

PLATINUM QUARTERLY PRESENTATION Q2 2017

London

6th September, 2017

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AGENDA: PLATINUM QUARTERLY Q2 2017 AND 2017 REVISED FORECAST

1. Introduction

Paul Wilson, CEO

2. Platinum Quarterly, Fundamentals review

Trevor Raymond, Director of Research

3. Focus on fundamental drivers

Trevor Raymond

4. Questions

Paul Wilson

Trevor Raymond

Marcus Grubb, Director of Market Development



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- Q2'17
- 2017f revision

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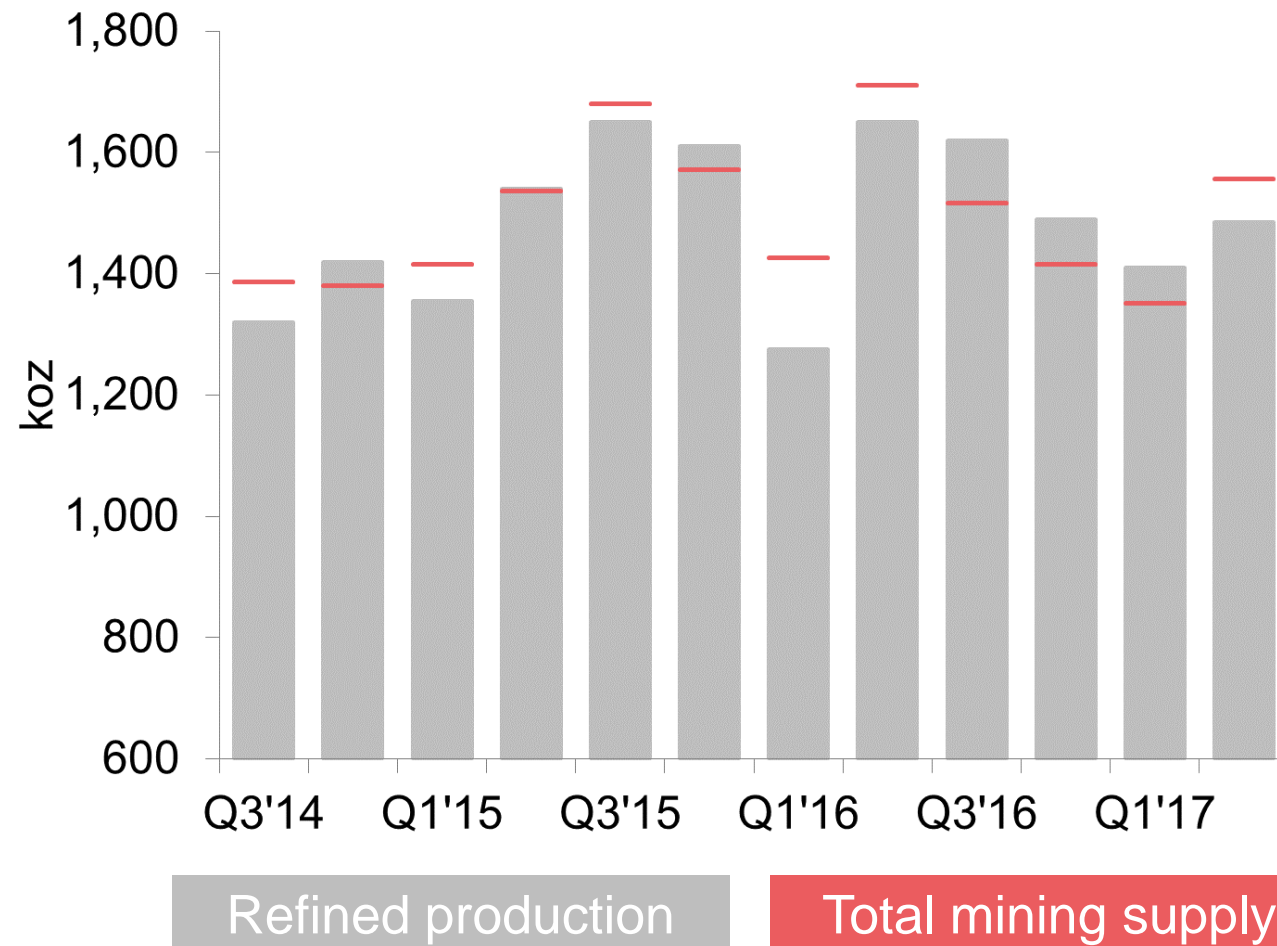
Q2 2017 SUPPLY: QoQ SUPPLY UP, BUT YoY WEAKNESS CONTINUES

SUPPLY	Q2 2016 // Q1 2017 Q2 2017		
Refined Production	1,650	1,410	1,485
South Africa	1,200	1,015	1,045
Zimbabwe	120	115	105
North America	105	95	85
Russia	180	140	205
Other	45	45	45
Inc (-)/Dec (+) in Producer Inventory	60	-60	70
Total Mining Supply	1,710	1,350	1,555
Recycling	480	420	480
Autocatalyst	340	300	330
Jewellery	140	120	150
Industrial	0	0	0
Total Supply	2,190	1,770	2,035

- Inventory and pipeline drawdown support Q2 mine supply growth
- Refined production up 75 koz QoQ, S.A. Q2 up less than normal (+30 koz) Russia Q1 inventory release in Q2 (+65 koz)
- Mining supply up 205 koz QoQ including 70 koz release from inventory
- Recycling rose 60 koz QoQ but flat YoY
- Total supply rose 65 koz QoQ (+15%) but down 155 koz YoY (-7%)
- Annual downward trend continues

MINING SUPPLY: DECLINE CONTINUES, DESPITE TEMPORARY QUARTERLY PICKUP

Total mining supply and refined production

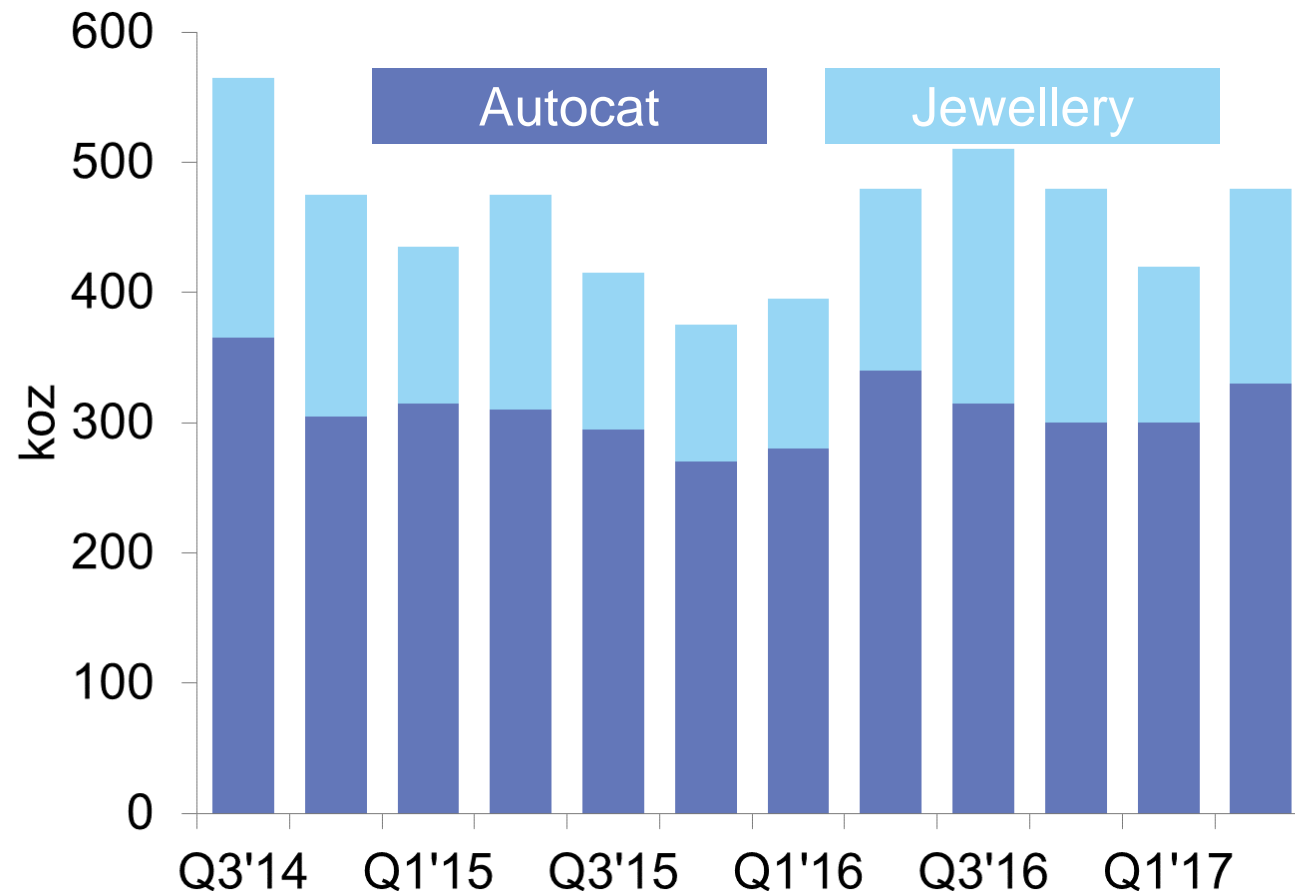


Temporary factors raised mine production in Q2 2017

- Key Western Bushveld mine output at normal rates – prior to planned slow-down
- S.A. smelter run-out and rebuild to increased refined production later in the year
- Russia processed pipeline material built up during Q1'17
- Unplanned mine maintenance in Sudbury dampened U.S. output

RECYCLING: QUARTERLY INCREASE BUT LOWER ANNUAL LEVEL STILL EXPECTED

Autocat and jewellery recycling



- Q2 recycle growth QoQ but flat YoY
- Autocatalyst recycling up 30 koz QoQ (+10%), helped by rising scrap steel price
- Jewellery scrap up 30 koz QoQ (+25%), as some retail rationalisation saw stock returned
- Broader high retail recycle in 2016 not expected to be repeated in 2017

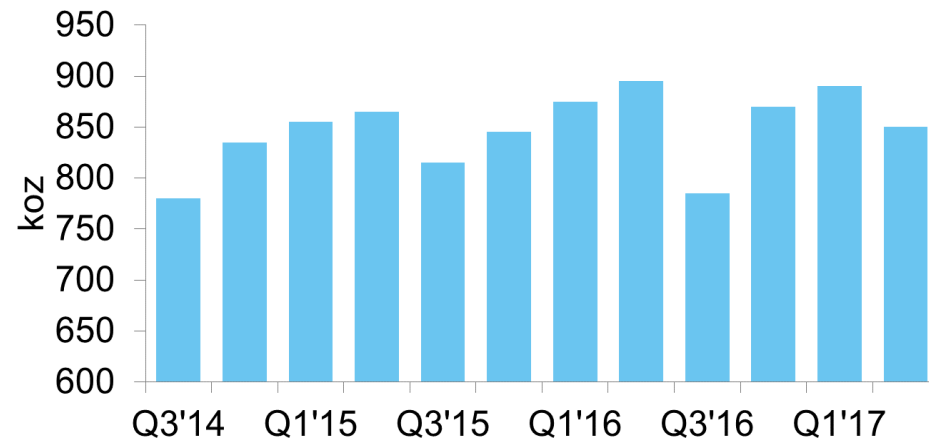
Q2 2017 DEMAND: WEAK AUTO AND INDUSTRIAL RESILIENT JEWELLERY AND INVESTMENT

DEMAND		Q2 2016 // Q1 2017 Q2 2017		
Automotive		895	890	850
	Autocatalyst	860	845	815
	Non-road	35	35	35
Jewellery		620	640	620
Industrial		470	465	400
	Chemical	140	150	140
	Petroleum	60	45	10
	Electrical	40	40	40
	Glass	80	85	50
	Medical & Biomedical	65	55	70
	Other	85	90	90
Investment		90	80	90
	Change in Bars, Coins	110	25	70
	Change in ETF Holdings	-15	65	20
	Change in Stocks Held by Exchanges	-5	-10	0
Total Demand		2,075	2,075	1,960
Balance		115	-305	75

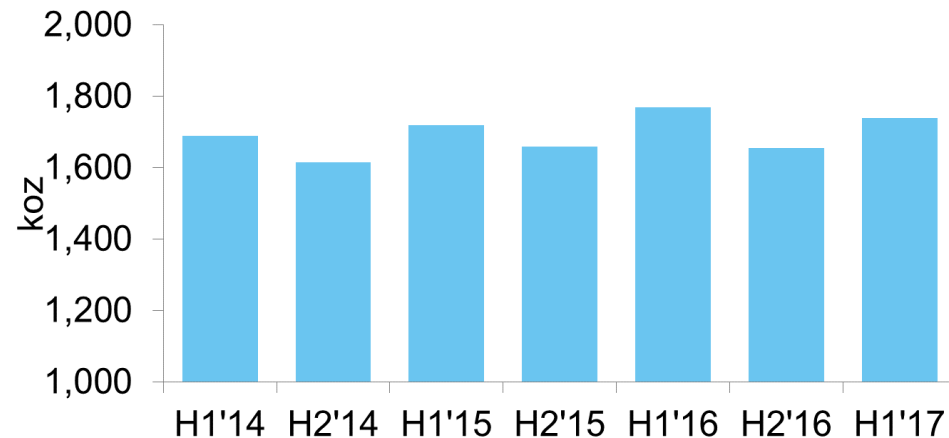
- Automotive demand slips by 5% QoQ, weakness in Japan and W. Europe
- Jewellery weak at 620 koz but weakness appears to be abating. India continues to grow
- Industrial demand down QoQ and YoY as rationalization and new build timing reduce net Petroleum and Glass demand
- Investment resilient in Japan. ETF assets continue to build in Q2'17
- Total demand lower by 115 koz posting a slight surplus in Q2'17

Q2 2017 DEMAND: AUTOCATALYST DEMAND DOWN, BUT W EUROPE HOLDING UP

Autocatalyst demand, quarterly



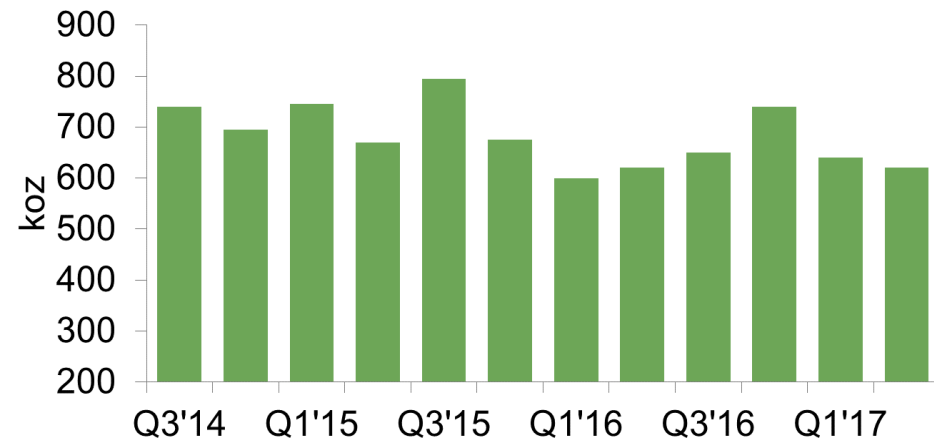
Autocatalyst demand, half-yearly



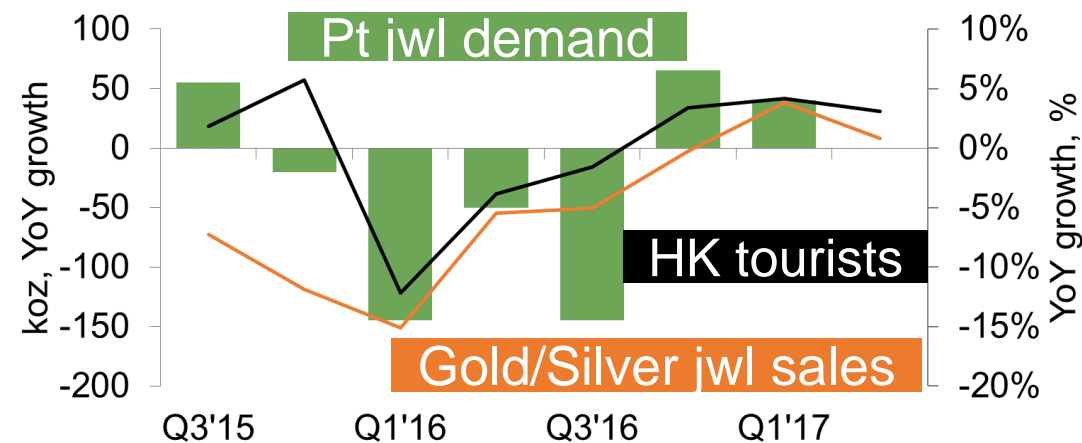
- Autocatalyst demand fell slightly to 850 koz in Q2'17 from 890 koz in Q2'16
- Losses in W. Europe, Japan and India offset growing demand elsewhere
- But overall demand has remained robust, with H1'17 up 5% from H2'16 and down just 2% YoY

Q2 2017 DEMAND: JEWELLERY WEAKNESS ABATES IN CHINA. SOLID YoY PERFORMANCE IN INDIA

Jewellery demand



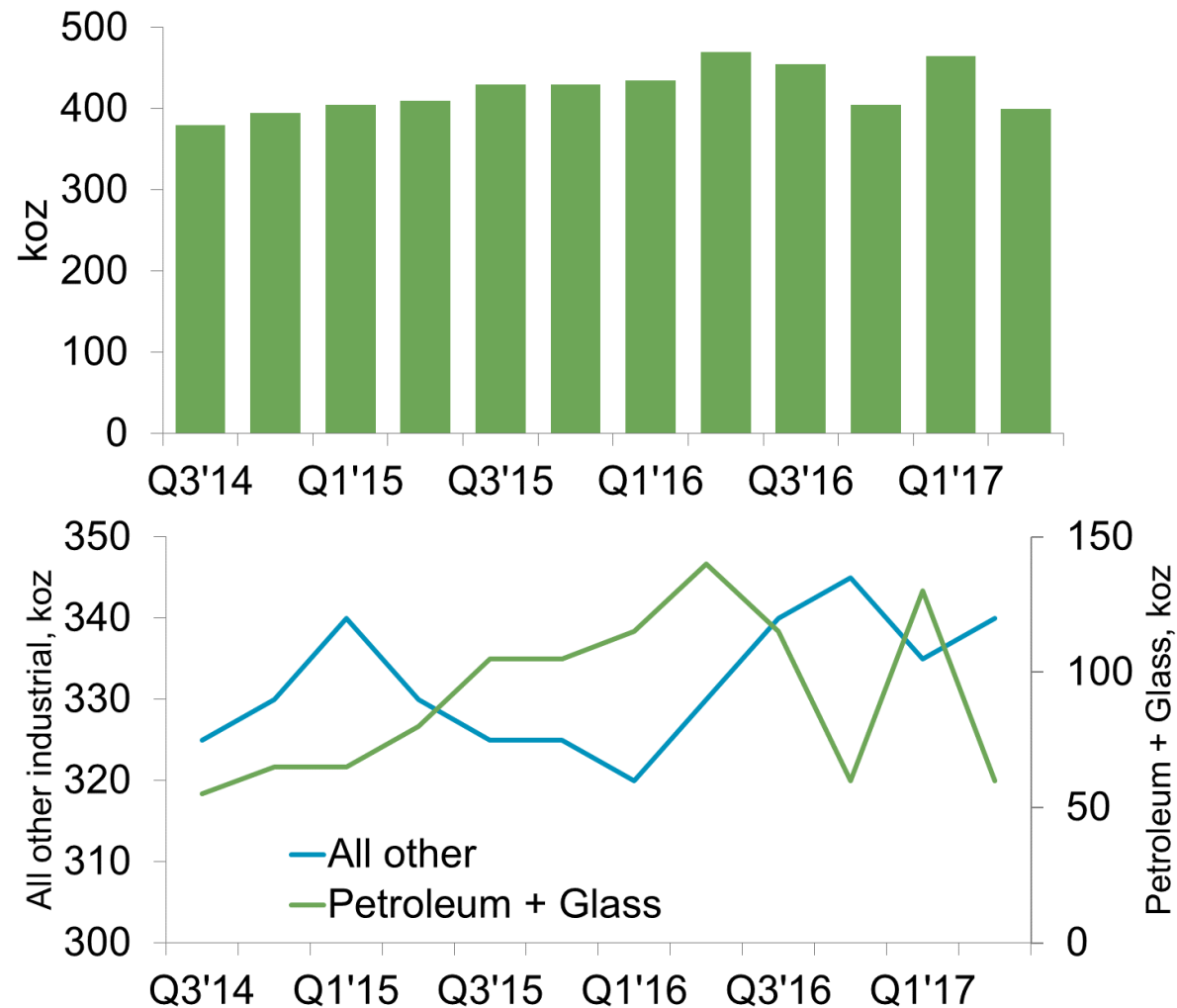
Jewellery demand growth and economic drivers



- Jewellery demand was 620 koz in Q2 2017, flat YoY and down 3% QoQ
- Gains in India, Japan and North America offset weakness in China
- Tentative signs of a bottoming in Chinese demand helped by underlying economic conditions
- Growth in retail sales in China not directly reflected in demand as more higher margin lighter pieces sold

Q2 2017 DEMAND: INDUSTRIAL DEMAND LOWER ON NET FALLS IN PETROLEUM AND GLASS

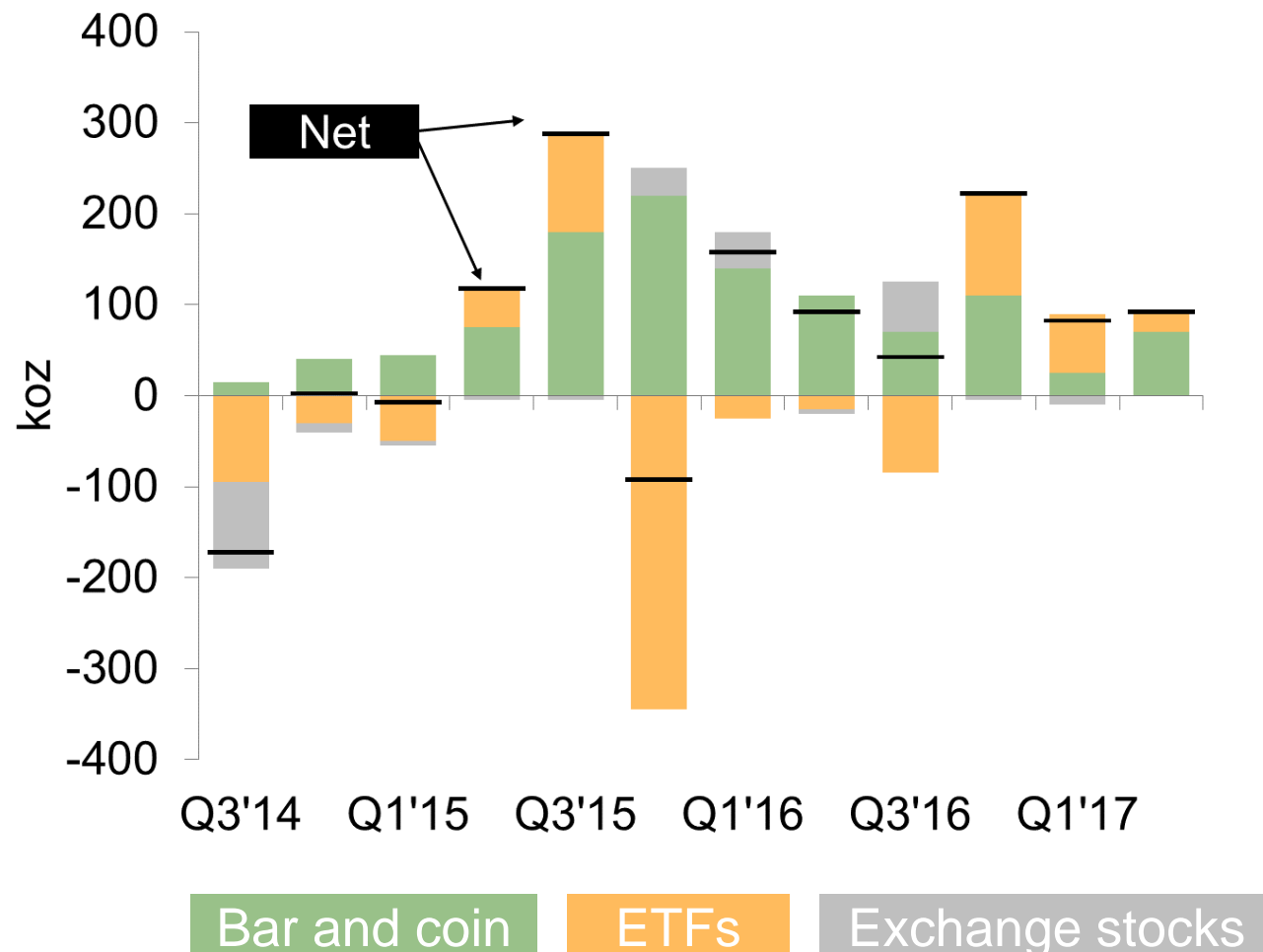
Industrial demand



- Net platinum demand was 400 koz in Q2'17, down 70 koz (-15%) YoY
- Weaker petroleum refining (-50 koz) and glass fabrication (-30 koz) were the main drivers
- Partly offsetting these falls was continued growth in medical (+10 koz) and other (+10 koz) – predominantly from fuel cells

Q2 2017 DEMAND: INVESTMENT SOLID. JAPANESE BAR DEMAND STRONG, ETFs GROWING

Investment demand by category



- Platinum investment demand posted the 6th consecutive net positive quarter
- Bar and coin demand climbed from 25 koz in Q1'17 to 70 koz in Q2'17, predominantly in Japan
- Demand from BullionVault investors added 5 koz in Q2'17
- ETFs added 20 koz in Q2'17, down from 65 koz in Q1'17
- Exchange stocks were flat

2017 FORECAST: SUPPLY RAISED AND DEMAND LOWERED.

MARKET IN BALANCE

SUPPLY	2016	2017f	YoY, oz	YoY, %
Refined Production	6,035	5,970	-65	-1%
South Africa	4,255	4,240	-15	0%
Zimbabwe	490	445	-45	-9%
North America	395	405	10	3%
Russia	715	705	-10	-1%
Other	180	175	-5	-3%
Inc (-)/Dec (+) in Producer Inventory	30	10	-20	-67%
Total Mining Supply	6,065	5,980	-85	-1%
Recycling	1,865	1,815	-50	-3%
Autocatalyst	1,235	1,295	60	5%
Jewellery	625	515	-110	-18%
Industrial	5	5	0	0%
Total Supply	7,930	7,795	-135	-2%
DEMAND				
Automotive	3,435	3,360	-75	-2%
Jewellery	2,605	2,590	-15	-1%
Industrial	1,775	1,610	-165	-9%
Investment	505	250	-255	-50%
Total Demand	8,320	7,810	-510	-6%
Balance	-390	-15	-	-
Above Ground Stocks	1,930	1,915	-15	-1%

- Mine supply to fall by 1% in 2017. S.A. revised up 40 koz and Russia revised down 30 koz. Total supply also down 1%
- Recycled supply to fall by 3% despite upward revisions to autocat (+40 koz) and jewellery (+15 koz)
- Total demand to fall 6% due to lower industrial and investment
- Automotive and jewellery more robust than sentiment suggests
- Above-ground stocks at record low and market in balance

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- Automotive demand
- Jewellery demand

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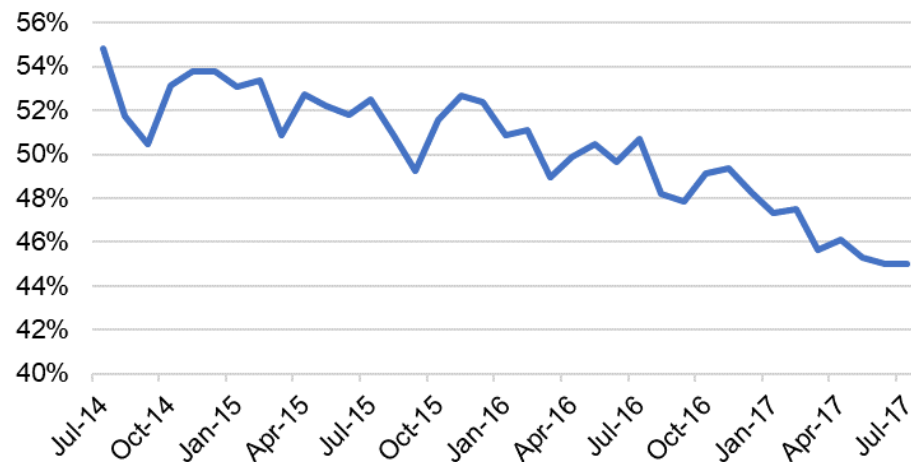
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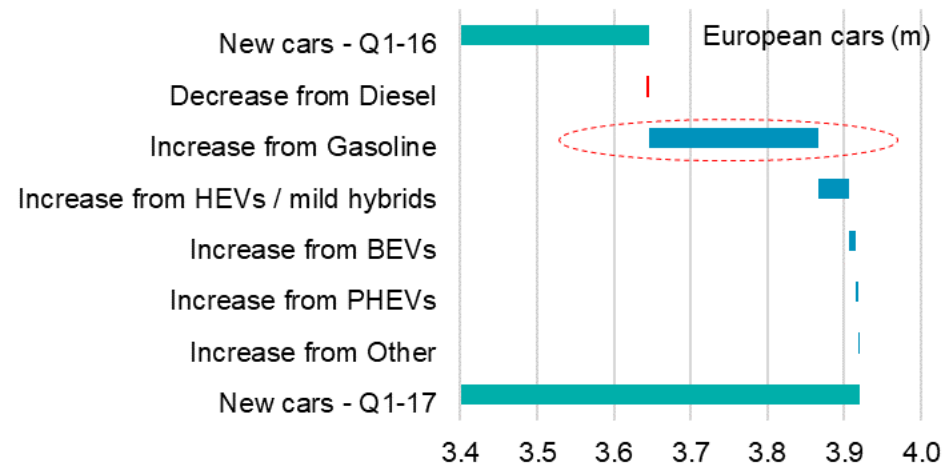


EUROPEAN PASSENGER DIESEL IS DECLINING – BUT GASOLINE AND CO₂ UP

European diesel market share



Diesel share down, gasoline up



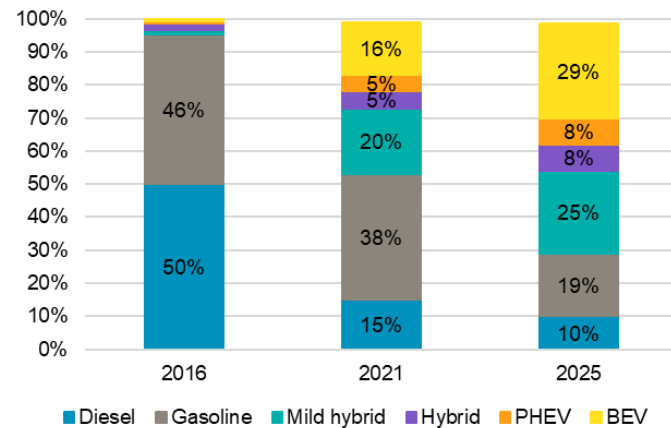
European diesel passenger market share has been in structural decline

- Withdrawal of incentives and negative governmental rhetoric on passenger diesel vehicles affecting consumer perception
- Some governments now recognise a “collapse” of diesel share will have significant negative economic consequences
- Gasoline vehicles have been the overwhelming “winner” of diesel market share decline
- Increasing gasoline market share means CO₂ emissions have started to increase for the first time in several years (e.g. in July 2017, German emissions increased to 128.4g CO₂/km)

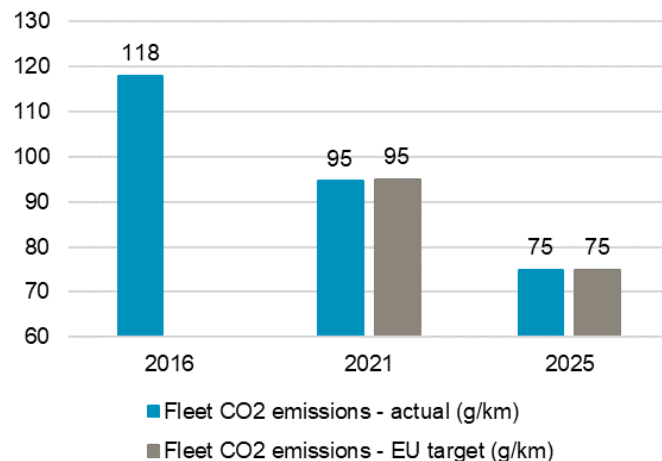
POWERTRAIN MIX AND CO₂ TARGETS COLLIDE

– SCENARIO ANALYSIS* - LOW DIESEL, HIGH EVS

European powertrain market share (%)



European fleet CO₂ emissions (g/km)



Low Diesel, high EVs

Market expects hybrids and BEVs to 'bail out' European fleet CO₂

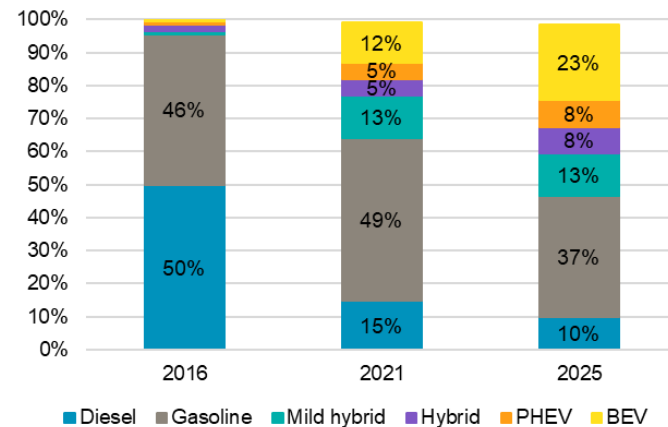
- Scenario 1 - Most aggressive assumptions on European diesel share assume a decline to 10% by 2025
- In this scenario, BEV market share would have to be 16% and mild hybrid share 20%, in order to meet fleet CO₂ targets
- A combined non-ICE (i.e. alternative fuel vehicles) market share of 47% in 2021 (from c4% today); seems unrealistic

* **FCEVs and diesel hybrids excluded from scenario analysis**

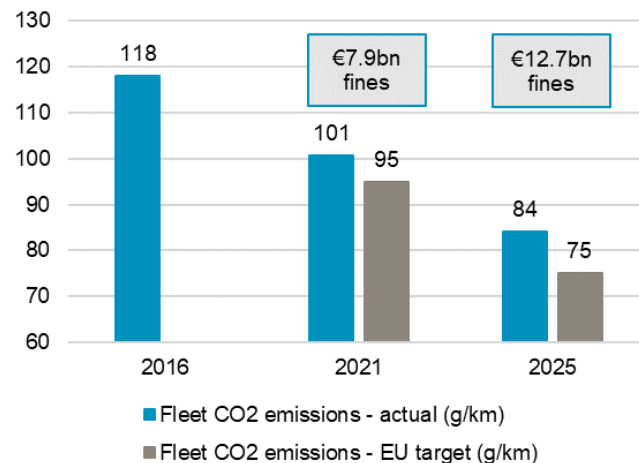
POWERTRAIN MIX AND CO₂ TARGETS COLLIDE

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European powertrain market share (%)



European fleet CO₂ emissions (g/km)



Low Diesel, moderate EVs

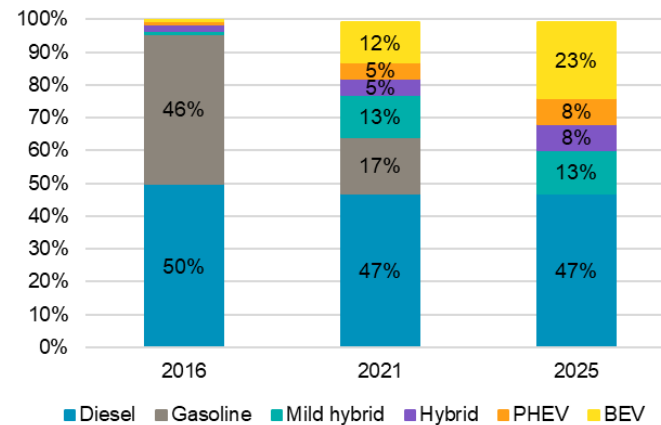
- Scenario 2 - We show again aggressive assumptions on European diesel share assume a decline to 10% by 2025
- However we show a lower, but still ambitious combined non-ICE market share of 35% in 2020 (from c4% today) – BEVs 12%, mild hybrids 13%
- In this scenario European fleet CO2 targets would be missed – with heavy annual fines:
 - **c€8 billion - c€13 billion**

* **FCEVs and diesel hybrids excluded from scenario analysis**

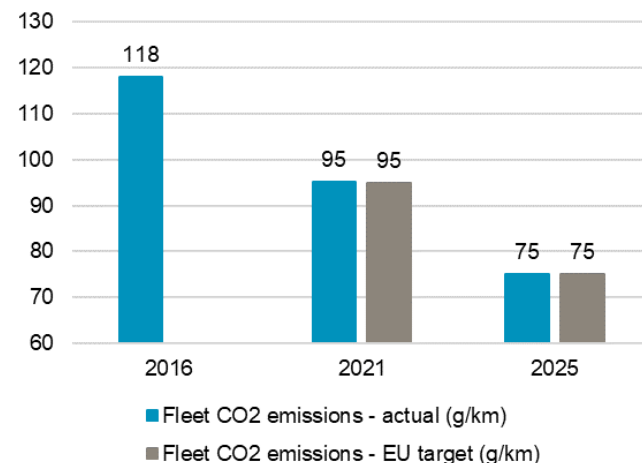
POWERTRAIN MIX AND CO₂ TARGETS COLLIDE

– SCENARIO ANALYSIS* - FLAT DIESEL, MODERATE EVS

European powertrain market share (%)



European fleet CO₂ emissions (g/km)



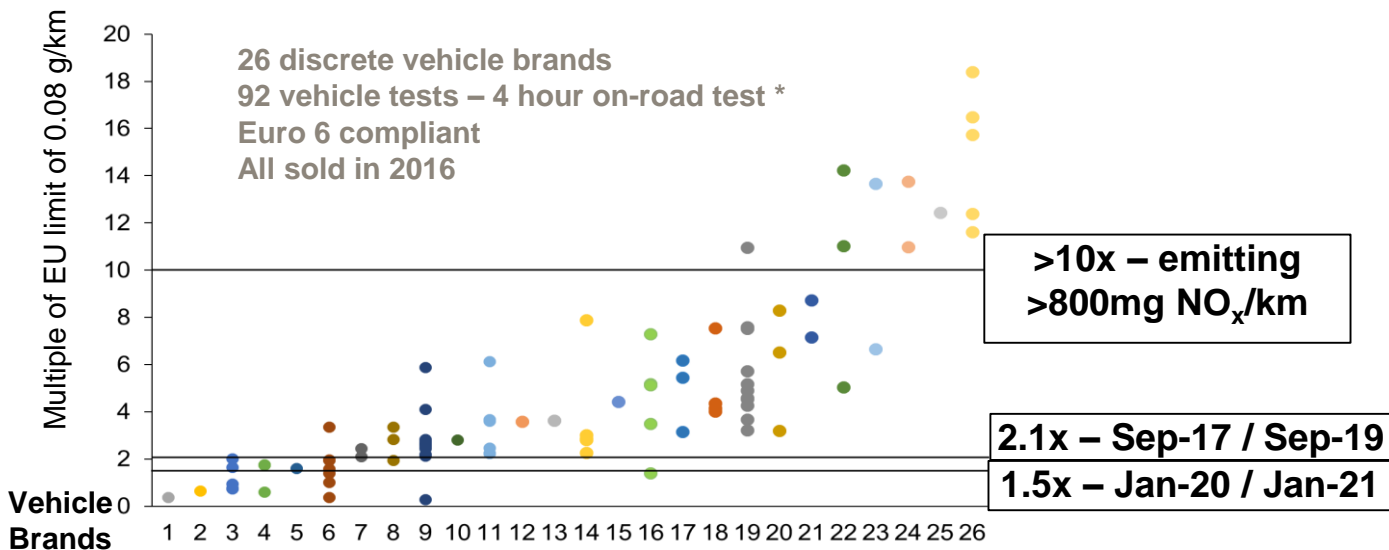
Flat Diesel, moderate EVs

- Scenario 3 - We show a scenario where on European diesel share is stable at 47%
- Combine with combined non-ICE market share of 35% in 2020 (from c4% today) – BEVs 12%, mild hybrids 13% (same as Scenario 2)
- In this scenario European fleet CO₂ targets would be met
- Flat diesel share may seem unrealistic, but with a lower diesel share in this scenario CO₂ targets would be missed

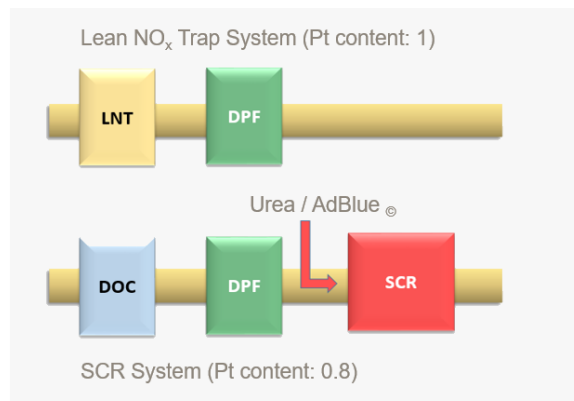
*** FCEV and diesel hybrids excluded from scenario analysis**

AUTOMAKERS CAN CLEAN UP DIESEL

Automakers' NO_x emissions vs standards



NO_x reduction - more platinum needed



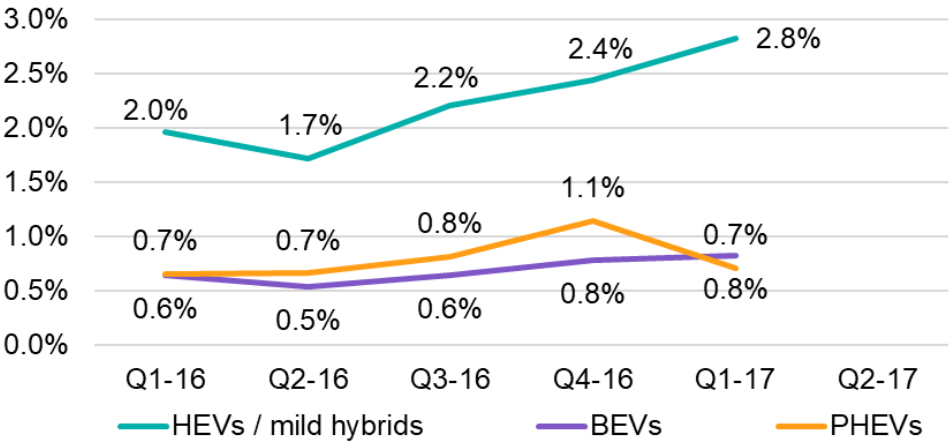
Market believes it is “too hard” and “too expensive” to clean up diesel – Some already have

- Many vehicles on the road emit significantly more NO_x than advertised
- Some models already emit less than 2021 requirements
- EXAMPLE – PSA (willing to commit to independent testing)
- EXAMPLE – Daimler (already producing <30mg/km NO_x on some models)
- More platinum required - NO_x emissions likely cannot be reduced from >1,000mg/km to <30mg/km without a higher urea dosing and more platinum on the catalyst

“ELECTRIC” VEHICLES

– NEGATIVE PGM DEMAND IMPACT OVERESTIMATED

Battery and hybrid market share



“Electric” Vehicles explained

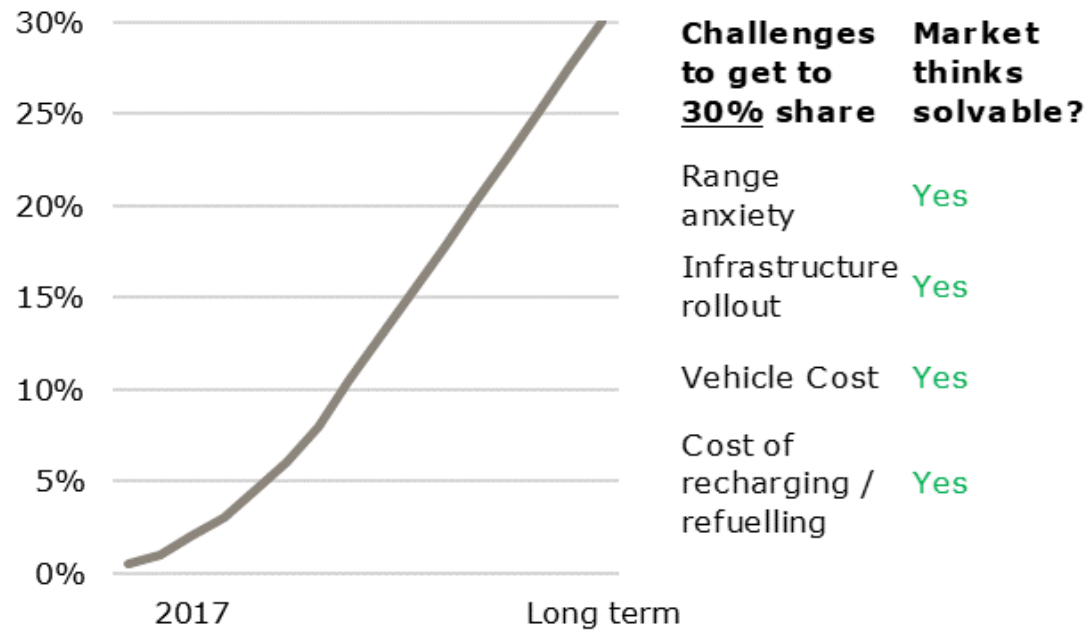
Type of EV	Acronym	Comment on PGM loadings
Battery Electric Vehicle	BEV	Generally BEVs contain no PGMs
Fuel Cell Electric Vehicle	FCEV	High platinum loadings (currently >30g)
Plug-in Hybrid Electric Vehicle	PHEV	Likely contains similar PGM loadings to an equivalent internal combustion vehicle
Hybrid Electric Vehicle	HEV	Likely contains similar PGM loadings to an equivalent internal combustion vehicle
Mild Hybrid / 48V	48V	Likely to contain similar PGM loadings to an equivalent ICE vehicle - same combustion engine size

Market believes electric vehicles represent significant PGM demand risk

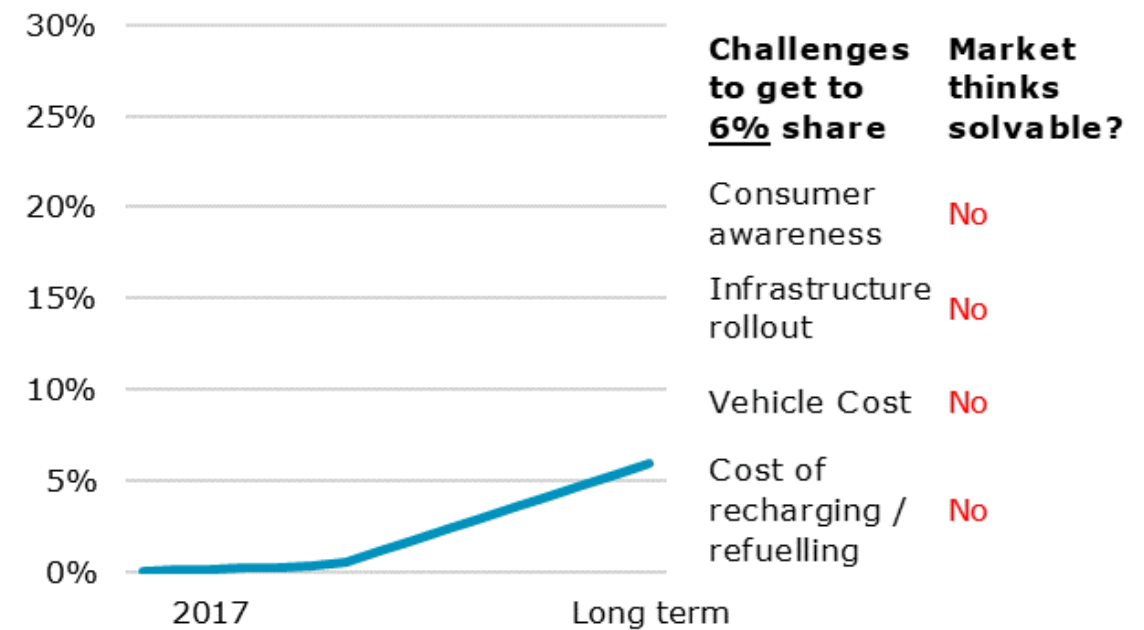
- Even the most ardent electric vehicles bulls believe mild hybrids / 48Vs will make up the majority of “electric” vehicles over the next decade
- Mild hybrids are not “electric”; they are a conventional car (gasoline or diesel) with a small 48 volt battery and electric motor to help with fuel efficiency
- Mild hybrids can be both gasoline and diesel (e.g. Audi’s SQ7 TDi)
- Curiously, FCEVs are largely ignored

ZERO EMISSION VEHICLES – DON'T DISCOUNT FCEVS

Battery Electric Vehicles (BEVs)



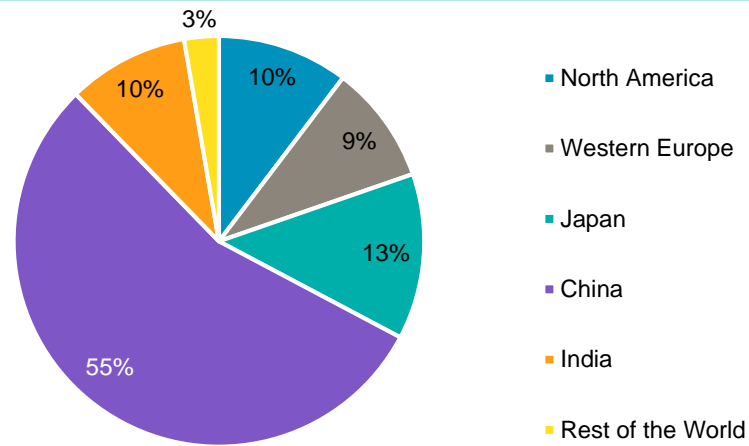
Fuel Cell Electric Vehicles (FCEVs)



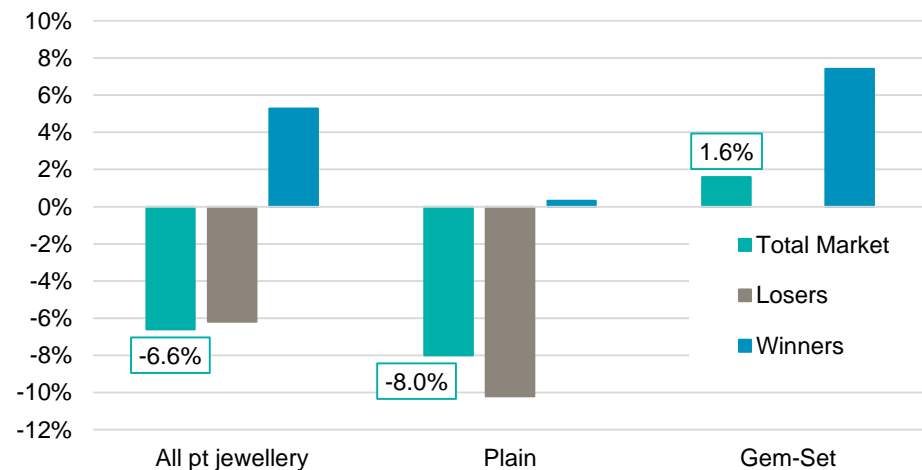
- Market believes hurdles for significant BEV adoption are surmountable, but that even a modest market share for FCEVs in passenger vehicles is unlikely
- Incremental infrastructure investment cheaper for BEVs than FCEVs
- FCEVs finding early application in larger vehicles (greater vehicle efficiency than BEVs over long distances) – e.g. China bus fleets

JEWELLERY: TEMPORARY CHINA WEAKNESS OFFSET BY INDIA AND U.S.

2016 Jewellery demand mix



China Q2' 17 retail sales – mixed performance



- Weakness in China (55% of global) offset by growth in U.S and India (10% each of global)
- New data published by PGI shows Q2'17 YoY retail demand – China -6.6%, US +12%, India +48%, Japan -1.6%
- China retail strategies working for some. PGI expertise being tapped by some retailers

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