

PLATINUM QUARTERLY PRESENTATION Q4 2022

London

8th March 2023

COPYRIGHT AND DISCLAIMER

IMPORTANT NOTICE AND DISCLAIMER: This publication is general and solely for educational purposes. The publisher, The World Platinum Investment Council, has been formed by the world's leading platinum producers to develop the market for platinum investment demand. Its mission is to stimulate investor demand for physical platinum through both actionable insights and targeted development, providing investors with the information to support informed decisions regarding platinum and working with financial institutions and market participants to develop products and channels that investors need.

The research for the period since 2019 attributed to Metals Focus in the publication is © Metals Focus Copyright reserved. All copyright and other intellectual property rights in the data and commentary contained in this report and attributed to Metals Focus, remain the property of Metals Focus, one of our third-party content providers, and no person other than Metals Focus shall be entitled to register any intellectual property rights in that information, or data herein. The analysis, data and other information attributed to Metals Focus reflect Metals Focus' judgment as of the date of the document and are subject to change without notice. No part of the Metals Focus data or commentary shall be used for the specific purpose of accessing capital markets (fundraising) without the written permission of Metals Focus.

The research for the period prior to 2019 attributed to SFA in the publication is © SFA Copyright reserved.

This publication is not, and should not be construed to be, an offer to sell or a solicitation of an offer to buy any security. With this publication, neither the publisher nor its content providers intend to transmit any order for, arrange for, advise on, act as agent in relation to, or otherwise facilitate any transaction involving securities or commodities regardless of whether such are otherwise referenced in it. This publication is not intended to provide tax, legal, or investment advice and nothing in it should be construed as a recommendation to buy, sell, or hold any investment or security or to engage in any investment strategy or transaction. Neither the publisher nor its content providers are, or purports to be, a broker-dealer, a registered investment advisor, or otherwise registered under the laws of the United States or the United Kingdom, including under the Financial Services and Markets Act 2000 or Senior Managers and Certifications Regime or by the Financial Conduct Authority.

This publication is not, and should not be construed to be, personalized investment advice directed to or appropriate for any particular investor. Any investment should be made only after consulting a professional investment advisor. You are solely responsible for determining whether any investment, investment strategy, security or related transaction is appropriate for you based on your investment objectives, financial circumstances, and risk tolerance. You should consult your business, legal, tax or accounting advisors regarding your specific business, legal or tax situation or circumstances.

The information on which this publication is based is believed to be reliable. Nevertheless, neither the publisher nor its content providers can guarantee the accuracy or completeness of the information. This publication contains forward-looking statements, including statements regarding expected continual growth of the industry. The publisher and Metals Focus note that statements contained in the publication that look forward in time, which include everything other than historical information, involve risks and uncertainties that may affect actual results and neither the publisher nor its content providers accept any liability whatsoever for any loss or damage suffered by any person in reliance on the information in the publication.

The logos, services marks and trademarks of the World Platinum Investment Council are owned exclusively by it. All other trademarks used in this publication are the property of their respective trademark holders. The publisher is not affiliated, connected, or associated with, and is not sponsored, approved, or originated by, the trademark holders unless otherwise stated. No claim is made by the publisher to any rights in any third-party trademarks.

© 2022 World Platinum Investment Council Limited. All rights reserved. The World Platinum Investment Council name and logo and WPIC are registered trademarks of World Platinum Investment Council Limited. No part of this report may be reproduced or distributed in any manner without attribution to the publisher, The World Platinum Investment Council, and the authors.

AGENDA: PLATINUM QUARTERLY: Q4 2022, FULL YEAR 2022 AND UPDATED 2023 FORECAST

1. Introduction

Trevor Raymond, CEO

2. Platinum Quarterly, fundamentals review

Edward Sterck

3. Current thematics

Edward Sterck

4. Questions

Trevor Raymond

Edward Sterck



AGENDA: PLATINUM QUARTERLY: Q4 2022, FULL YEAR 2022 AND UPDATED 2023 FORECAST

1. Introduction

Trevor Raymond

2. Platinum Quarterly, fundamentals review

- Supply, demand and balance: Q4'22, 2022 and 2023 forecast

Edward Sterck, Director of Research

3. Current thematics

Edward Sterck

4. Questions

Trevor Raymond

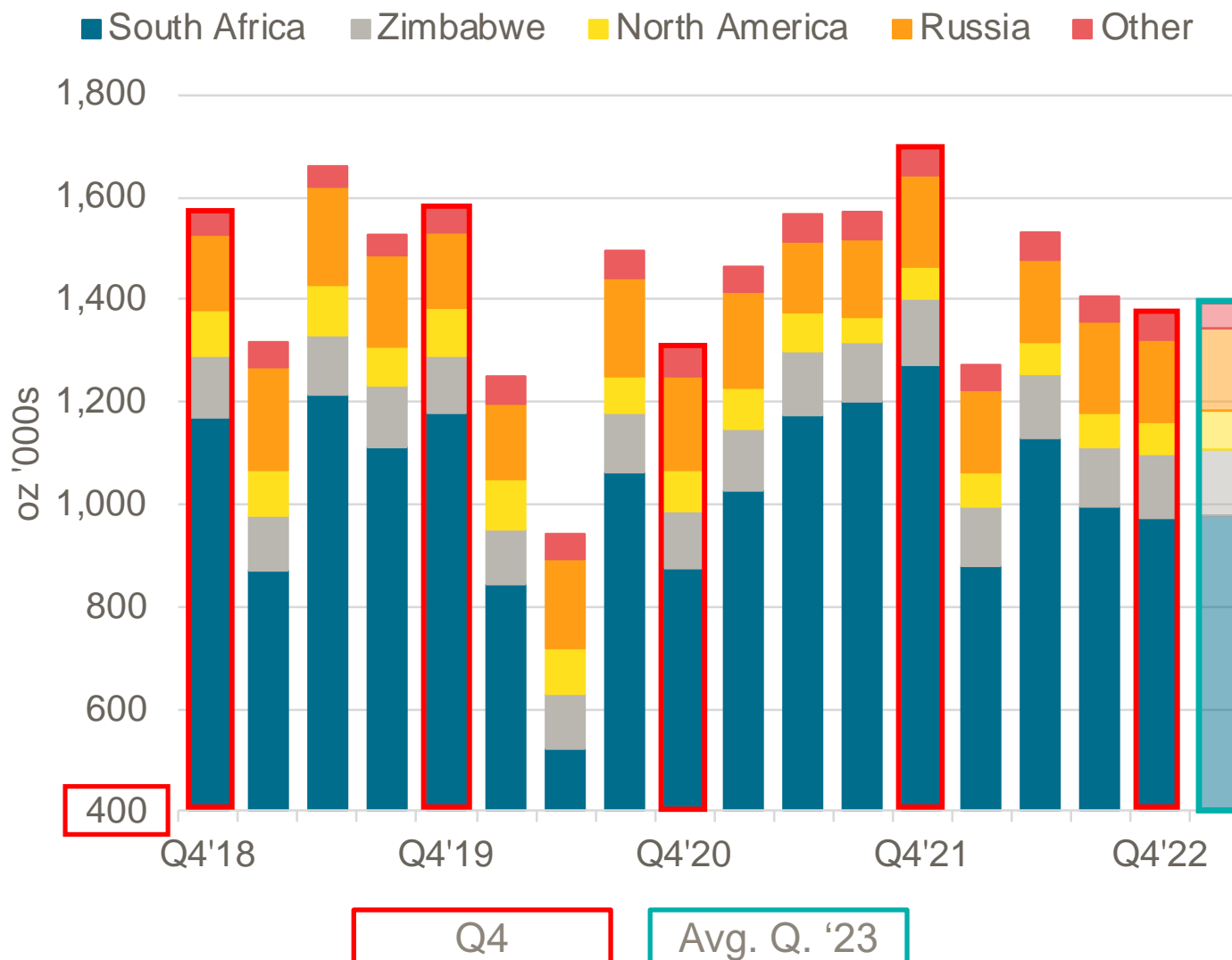
Edward Sterck



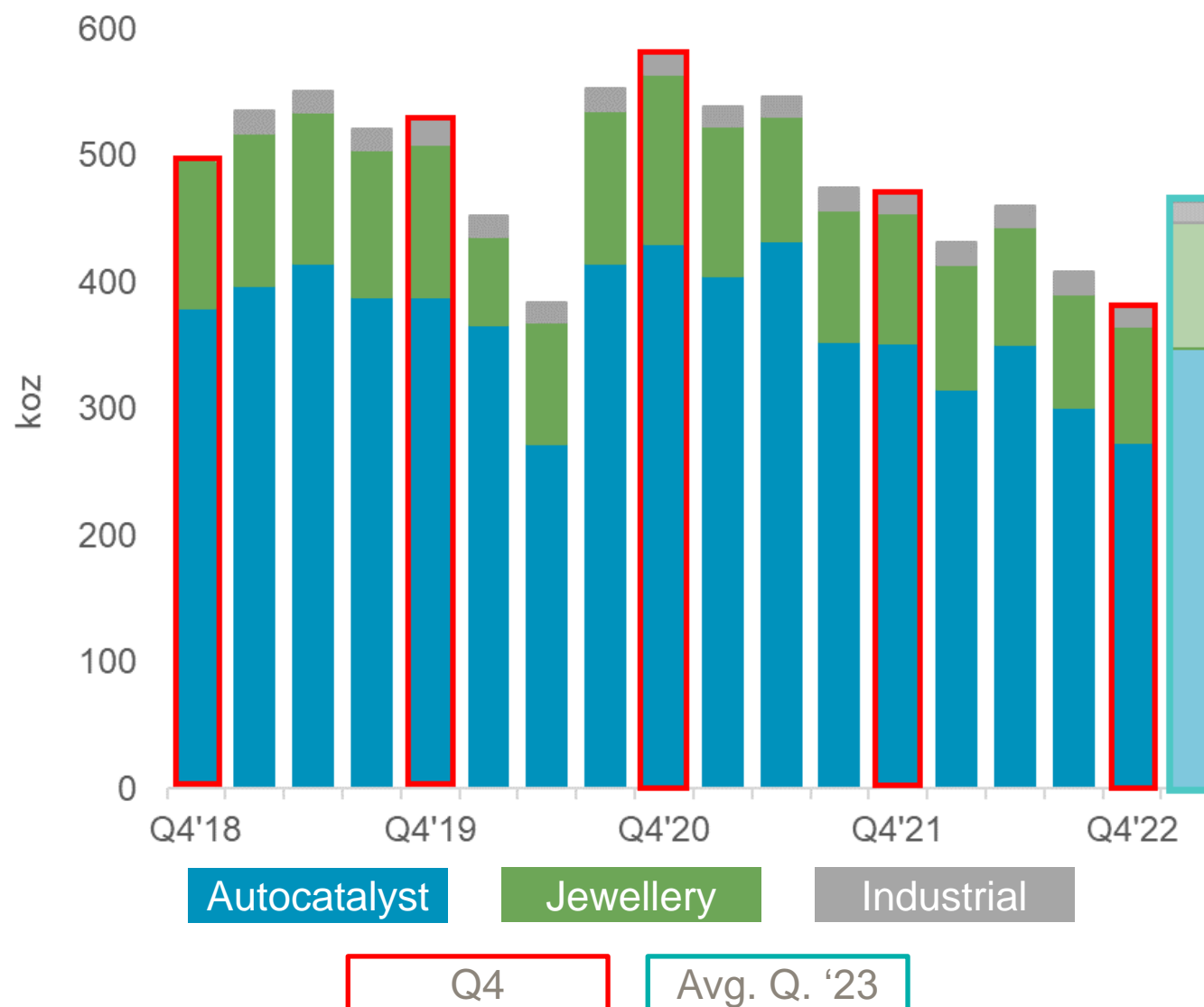
Q4 2022 SUPPLY: TOTAL SUPPLY DOWN 18% YOY ON MINE CHALLENGES & REDUCED VEHICLE SCRAPPAGE

SUPPLY	Q4 2021	Q3 2022	Q4 2022	YoY	QoQ
Refined Production	1,695	1,407	1,369	-19%	-3%
South Africa	1,274	994	974	-24%	-2%
Zimbabwe	127	116	123	-3%	6%
North America	64	66	63	-1%	-5%
Russia	178	179	160	-10%	-10%
Other	52	52	49	-6%	-5%
Inc(-)/Dec(+) in Producer Inventory	-39	-43	-13	-66%	-69%
Total Mining Supply	1,656	1,363	1,356	-18%	-1%
Recycling	471	408	383	-19%	-6%
Autocatalyst	352	301	274	-22%	-9%
Jewellery	102	90	92	-10%	2%
Industrial	17	17	17	1%	0%
Total Supply	2,127	1,772	1,739	-18%	-2%

Q4 2022 REFINED MINE SUPPLY: DOWN 19% YOY ON PRODUCTION CHALLENGES IN SA AND RUSSIA



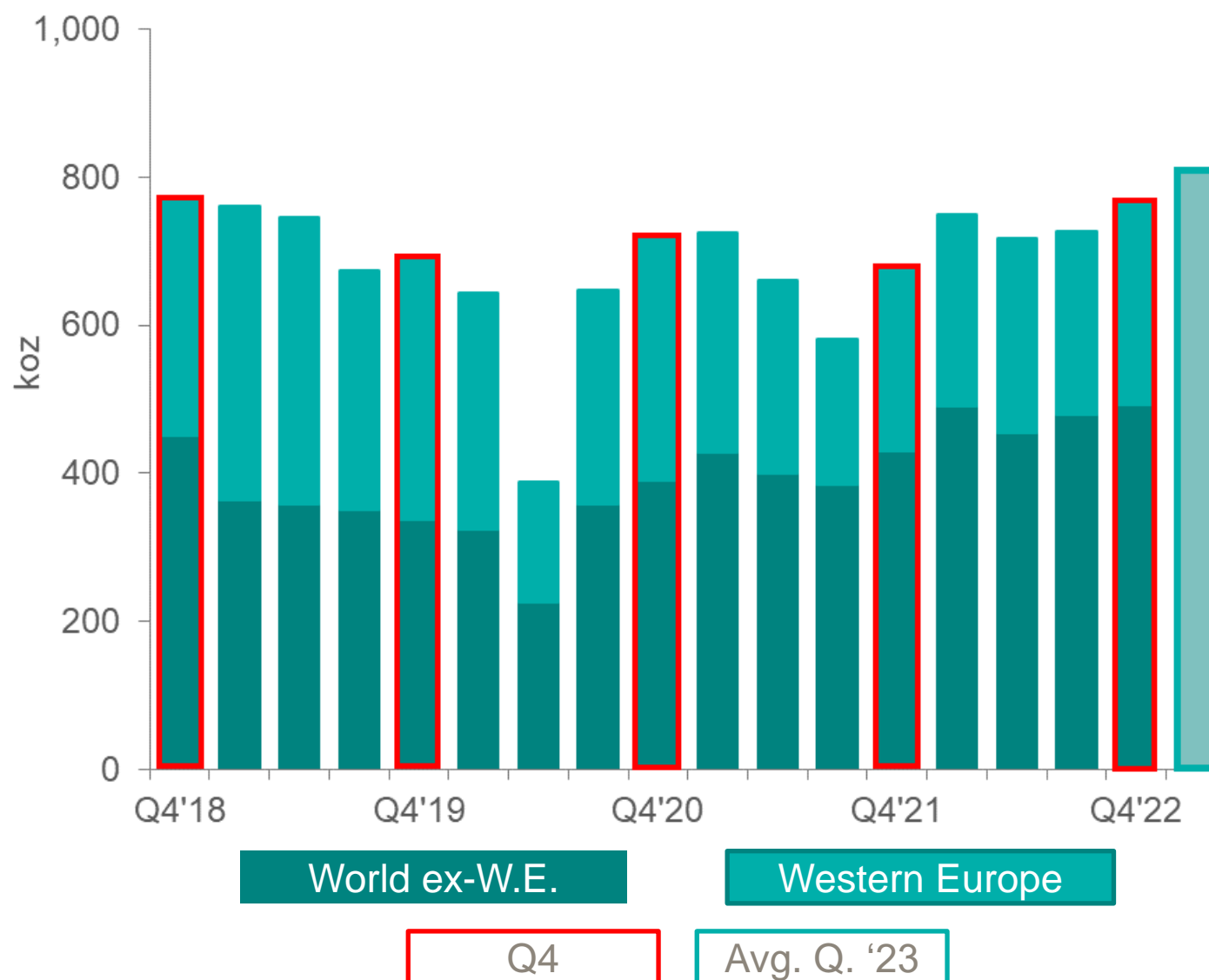
Q4 2022 RECYCLING: DOWN 19% YOY ON SUPPLY CHAIN AND JEWELLERY SELL-BACK CHALLENGES



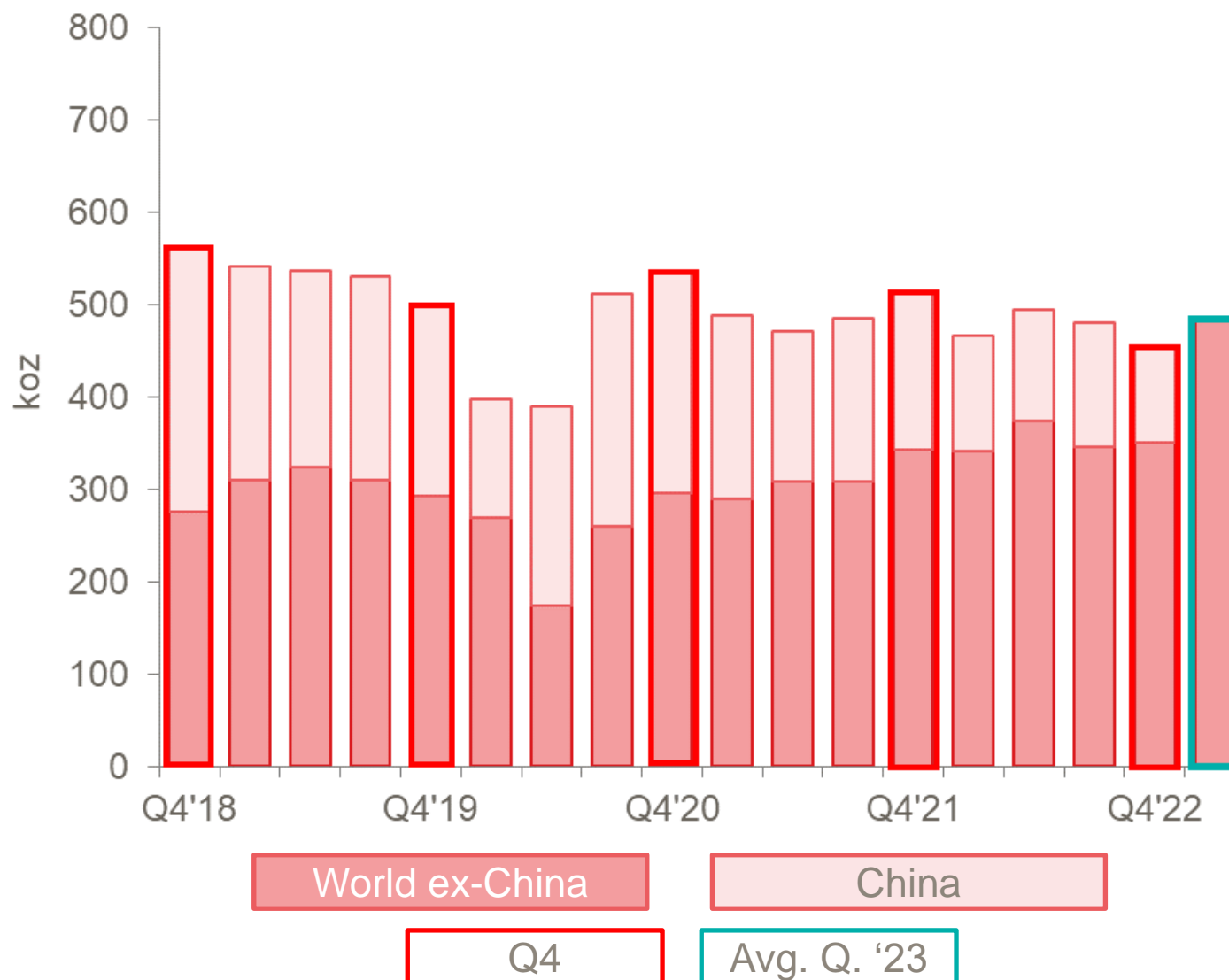
Q4 2022 DEMAND: DOWN 5% YOY WITH IMPROVED AUTO AND INVESTMENT DEMAND OFFSET BY INDUSTRIAL

DEMAND		Q4 2021 // Q3 2022	Q4 2022	YoY	QoQ	
Automotive		681	727	763	12%	5%
	Autocatalyst	681	727	763	12%	5%
	Non-road	†	†	†	n/a	n/a
Jewellery		511	481	452	-12%	-6%
Industrial		631	586	477	-24%	-19%
	Chemical	188	174	157	-16%	-9%
	Petroleum	57	48	51	-11%	7%
	Electrical	32	26	24	-26%	-8%
	Glass	142	128	42	-70%	-67%
	Medical & Biomedical	67	70	69	2%	-2%
	Other	145	141	134	-8%	-5%
Investment		-111	-277	-59	-47%	-79%
	Change in Bars, Coins	92	92	1	-98%	-98%
	Change in ETF Holdings	-155	-235	-67	-57%	-71%
	Change in Stocks Held by Exchanges	-48	-134	7	-115%	-105%
Total Demand		1,712	1,517	1,634	-5%	8%
Balance		416	255	105	-75%	-59%

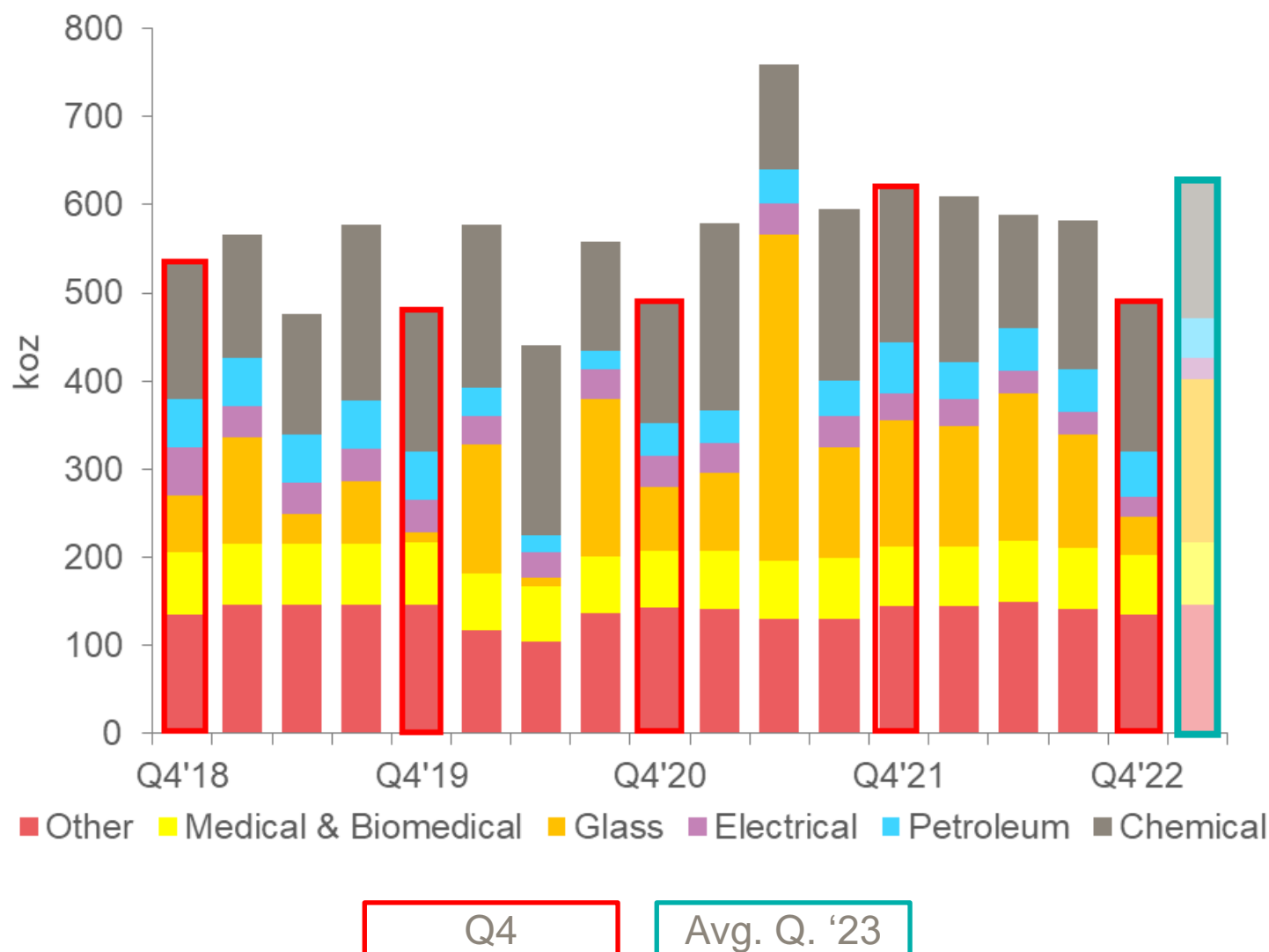
Q4 2022 AUTOMOTIVE: UP 12% SUPPORTED BY HIGHER LOADINGS AND SUBSTITUTION



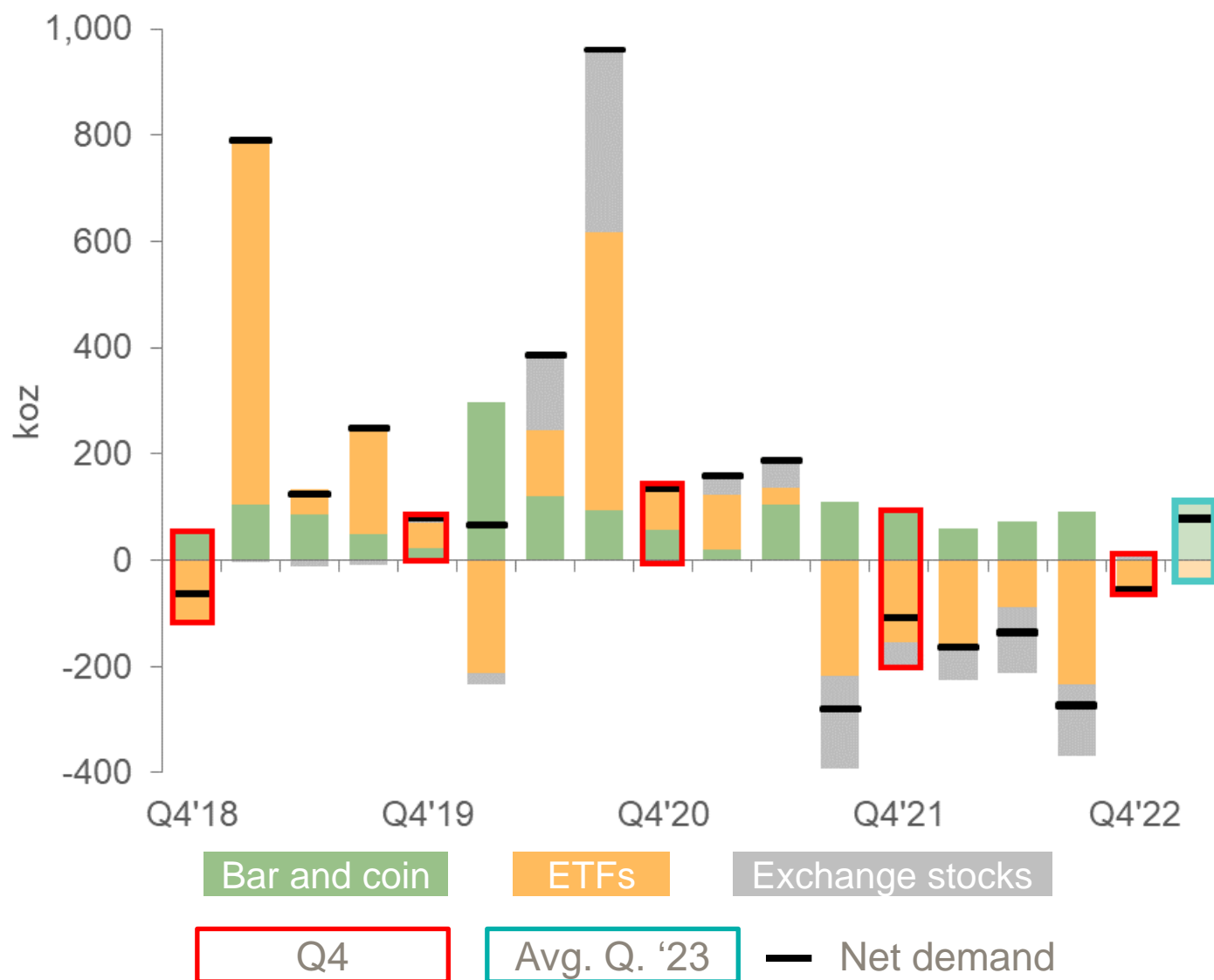
Q4 2022 JEWELLERY: DOWN 12% YOY WITH ROW STRENGTH OFFSET BY WEAKNESS IN CHINA AND N.A.



Q4 2022 INDUSTRIAL DEMAND: DOWN 24% YOY ON THE TIMING OF GLASS CAPACITY ADDITIONS



Q4 2022 INVESTMENT DEMAND: IMPROVED QOQ AND YOY ON IMPROVED FINANCIAL FLOWS OFFSET BY B&C

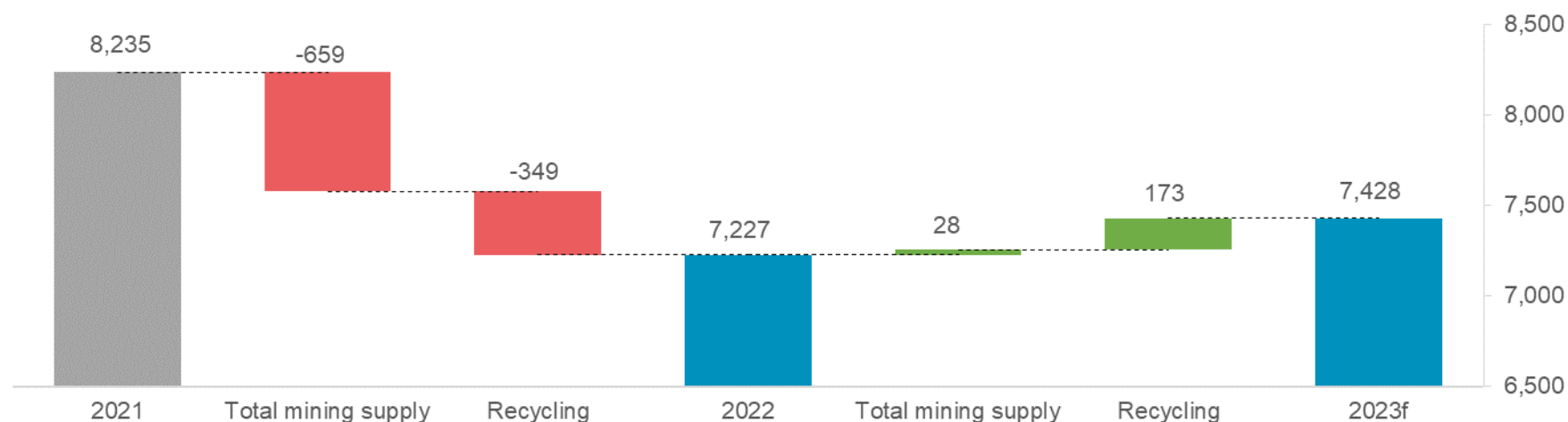


2021 - 2023F FULL YEAR: REDUCED 2022 SURPLUS, 2023 IN DEFICIT, CONSTRAINED SUPPLY & DEMAND GROWTH

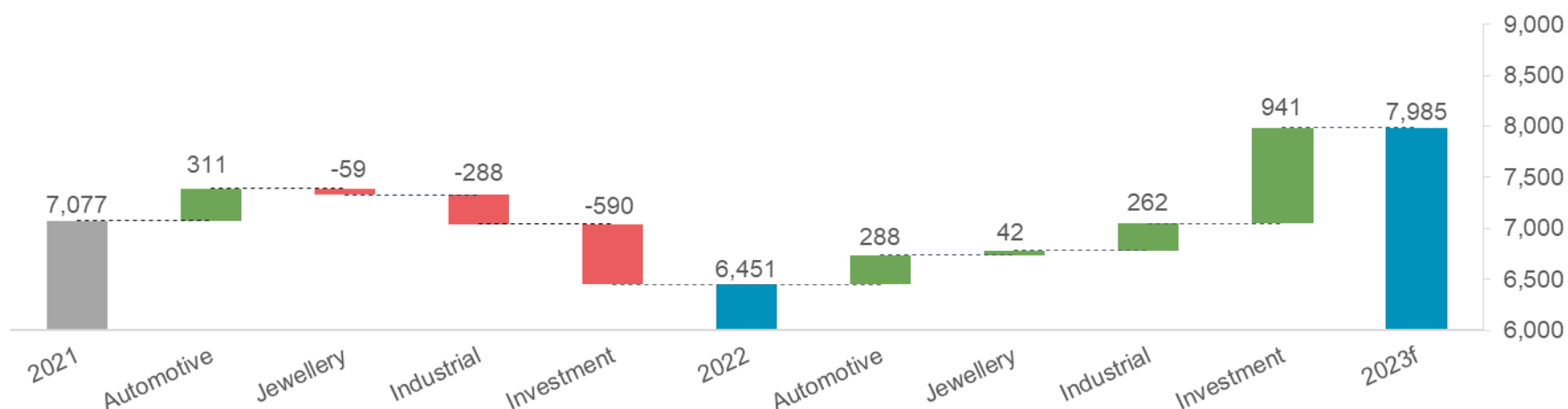
SUPPLY	2021	2022	YoY, oz	YoY, %	2023f	YoY, oz	YoY, %
Refined Production	6,297	5,579	-717	-11%	5,573	-6	0%
South Africa	4,678	3,975	-704	-15%	3,920	-55	-1%
Zimbabwe	485	480	-5	-1%	502	22	5%
North America	273	260	-13	-5%	302	42	16%
Russia	652	663	11	2%	644	-19	-3%
Other	208	201	-6	-3%	205	3	2%
Inc (-)/Dec (+) in Producer Inventory	-93	-35	58	N/A	+0	35	N/A
Total Mining Supply	6,204	5,545	-659	-11%	5,573	28	1%
Recycling	2,032	1,682	-349	-17%	1,856	173	10%
Autocatalyst	1,543	1,242	-301	-20%	1,391	149	12%
Jewellery	422	372	-50	-12%	395	23	6%
Industrial	67	68	2	3%	69	1	2%
Total Supply	8,235	7,227	-1,008	-12%	7,428	201	3%
DEMAND							
Automotive	2,647	2,957	311	12%	3,246	288	10%
Jewellery	1,953	1,894	-59	-3%	1,936	42	2%
Industrial	2,530	2,243	-288	-11%	2,505	262	12%
Investment	-53	-643	-590	N/A	298	941	N/A
Total Demand	7,077	6,451	-626	-9%	7,985	1,534	24%
Balance	1,158	776	-382	-33%	-556	-1,332	N/A
Above Ground Stocks	3,679	4,455	776	21%	3,899	-556	-12%

2023 OUTLOOK: MUTED SUPPLY UP 3% AND STRONG POSITIVE SWING IN DEMAND UP 24% (>1.5 MOZ)

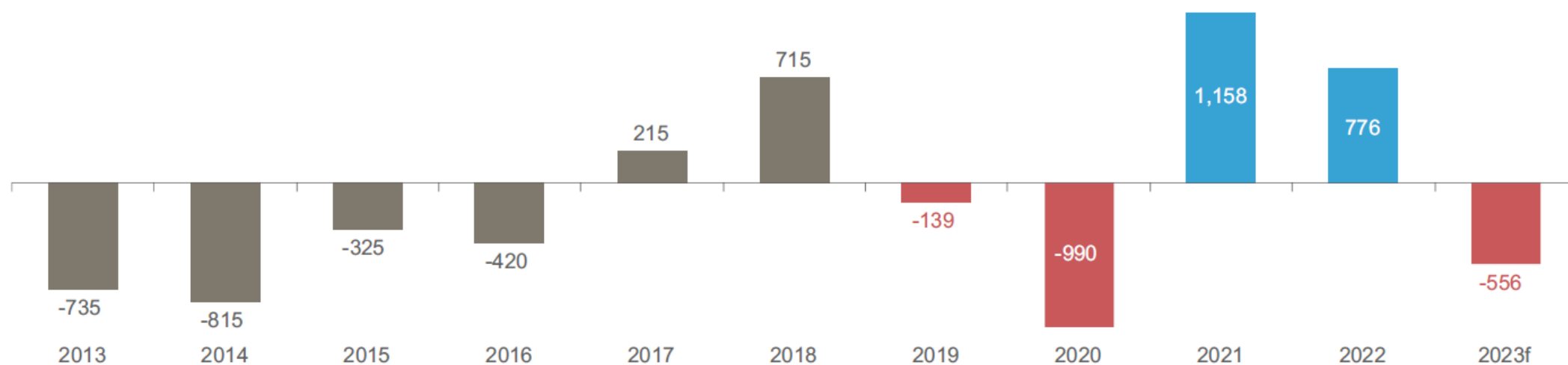
Annual total supply and changes 2021 to 2023F (koz)



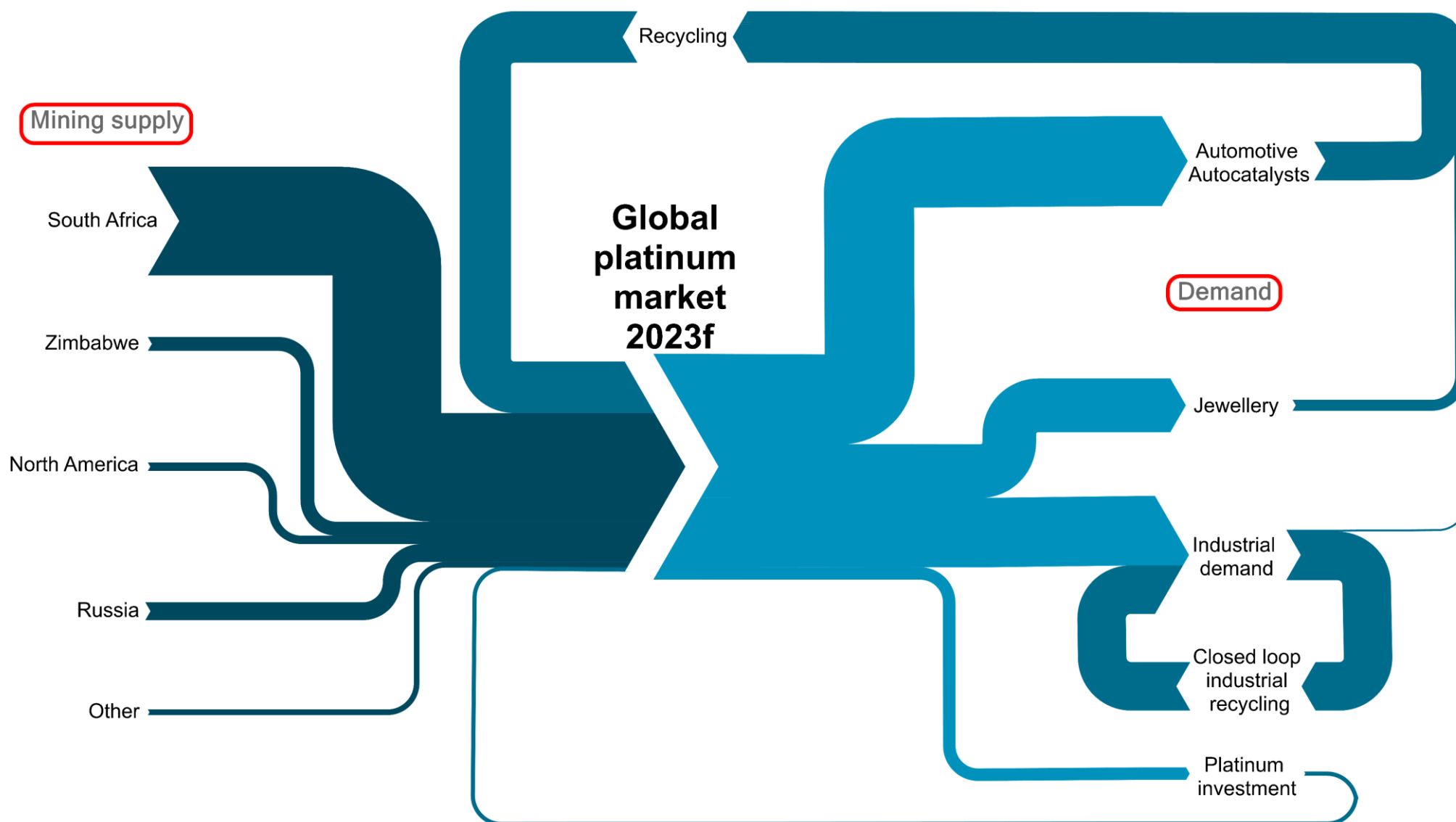
Annual total demand and changes 2021 to 2023F (koz)



MARKET BALANCE: MOVING TO DEFICIT IN 2023 AFTER TWO YEARS OF SURPLUSES, A MOVE OF OVER 1.3 MOZ



EXPECTED PLATINUM FLOWS FROM MINERS TO DEMAND SEGMENTS AND RECYCLING RETURNS: ANNUAL 2023F



AGENDA: PLATINUM QUARTERLY: Q4 2022, FULL YEAR 2022 AND UPDATED 2023 FORECAST

1. Introduction

Trevor Raymond

2. Platinum Quarterly, fundamentals review

Edward Sterck

3. Current thematics

- Risks to supply
- Recession resistant demand
- Above ground stocks
- Green Hydrogen

Edward Sterck, Director of Research

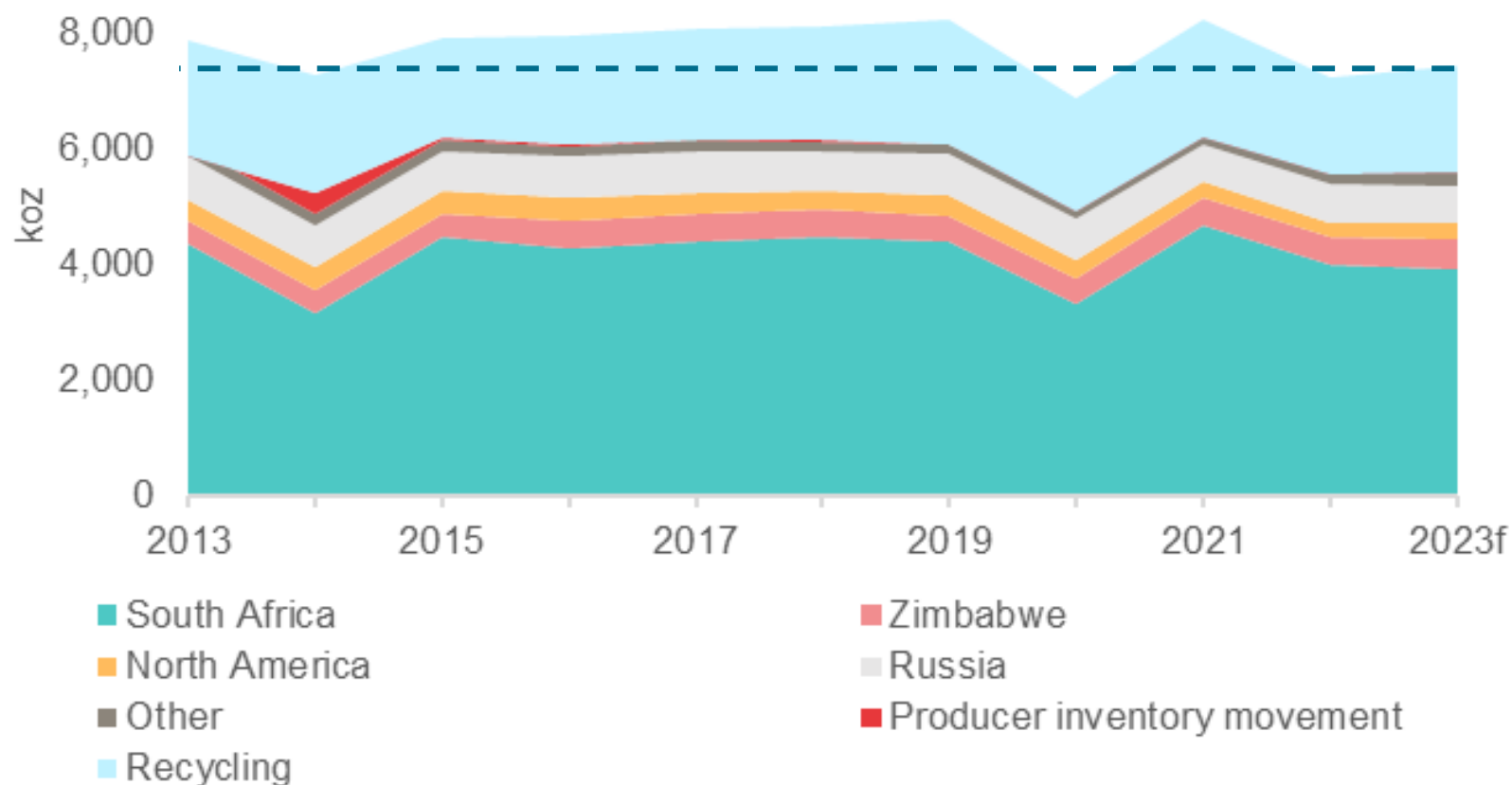
4. Questions

Trevor Raymond

Edward Sterck

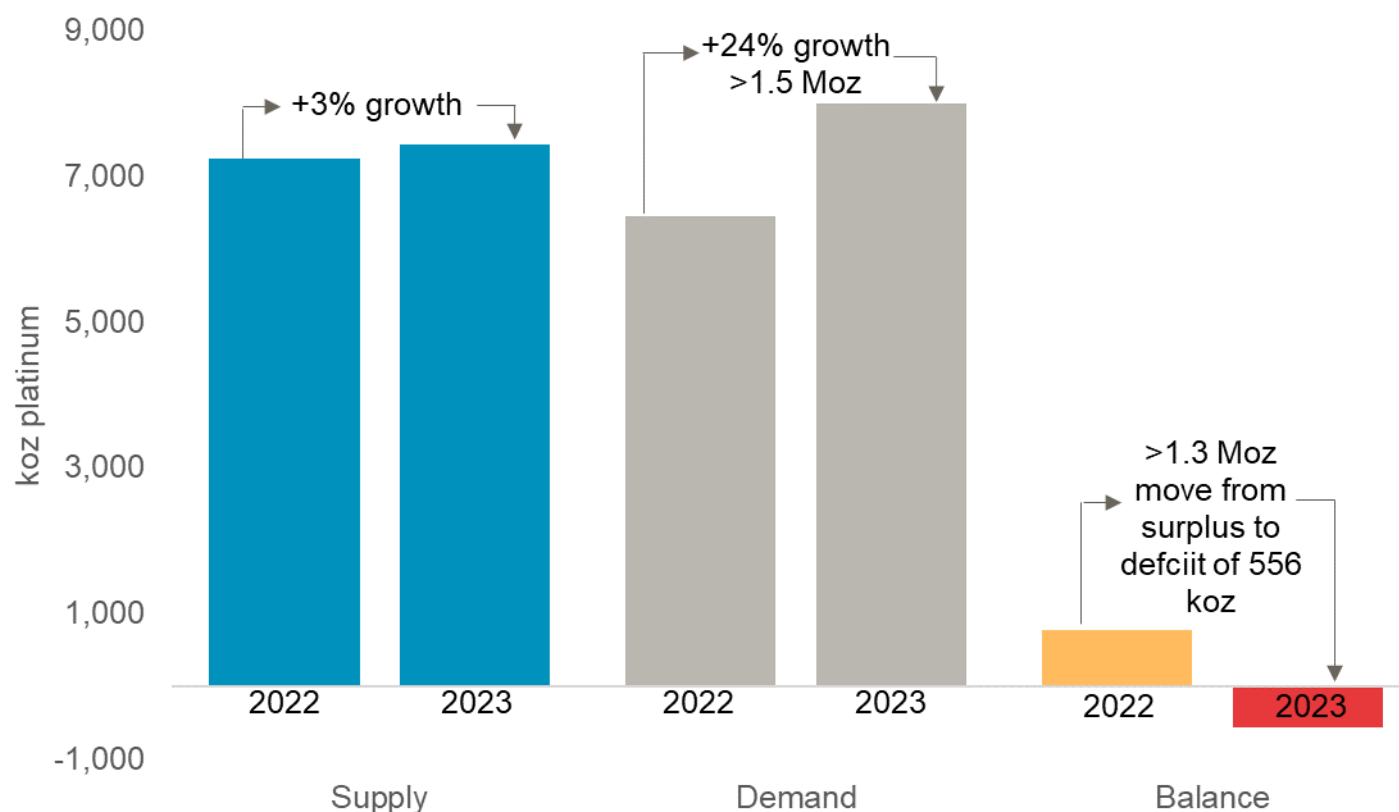


MUTED SUPPLY AND STRONG DEMAND GROWTH, WHERE ARE THE RISKS?



- Global platinum supply is projected to increase by only 3% in 2023
- Constrained by electricity shortages in SA and sanction-related operational challenges in Russia
- Total supply in 2023f 5% below ten-year average level

24% YOY DEMAND GROWTH RESULTS IN 1.3 MOZ SWING IN THE SUPPLY DEMAND BALANCE



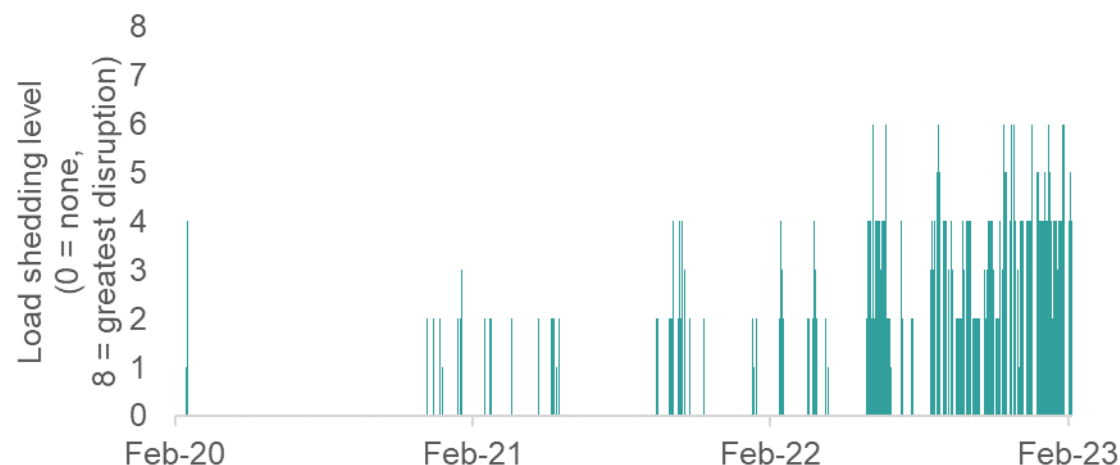
The projected deficit in 2023f:

- Is almost the equivalent to Russia's total annual platinum production
- Reduces above ground stocks by 12%

RISKS TO MINE SUPPLY FROM SOUTH AFRICAN POWER SHORTAGES AND OPERATIONAL HEADWINDS IN RUSSIA

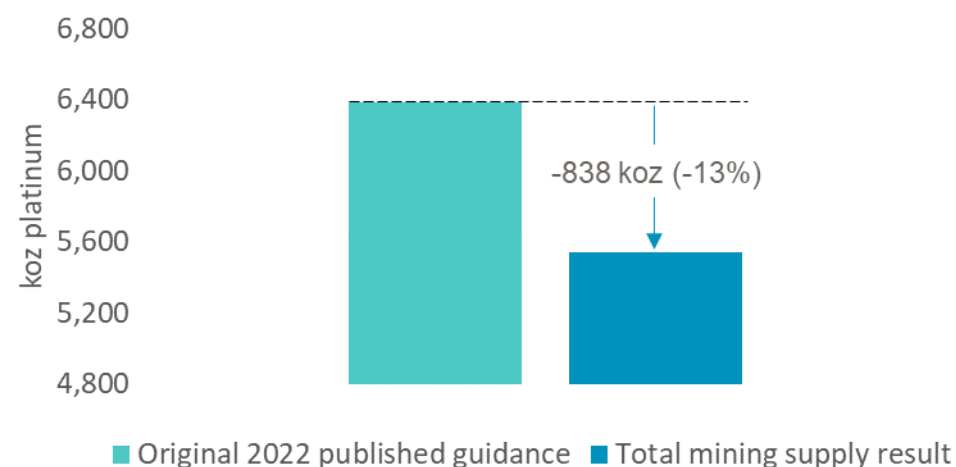
Eskom load shedding increasing in frequency and severity

- Electricity shortages in South Africa are close to the limit of what producers can manage without impacting production

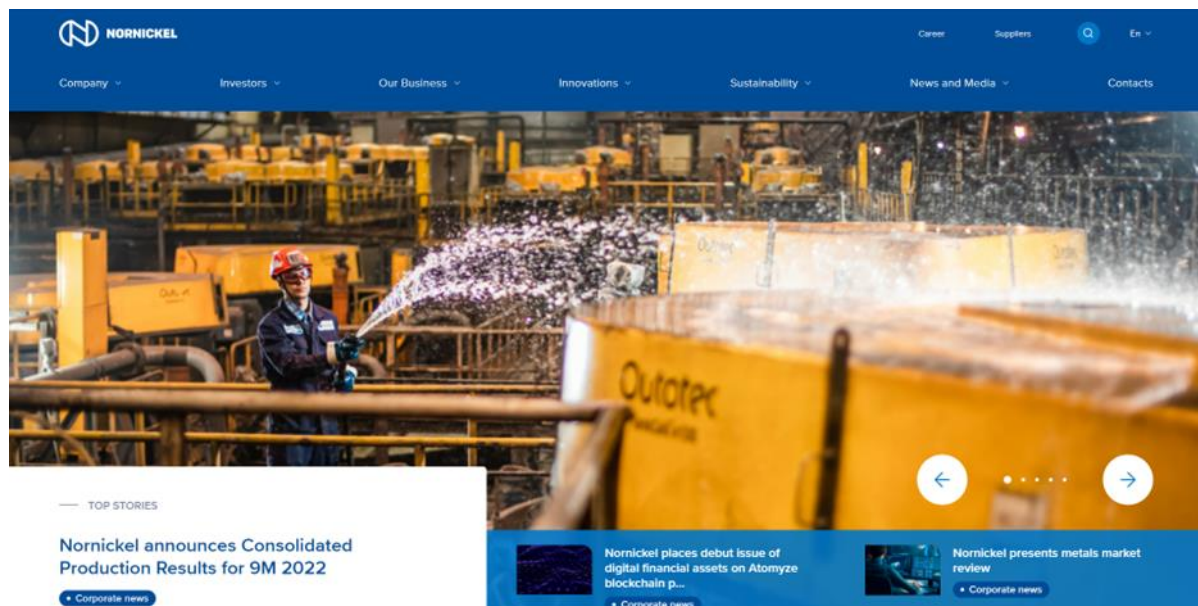


2022 mine supply was >800 koz lower than original guidance

- Global Mine supply in 2022 fell well short of guidance due to challenges with scheduled maintenance, but in-part also due to electricity shortages



RISKS TO MINE SUPPLY FROM SOUTH AFRICAN POWER SHORTAGES AND OPERATIONAL HEADWINDS IN RUSSIA



- Nornickel warned that sanctions have impacted access to spares and new mining equipment
- Biggest risks are to capital equipment once spares are depleted and without access to OEM engineers for scheduled and unscheduled maintenance
- China not a panacea for replacing capital equipment

Metso Outotec to book a non-recurring charge of EUR 150 million related to winding down its business in Russia

Metso Outotec Corporation's stock exchange release on July 11, 2022, at 9:00 a.m. EEST

Metso Outotec has been winding down its business operations and customer contracts in Russia during the second quarter, in line with the company's disclosure in its January-March 2022 interim report. At the end of March 2022, Metso Outotec had an order backlog of EUR 479 million to Russia. Around EUR 315 million was originally expected to be recognized as sales in 2022, of which approximately EUR 215 million was to non-sanctioned customers at the end of March.

RISKS TO SUPPLY: PROVENANCE CONCERNS IMPACT CATALYTIC CONVERTER RECYCLING IN NORTH AMERICA

US authorities bust catalytic converter theft ring that raked in over \$545m

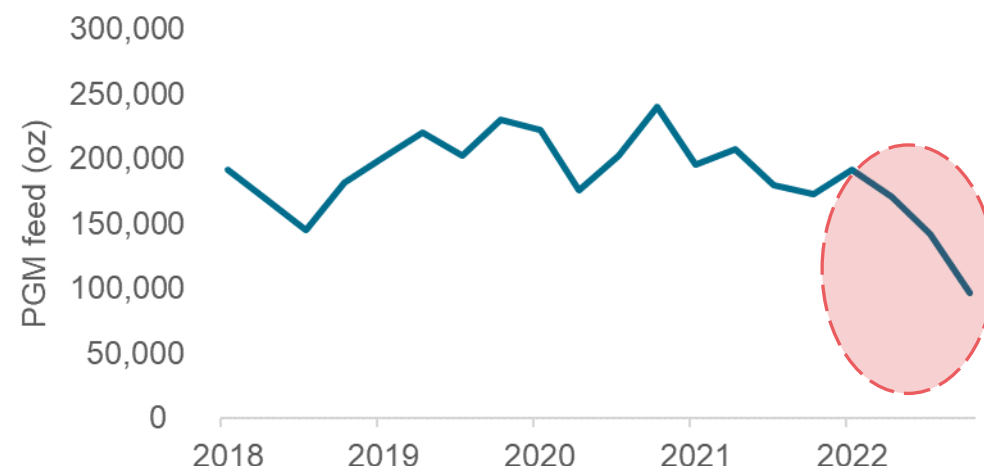
The justice department charged 21 people and seized millions of dollars in assets in the takedown of the nationwide operation



📷 Catalytic converters are vehicle exhaust devices that convert toxic gases into safer emissions.
Photograph: AP

US authorities said they have taken down a massive, nationwide criminal ring to steal thousands of catalytic converters from cars and trucks, charging 21 people and seizing millions of dollars in assets.

Sibanye Stillwater recycling volumes

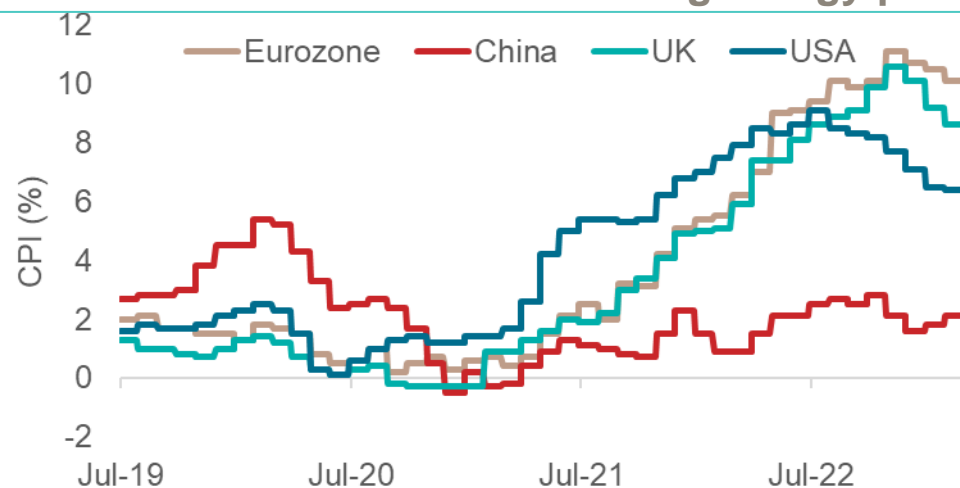


Global automotive recycling volumes

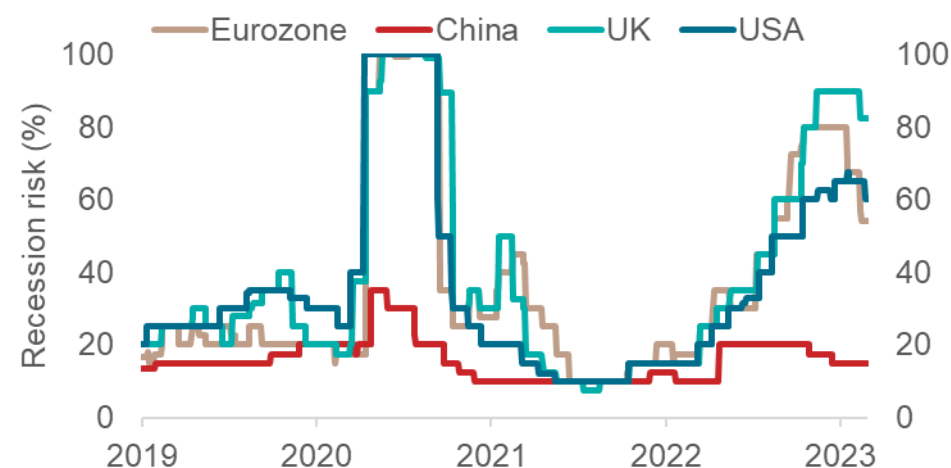


INFLATIONARY RISKS HAVE EASED, PREDOMINATELY DUE TO DECLINING ENERGY PRICES

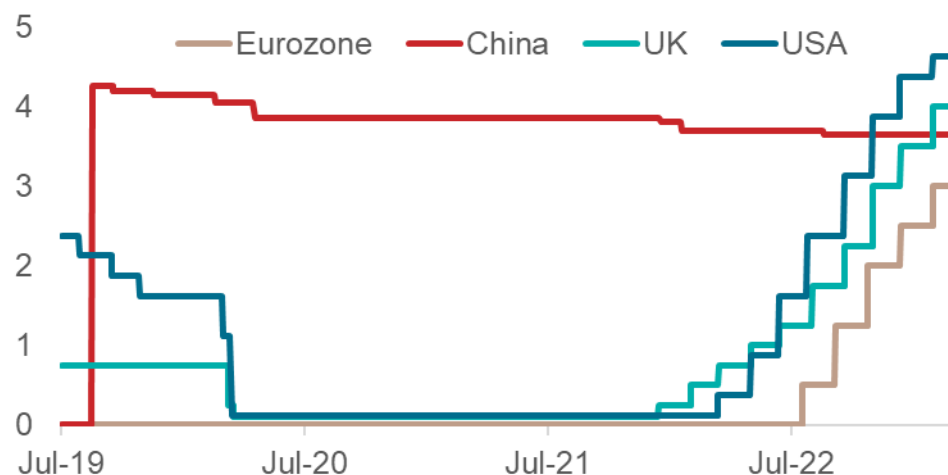
Inflation rates have eased on falling energy prices



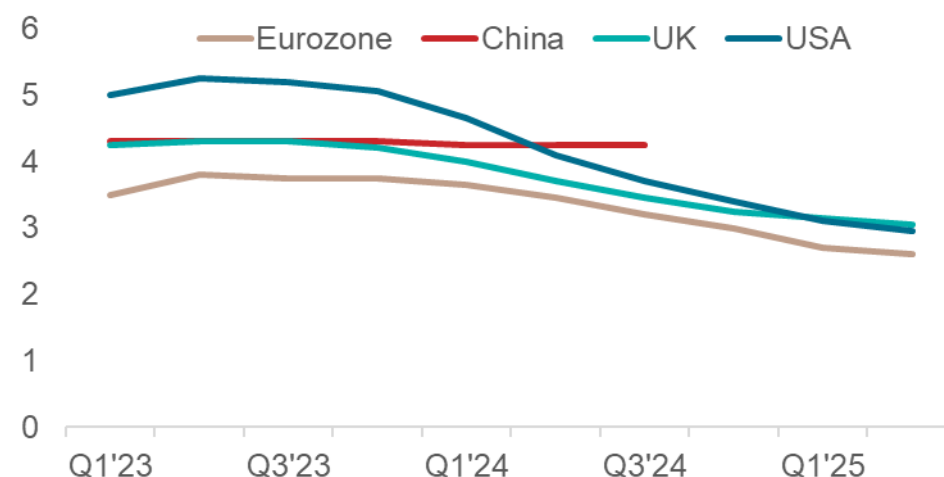
Recessionary risks are abating



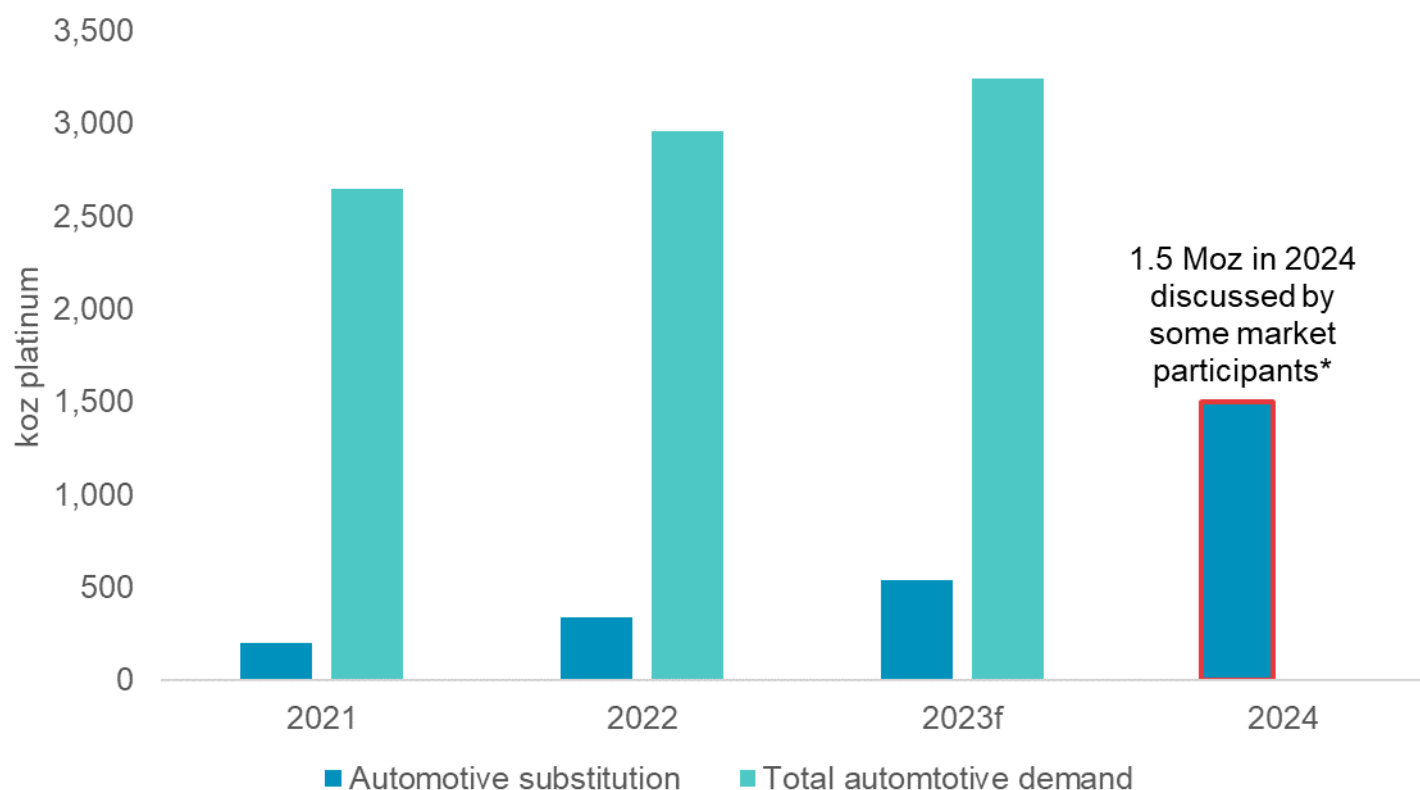
Central bank interest rates have risen rapidly



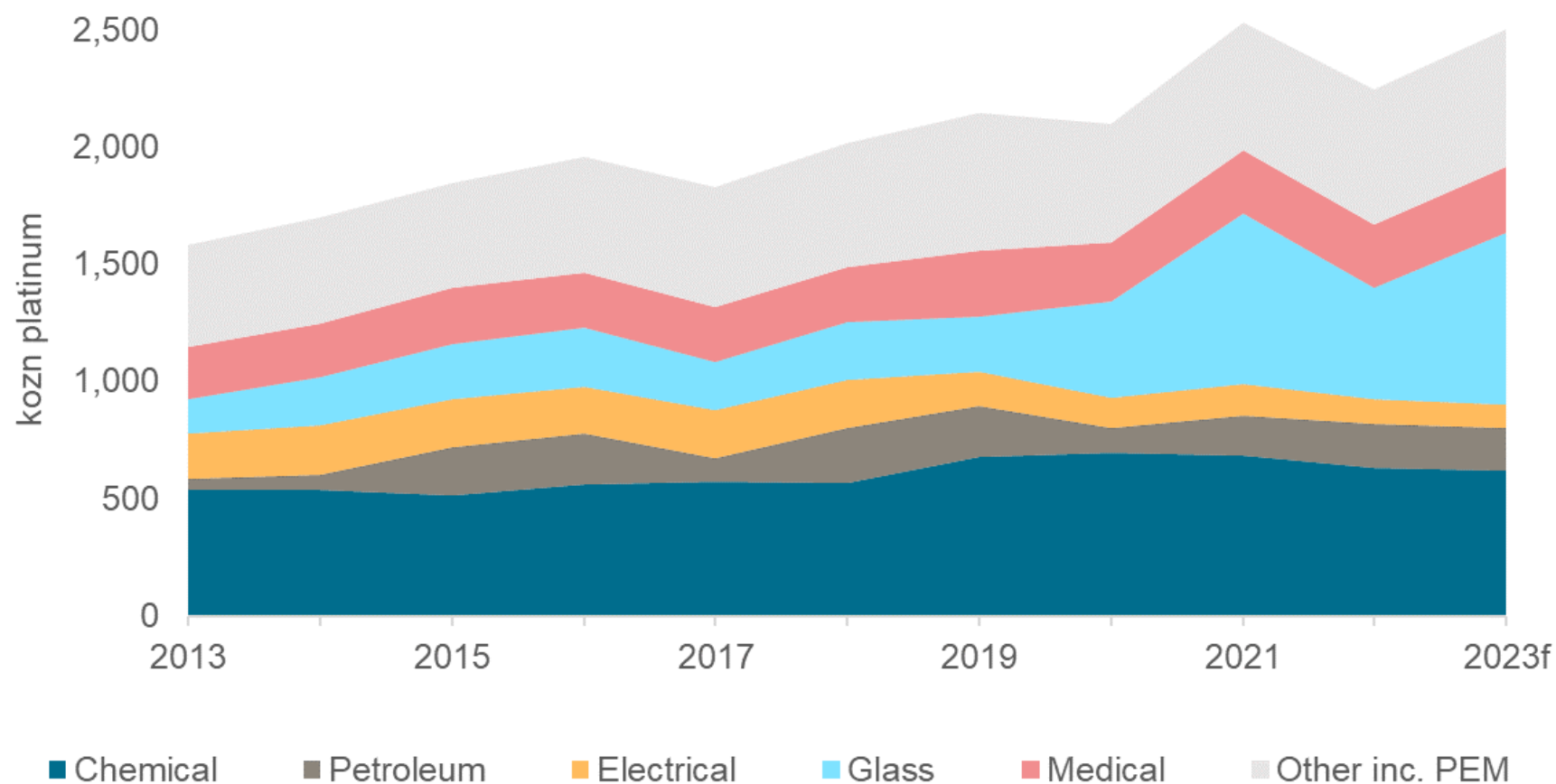
Consensus forecasts are for slower rate increases



SUBSTITUTION A FAR BIGGER DRIVER OF AUTOMOTIVE DEMAND FOR PT THAN VEHICLE PRODUCTION VOLUMES

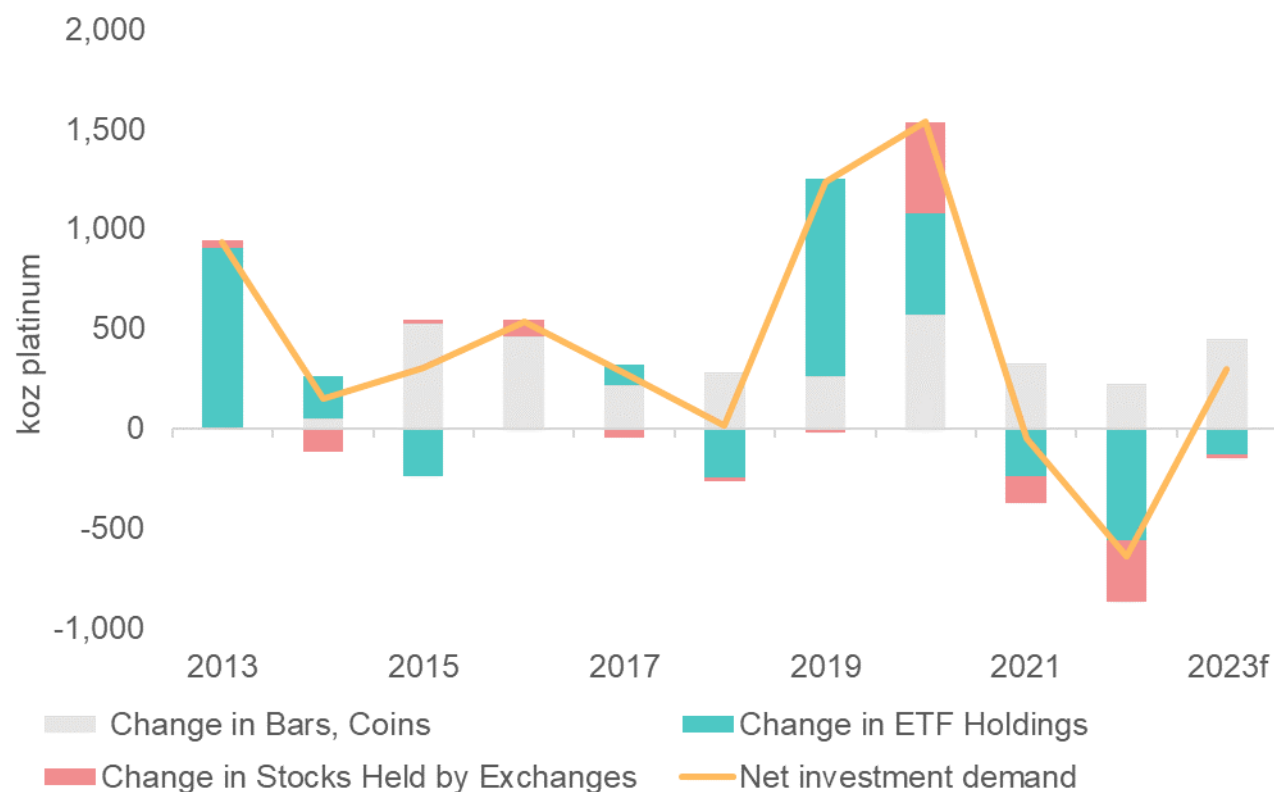


GLASS CAPACITY ADDITIONS A MAJOR DRIVER OF INDUSTRIAL DEMAND GROWTH

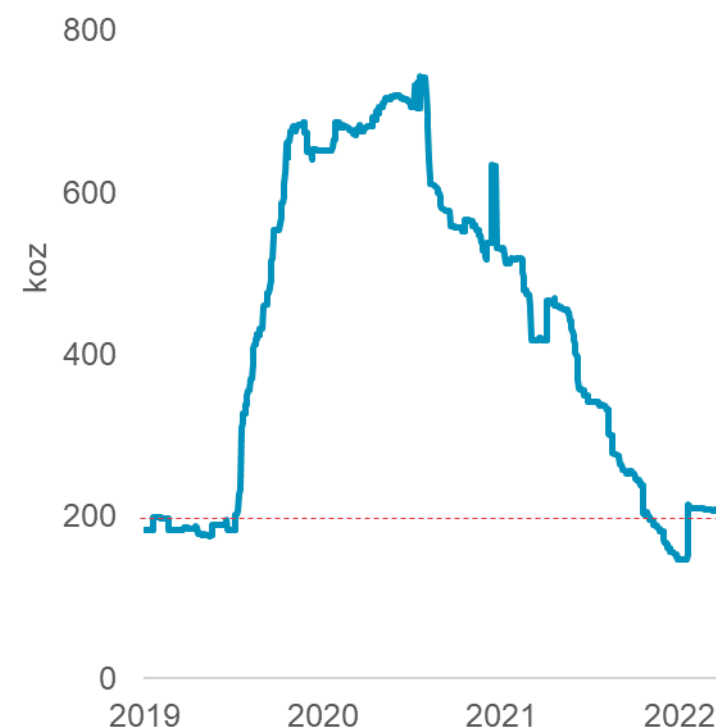


ETF DEMAND COULD BUILD ON STRONG BAR AND COIN TO BOOST FORECAST INVESTMENT DEMAND

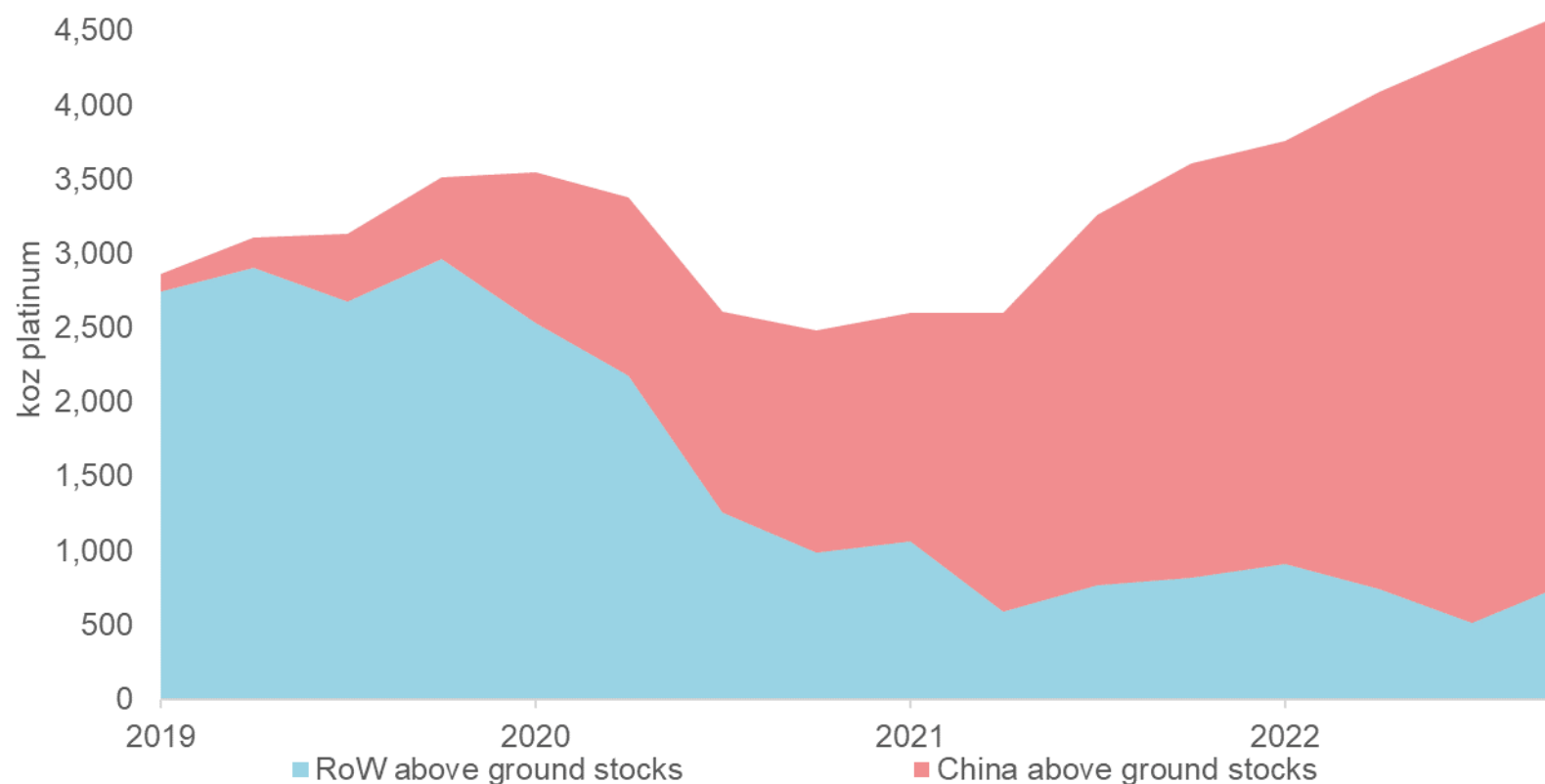
Investment flows shifting more in favour of ETFs



Exchange stock movements



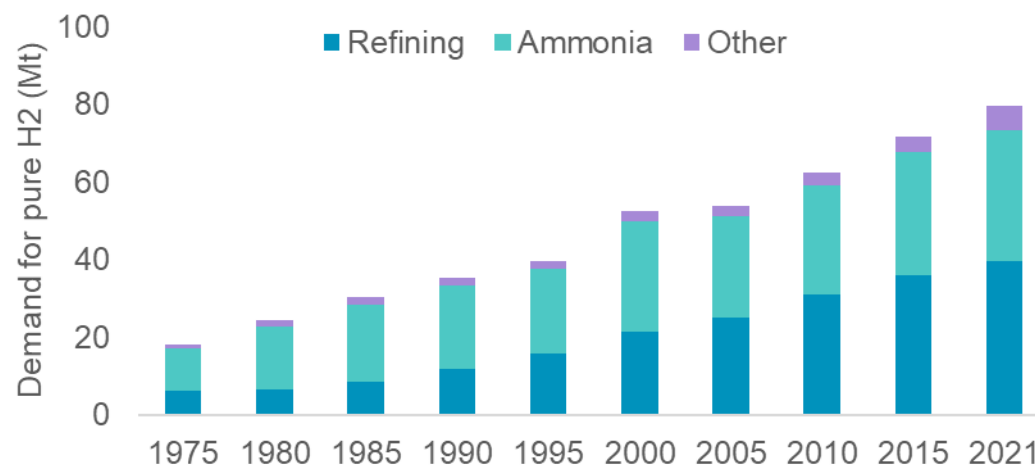
MOVEMENT OF ABOVE GROUND STOCKS INTO CHINA LEAVES LITTLE INVENTORY IN ROW TO OFFSET DEFICITS



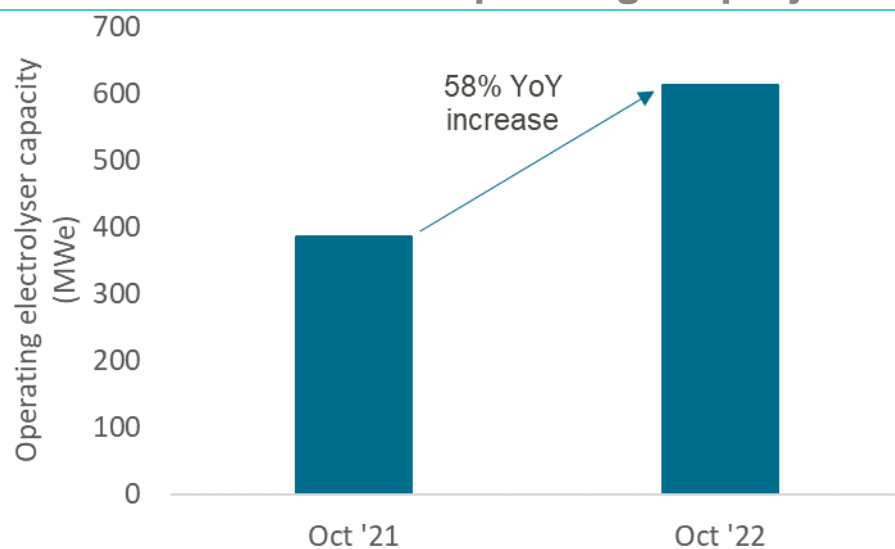
- We expect any release of the quasi-speculative portion of the excess imports into the domestic market to also be price-based - and only at prices significantly higher than current
- Price opportunistic China buying could ease if platinum price continues to increase

GREEN HYDROGEN: ELECTROLYSER PLANS LEAD HYDROGEN-RELATED PLATINUM DEMAND

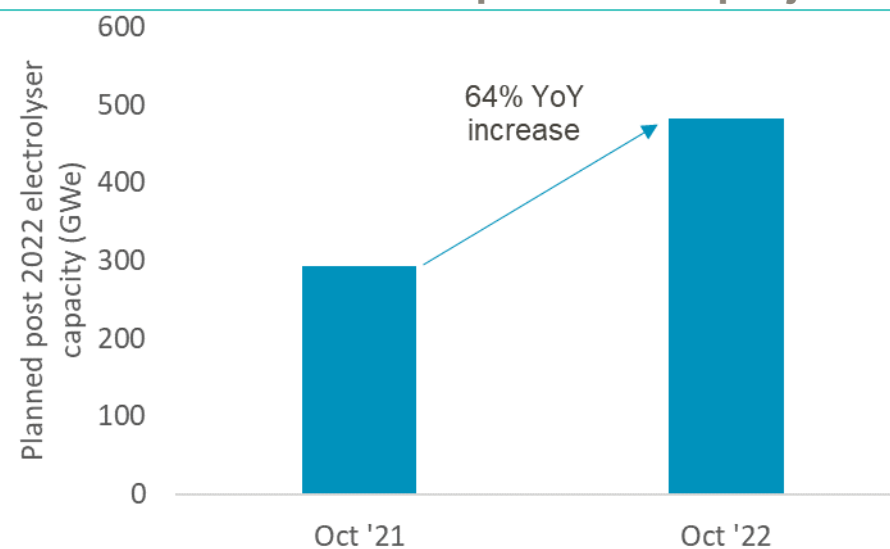
Decarbonising existing grey H2 market ensures base demand for green H2



58% YoY increase in operating H2 projects



64% YoY increased in planned H2 projects



WHY INVEST IN PLATINUM? SUPPLY RISKS, DEMAND GROWTH, DEFICITS, H2 & STRONG INVESTMENT CASE



- Risks to sustaining supply from operational challenges, inflationary headwinds and sanctions against Russia
- Platinum market moving into a deficit in 2023, adding to already tight market conditions
- Substitution likely locked in for seven-year model life
- Recent flows of platinum from West into China has absorbed more than recent surpluses and stocks are likely unavailable outside of China
- A new, and fast growing, end source of demand from the hydrogen economy

AGENDA: PLATINUM QUARTERLY: Q4 2022, FULL YEAR 2022 AND UPDATED 2023 FORECAST

1. Introduction

Trevor Raymond

2. Platinum Quarterly, fundamentals review

Edward Sterck

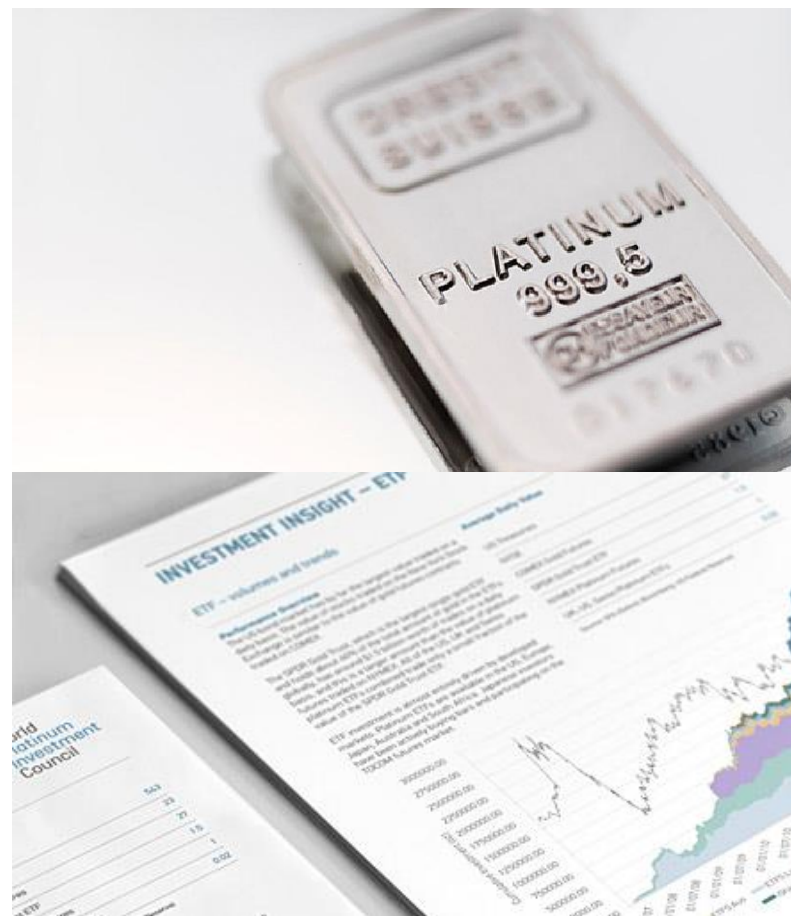
3. Current thematics

Edward Sterck

4. Questions

Trevor Raymond, CEO

Edward Sterck, Director of Research



WPIC INITIATIVES AND UPCOMING RESEARCH



WPIC initiatives:

- New platinum products launched in North America
- Platinum Panda to continue in China, supplemented by launch of platinum dragon, the first of 12 years of zodiac coins
- Two additional partners, Osaka Exchange (JPX) and Nihon Material, added in Japan

WPIC Research:

- New analyst hired
- Additional capacity to support additional PGM and hydrogen research

AGENDA: PLATINUM QUARTERLY: Q4 2022, FULL YEAR 2022 AND UPDATED 2023 FORECAST

1. Introduction

Trevor Raymond

2. Platinum Quarterly, fundamentals review

Edward Sterck

3. Current thematics

Edward Sterck

4. Questions

Trevor Raymond, CEO

Edward Sterck, Director of Research

