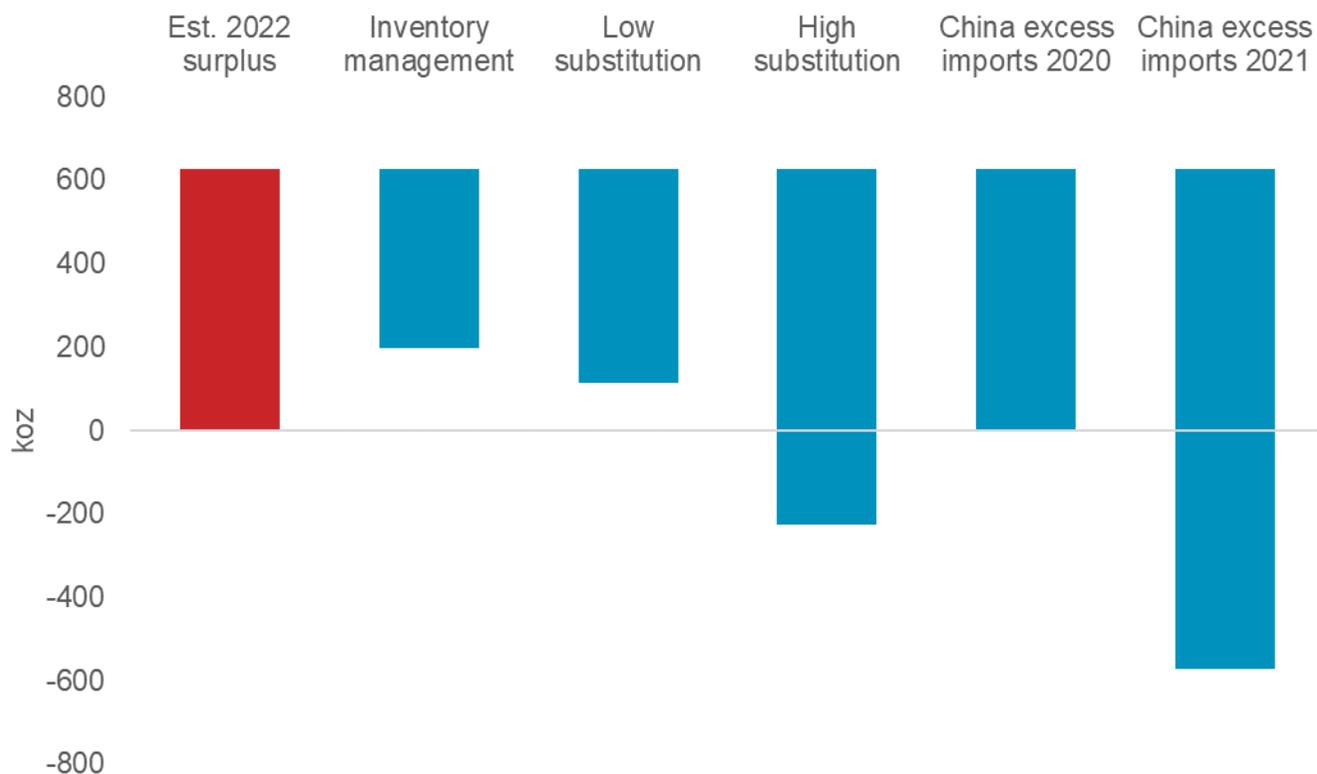
	2020	2021
Platinum Quarterly Global Balance	-908	1,128
Estimated Chinese Speculative Stock Build	624	1,200
Implied balance after speculative stock build	-1,531	-72



- China imported significantly more platinum than it consumed in 2020 and 2021
- China's excess imports were sufficient to completely absorb the 1.2 Moz market surplus in 2021
- Too early to expect the same for 2022
- But security of supply concerns and the broader market environment supportive of a continuation of speculative purchases

# SECURITY OF SUPPLY CONCERNS: A SUMMARY

Any one action in response to security of supply concerns could materially reduce or even eliminate the forecast surplus



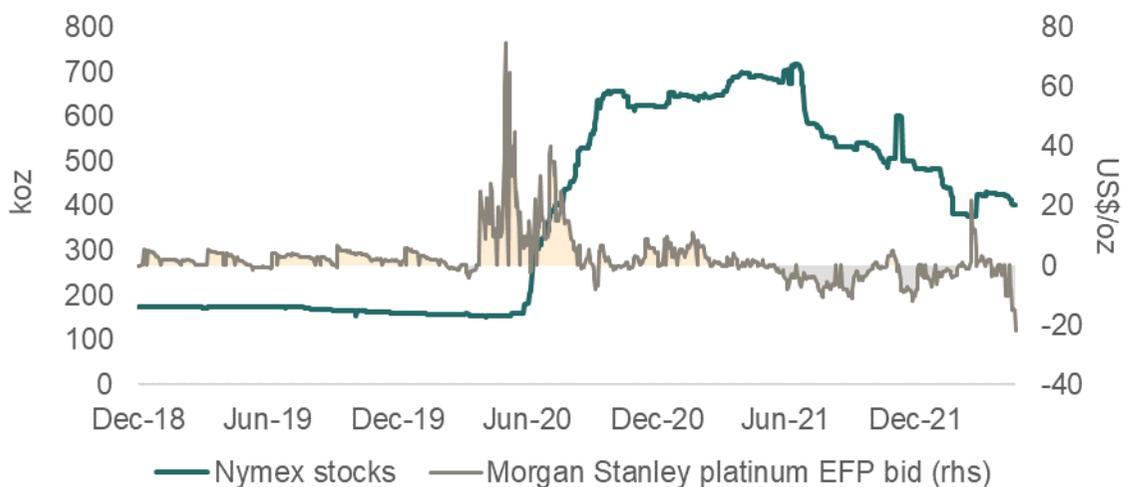
# PLATINUM LEASE AND EFP RATES IMPLY POSSIBLE SHORTAGE OF NEAR TERM METAL AVAILABILITY

## One month implied platinum lease rates have spiked



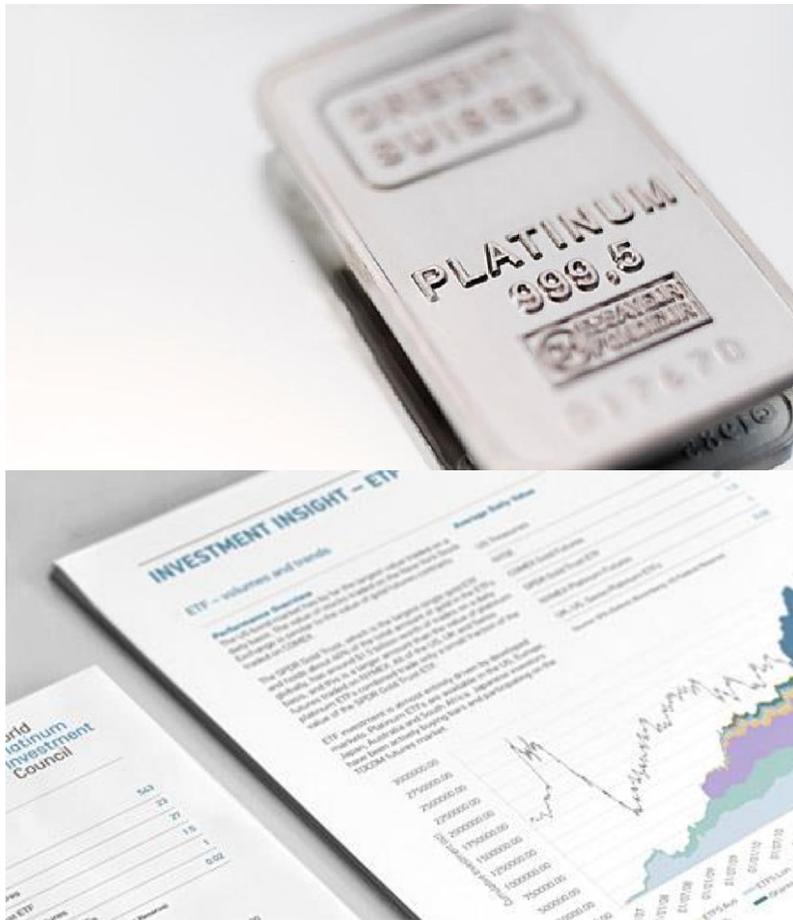
- Spike in lease rates to 9% point to possible short-term shortage of platinum metal availability

## EFP suggests demand pulling stocks from NYMEX



- Strong EFP discount likely to draw metal from exchange stocks (NYMEX), potentially to satisfy demand for metal in the physical market

# WHY INVEST IN PLATINUM? REACTIONS TO SUPPLY RISKS, GREEN HYDROGEN & SPECULATIVE INVESTMENT



- Security of supply concerns likely to override near-term surplus
- Potential for changes to procurement strategies including building buffer inventories
- Increased platinum for palladium substitution could eliminate market surplus
- Green hydrogen strategies support significant platinum demand growth from FCEVs
- China may continue to accumulate excess inventories

# AGENDA: PLATINUM QUARTERLY: Q1 2022 AND FULL YEAR 2022

## 1. Introduction

*Paul Wilson*

## 2. Platinum Quarterly, fundamentals review

*Trevor Raymond*

## 3. Security of supply concerns

*Edward Sterck*

## 4. Questions

*Paul Wilson, CEO*

*Trevor Raymond, Director of Research*

*Edward Sterck, Analyst*



# UPCOMING EVENTS AND RESEARCH TO LOOK OUT FOR



## Initiative highlight:

- Wimbledon Championships Ladies' and Gentlemen's finals coin tosses, honouring Her Majesty the Queen's Platinum Jubilee



## Upcoming research reports:

- WPIC full drivetrain forecast to 2040 – building upon the FCEV report
- WPIC supply-demand outlook for platinum for years two to five

