SIAM / ACMA

Report on the Localization Assessment for Indian Automotive Sector Phase II

20th April, 2023

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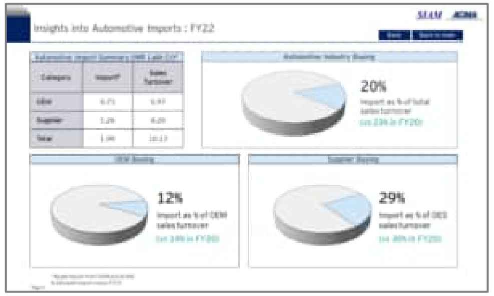
1 Executive Summary

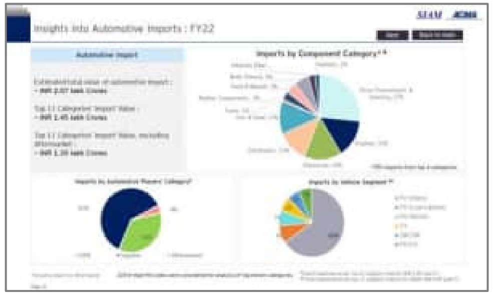
A detailed snapshot of the project approach for the Localisation Assessment for automotive sector

Flow of report → FY20 baseline import analysis → Localisation targets for FY22 → Industry and Govt. Initiatives over the past two years → Localisation achieved & FY import snapshot → Planned initiatives for the next few years → Category wise localisation assessment

Data Analysis for FY 21-22

223 6-digit HS codes data collected for 11 categories

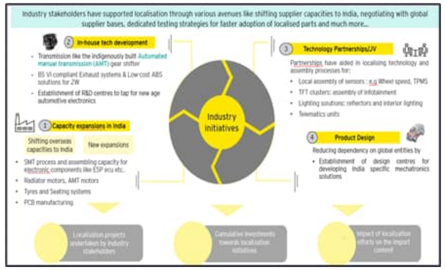




Category Deep Dive

Initiatives – Industry, Govt., Future

Compiled and represented localisation initiatives of OEM/OES and government policies, schemes etc.



Primary conversations

Interactions with 11 OEMs and 7 OESs aimed at capturing localization efforts in the past years

Electronics sub-group meeting

Steel subgroup meeting

Key Outcomes

Quantitative info.

Representing industry efforts via quantifiable metrics obtained through primary interactions

500 – Localisation projects undertaken by industry stakeholders

3000Cr+ – Cumulative investments towards localization initiatives

Key vehicle segment definitions and the list of 11 categories as part of the study

IMPORTER TYPE SEGMENTATION

Segment	Definition	Illustrative
PV Mass	PV players above ~80-100 K per annum	Maruti, Hyundai, Renault Nissan, Honda Cars, Toyota, Mahindra, Tata Motors, Ford, Skoda-VW, Kia
PV Niche	Luxury Car (PV) manufacturers	BMW, JLR, Mercedes
PV Low Volume	Others PV players which are less than PV (Mass)	MG, Fiat
PV/CV	Players who operate across both PV and CV categories	Tata Motors, Mahindra, Isuzu Motors
CV	CV Manufacturers	Ashok Leyland, VECV, Daimler India, SML Isuzu
2W/3W	2-wheeler / 3-wheeler manufacturers	Bajaj, TVS, Piaggio, Hero MotoCorp, HMSI, Suzuki Motorcycle, Atul Auto, Royal Enfield
Suppliers	Automotive component suppliers	Bosch, Motherson, Continental, Uno Minda, Lumax, Sundaram

**Second level segmentation*

CATEGORY TYPE SEGMENTATION

Category Name	Major Parts Imported (not exhaustive)	
	OEM	Suppliers
Drive Transmission & Steering	Automatic Transmission, Continuously Variable Transmission, Torque Converter, Steering System (Steering column & assembly, Rack & Pinion, EPAS – Electronic Power Assisted Steering), Axle Assy, Universal joint, Alloy Wheels	Fly wheel assembly & Gear box housing, Gears, Shafts, Bearing, Clutch Parts, Clutch Cylinder, Steering Wheel Assembly
Engine	Engines Assy, Turbochargers, Exhaust Manifolds, Valves Cotter, Seals	Fuel Injection System components - Rail, Injectors, Exhaust System Components, Pulley
Electricals	Wiring Harness, Lighting System, Alternator, Ignition Coil, Outside Rear View Mirror, Junction box	Connectors, Terminal, Cables, Motors, Magnets, Commutators, Carbon Brushes, Switches
Electronics	Infotainment Systems, Speakers, Sensors, Electronic Control Unit, Camera's, RPS	Infotainment Systems, PCB Assemblies, Controllers, Semiconductor, Diodes and Electronics parts, Airbag electronics
Iron & Steel	Ultra High Tensile Steel (Coated & Cold Rolled), Hot Rolled Galvannealed (HR GA), Stainless Steel for Exhaust System, Fuel Tank Steel, Special Alloy Steels	
Tools, Dies & Moulds	Sheet Metal Dies for Skin Panel, Suspension Comp. Plastic: IP, Bumpers, Console, Dashboards Accessories & Components of Tools & Dies	
Body/Chassis/BiW	BIW Parts & Sub Assemblies, Chassis, Sunroof assembly & components, Tubular & fabricated parts	
Interiors (non-electronic)	Plastic Parts, Mirrors, Glass, Seating System Parts, Safety System Parts	Assembly covers, Retainer parts, Clamps, Protectors
Rubber Components	Gaskets, Seals, Washes, Hoses, Bushes	
Fasteners	Bolts, Nuts, High Tensile Fasteners, Washers & Rivets	
Tyres	Sealant Tyres, Run Flat Tyres	

Summary of Automotive Imports : FY 2019-20*

Automotive Import

Estimated total value of automotive import :
~ INR 1.83 lakh Crores

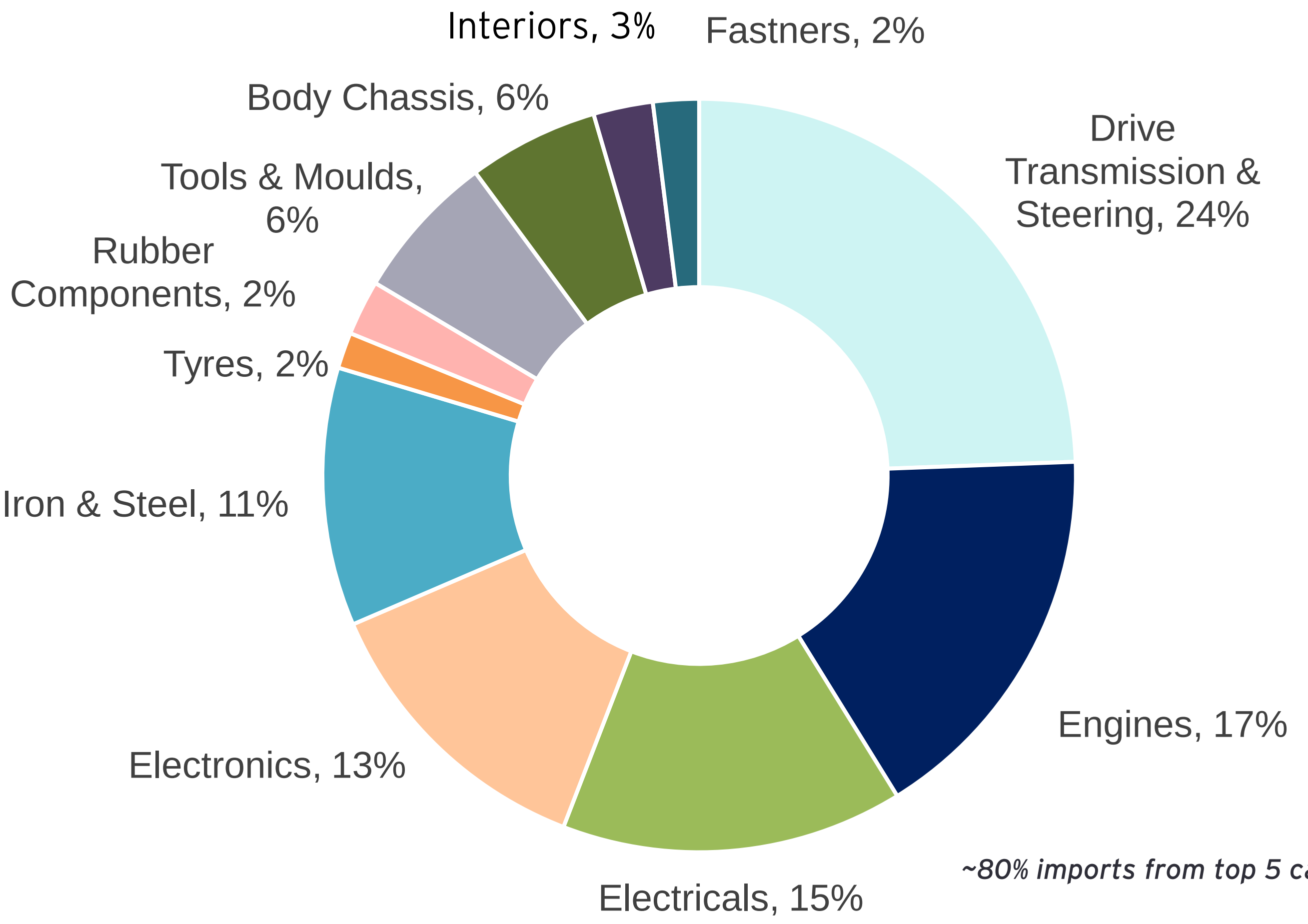
Top 11 Categories' Import Value :
~ INR 1.27 lakh Crores

Top 11 Categories' Import Value, excluding Aftermarket :
~ INR 1.21 lakh Crores

Imports by Automotive Players' Category

- Automotive OEM: 38% of imports
- Auto-component supplier: 57% of imports
- Aftermarket: 5% of imports

Imports by Component Category**



~80% imports from top 5 categories

*Adjusted for BS-VI transition
**Including import for Aftermarket

223 6-digit HS codes were considered for analysis of top eleven categories

#Charts baselined as per top 11 category imports: INR 1.27 Lakh Cr
##Chart baselined as per top 11 category imports for OEMs: INR 0.48 Lakh Cr

Key targets outlined as part of Phase 1 study: FY20
By Component category

Component Category	FY 20 Import Value (INR Cr.)	Localization Targets (% and INR Cr.)			
		0-2 years		3-5 years	
Drive Transmission & Steering	29,860	3-5%	896-1493	15-19%	4,394 - 5,742
Engines	21,093	1-3%	211-633	13-17%	2,822 - 3,653
Electricals	17,540	4-6%	702-1052	15-20%	2,637 - 3,438
Electronics	15,689	2-6%	314-941	18-25%	2,824 - 3,922
Iron & Steel	12,119	5-10%	606-1212	25-30%	3,029 - 3,635
Tools & Moulds	7,785	6-9%	467-701	18-21%	1,378 - 1,647
Body Chassis	6,883	2-4%	138-275	11-13%	742 - 890
Rubber Components	2,938	-	-	6-8%	177 - 221
Interiors (Non-Electronic)	2,939	3-7%	88-206	14-17%	406 - 507
Fasteners	2,304	-	-	21-25%	484 - 580
Tyres	1,545	10-13%	154-201	41-49%	634 - 761
Total for top 11 categories	**1,20,695**	**3-5%**	**3,576 - 6,714**	**16-20%**	**19,526 - 24,995**

EY

The auto-industry and government have worked hand-in-hand and made strong strides towards the goal of localization

Industry initiatives

Collective efforts put in by the OEMs and OESs in the past 2 years to drive localization

500+ Localisation projects undertaken

₹3000 Cr+ Cumulative investments towards localization initiatives

1 Capacity expansion in India

- SMT process and assembling capacity for ECUs
- Radiator motors, AMT motors
- Tyres and Seating systems
- Condenser extruded microtubes

2 In-house tech development

- Indigenously built **AMT gear shifter**
- BS VI compliant Exhaust systems & **Low-cost ABS solutions for 2W**

3 Technology Partnerships/JV

- Local assembly of sensors: e.g. **Wheel speed, TPMS**
- Instrument cluster assembly
- Lighting solutions: **reflectors and interior lighting**
- Blower Motor

4 Product Design

- Establishment of design centres for developing India specific **mechatronics solutions**

Government schemes

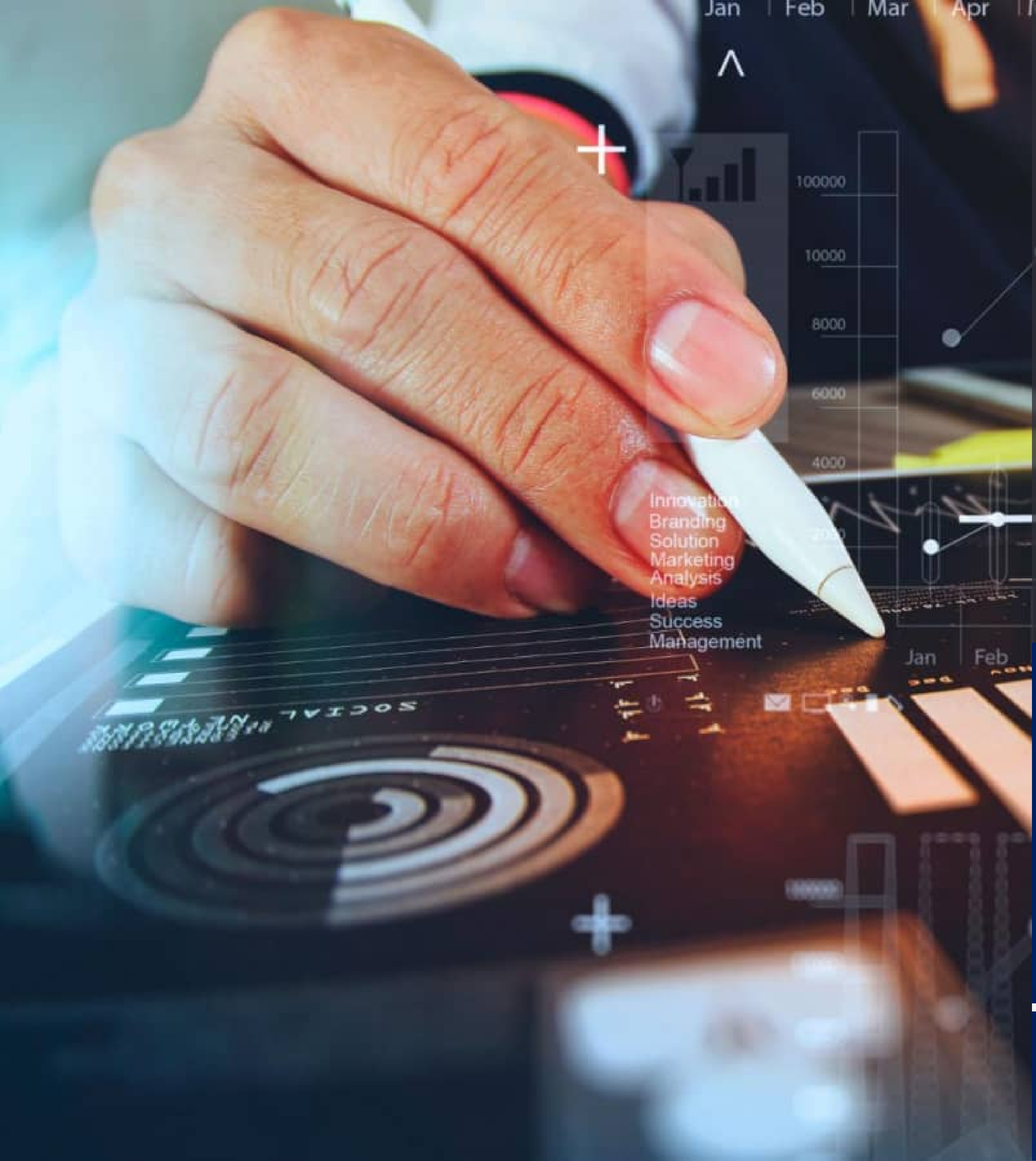
Policies and initiatives by the government of India which have been instrumental in aiding the industry's efforts

1 PLI

- Critical engine parts like **CRDI control units, injectors and fuel pumps for GDI**
- Safety electronics: **ADAS related sub-systems, sensors**
- **Automatic transmission:** DCT, CVT and EPS
- **Textile PLI** to promote airbag production
- Connected technology components like **connectivity-5G modules**

2 Duty rationalisation

- Rationalised duties to promote localisation:
  - 15% for **saddles, pedals** etc
  - **Ignition wiring sets** to 15% from 7.5%-10%
  - **Safety glass** to 15% from 7.5%-10%
- Revoked the anti-dumping duty on **Tyre cord fabric**
- Dumping duty on **Axles for trailers** from China



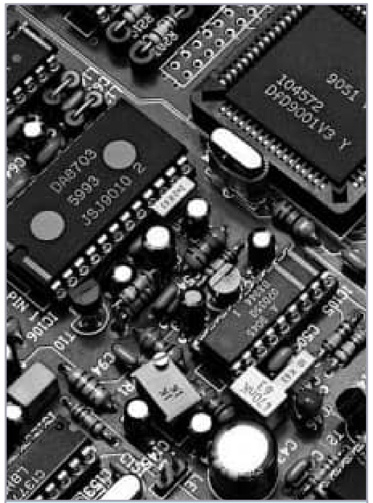
Industry initiatives

The automotive industry has seen efforts from the government, automotive manufacturers and suppliers in localizing a significant number of component categories – (1/3)

Category	Automotive and Auto-comp supplier initiatives		
 Drive Transmission & Steering	New Delhi-based Tier-1 manufacturer, developed **India's first indigenously built automated manual transmission (AMT)** gear shifter and is 100% localised barring minor electronic components	American auto- parts maker has invested **\$50 million** in the past two years to increase to local **production capacity of axle and drive train components by 15-20%**	
 Engine	A JV has been setup in Chennai for the **R&D of full Exhaust After Treatment Systems** to meet the TREM V off-highway and BS VI Stage 2 emission standards	Pune based auto engineering company has developed in-house competence to manufacture **BS-VI compliant 2W exhausts**. They are also, evaluating **entry into PV and CV segments** via Tech. collaboration with a German exhaust technology company.	A metals company formally launched its foray into **aluminium alloys which are critical to manufacture cylinder heads etc.**
 Electricals	Investments to the tune of **150Cr** have been made **in Lighting manufacturing by a Tier 1** component manufacturer in Gujarat to push for localisation	Electrical and lighting Tier-1 has **localised procurement of 2 layer PCBs** for 2W applications through a Pune based PCB manufacturer.	A manufacturer and supplier of **lead-acid battery separators** for automotive, industrial and specialty applications has **doubled their capacity** citing demand in the Indian market
 Iron & Steel	Multiple steel manufacturers started on focusing on **light-weighting and made investments in the past two years** to support OEMs in meeting emission norms	Commercial vehicle OEM has **localised stainless steel** requirement in its Exhaust aftertreatment system **(EATS) enclosures**	

The automotive industry has seen efforts from the government, automotive manufacturers and suppliers in localizing a significant number of component categories – (2/3)

Category	Automotive and Auto-comp supplier initiatives



Electronics

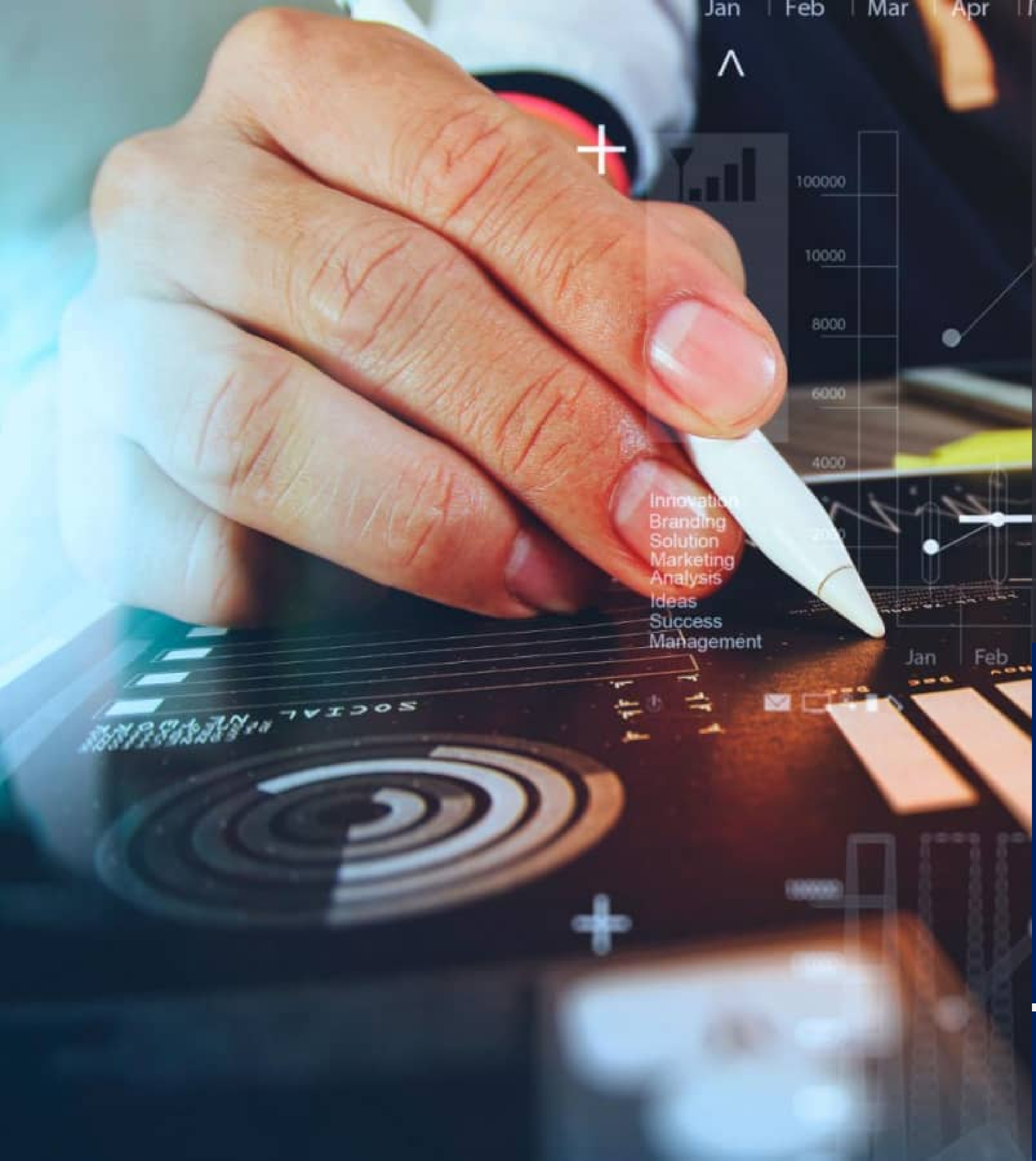
- Global electronics Tier 1 started local manufacturing of Digital instrument clusters and infotainment systems to support the localization drive of the industry
- Global design and technology services company has opened a Global Engineering Center (GEC) along with a solution provider offering mechatronics solutions for transportation to promote design capabilities in India
- Stringent vehicle safety mandates and a growing consciousness for safety has driven a braking system provider to start local production of ABS modules in India
- Automotive lighting player entered into manufacturing of Body Electronics (BCM, Access Passive Entry, Remote Keyless Entry, RPAS, Immobilizer), Sensors & Actuators; Headlamp Levelling Actuators, Vacuum Pump, EPS Torque & Angle Sensor, Climate Sensor, Rain Sensor
- Audio electronics company invested INR 350 Cr. to triple its production and double plant headcount in Chakan, Pune focusing on Connected Car Electronics Solutions
- ~ 100Cr Investments have been made in PCB manufacturing for the lighting business by a Tier 1 component manufacturer

Rubber Components and Tyres

- Japanese tyre maker has doubled its local production capacity from 8 Lakh tyres per year to 1.6 million tyres per year as part of their localization drive
- A new manufacturing facility has been established by a tyre manufacturer in Maharashtra to produce medium and small diameter tyres as part of their localisation drive
- One of India's largest tyre makers has invested ~ 2000 Cr. in India and has plans to its capacity from 30k tyres per day to 34k-35k tyres per day in the next 1 year. They also announced investment into R&D to develop & manufacture EV-specific Tyres locally in the next few years
- A premium tire manufacturer expanded its truck tires production capacity at the Modipuram plant in Uttar Pradesh for increasing the product range to 20 inch and 22.5 inch tyres

The automotive industry has seen efforts from the government, automotive manufacturers and suppliers in localizing a significant number of component categories – (3/3)

Category	Automotive and Auto-comp supplier initiatives	
 Body/Chassis/ BiW	A global sunroof player has already setup a plant and started **local manufacturing in 2021** in order to tap the growing demand for sunroofs in India	A vehicle components manufacturer, has inaugurated its manufacturing facility in Himachal Pradesh to **manufacture sheet metal parts for 4Ws and 2Ws**
 Tools, Dies & Moulds	**Tool rooms** have been established by an auto-component manufacturer to **manufacture moulding tools for lighting systems** in India	Investments have been made in the **3-d printing and additive manufacturing technology** to develop **advanced automotive dies** locally by a Tooling company part of huge conglomerate
 Interiors (Non-Electronic)	Tool rooms have been established by an auto-component manufacturer to manufacture **new cabin interiors**	Partnership between two auto-component players has been etched to combine capabilities in **lighting and interior module** manufacturing
 Fasteners	A renowned Fasteners manufacturers had already announced setting up a **100 crore SEZ** (special economic zone) unit to manufacture and export high precision engineering components	



Government initiatives

The Government has been facilitating localization, research and development of automotive and auto-components through various schemes

- **The PLI scheme aims to drive local manufacturing & exports of advanced & cleaner automotive technology**

26058 Cr budget allocation for the automotive sector w.e.f Apr 22' for 5 years

Up-to **18% sales linked incentives** depending on product category & sub-scheme

2.3 L Cr incremental production targeted

7.5 L employment opportunities

Champion OEM Incentive + **Component Champion Incentive** For 22 advanced components

The Auto-PLI received an astounding response with 75% more investments than the Govt's. target estimate

95 OEMs and OESs granted approval

INR 75k Cr Investments committed

- **Electronics Manufacturing Clusters scheme** to transform India into a global hub of electronics components
- The Indian government has approved PLI scheme to **boost domestic textile production**, has aided in producing **airbags** for the automotive sector
- **NATRiP**- Multiple testing and research centres have been established in the country
- The **Vehicle Scrappage Policy**, launched in 2021 aims to scrap old vehicles and generate new demand in the auto industry

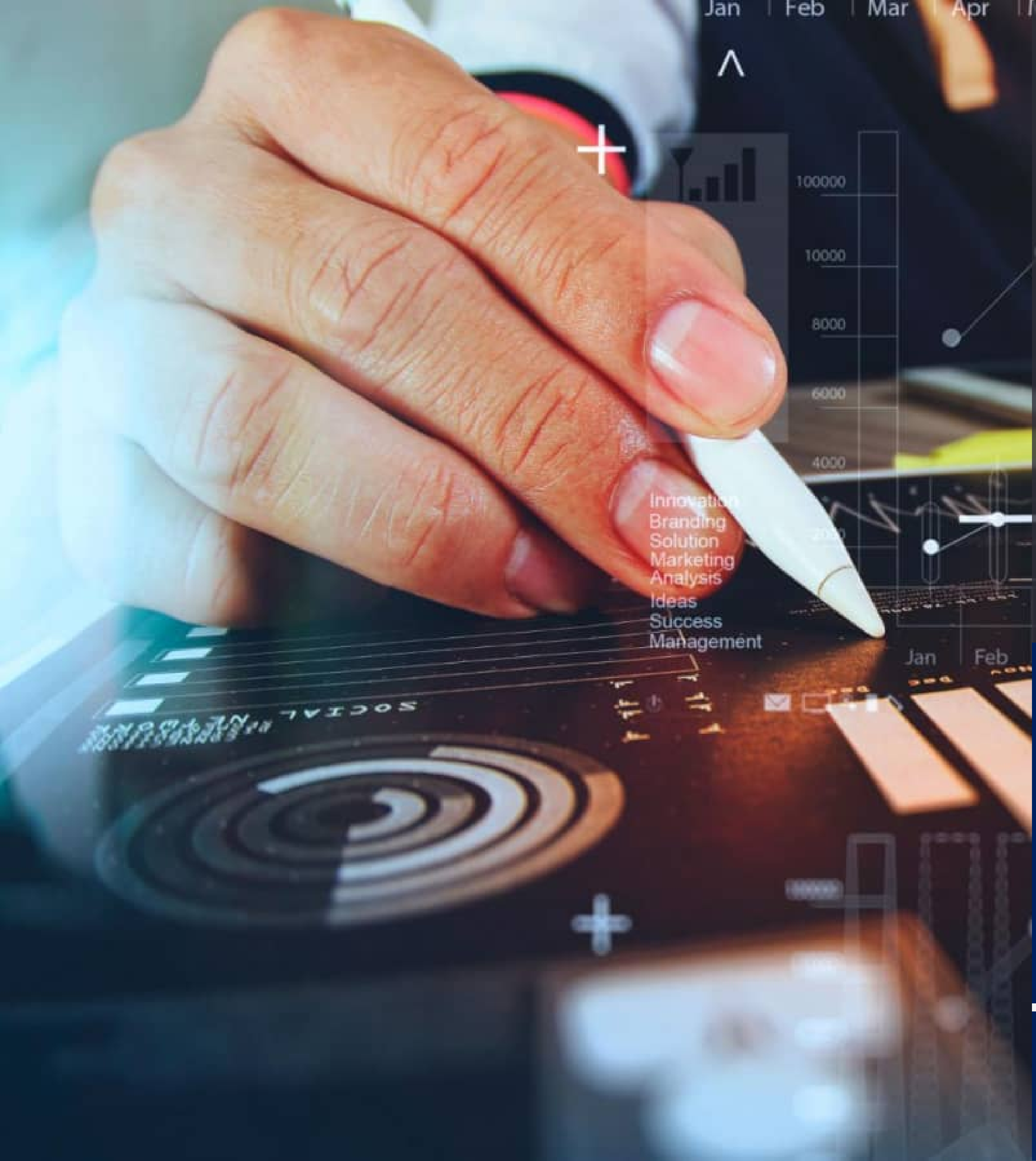
Initiatives to promote EV ecosystem and Chip manufacturing

Advanced Cell chemistry PLI has been announced with an outlay of **₹ 18,100 crore**

Total of **10 bids** were received with a manufacturing capacity of **128 GWh**

To address the growing need for semiconductor chips, the GOI launched the **₹ 76,000** crore PLI scheme

MeitY also launched **the Design Linked Incentive (DLI) Scheme** to nurture domestic companies involved in semiconductor design



Key challenges faced by the industry

The past two years have posed numerous challenges for the Automotive Industry

Impact on Automotive industry

- Production volumes across segments saw significant degrowth in FY21 due to effects of the pandemic.
- 2W/3W were hit hardest with volumes dropping up to **40%**
- In FY22, the industry volumes showed recovery and rose marginally above pre-pandemic levels

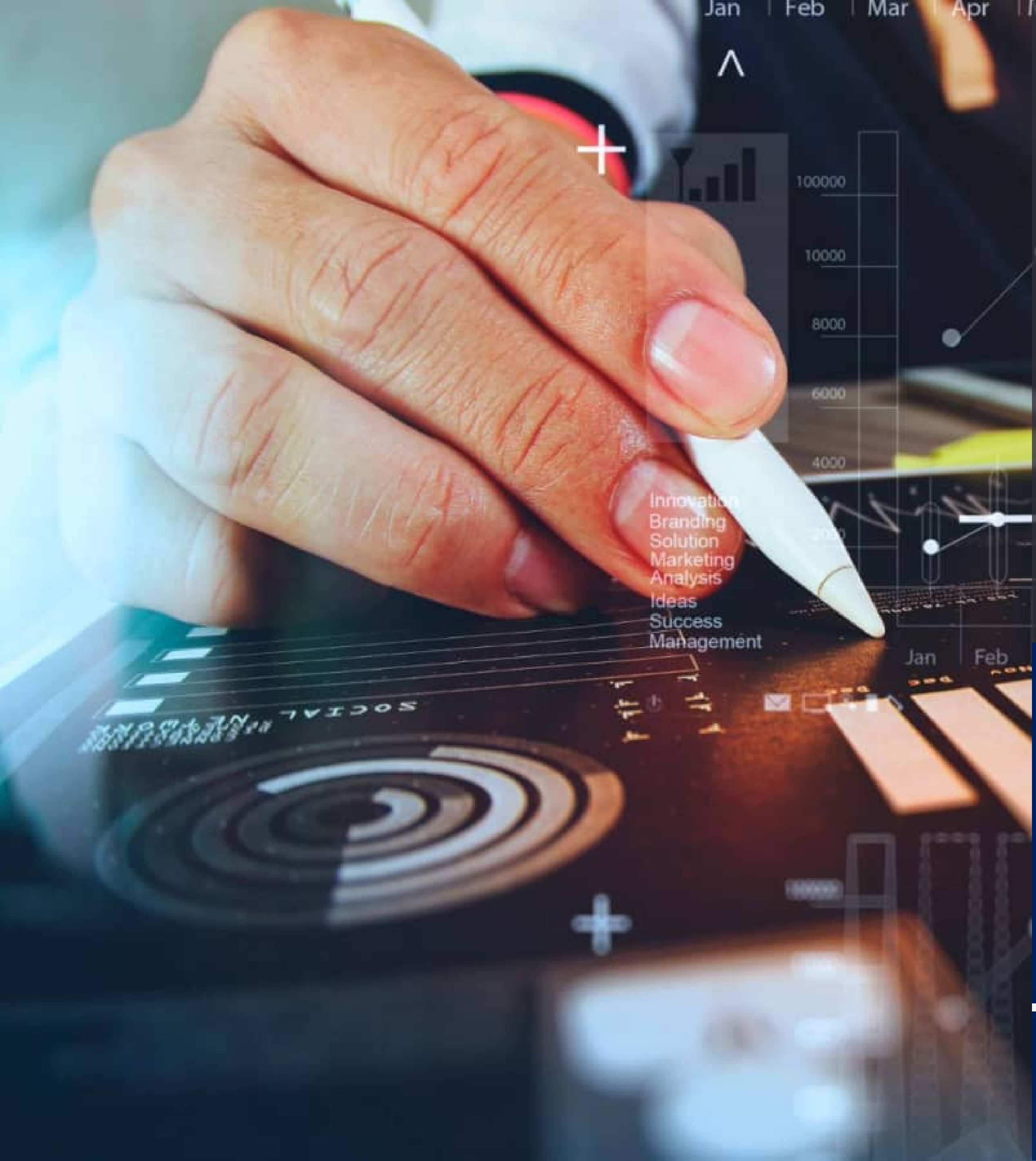
Commodity price inflation*

	Apr-21	Apr-22
HR Steel	+49%	+33%
Natural rubber	+44%	+2%
Synthetic Rubber - SBR	+73%	+16%
	(vs Apr-20)	*(vs Apr-21)*

FY20 — FY22

COVID-19	Disrupted supply chain	Rising commodity prices	Semiconductor chip shortage
Production shutdowns	Elevated freight rates	Increased iron & steel and non-ferrous metals' prices	Spike in demand for consumer electronics (laptops, mobiles)
Lower availability of manpower	Disrupted shipping routes	Increased fuel prices	Impact on production volumes
Slump in export opportunities	Unavailability of shipping containers		Rising prices and longer delivery times

* *SIAM Commodity price monitor*



Progress on Localisation by the industry

Despite the challenges, localization efforts in the past two years have culminated in reducing automotive industry imports by ~6% (1/2)

1 FY20 Import value

Total absolute import value for FY20, for OEMs and Suppliers

2 Localisation Effort

Net decrease in imports on account of localisation efforts by the industry between FY20 and FY22

3 Incremental Imports

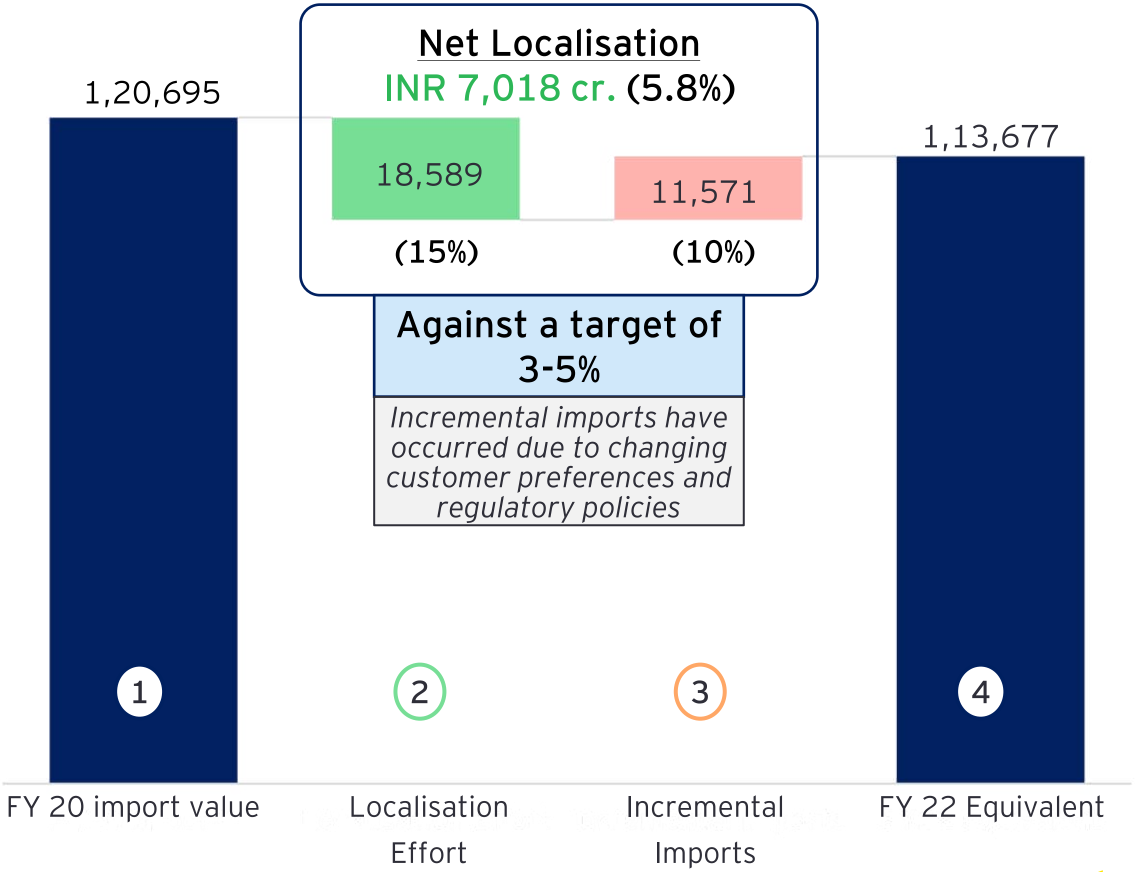
Net increase in imports between FY20 and FY22 due to consumer and regulatory trends

4 FY22 equivalent

Total import value for FY22 net of localisation on FY20 value

Waterfall analysis of top 11 categories (in INR Cr.)

Net localisation impact is the net result of localisation efforts by industry and rise in imports due to feature addition, premiumisation and regulatory impact.



**Only OEM and OES imports considered*
All Figures in INR Cr.

Net localization achieved across 11 categories

Component Category	FY 20 import value (INR Cr.)	FY 22 Equivalent (INR Cr.)	Localisation efforts (INR Cr.)	Incremental imports (INR Cr.)	Net Localization (INR Cr.)
Engines	21,093	17,979	3,417	303	3,114
Electricals	17,540	16,234	1,820	514	1,306
Electronics	15,689	14,184	4,308	2,802	1,505
Tyres	1,545	646	990	92	898
Tools, Dies and moulds	7,785	5,846	1,939	-	1,939
Fasteners	2,304	1,827	499	21	478
Rubber Components	2,938	2,911	86	59	27
Iron & Steel	12,119	11,795	4,787	4,463	324
Drive, Transmission and Steering	29,860	32,017	453	2,611	2,158
Body Chassis	6,883	7,170	226	513	287
Interiors (non-electronics)	2,939	3,068	65	193	128
Total for top 11 categories	1,20,695	1,13,677	18,589	11,571	7,018

EY

The gap in import values can be explained through impact of rising dollar, production volumes and inflation in commodities (2/2)

4 FY22 equivalent

Total import value for FY22 net of localisation on FY20 value

5 Dollar fluctuation

Year	INR/$	% change
2020	75	4%
2022	78	

6 Production Volume

Units (in Lakhs)	% change
PV	7%
CV	6%
2W	-17%
3W	7%
Suppliers	16%

(Source: SIAM production numbers for OEMs and ACMA report for OES)

7 Inflationary impact

Drive Transmission & Steering	5%
Engines	5%
Electricals	8%
Electronics	7%^
Iron & Steel	32%
Tyres	6%
Rubber Components	30%
Tools & Moulds	3%
Body Chassis	4%
Interiors (Non-Electronic)	2%
Fasteners	12%

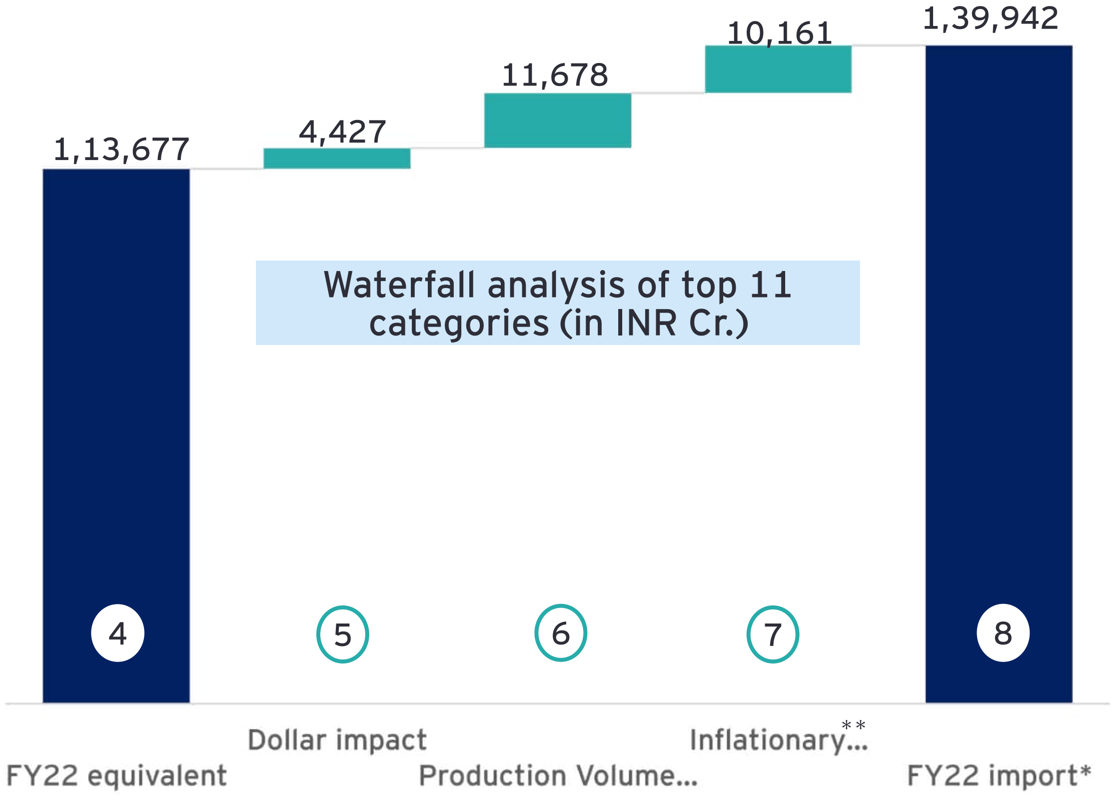
^~13% for semiconductor chips

8 FY22 Import value

Total absolute import value for FY22, for OEMs and OESs.

Factors leading increase in import:

- Dollar fluctuation
- Production volume changes
- Inflationary impact



*Only OEM and OES imports considered
**Includes pricing, insurance, freight

A snapshot of the 1.39 lakh crore auto imports across the top 11 categories

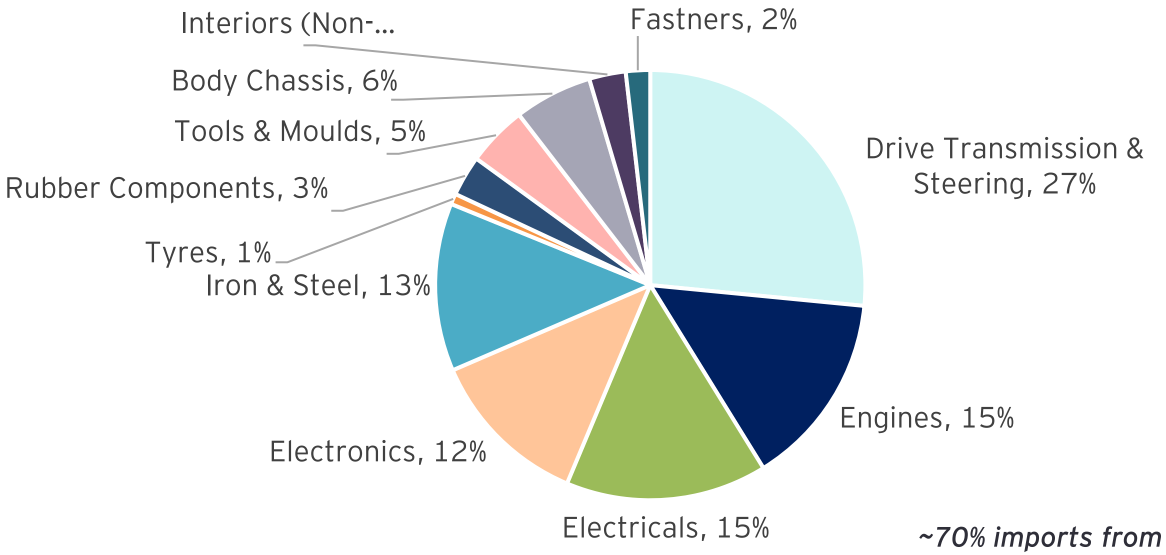
Automotive Import

Estimated total value of automotive import :
~ INR 2.07 lakh Crores

Top 11 Categories' Import Value :
~ INR 1.45 lakh Crores

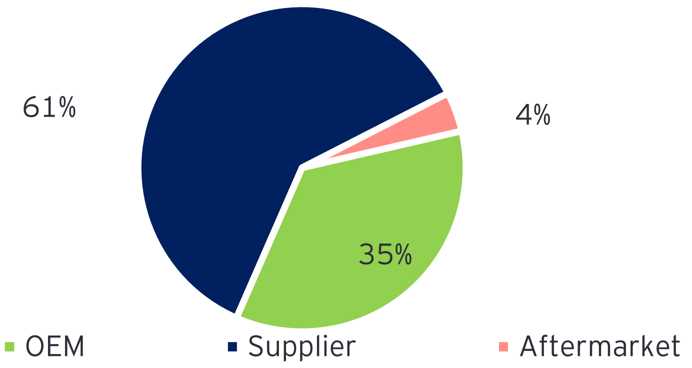
Top 11 Categories' Import Value, excluding Aftermarket :
~ INR 1.39 lakh Crores

Imports by Component Category*

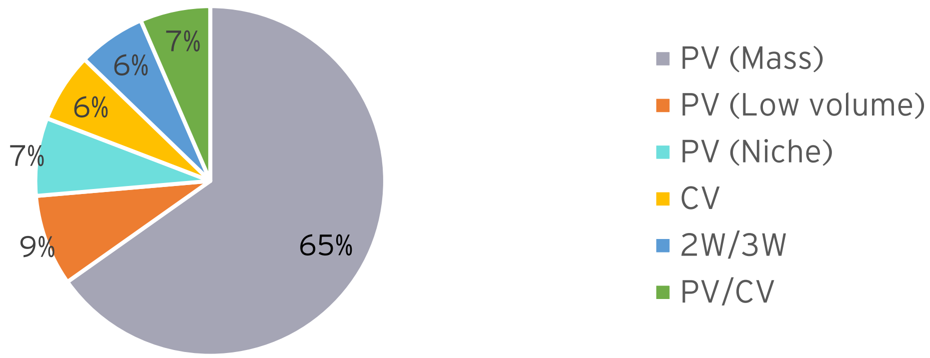


~70% imports from top 4 categories

Imports by Automotive Players' Category#



Imports by Vehicle Segment



*Including import for Aftermarket

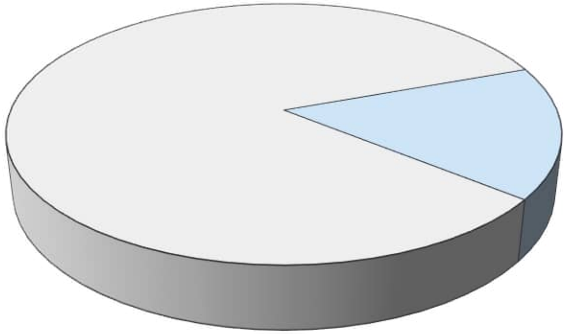
223 6-digit HS codes were considered for analysis of top eleven categories

#Charts baselined as per top 11 category imports: INR 1.45 Lakh Cr
Chart baselined as per top 11 category imports for OEMs: INR 0.49 Lakh Cr

Automotive industry imports as percentage of sales has seen a dip of ~3% in the past two years across OEMs and suppliers

Automotive Import Summary (INR Lakh Cr)*		
Category	**Import#**	**Sales Turnover**
OEM	0.73	5.97
Supplier	1.26	4.20
Total	1.99	10.17

Automotive Industry imports

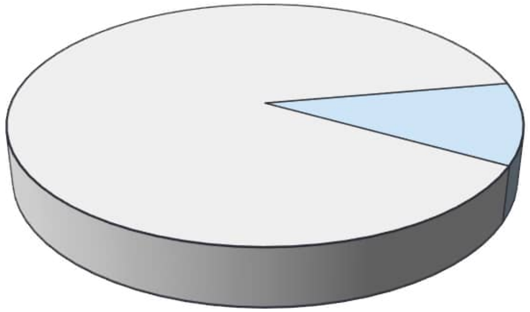


20%

Import as % of total sales turnover

(vs 23% in FY20)

OEM imports

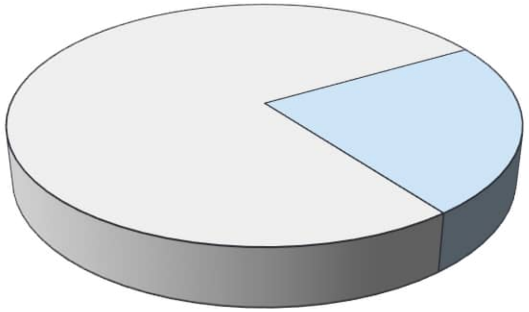


12%

Import as % of OEM sales turnover

(vs 14% in FY20)

Supplier imports

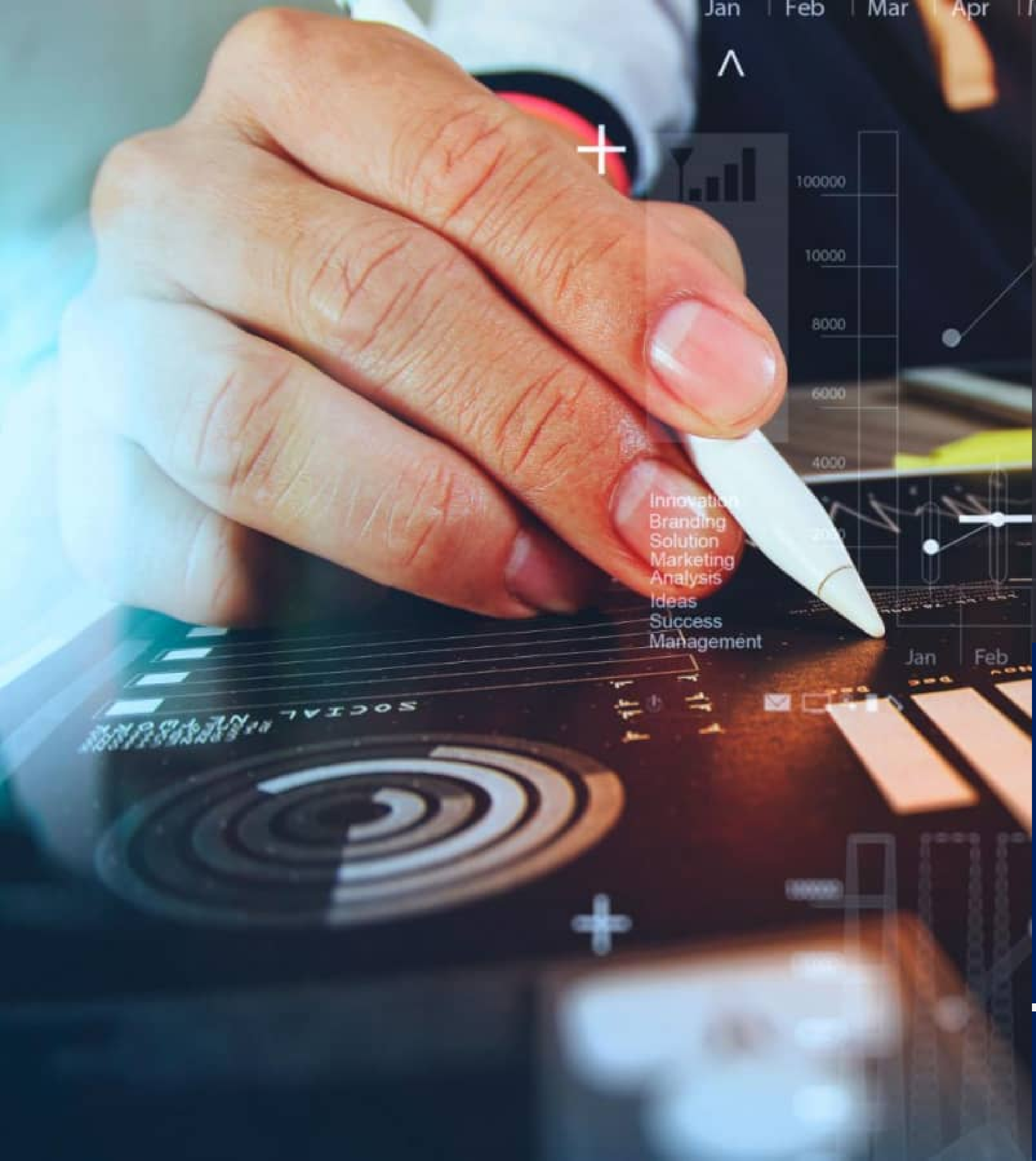


29%

Import as % of OES sales turnover

(vs 30% in FY20)

*As per inputs from SIAM and ACMA
Absolute import values FY22



Future initiatives planned by the industry

Major categories are expected to witness increased localization in the next 3-5 years

Capacity Expansion and production line shifting	**Engine** • Exhaust management components • Engines, engine control and VCT	**Drive, Transmission and Steering** • Shaft sub-assemblies and drive gear sub-assemblies • Power steering MCU	**Tools Dies and Moulds** • Tools for moulding and stamping operations	**Body chassis** • Sunroof and child parts
Partnerships	**Engine** • Exhaust after treatment systems (EATS)	**Drive, Transmission and Steering** • Variants of EPS – Rack EPS etc.	**Electronics** • ABS units for 2W • ESP units	**Interiors** • Seat ventilation systems
Greenfield investments	**Drive, Transmission and Steering** • Automatic Transmission and Transmission components • DCT assemblies	**Electricals** • Special application motors • PV electrical switches	**Electronics** • Certain sensors like NOx, EGT • 360 degree camera assembly	**Tools Dies and Moulds** • Tooling for interior plastic moulded parts

The automotive industry has initiated plans to increase localization across major imported categories (1/2)

Category	Key initiatives to ramp up localization in the next 3 years	
 Drive Transmission & Steering	German auto component maker would **invest over 300 cr. in the next four year years** in setting up a new manufacturing facility in Hosur, The proposed plant will manufacture transmission components and systems for automotive industry	A fasteners company is planning to invest **Rs 200 crore** to support the new orders under the six-year long purchase package involving the supply of shaft sub-assemblies and drive gear sub-assemblies.
	A German OEM is aiming for **95% localisation of India 2.0 models**. Most of the models will come with 90 percent localisation in the coming years	A tier 1 component manufacturer has set aside **INR 500 Cr to locally manufacture DCT** in India with an initial production output of 100,000 units
 Engine	Global auto-component player has inaugurated another plant in India, which provides extensive manufacturing, assembly and storage space. Assembly of **high-performance engine control and variable camshaft timing (VCT) systems** will be centralized in the new facility	Japanese OEM has commenced manufacture of global engines from its fourth factory in India to produce **50,000 engines in the first year of production**
 Electricals	Tier I component manufacturer is also setting up a new manufacturing plant to cater to increased demand of **4W automotive switches from domestic and overseas customers**. The project cost for setting up Phase 1 will cost the firm around **₹110 crore** which is expected to be completed by September 2023	Japanese electric motors company is looking to spend **$78 million** in building a new plant at its existing facility for **motors for automobiles**

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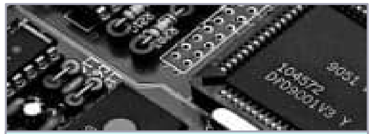
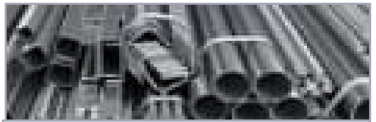
The automotive industry has initiated plans to increase localization across major imported categories (2/2)

Category	Key initiatives to ramp up localization in the next 3 years
 Electronics	An auto component supplier has its first series of productions in the powertrain solutions products that include engine management systems, sensors, and actuators, as well as exhaust management components for passenger cars and commercial vehicles German sensor manufacturer is in process of localising production of sensors such as NOx, Knock, temperature etc.
 Iron & Steel	Domestic steel maker plans to invest Rs 8,500 crore in India. The company is in process of expanding capacity of its plant in Kalinganagar, Odisha to 8 MT from 3 MT One of India's bead wire manufacturers expects its volumes to increase by at least 20-25% in the current fiscal OEMs are developing partners to localise special steel grades such as electrical steel and high wear resistance steel
 Rubber Components and Tyres	Japanese tyre maker is looking to scale up its manufacturing capacity by over 10% next year amid a surge in demand from OEM and after market segments Indian tyre manufacturer is investing ₹1,000 crore on expansion of its manufacturing facility near Hyderabad
 Body/Chassis/ BiW	A e-3W Manufacturer has planned to manufacture E2W Frames & Chassis At Its New Facility, it will be investing around Rs. 25 crores in phase manner for setting up the new manufacturing unit All major PV OEMs have implemented plans to localise procurement and assembly of sunroof systems over next 2 years
 Interiors (Non-Electronic)	French glass and building material major is planning a capital expenditure of Rs 1,800 crore to expand capacities in India in 2023

Despite localization efforts planned across all the categories, various factors evolving in the auto industry call for revisiting the 5-year targets

Major changes expected in the industry	Increased **customer preference** towards technology and comfort	Rise in **connected and safety solutions** (e.g. ADAS, light weighting, airbags)	Increased Electric vehicle penetration
Key areas of impact	Electronics Interiors	Electronics Ultra high strength steel	EV components
Key imperatives for the industry to drive localisation	Development of 4,6 layer PCBs Local manufacturing of TFT screen	Build in-house capabilities Collaboration to develop speciality steels	Investments in EV related component manufacturing

Revised Roadmap

To address the changing dynamics, the current targets have to be reassessed and new strategies have to be adopted by the industry

FY22

Localisation target ~ 3-5%

Localisation achieved ~ 5.8%

FY25

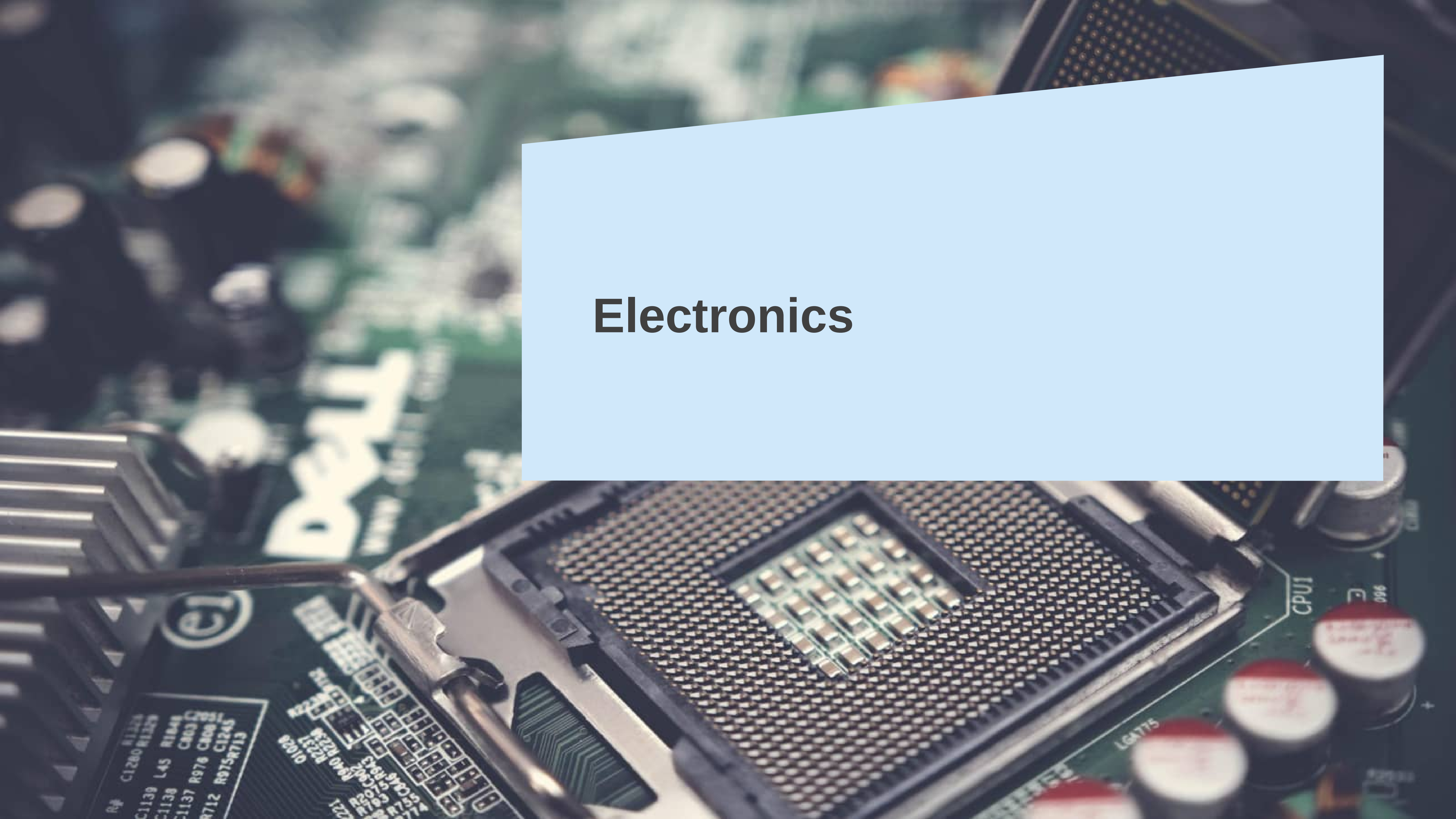
Localisation target ~ 16-20%

To be reassessed

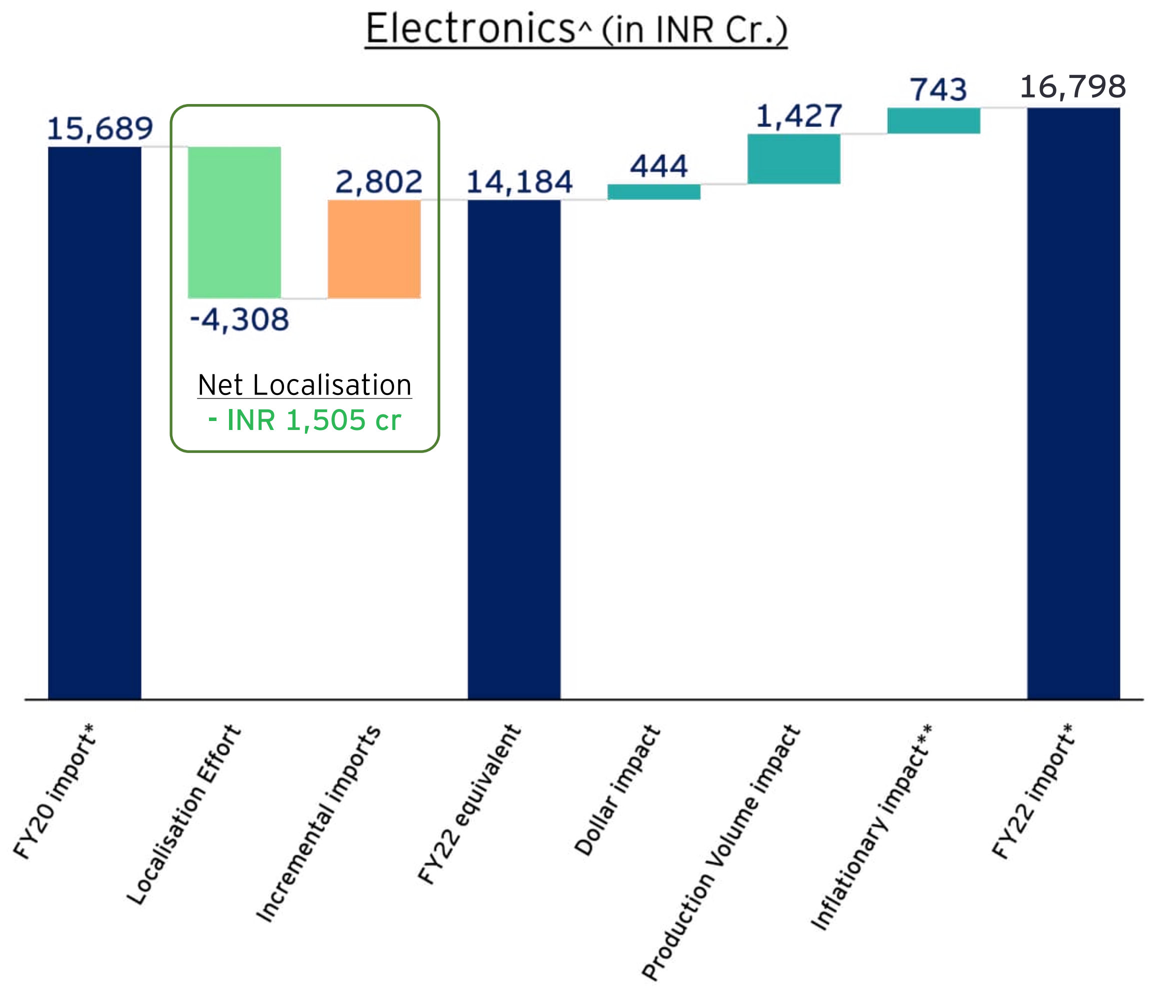
2

Category wise view

Electronics



Electronics : Localisation is achieved in the electronics category on the back of investments in infotainment system and ECU assemblies



Subcategory	Key components localised in the last 2 years	Key components contributing to import#
Infotainment	Final assembly & SMT process for smart display audio	Heads up Display, LCD/TFT screen, digital instrument cluster, Telematics
Cameras	Assembly process for camera controllers	Front, rear camera, 360 degree ,camera module
Sensors & ECU	ECU assemblies : ESP, ABS, EMS,BCM, CGU , airbag controller	Radar ,emission control sensors, PEPS, specialised ECUs
PCB, Electronic Components and Diodes & Semiconductors	2 layer PCBs, and child parts	4,6 Layer PCB, integrated chips

List of components is representative sample with substantial contribution to localisation/imports

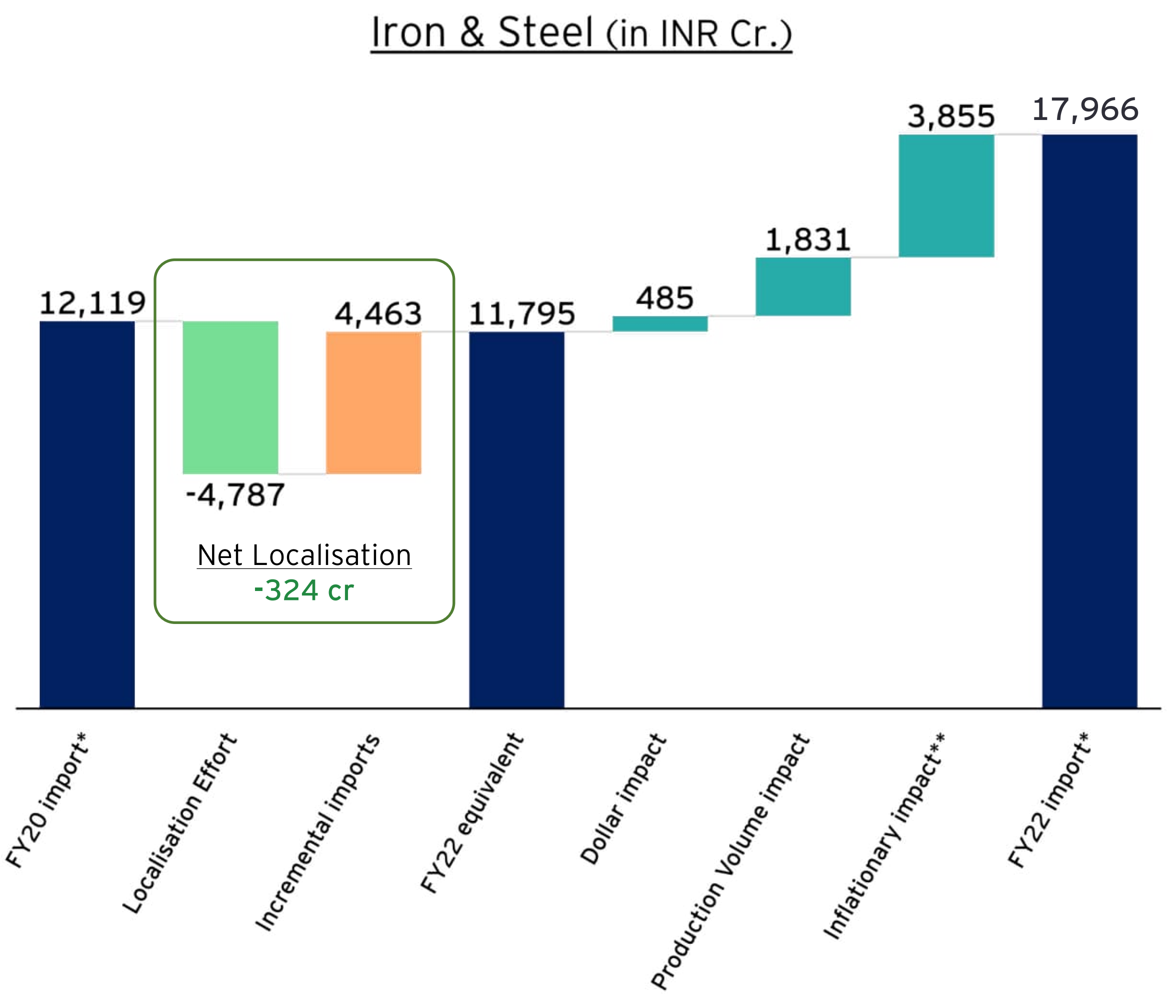
**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

^ The dollar, production volume and inflationary impact has been calculated on the FY 20 BS VI adjusted values

#imports due to consumer/ technology/ regulatory requirements

Iron and steel

Iron and steel : Import value has been driven up by fluctuating commodity prices, supply chain shocks and increased demand of specialty grade steels



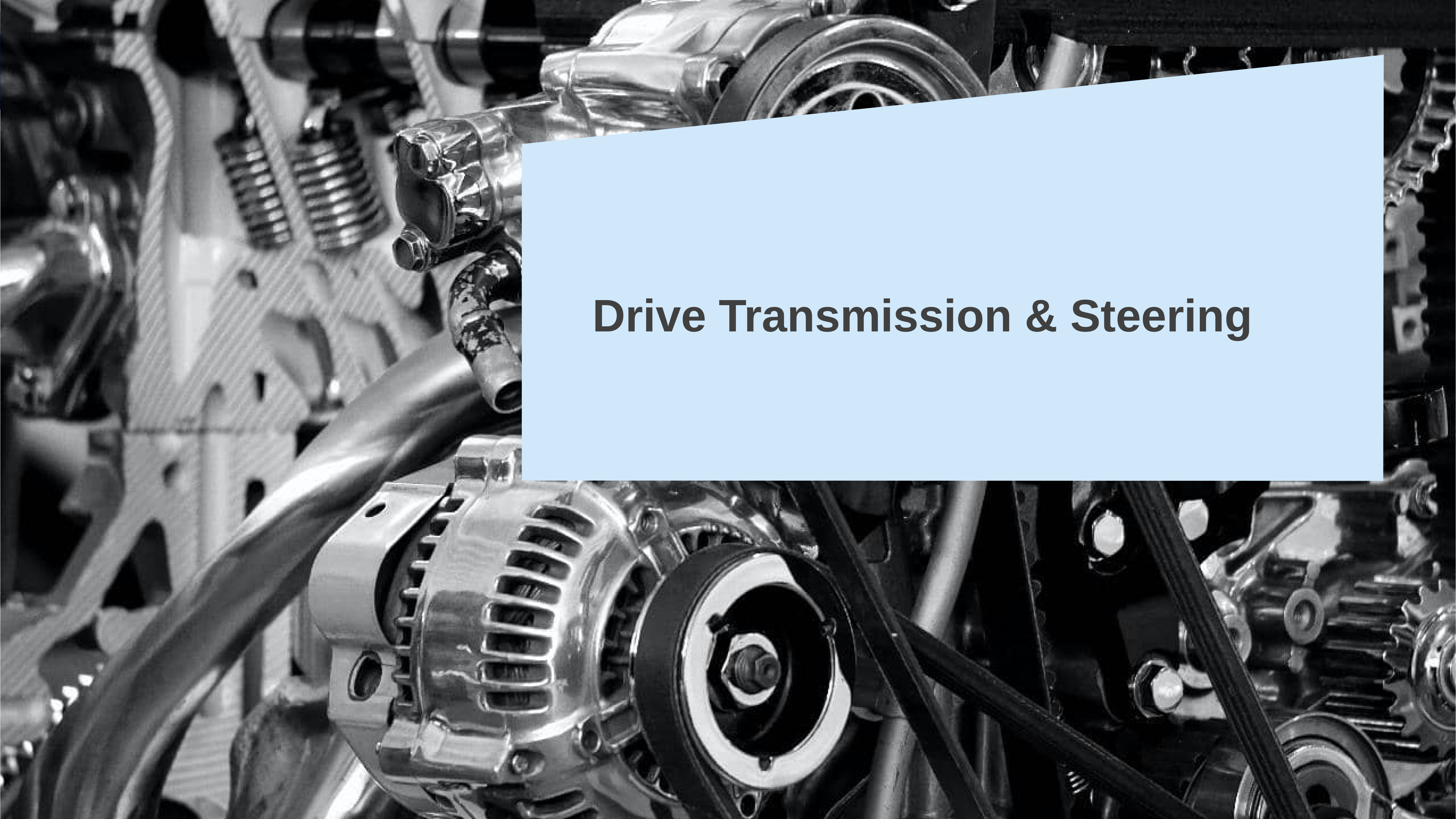
Subcategory	Key components localised in the last 2 years	Key components contributing to import#
Flat Rolled	Stainless steel for EATS applications,	Ultra high tensile steels, Galvanised steel, electric steel, Cold rolled - High tensile steel and
Structural Parts	_	High strength steel

List of components is representative sample with substantial contribution to localisation/imports

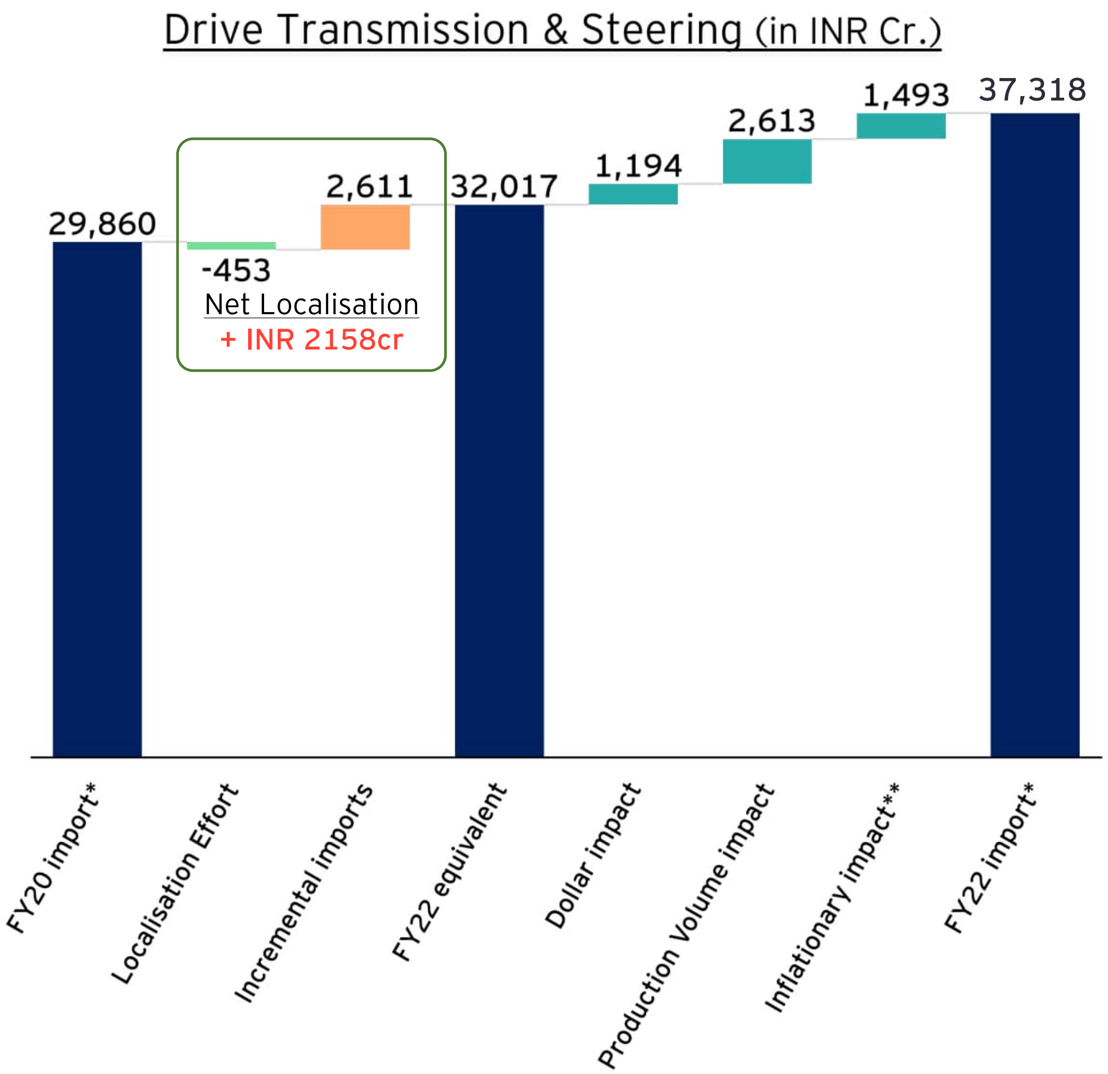
#imports due to consumer, technology and regulatory requirements

**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

Drive Transmission & Steering



Drive Transmission and Steering : Localisation has been minimal due to a rising trend of increased adoption of automatic transmission and its related components

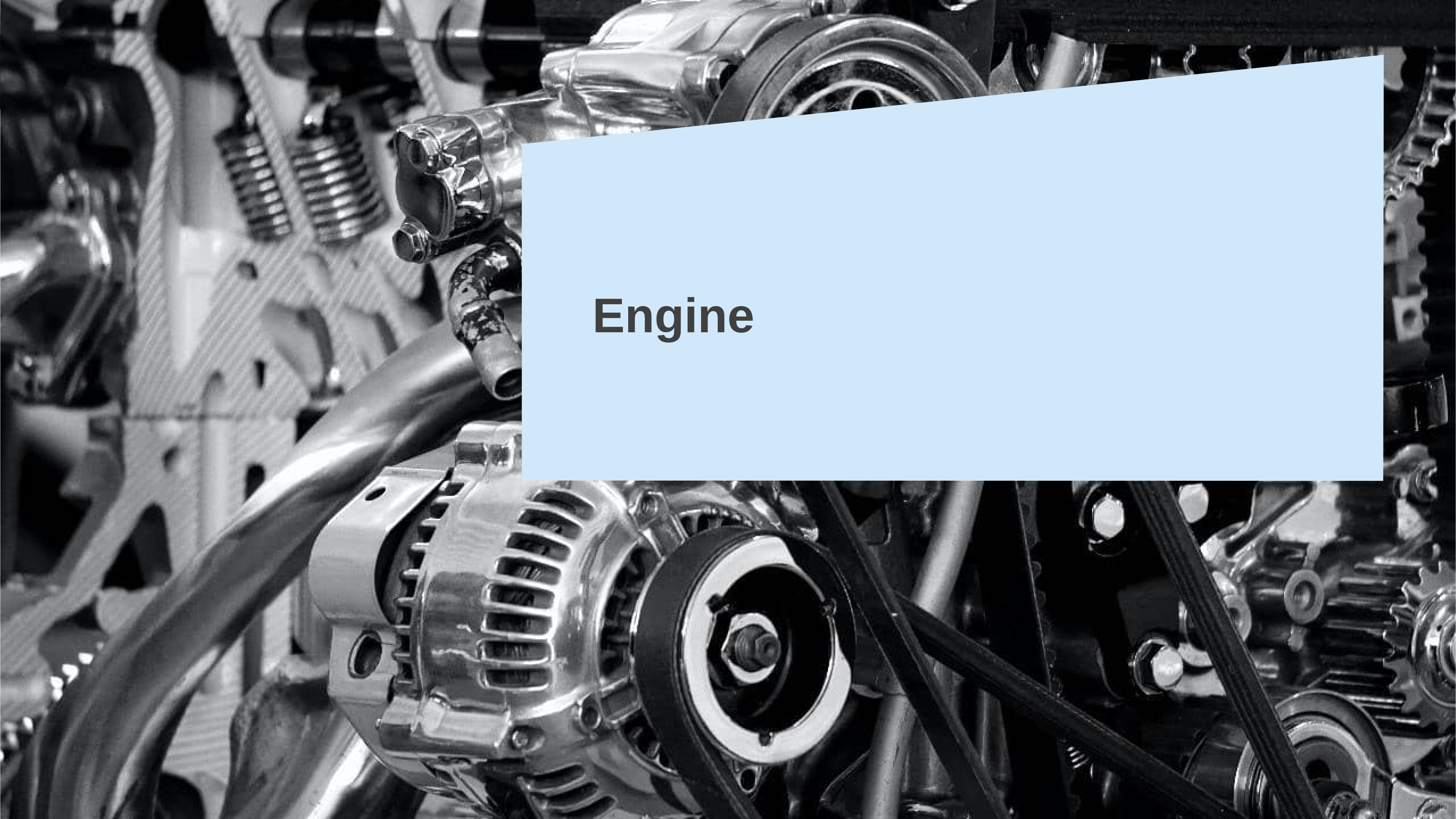


*Only OEM and OES imports considered
**Includes pricing, insurance, freight

Subcategory	Key components localised in the last 2 years	Key components contributing to import#
Transmissions and Transmission components	AMT system and child parts	Automatic transmission systems, Torque converter, Higher precision gears and shafts and other child components
Steering Components	EPS motor yoke, gear reduction , Steering wheel armature, Steering column	Power steering motor assembly
Alloy Wheels	Alloy wheels for PV segment	Alloy wheels for 2W segment

List of components is representative sample with substantial contribution to localisation/imports

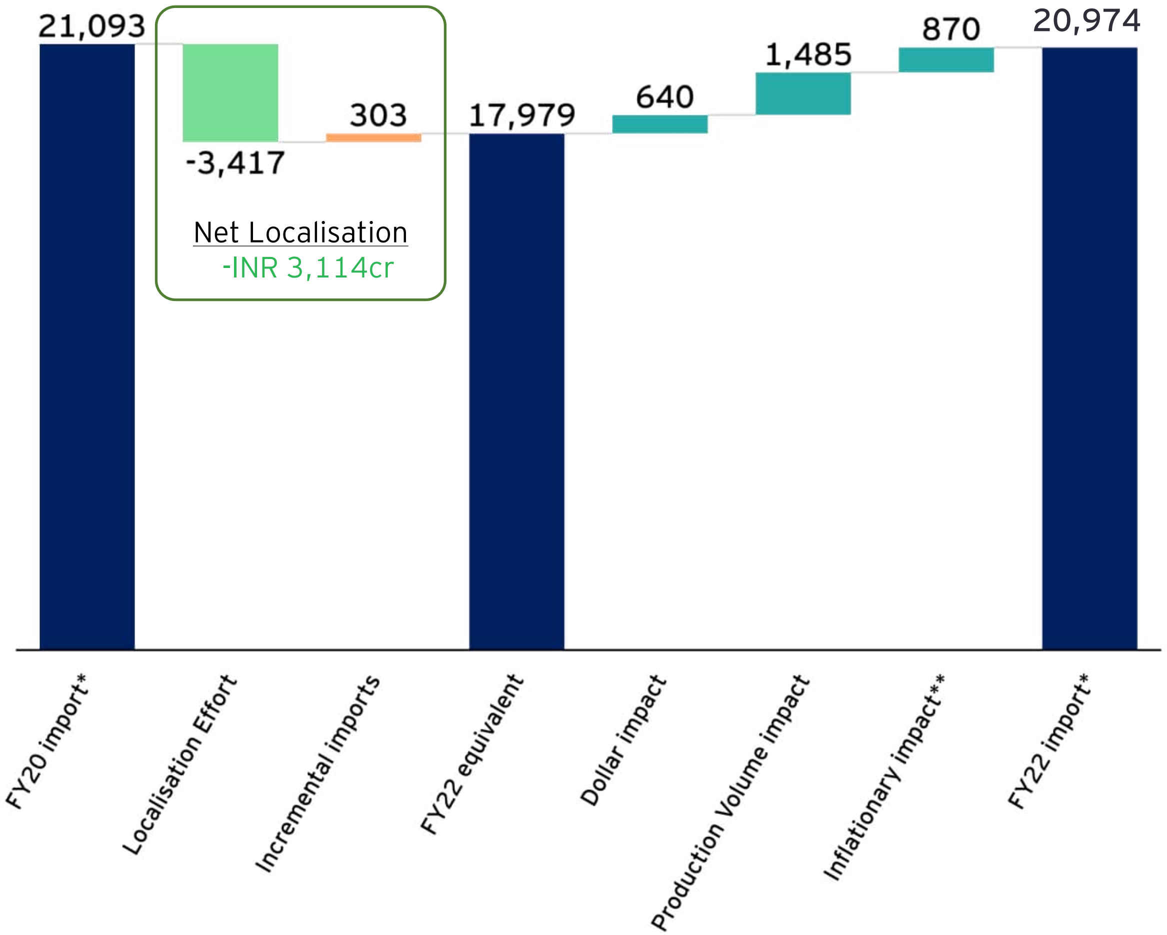
#imports due to consumer/ technology/ regulatory requirements



Engine

Engines : Engine manufacturing remains largely localised except for critical components/systems which are imported due to technology constraints

Engines^ (in INR Cr.)



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
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Engine components	Ignition coil assy (certain varieties) and parts, EGR assembly	Fuel injector components, Exhaust sensors, SCR components, EGR parts	Doubling of fuel injectors and incorporation of emission control components are contributing to imports
Others	–	EATS parts - PGMs, Urea modules, etc.	Contains precious metals and special steels leading to imports

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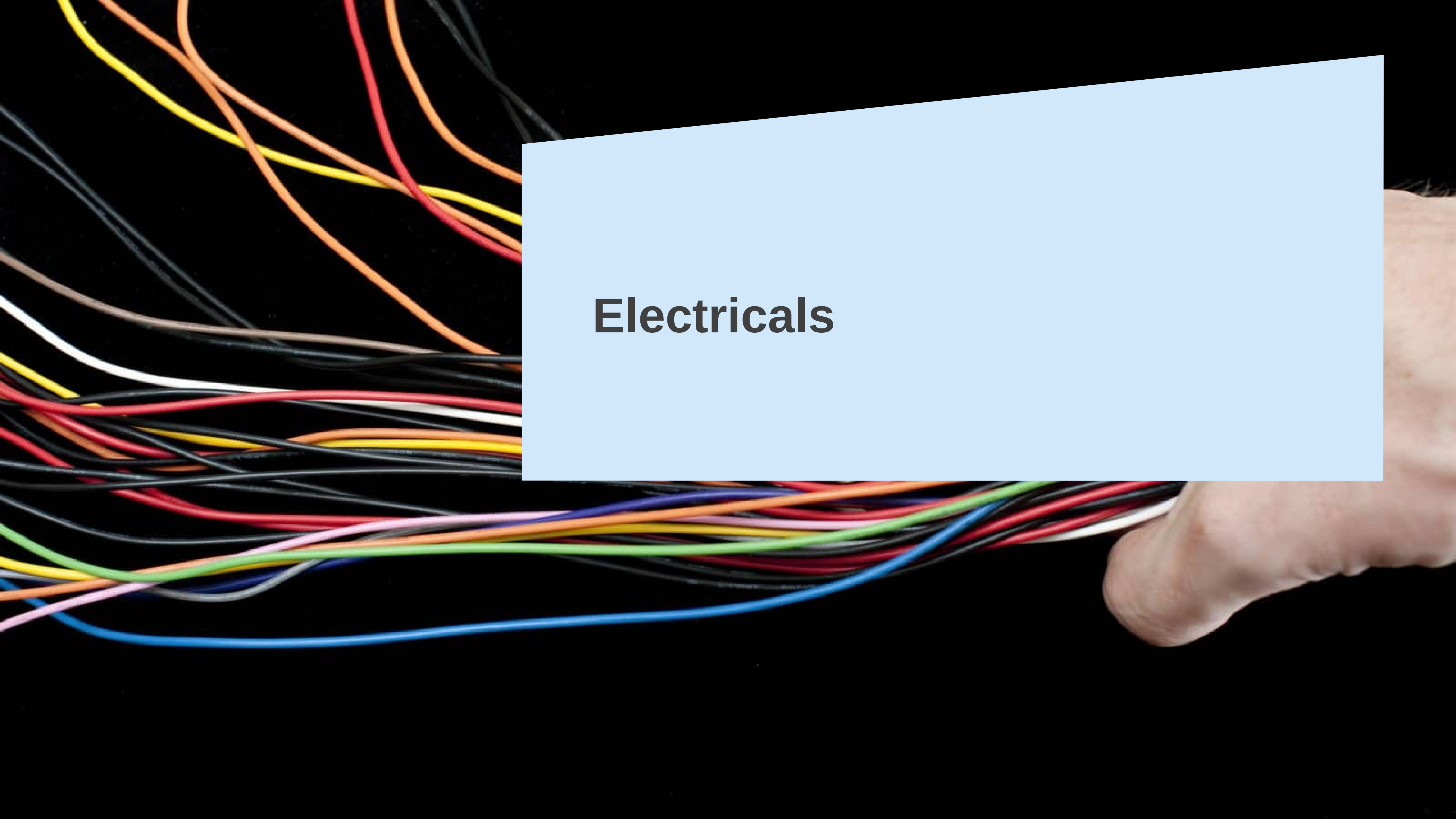
^ The dollar, production volume and inflationary impact has been calculated on the FY 20 BS VI adjusted values

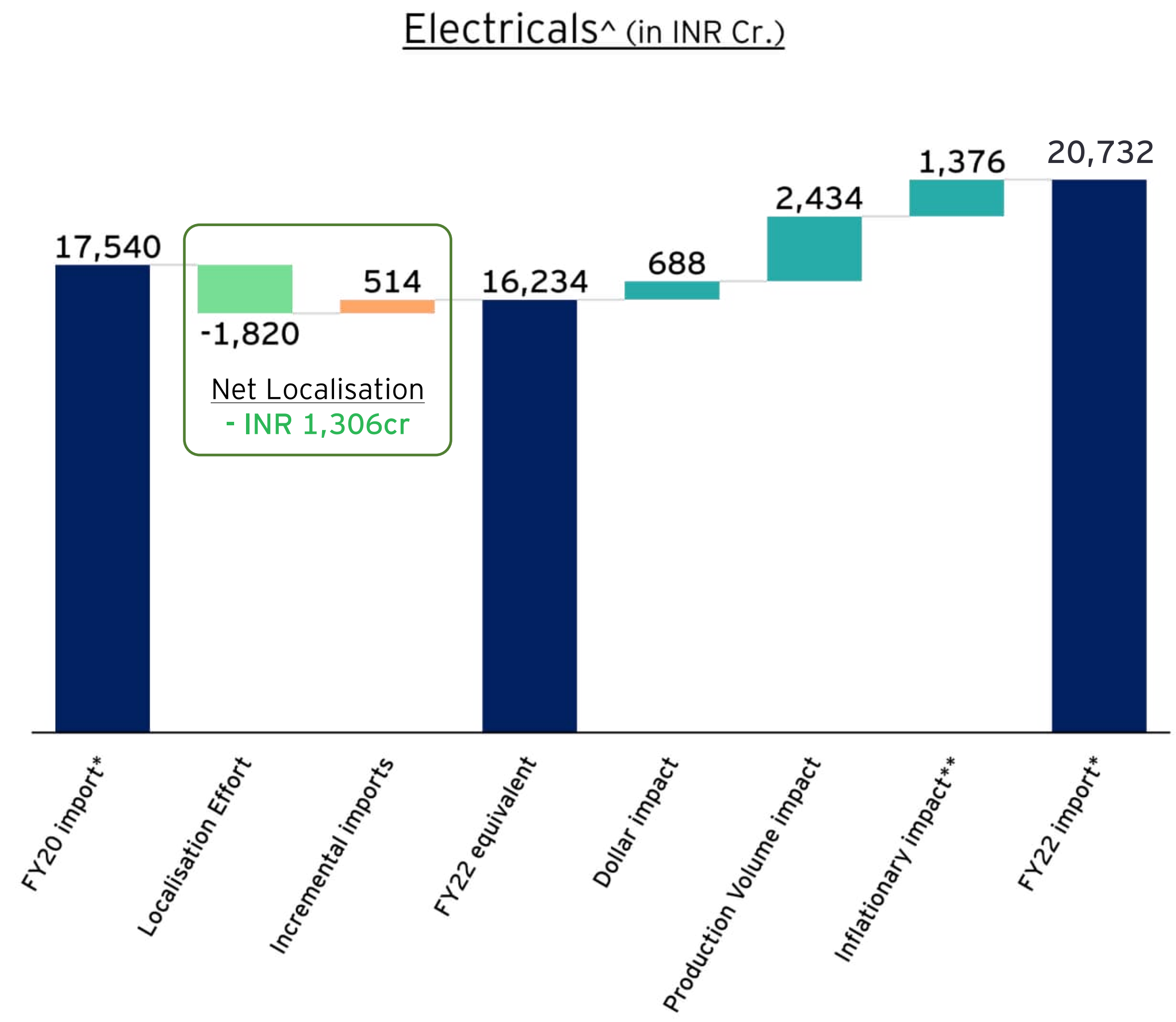
List of components is representative sample with substantial contribution to localisation/imports

#imports due to consumer/ technology/ regulatory requirements

Electricals



Electricals : Concerted efforts in electricals category have resulted in localisation despite customer driven trends of premiumisation



*Only OEM and OES imports considered
**Includes pricing, insurance, freight

^ The dollar, production volume and inflationary impact has been calculated on the FY 20 BS VI adjusted values

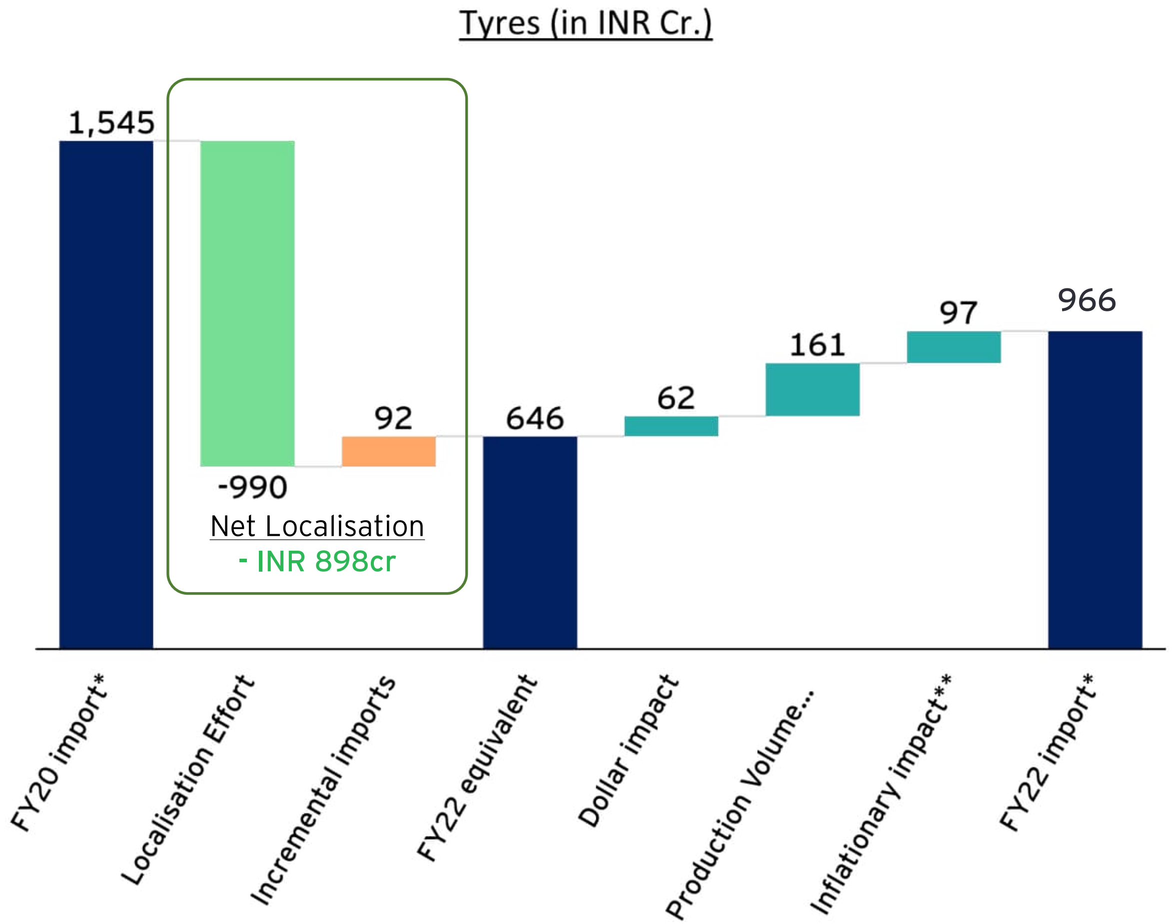
Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Motors & Motor components	Starter motor, alternator, Radiator motors, AMT motor	Micro motors, Motor child parts- commutator, carbon brush, Grade 6,7 magnets (rare earth)	Premiumisation related features like sunroof, powered tailgate, EPS are witnessing increased demand
Lighting systems and components	Reflectors for headlamps, Head lamp beam control module, lamp housings	Lens for headlamps,	• Technological advancement and adoption of projector headlamps • Cost also plays a key role in OEMs & Suppliers importing the lighting systems & components (due to FTA)
Cables, Wires & Wiring harnesses	Wiring harness, junction boxes, housing	Terminals and connectors	Mother plants concentrated in China and European nations

List of components is representative sample with substantial contribution to localisation/imports

#imports due to consumer/ technology/ regulatory requirements

Tyres

Tyres : Regulatory push has led to localisation of tyres to a large extent barring imports for specific requirements

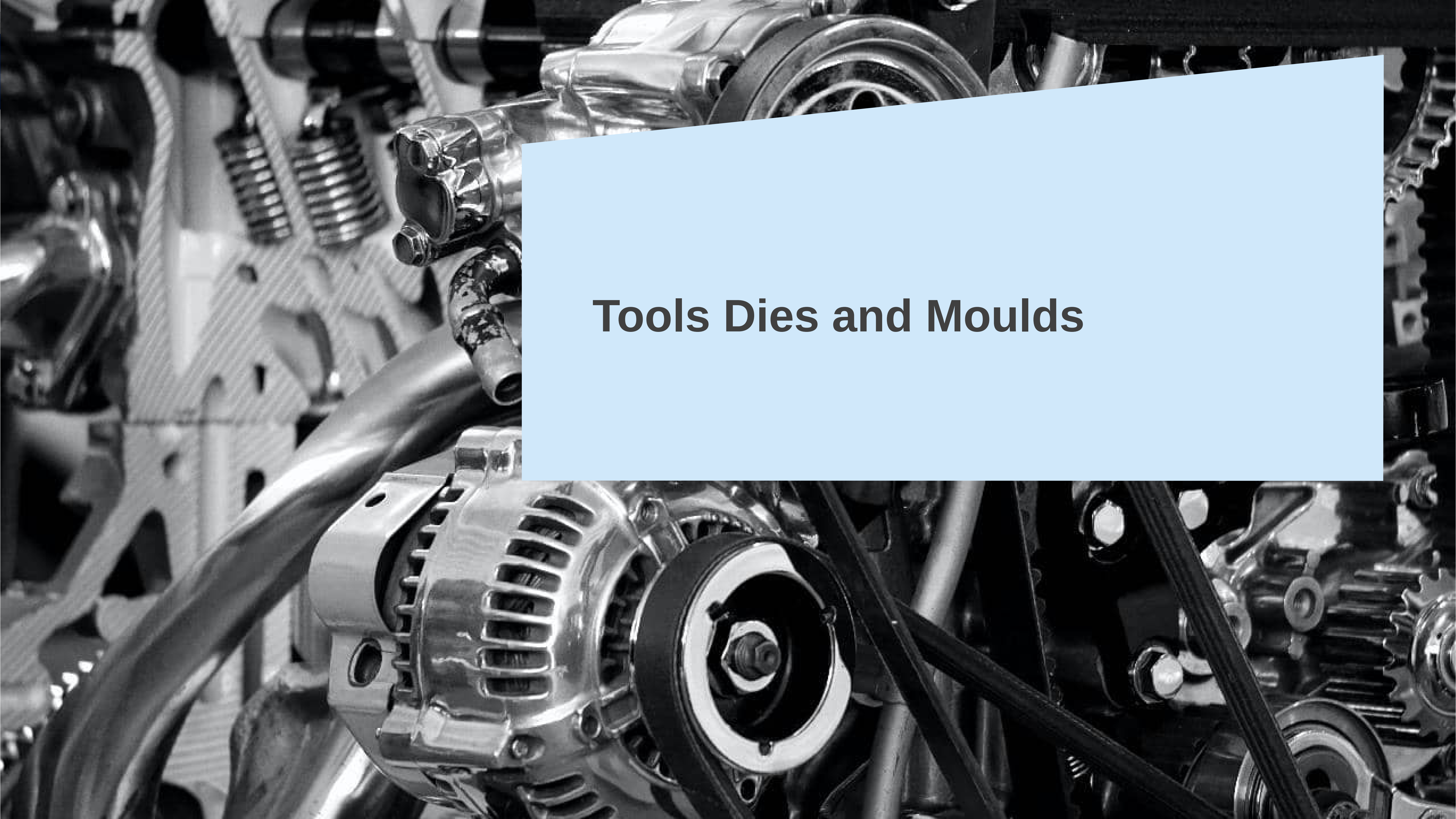


*Only OEM and OES imports considered
**Includes pricing, insurance, freight

Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Tyres for PV	Tyres for all vehicle segments except luxury vehicles	Niche segment tyres, EV specification tyres	• Luxury segment tires are primarily imported • Specific homologation requirements and customers' preference for select brands of tyres in global markets for PVs lead to imports • Speciality tyres are imported due to non-availability in India

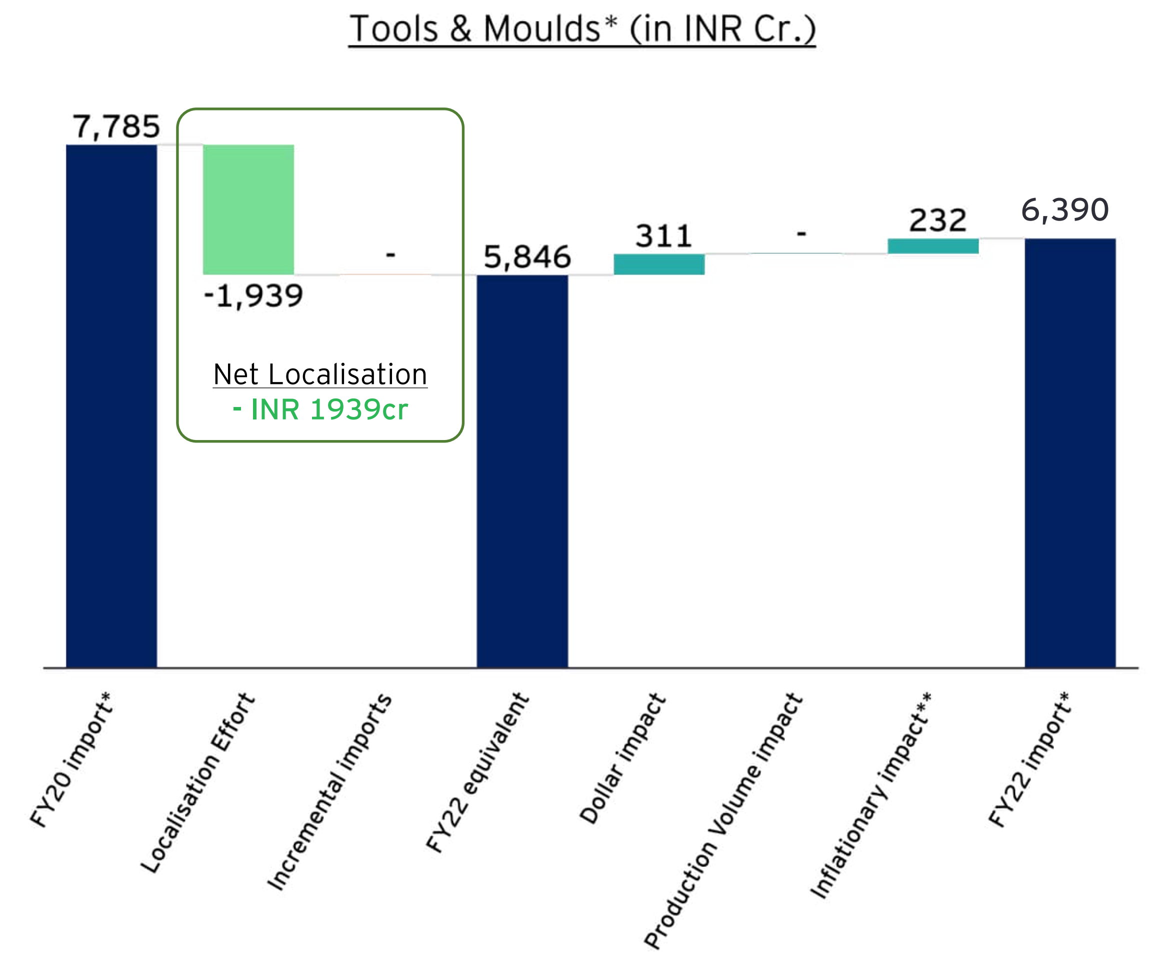
List of components is representative sample with substantial contribution to localisation/imports

#imports due to consumer/ technology/ regulatory requirements



Tools Dies and Moulds

Tools, dies and moulds : India's strengths in casting and forging are evident in the increasing localisation of tooling components



Tools & mould category imports are more closely linked to new product launches than production volume changes.

Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Press (Stamping) Tools & Dies	Transfer tools for BiW and cabin components, die casting tools for control arms, Tooling kits for 2W lamp sets	Tooling kits for lamp sets 4W , Tools for skin panels	• Dependence on tooling for lamps due to technological complexity • High Investments with longer gestation period to reap benefits • Lead time constraints
Tools for Plastics & Rubber Components	Tools for select interior plastic parts like glove box etc.	Moulds for lighting systems	• Limited supplier providing end to end tooling solutions • Lead time constraints

List of components is representative sample with substantial contribution to localisation/imports

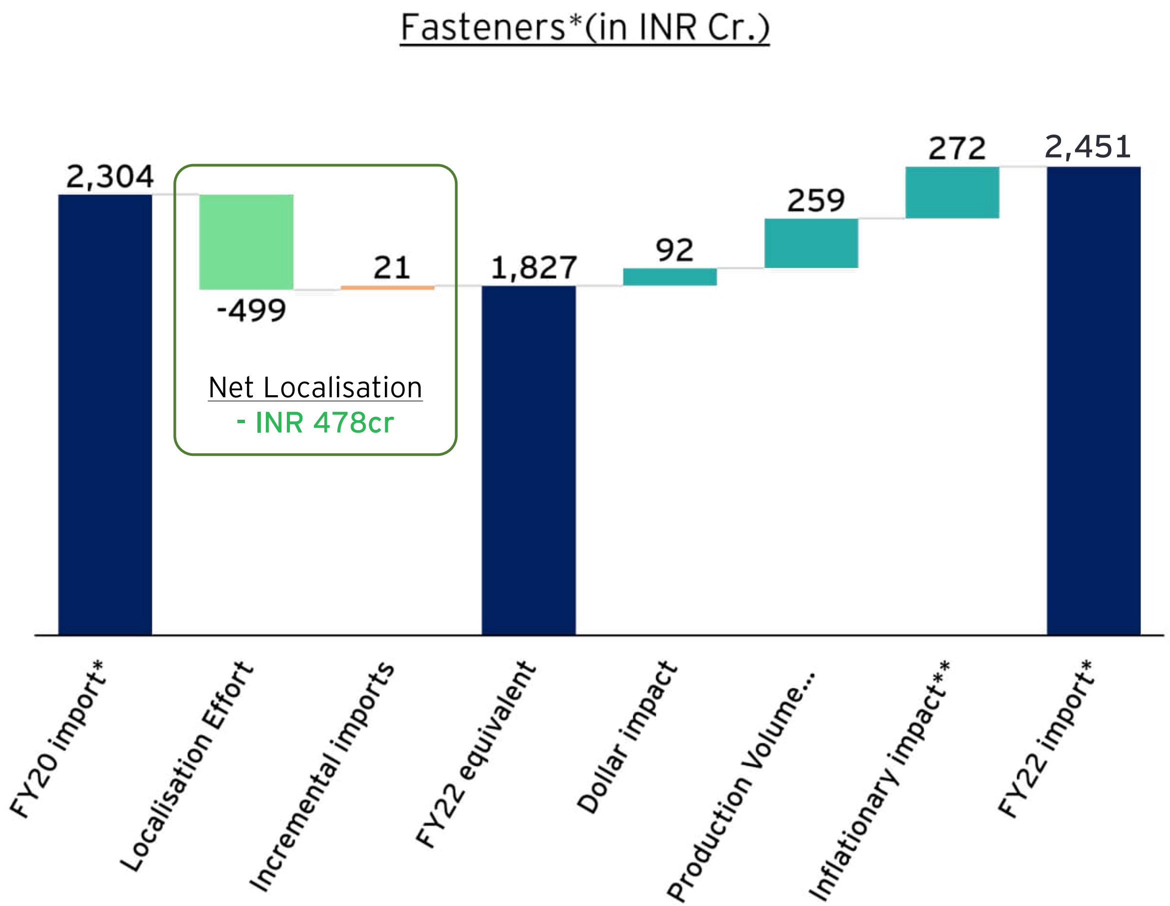
**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

#imports due to consumer/ technology/ regulatory requirements

Fasteners

(Nuts, Bolts, Washers & Rivets)

Fasteners : Significant localisation efforts have paid off; high tensile fasteners continue to be imported for critical applications

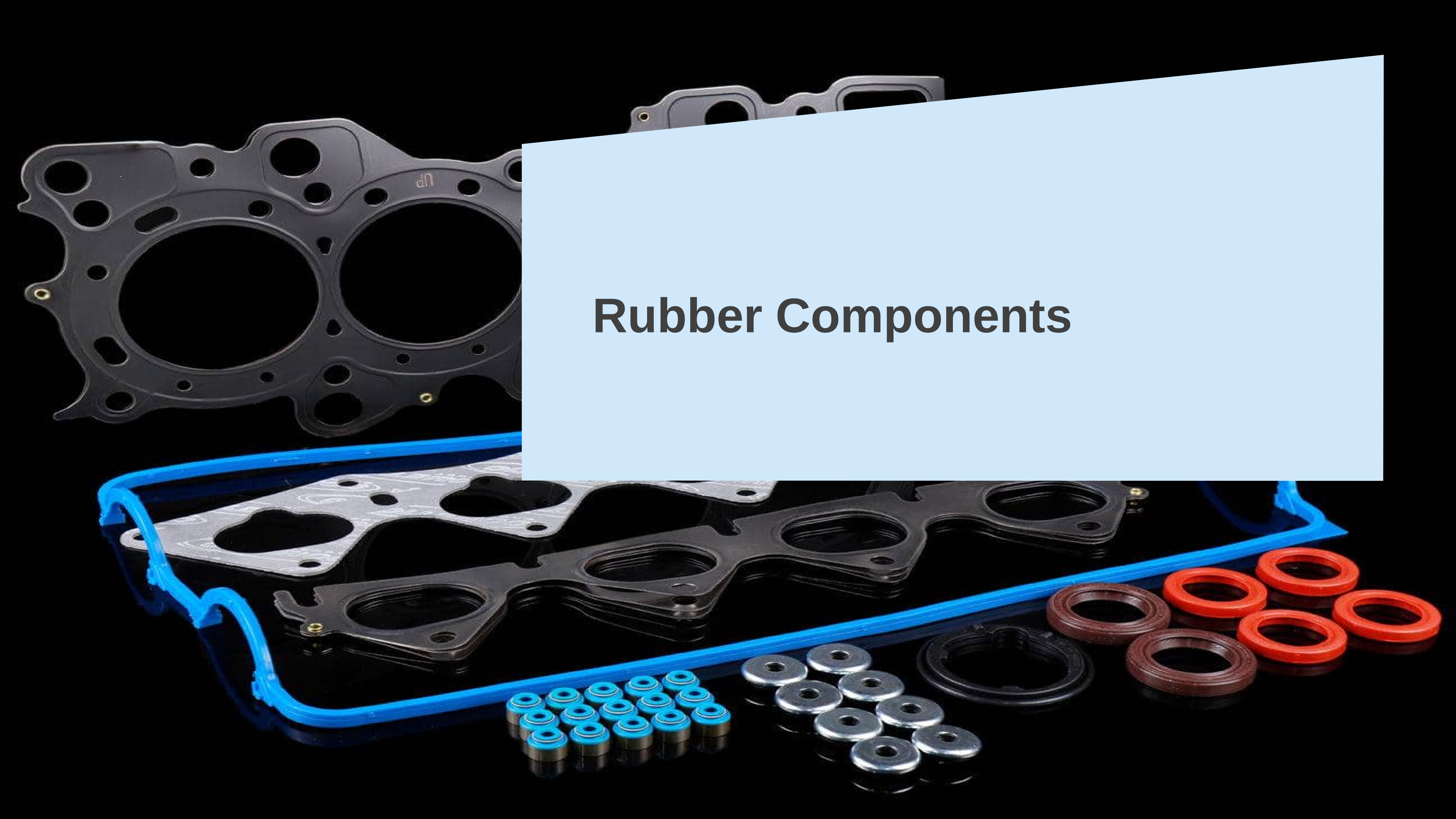


*Only OEM and OES imports considered
**Includes pricing, insurance, freight

Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Bolts, nuts, washers, rivets	Knurled Bolts, Flange bolts, Flange nuts, wheel nuts	High tensile fasteners (for safety critical applications)	• Safety critical applications – significantly higher cost of failure – OEMs prefer proven & existing sources • Cost & lead time for switching is high – stringent/rigorous testing & validation needed • Lack of integrated surface treatment for high tensile fasteners

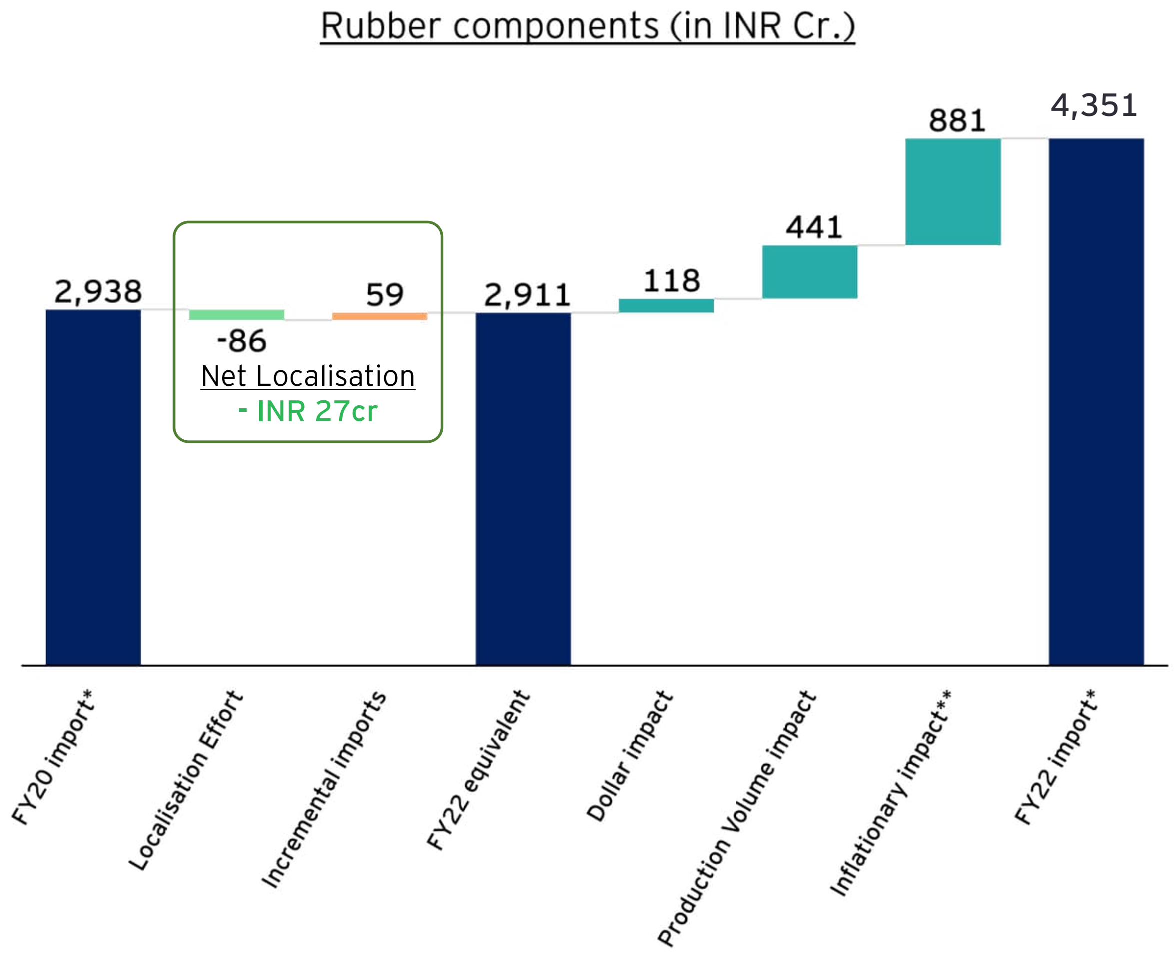
List of components is representative sample with substantial contribution to localisation/imports

#imports due to consumer/ technology/ regulatory requirements



Rubber Components

Rubber Components: Localisation is seen, however volatility in rubber prices and heavy dependency on Nylon-66 for tyre cord fabric have been deterrents



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Tubes, Gaskets, washers and seals: Pipes & Hoses	Grommets, pipes, hoses for general applications, door seals	Niche segment parts - gaskets, o-rings, seals	Companies also follow global standards and therefore, prefer to source globally
Tyre cord fabric	–	Nylon 66 tyre cord fabric	Shortage/ low availability of Nylon 66 for tyre cord fabric

List of components is representative sample with substantial contribution to localisation/imports

*Only OEM and OES imports considered
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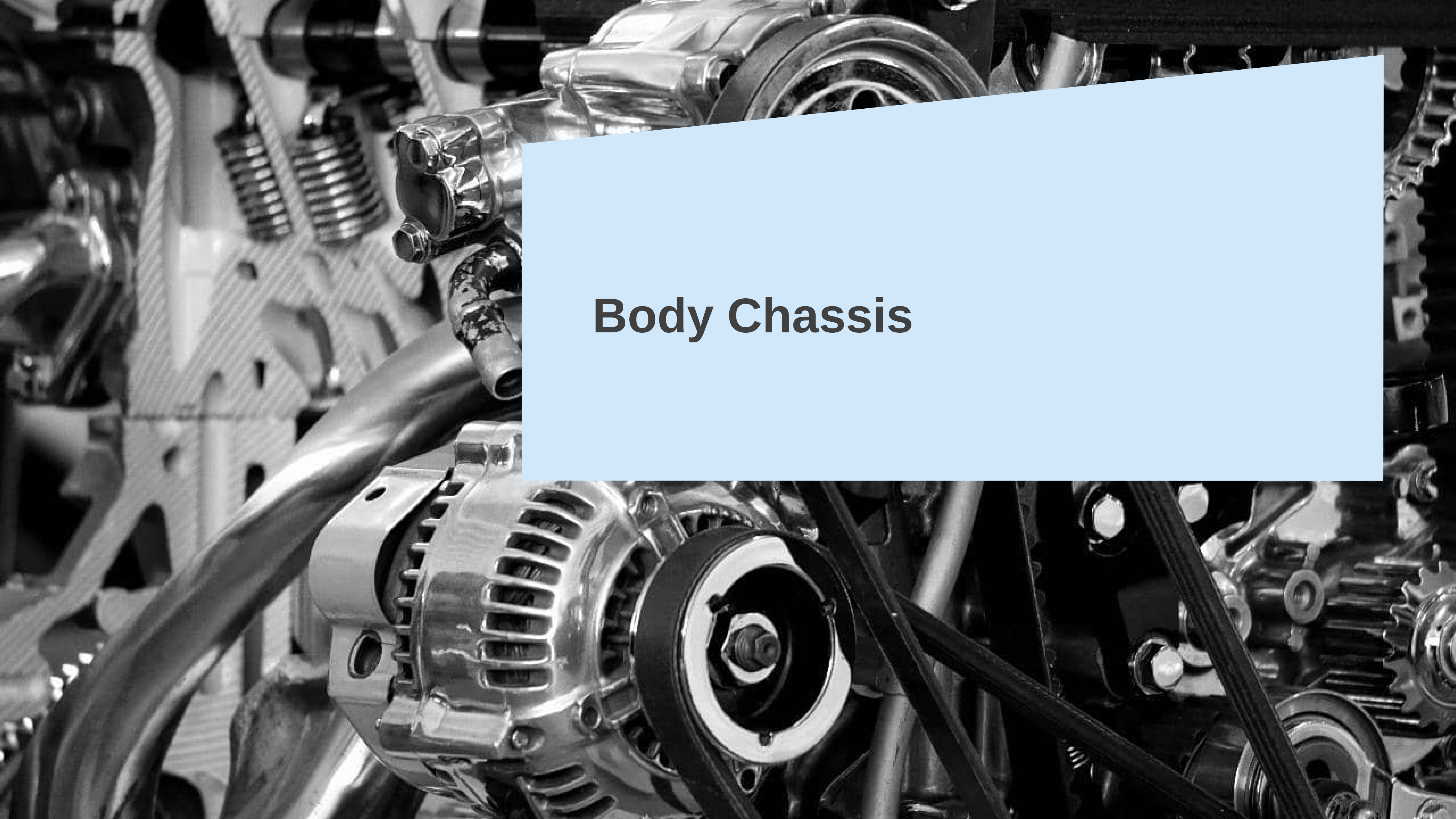
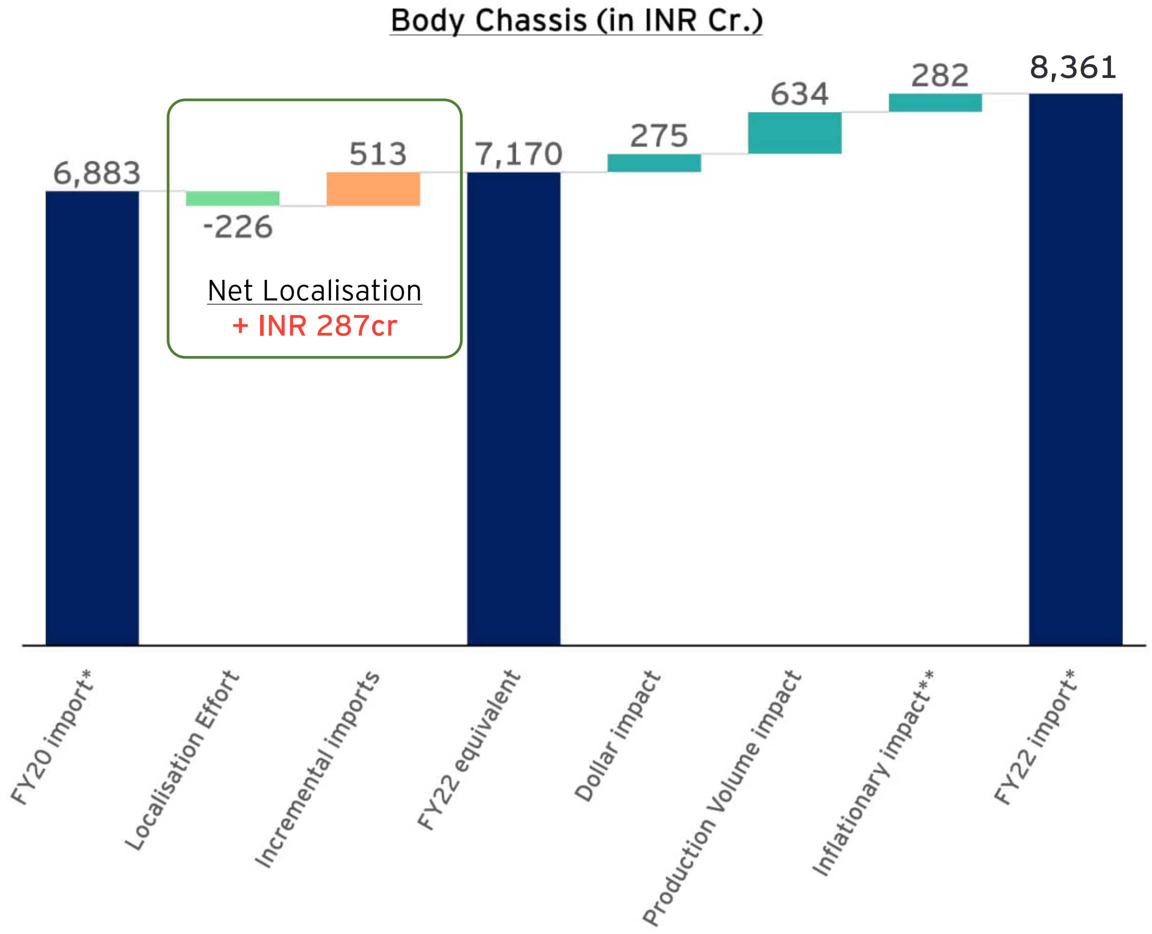
#imports due to consumer/ technology/ regulatory requirements



Body Chassis

Body Chassis : Increased adoption of features such as sunroofs and electrically adjustable ORVMs have negated the impact of localisation efforts in the category



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
BiW Fittings	Miscellaneous brackets, tabs, holders, Door latches	Mountings for sensors and clamp assemblies for critical applications	
BiW and Sub Assy	Sheet metal parts, body panels	Sunroof assemblies, Electrically adjusted ORVM	Sunroof systems have emerged as an important category with adoption increasing to 10-12 % in SUV's and 2-3% in sedans from negligible adoption rates

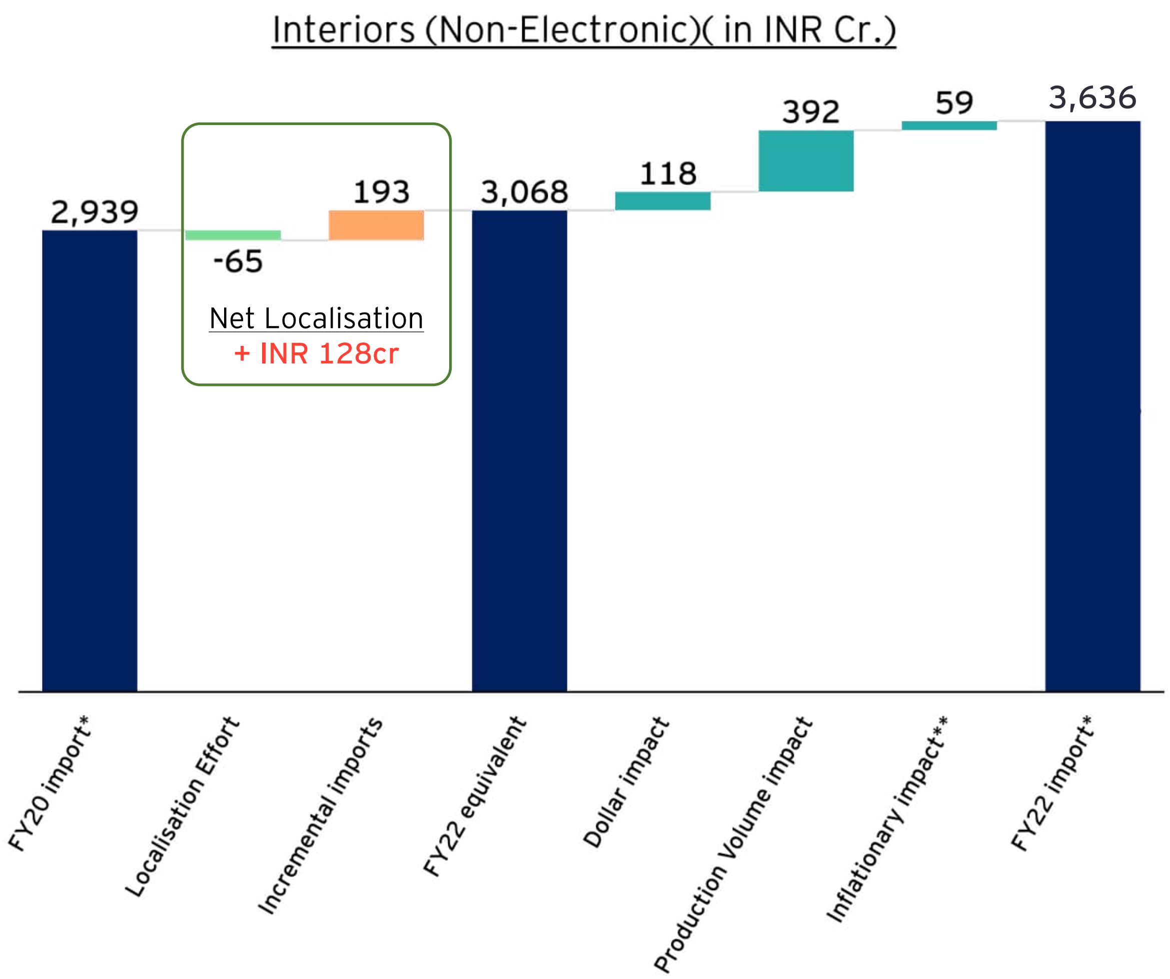
List of components is representative sample with substantial contribution to localisation/imports

**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

#imports due to consumer/ technology/ regulatory requirements

Interiors (non-electronics)

Interiors (Non-Electronic) : Localisation efforts in the Interiors category have been offset by rising adoption of comfort features such as ventilated seats



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Seating	Front head rest rod, seat belt reminder switch, seat belt fabric, retractor	Seat ventilation systems, PT seatbelts, micro gas generator	• Increasing customer preference for ventilated seats • Expected regulations mandating the adoption of 3 point seat belts in rear centre seats has seen increased demand

List of components is representative sample with substantial contribution to localisation/imports

*Only OEM and OES imports considered
**Includes pricing, insurance, freight

#imports due to consumer/ technology/ regulatory requirements

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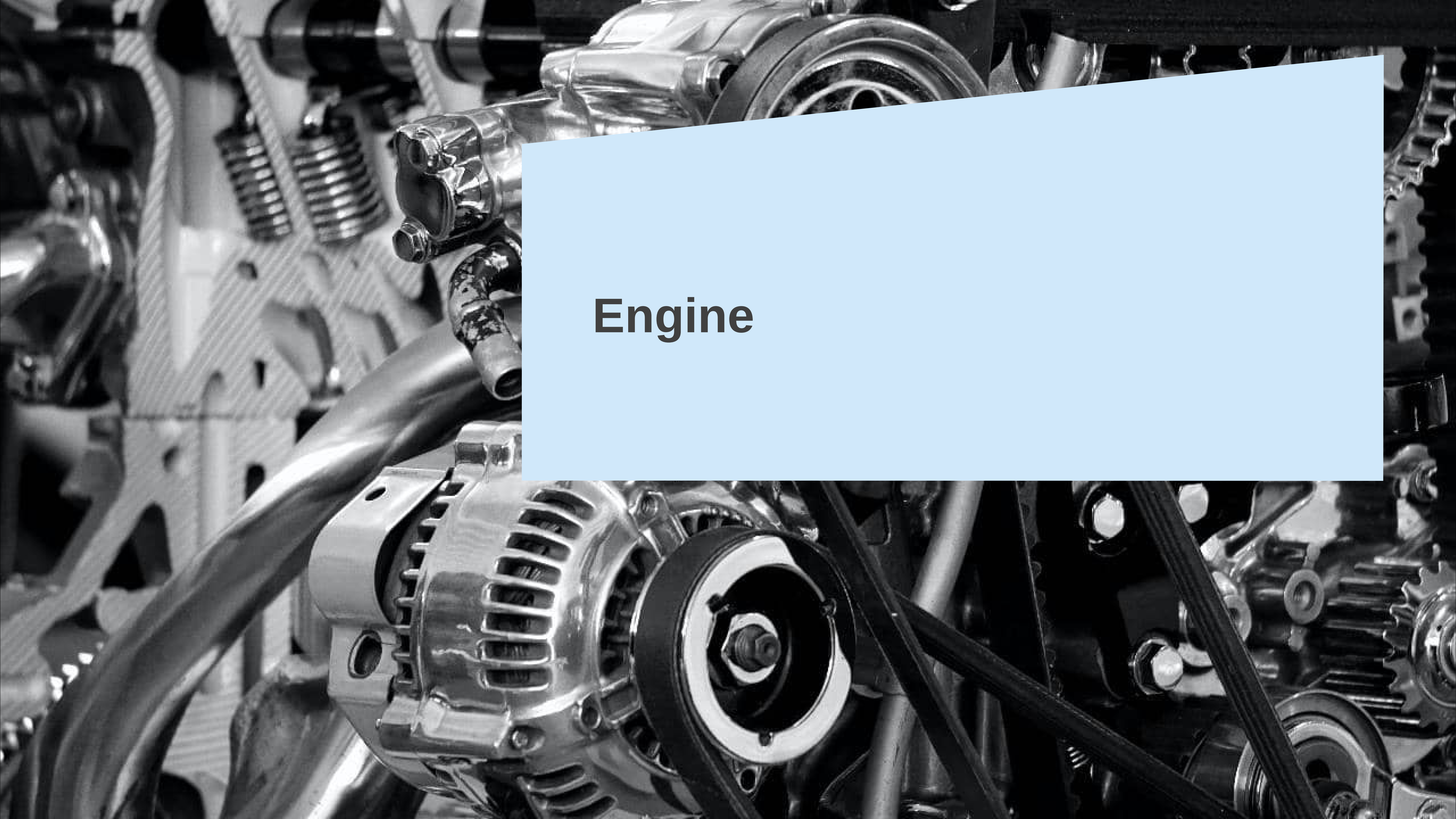
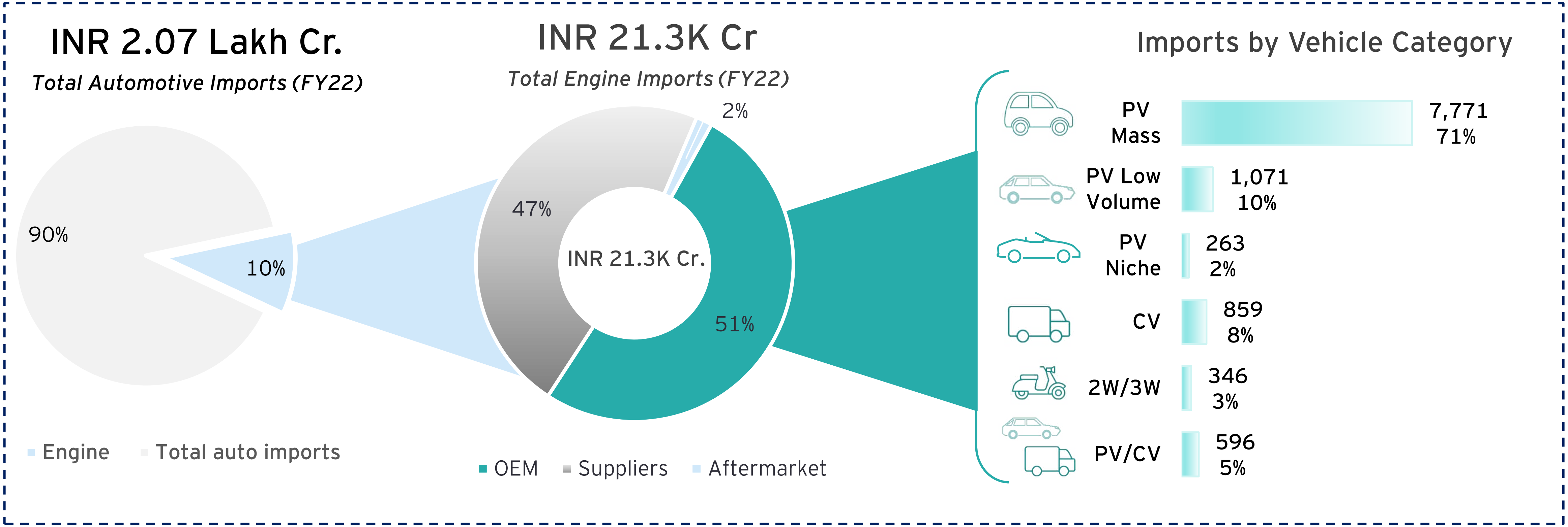
Category Deepdive

Engine



Engine : Category Snapshot FY21-22
Key Takeaways



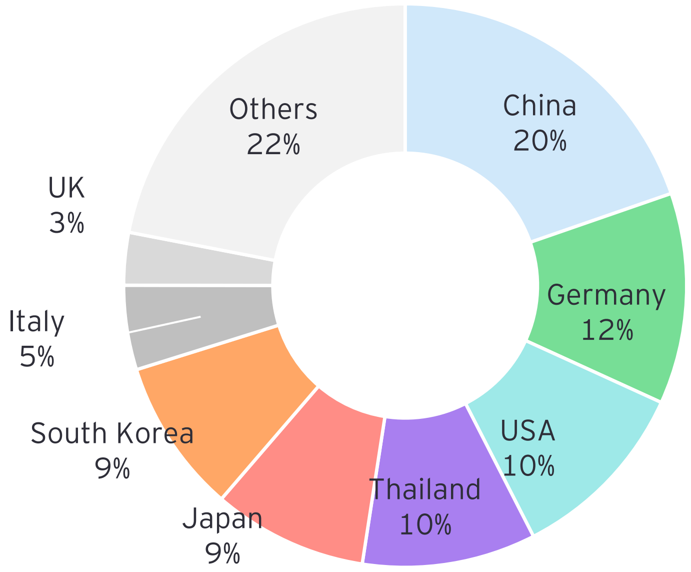
OEMs (51%) contribute to substantial imports of Engine components due to unavailability of local players

Among the OEMs, PV Mass alone contribute to 71% of the total imports

Imports under engine category are driven by changing designs, addition & modification of components to meet emission regulations and unavailability of certain parts in India due to scale/technology constraints

Engine : Category Snapshot FY21-22
Key Takeaways

Import by Country of Origin



Components of Import

(INR Cr.)

Engine components	17,265	77%
Engines	3,680	22%
Tubes, Pipes & Hoses	370	1%
Cooling system	302	1%
Transmission belts	37	0.5%
Others	1	Negligible

Import by Country of Origin : Top 3 Countries

China	Ger.	USA
17%	14%	11%

China	Korea	SA
43%	13%	11%

China	Thailand	Japan
24%	11%	10%

Germ.	Thailand	China
32%	14%	%

Germ.	China	Japan
44%	14%	12%

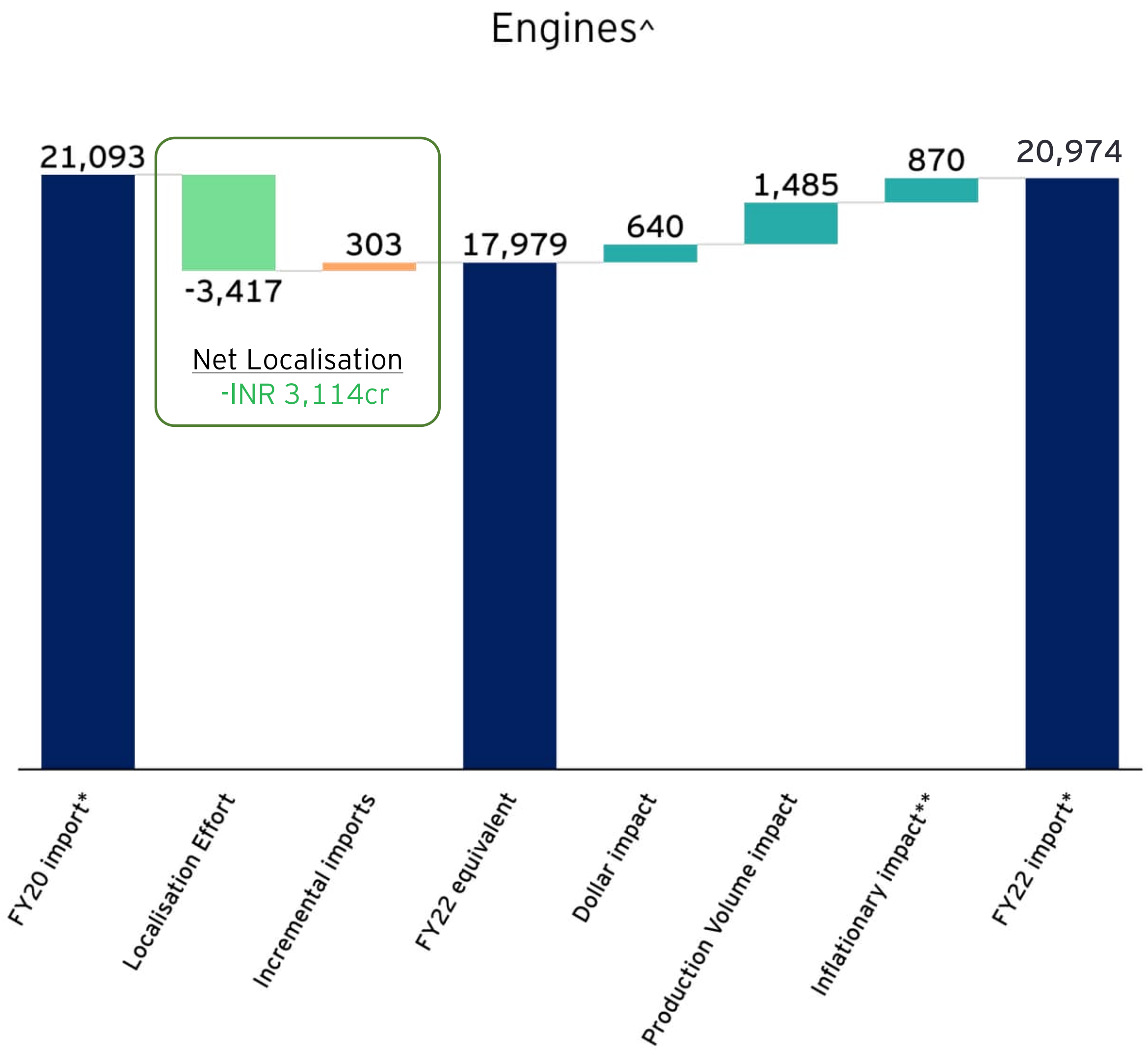
Primary insights

A strong ecosystem for **cylinder blocks, crankshafts, cylinder heads etc.** is present in India and there is low dependence on imports

EATS – Exhaust after treatment systems are largely imported due to unavailability of catalysts – precious metals, chemicals and some special steel grades

Fuel injectors and child parts are largely imported due to quality and technology constraints but there are initiatives in motion to localise

Engine : Engine manufacturing remains largely localised except for critical components/systems which are imported due to technology constraints



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
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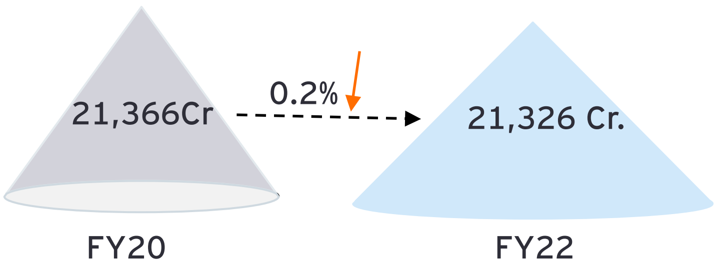
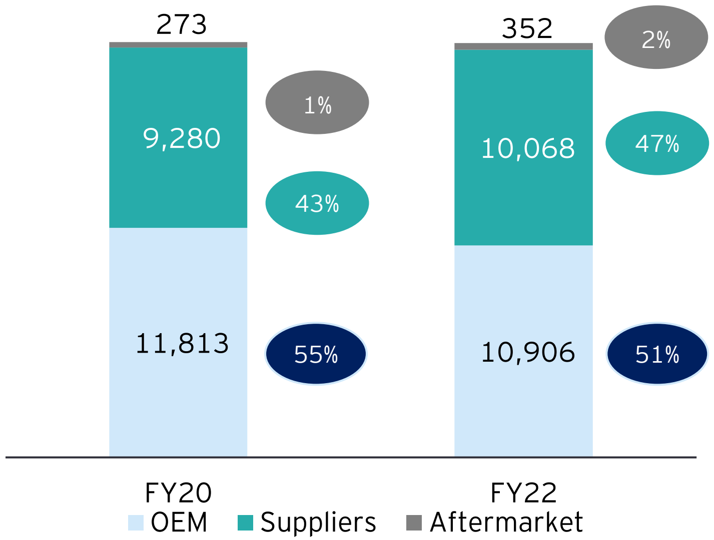
List of components is representative sample with substantial contribution to localisation/imports

#imports due to consumer/ technology/ regulatory requirements

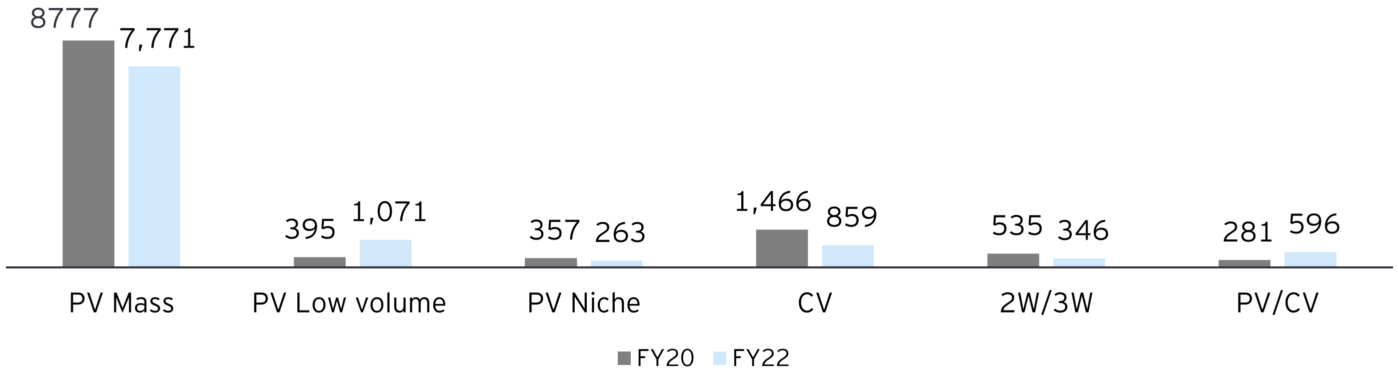
Comparative analysis (1/2): Import analysis at a supplier level and at a segment level

Total value of Engines imports(in Cr)

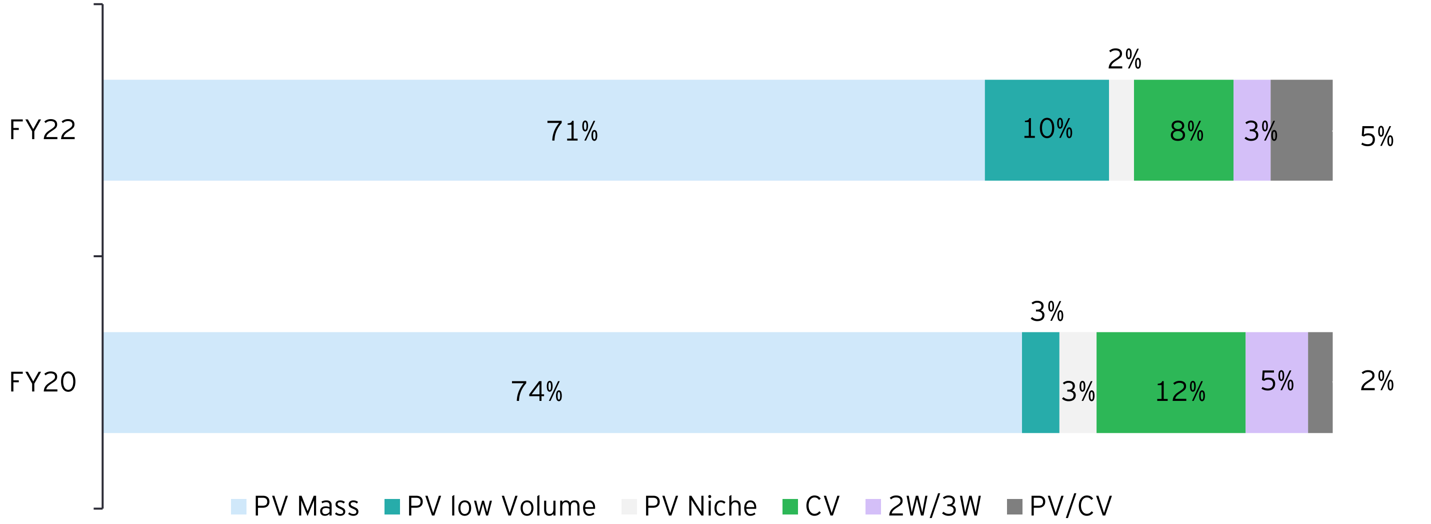




Total value of by OEM segments (in Cr)

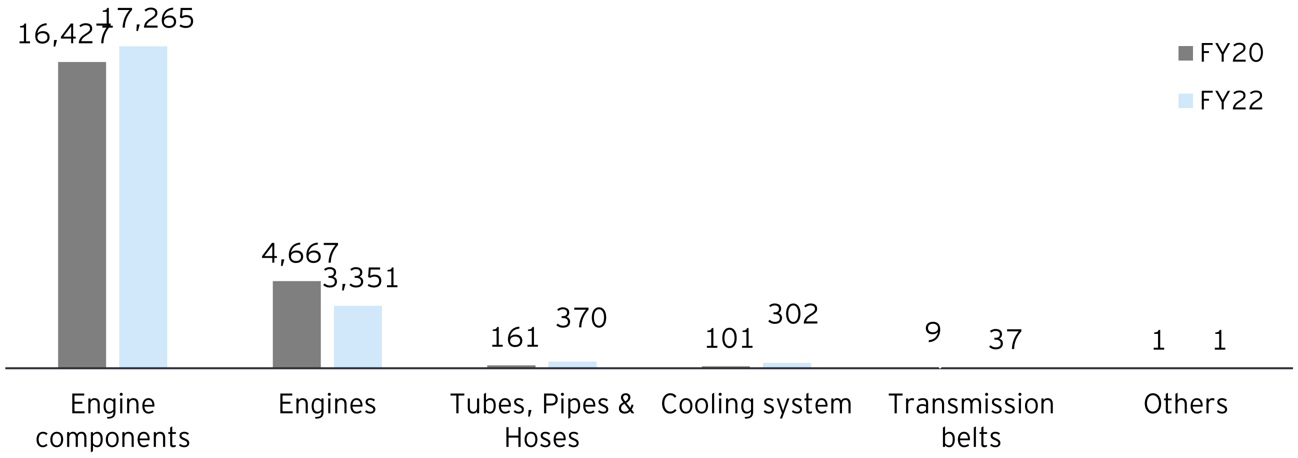


Share of OEM segments in OEM imports

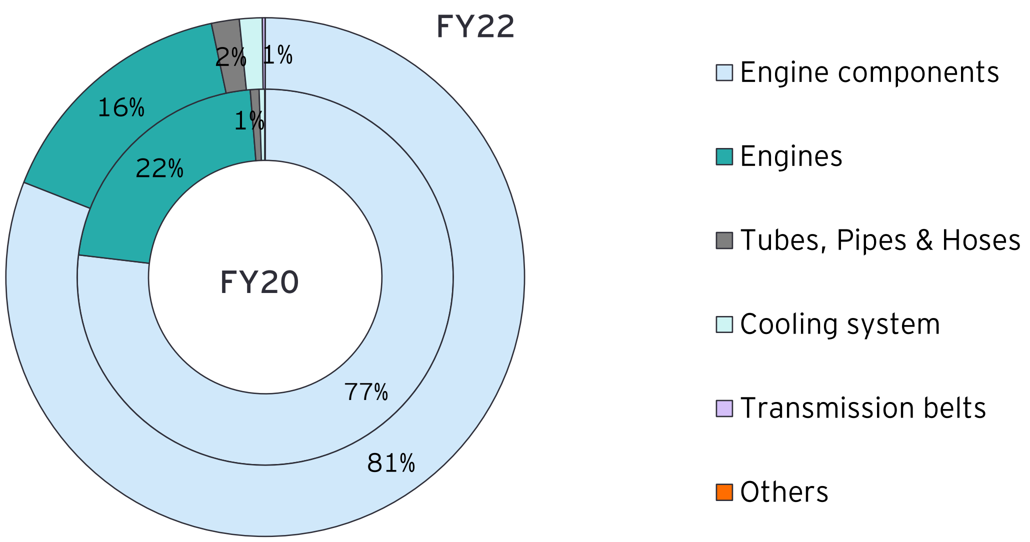


Comparative analysis (2/2): Sub category wise and country of origin comparison

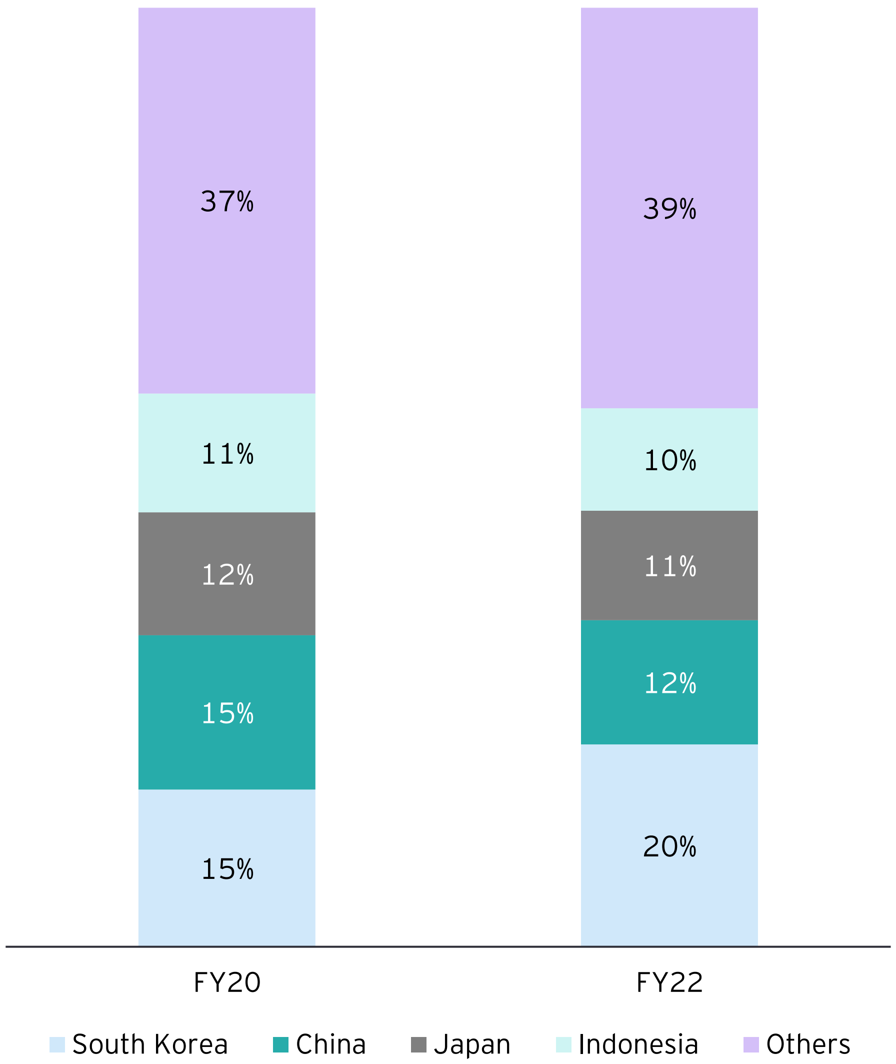
Sub-category wise import comparison (in Cr)



Sub-category wise share of import comparison(%)



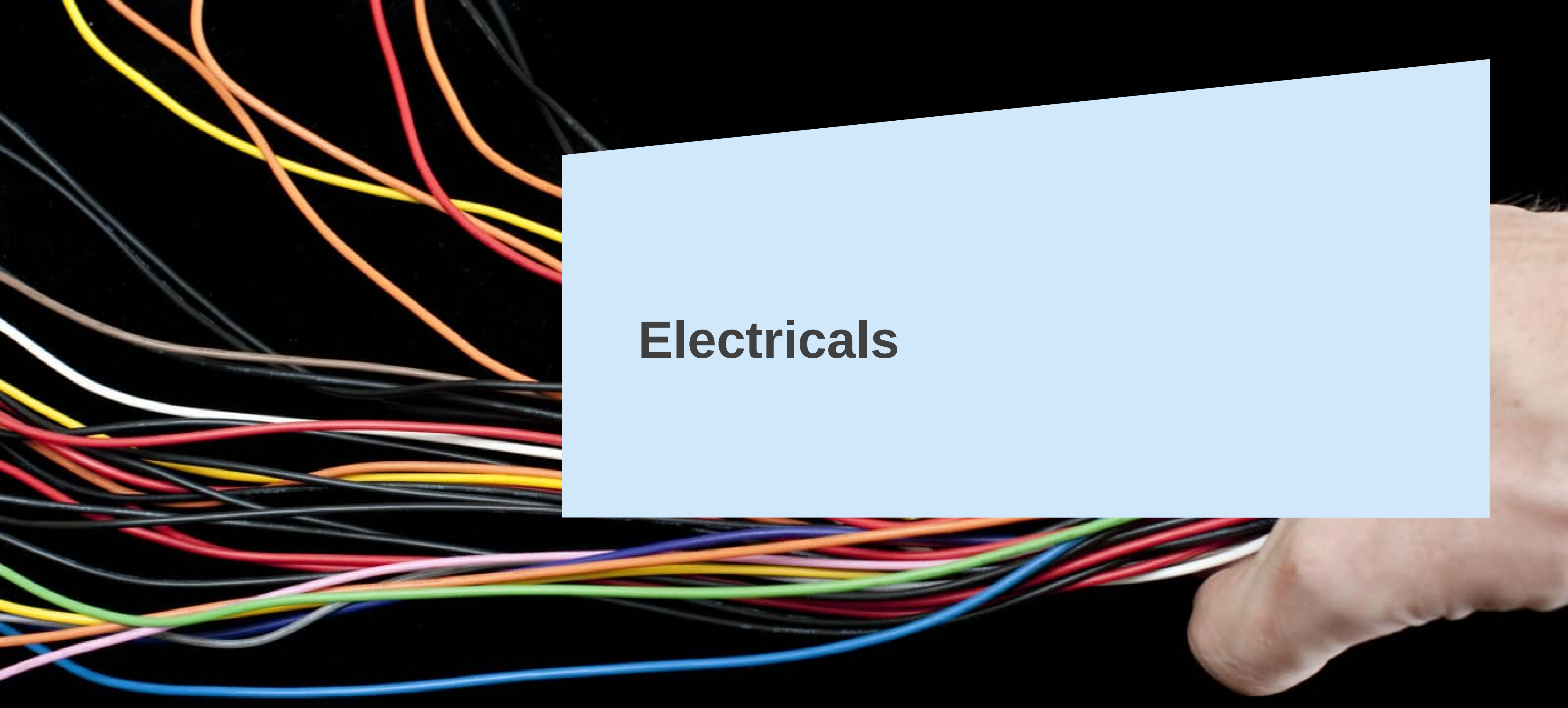
Country wise share of import comparison (%)



26 6-digit HS Code details for Engine

HS Code 6 Digit	Description
400921	TUBES,PIPES AND HOSES OF VULCNSD RUBR REINFORCED/OTHRWSE CMBND ONLY WTH METAL MATERIALS WITHOUT FITTINGS
400931	TUBES, PIPES AND HOSES OF VULCNSD RUBR REINFORCED/OTHRWSE CMBND ONLY WTH TEXTILE MATERIALS WTHOUT FITTINGS
400941	TUBES.PIPES AND HOSES OF VULCNSD RUBR REINFORCED/OTHRWSE COMBINED WTH OTHR MATERIALS WITHOUT FITTINGS
400942	TUBES,PIPES,ANDHOSES OF VULCNSD RUBR REINFORCED OTHERWSE COMBINED WITH OTHER MATARIALS WITH FITTINGS
401032	ENDLESS TRNSMSN BLT/BLTNG OF V-BLT/OTHER THAN V-RIBBED OF CIRCUM BETWN 60 CM AND 180 CM WHERE RUBY COMPD MORE THAN 25%
401034	CONVEYOR OR TRANSMISSION BELTS OR BELTING, OF VULCANISED RUBBER - OTHER
681299	ASBESTOS PACKING JOINTS AND GASKETS: PACKING JOINTS
840731	SPRK-IGNTN ENGINES FOR MOTOR CARS
840732	OF A CYLINDER CAPACITY EXCEEDING 50 CC BUT NOT EXCEEDING 250 CC: FOR MOTOR CYCLES
840733	SPRK IGNTN ENGINES FOR MOTOR CARS
840734	SPRK-IGNTN ENGINES FOR MOTOR CARS
840790	PETROL ENGINES
840820	ENGNS OF CYLNDR CPCTY>50 CC BUT <=250 CC
840991	VALVES,INLET AND EXHAUST

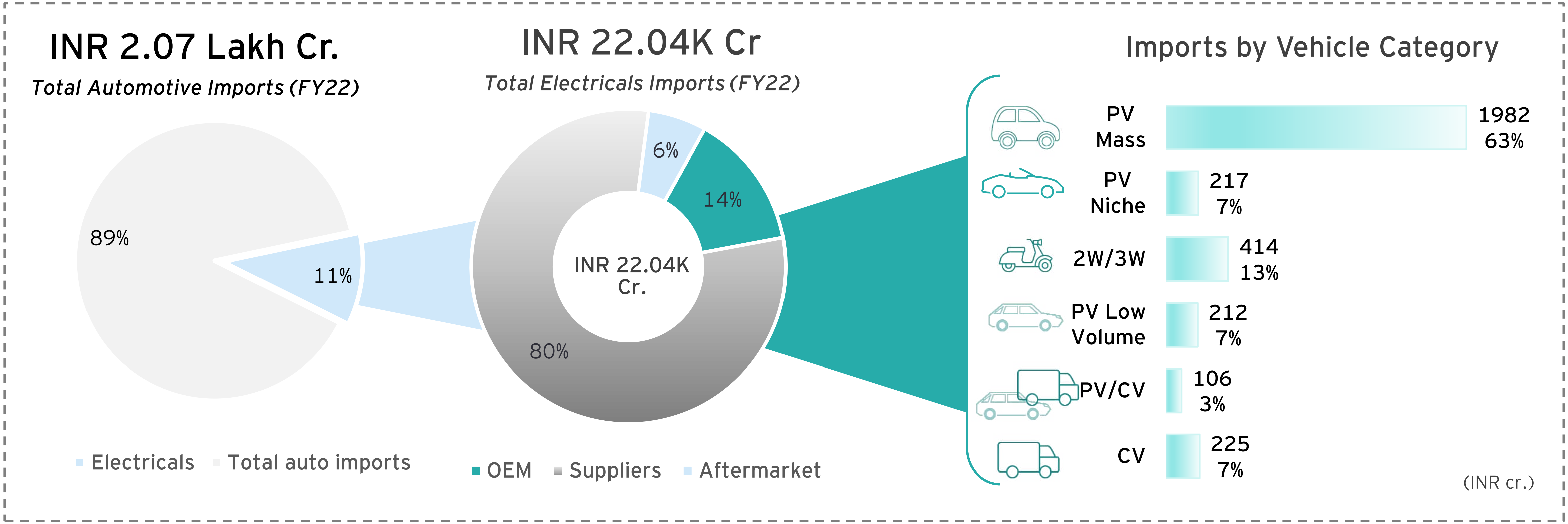
HS Code 6 Digit	Description
840999	VALVES,INLET AND EXHAUST
841330	INJECTION PUMPS FOR DIESEL ENGINES
841381	PUMPS: HYDRAULIC RAM
841391	OTHERS
842123	OIL/PRTL-FLTRS FR INTRNL CMBSTN ENGNS
842131	INTAKE AIR FLTRS FR INTRNL CMBSTN ENGNS
848310	CRANK SHAFT FOR ENGINES OF HEADING 8407
851110	SPARKLING PLUGS
870891	RADIATORS
870892	SILENCERS AND EXHAUST PIPES
842199	OTHR PARTS OF FLTRNG/PURFYNG MCHNRY
842139	AIR PURIFIERS OR CLEANERS



Electricals

Back

Electricals : Category Snapshot FY21-22
Key Takeaways



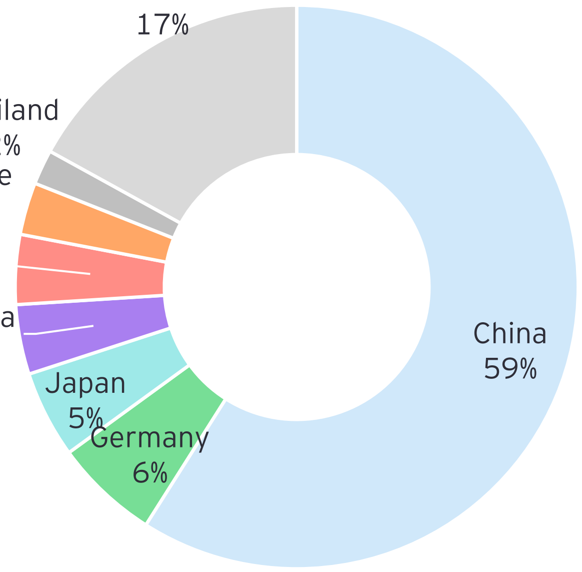
Suppliers (80%) contribute to substantial imports of Electricals due to design constraints

Among the OEMs, PV Mass alone contribute to 63% of the total imports due to a large variety of requirements in this category

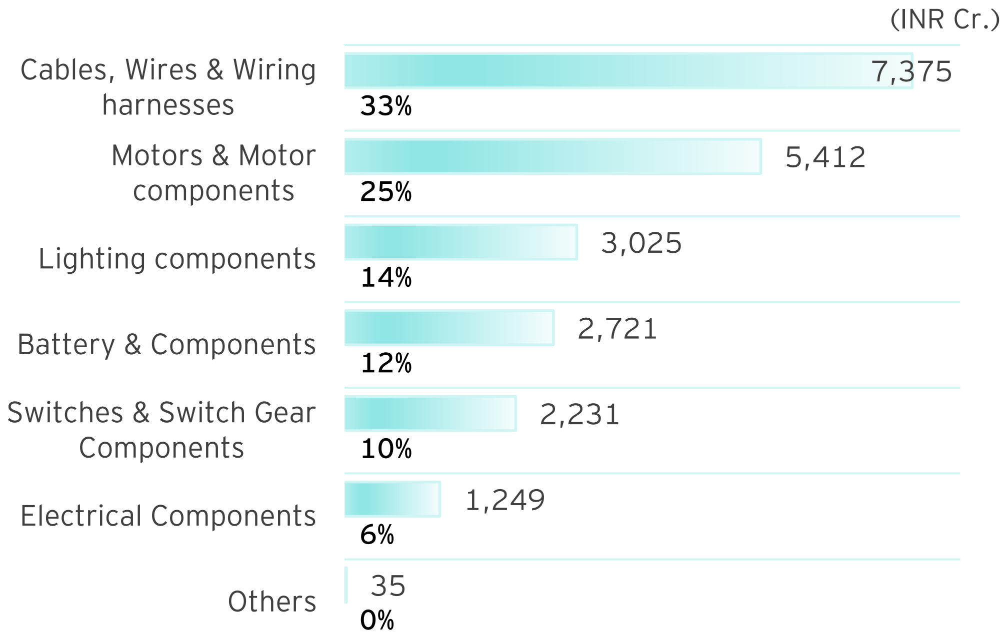
Electricals are imported into the country due to quality, design issues of local suppliers and non –availability of child parts to manufacture systems which have seen increased adoption due to premiumisation

Electricals : Category Snapshot FY21-22
Key Takeaways

Import by Country of Origin



Components of Import



Import by Country of Origin : Top 3 Countries

China 35%	Germ. 11%	Japan 9%
China 44%	Japan 8%	Germ. 7%
China 90%	Korea 2%	Malay. 2%
China 68%	Germ. 4%	USA 3%
China 29%	Germ. 11%	France 9%
China 36%	Korea 9%	Germ. 8%
China 74%	Germ. 11%	France 9%

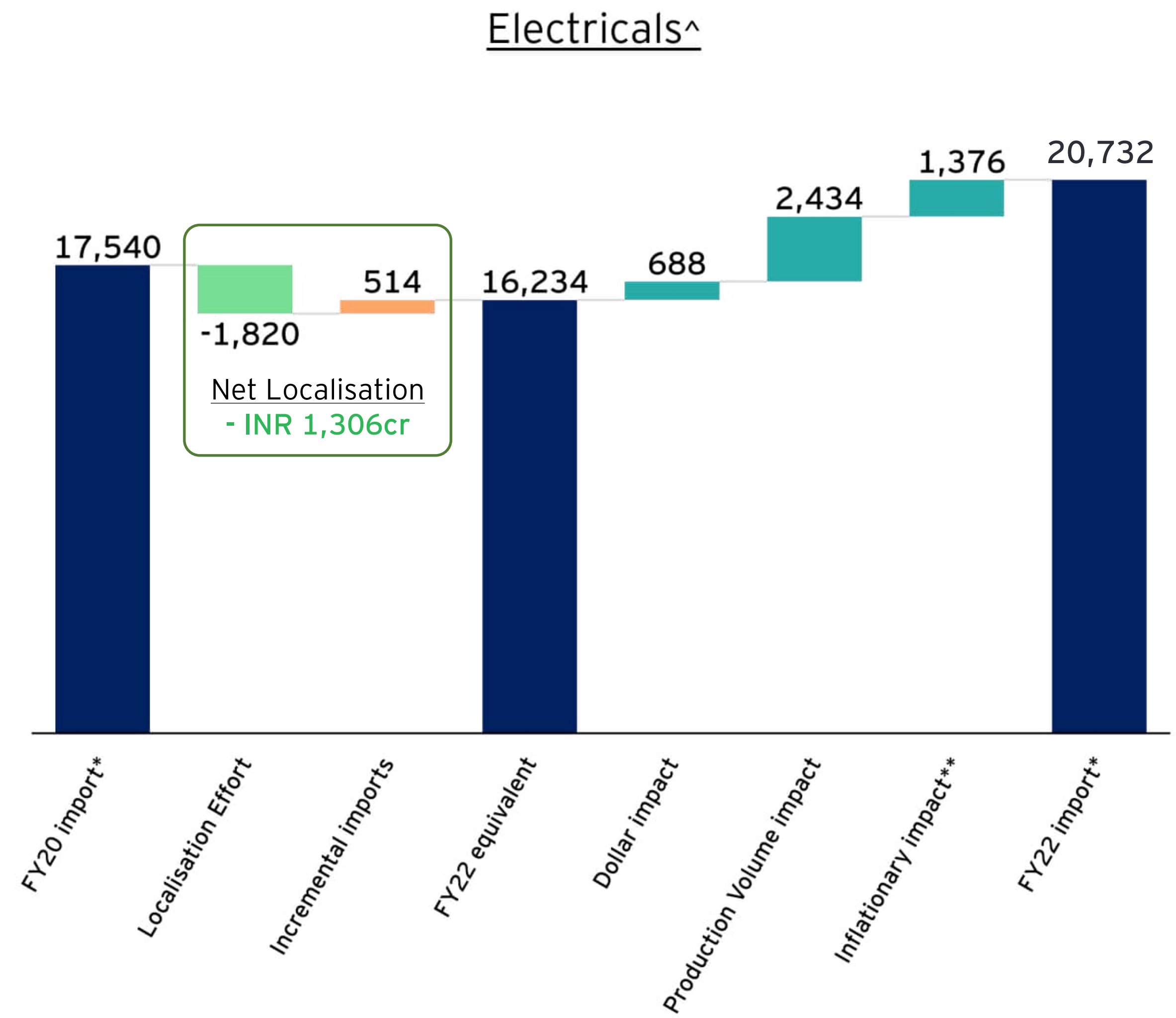
Primary insights

Connectors and terminals have import dependency as local demand cannot meet scale requirements of global suppliers

Projector lighting systems utilise "lenses" made of polymer or glass which are imported due to unavailability of technology in India

Motor components such as rare earth magnets, commutators and brushes are challenging to localise due to quality and supply constraints

Electricals : Concerted efforts in electricals category have resulted in localisation despite customer driven trends of premiumisation



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Motors & Motor components	Starter motor, alternator, Radiator motors, AMT motor	Micro motors, Motor child parts- commutator, carbon brush, Grade 6,7 magnets (rare earth)	Premiumisation related features like sunroof, powered tailgate, EPS are witnessing increased demand
Lighting systems and components	Reflectors for headlamps, Head lamp beam control module, lamp housings	Lens for headlamps,	• Technological advancement and adoption of projector headlamps • Cost also plays a key role in OEMs & Suppliers importing the lighting systems & components (due to FTA)
Cables, Wires & Wiring harnesses	Wiring harness, junction boxes, housing	Terminals and connectors	Mother plants concentrated in China and European nations

**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

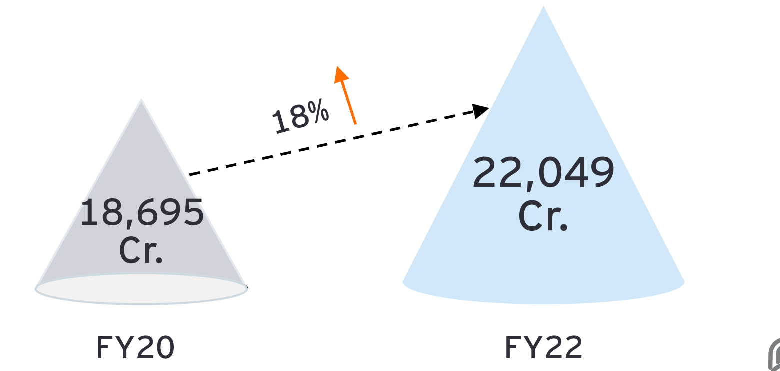
^ The dollar, production volume and inflationary impact has been calculated on the FY 20 BS VI adjusted values

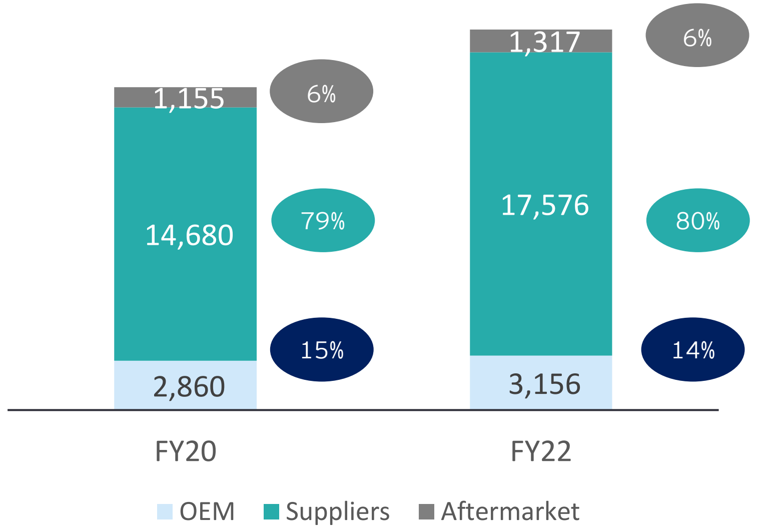
List of components is representative sample with substantial contribution to localisation/imports

#imports due to consumer/ technology/ regulatory requirements

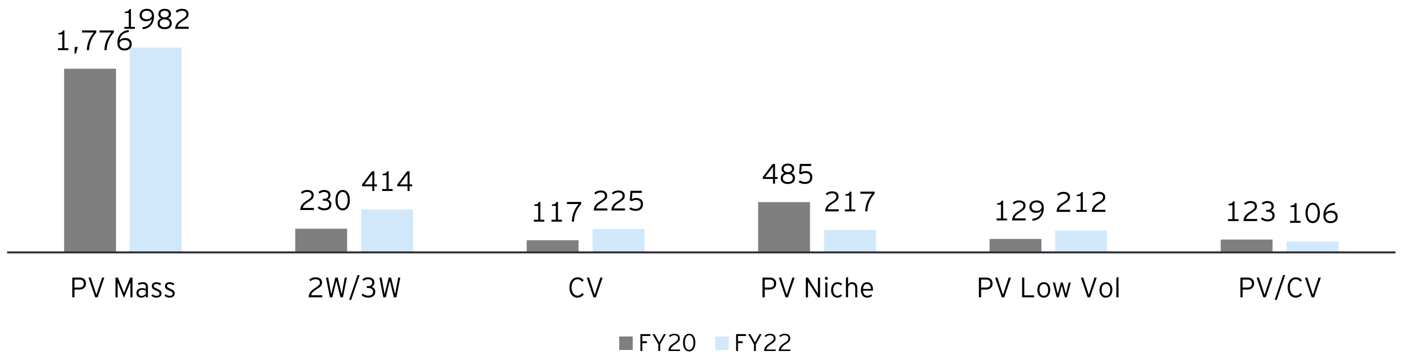
Comparative analysis (1/2): Importer type and vehicle segment level comparison

Total value of Electrical imports (in Cr)

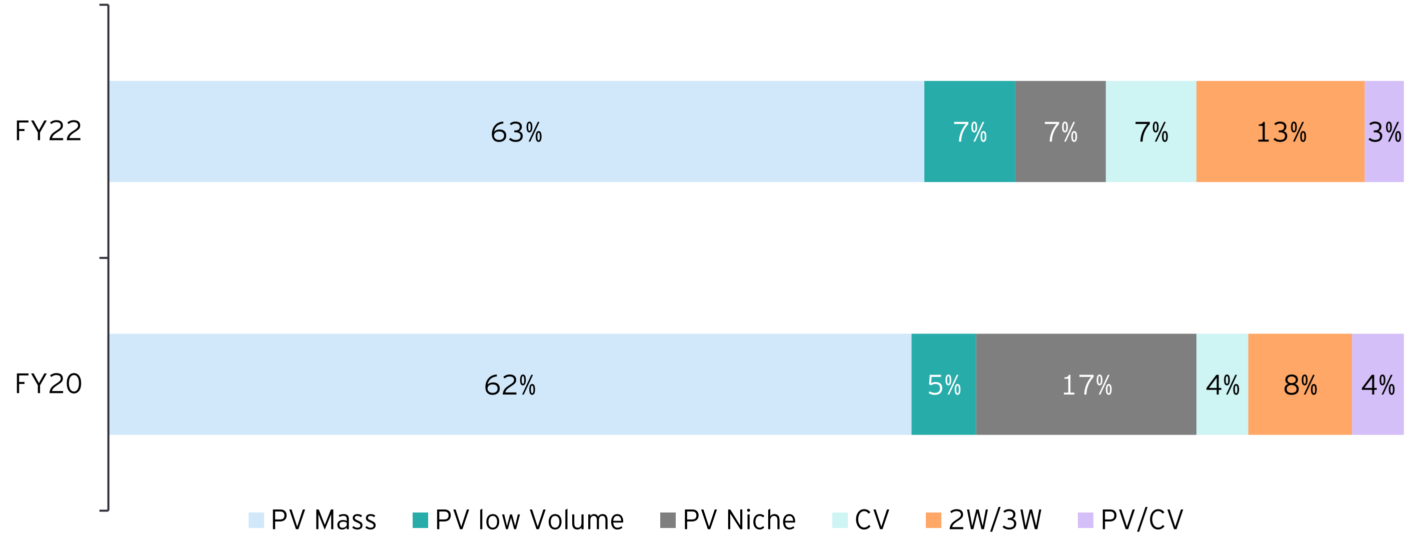




Total value of by OEM segments (in Cr)

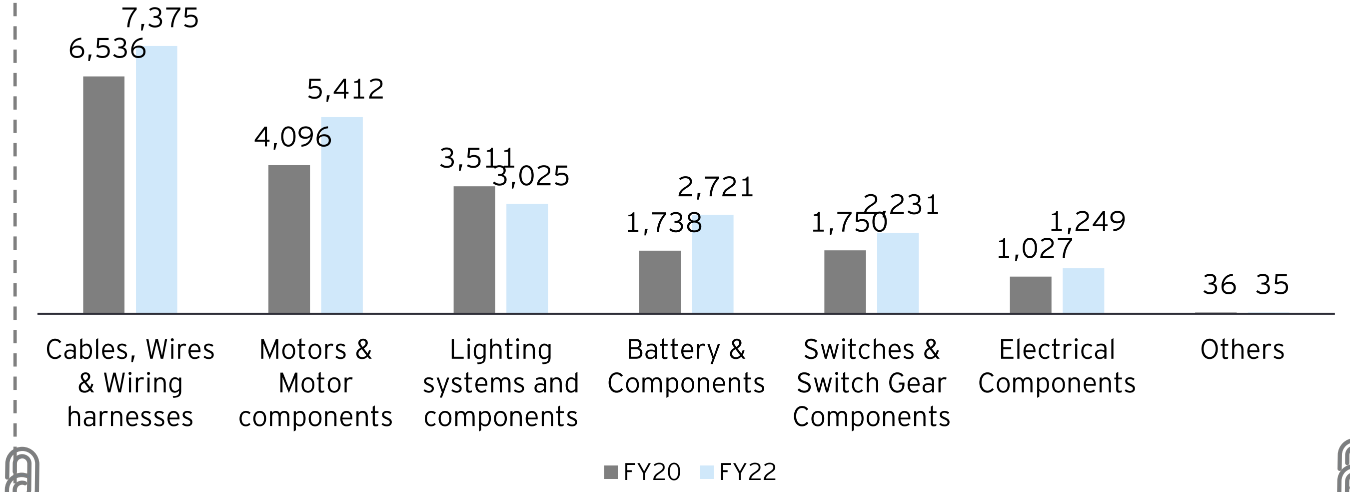


Share of OEM segments in OEM imports

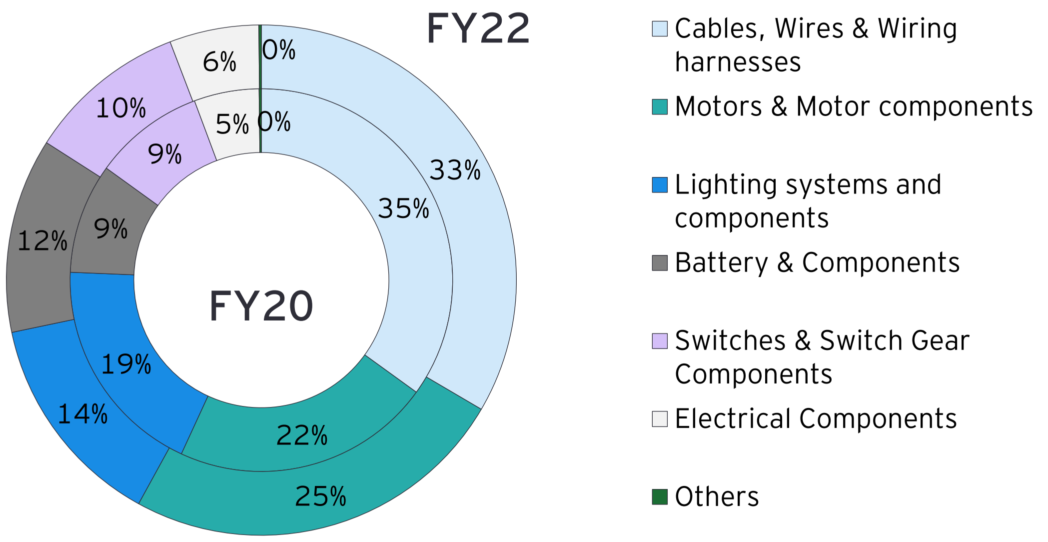


Comparative analysis (2/2): Sub category wise and country of origin comparison

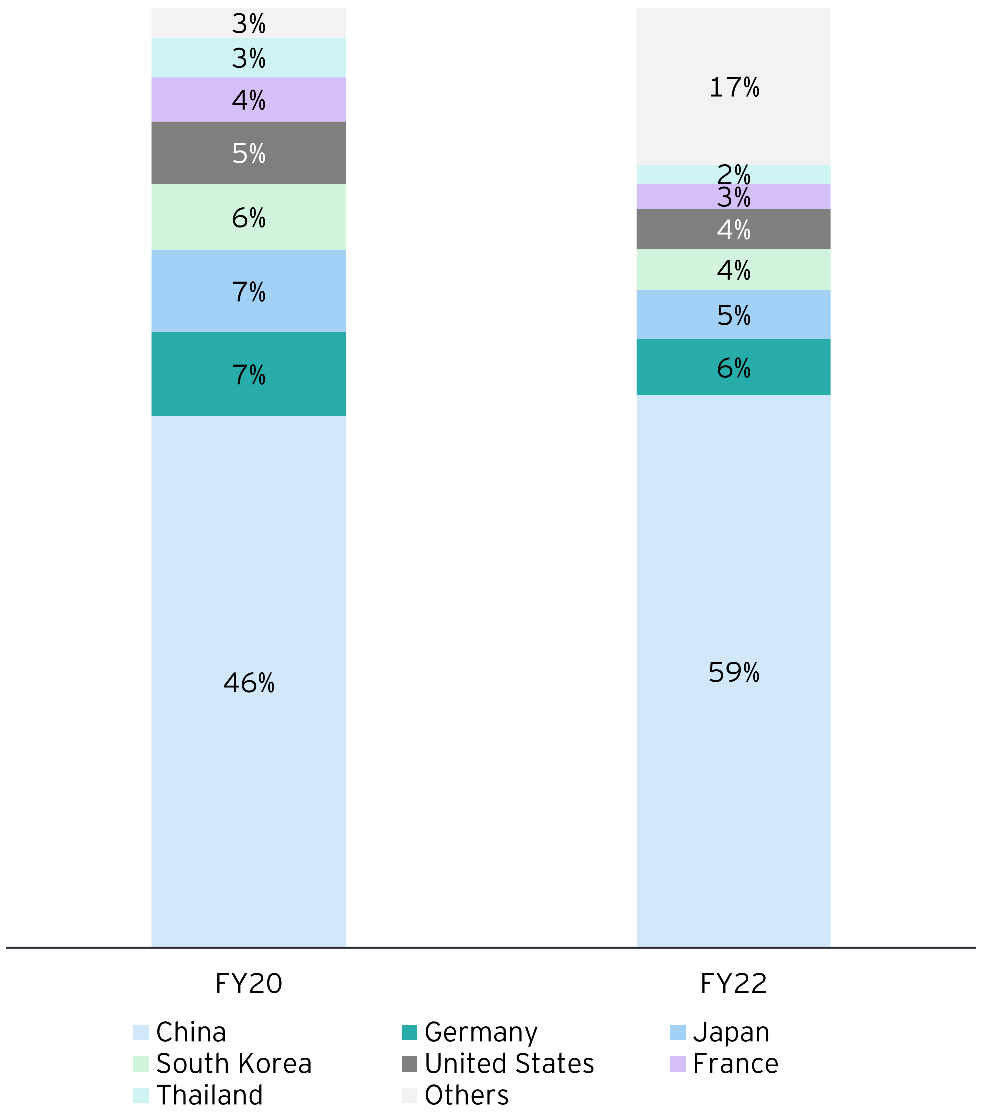
Sub-category wise import comparison (in Cr)



Sub-category wise share of import comparison (%)



Country wise share of import comparison (%)

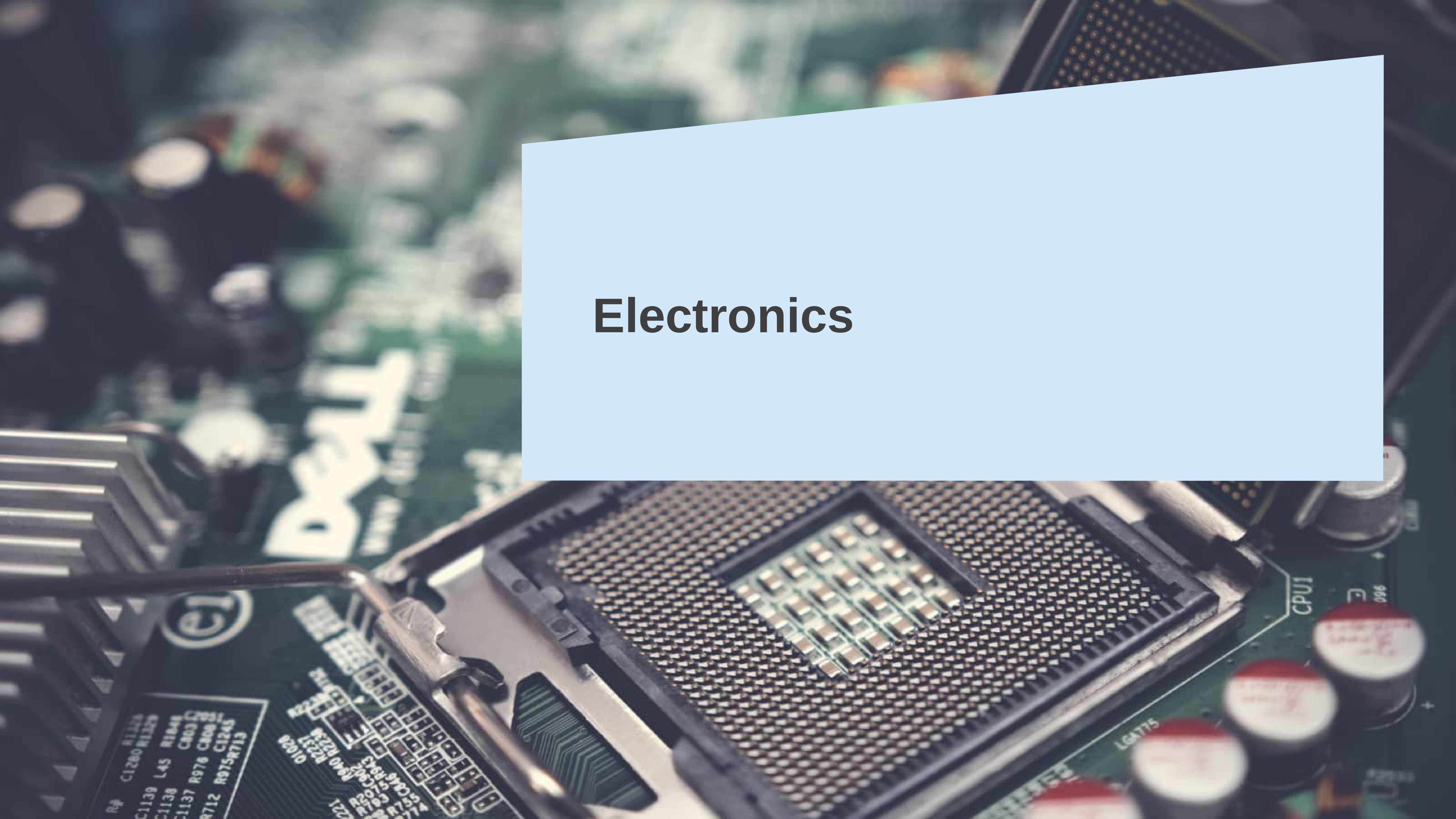


42 6-digit HS Code details for Electricals

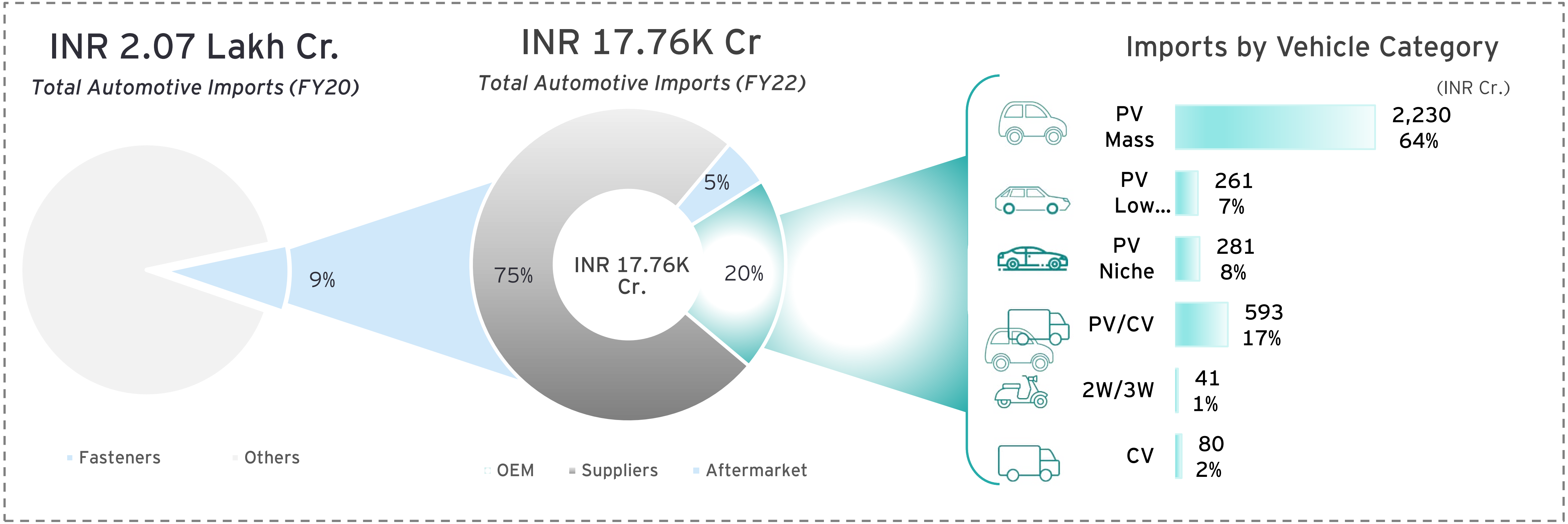
HS Code 6 Digit	Description
853641	RELAYS FR A VLTG NT EXCDG 60 V
853649	OTHER RELAYS
853669	PLUGS AND SOCKETS OF OTHER MATERIALS
853690	OTHER APPRATUS OF HEADING 8536 SPEED INCL REVRSNG STRTRS AT <=60 VOLTS
853710	BORDS ETC FOR A VOLTAGE<=1000 VLTS
853890	OTHER PARTS OF HDG 8538
853910	SEALED BEAM LAMP UNITS
853921	OTHER HALOGEN LAMPS FOR AUTOMOBILES
853929	OTHER AUTOMOBILE LAMPS
854140	SOLAR CELLS WHETHER OR NOT ASSEMBLED IN MODULES OR PANELS
854310	OTHER INCLUDING CYCLOTRONS
854430	IGNTN WIRING SETS AND OTHR WIRING SETS OF A KIND USED IN VEHICLES AIRCRAFT/SHIPS
854442	OTHR ELCTRC CNDCTRS FITTED WTH CONNCTRS USED IN TELECOM FR <=1000V EXCL PAPR PLSCTIC AND RUBBER INSULATED
854449	OTHR ELCTRC CNDCTRS NOT FITTED WTH CONNCTRS USED IN TELECOM FR <=1000V EXCL PAPR PLSCTIC AND RUBBER INSULATED
854520	BRUSHES
854790	OTHR INSLTNG FTTNGS
854720	INSLTNG FTTNGS OF PLASTICS
853650	OTHER SWITCHES OF PLASTICS
854419	OTHER WINDING WIRES OF OTHR METLS/SUBSTNCE EXCL COPPER OTH THN PLASTIC, RUBBER INSULATED AND ASBESTOS COVERED
391739	OTHR TUBES PIPES AND HOSES NES

HS Code 6 Digit	Description
850110	CLASSIFICATION OF MICRO MOTOR
850131	MICRO MOTOR WTH OUTPUT >37.5 W
850132	D.C.MOTORS
850151	OTHER TYPES OF A.C. MOTORS
850152	OTHER TYPES OF A.C. MOTORS
850153	OTHER TYPES OF A.C. MOTORS
850300	PARTS OF ELECTRC MTRS OTHR THN DC
850434	OTHR TRNSFRMRS HVNG A PWR HNDLNG CAPACITY EXCEEDING 500 KVA
850440	ELECTRIC INVERTERS
850710	LEAD ACID ACCUMULATORS OF A KIND USED FOR STARTING PISTON ENGINES
850790	HRD RUBBER ACCMLTRS CASES AND SEPARATORS
851120	OTHERS
851130	DISTRIBUTORS
851140	STRTR MTRS AND DUAL PURPOSE STRTR GNRTRS
851150	OTHER STATER-GENERATORS
851180	OTHER STARTING EQUIPMENTS
851190	PARTS OF ARTICLS OF HDNG 8511
851220	HEAD LAMPS,TAIL LAMP,STOP LAMP, SIDE LAMP,BLINKERS
851230	OTHERS
851290	PARTS OF ELCTRCL LIGHTNG/SIGNALNG EQUIP
853321	ELCTRCL RESISTANCE WIRE BARE OTHER THAN NICHROME
853329	ELCTRCL RESISTANCE WIRE,INSLTD EXCL NICHRM

Electronics



Electronics : Category Snapshot FY21-22
Key Takeaways



Suppliers (69%) contribute to substantial imports of Electronics

Among the OEMs, PV Mass alone contribute to 64% of the total imports.

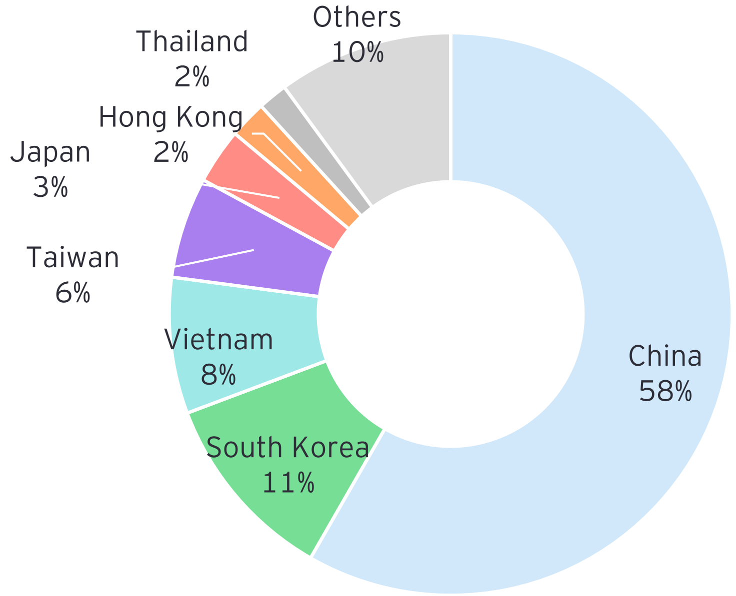
The electronics imports into the country have seen an increase due to the rising electric vehicle trend, focus on safety systems like ABS,ESP, TCS and changing customer preferences

4 6-digit HS codes were considered for analysis of Electronics category

Electronics : Category Snapshot FY21-22

Key Takeaways

Import by Country of Origin



Components of Import

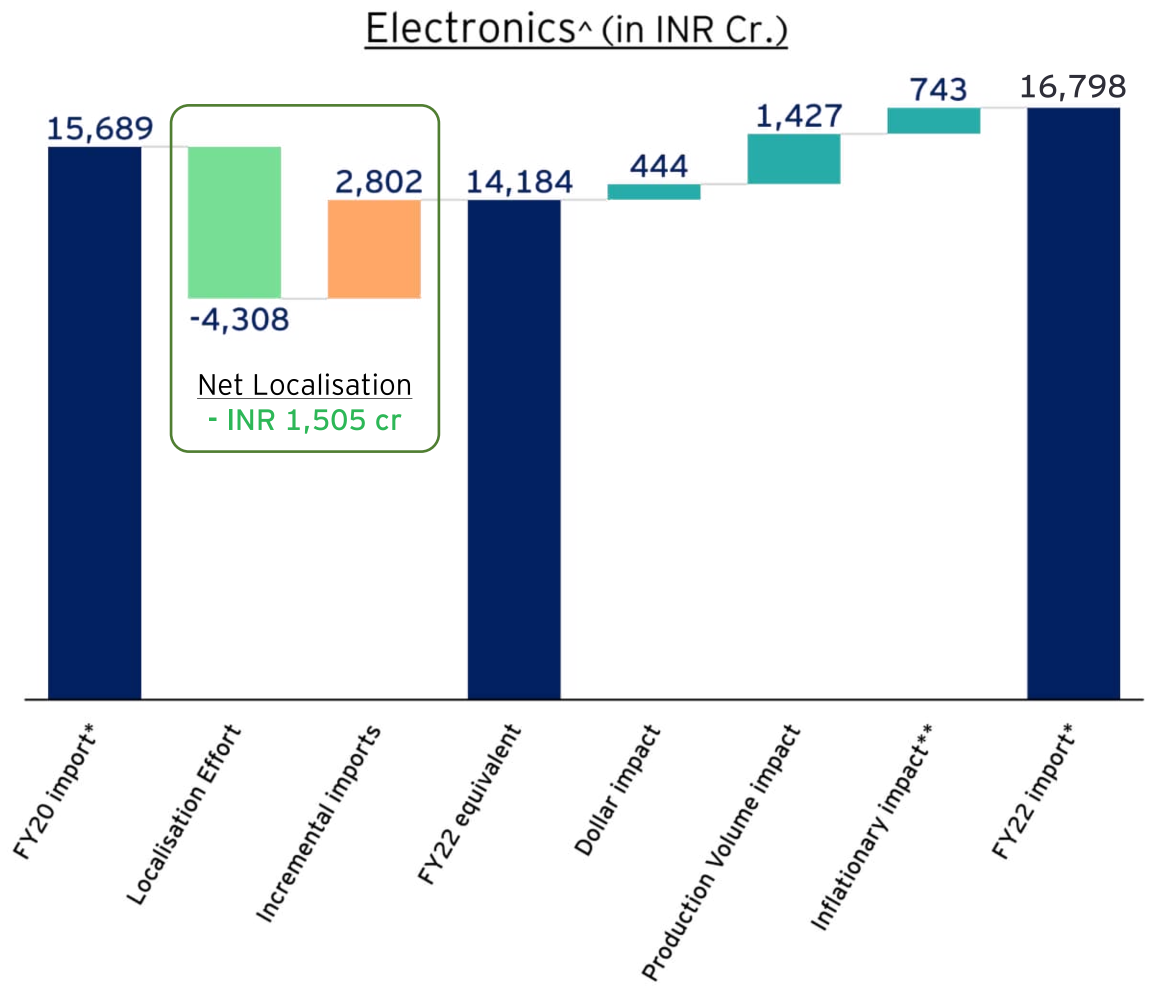
(INR Cr.)

Component	Import (INR Cr.)	Share	Import by Country of Origin: Top 3 Countries		
Sensors & ECU	4,168	23%	China 21%	Japan 13%	Ger. 12%
PCB and electronic components	4,839	27%	China 51%	Korea 22%	Taiwan 8%
Infotainment and Vision Cameras	3,180	18%	China 58%	Vietnam 23%	Thai. 4%
Airbag electronics	1,355	8%	China 38%	Thai. 19%	Ger. 12%
Diodes & Semiconductors	4,224	24%	China 68%	Korea 8%	Taiwan 7%

Primary insights

- Localization efforts have been targeted towards establishing assembly for **ECUs, camera controller, sensors, infotainment systems,** etc.
- Non-availability of high quality **PCBs of 4 and 6 layer** is driving imports by OEMs and Suppliers to establish SMT assembly and EOL testing locally
- A majority of imports are of **semi-conductor chips** which are not manufactured in India by any supplier due to the technology and design constraints

Electronics : Localisation is achieved in the electronics category on the back of investments in infotainment system and ECU assemblies



Subcategory	Key components localised in the last 2 years	Key components contributing to import#
Infotainment	Final assembly & SMT process for smart display audio	Heads up Display, LCD/TFT screen, digital instrument cluster, Telematics
Cameras	Assembly process for camera controllers	Front, rear camera, 360 degree ,camera module
Sensors & ECU	ECU assemblies : ESP, ABS, EMS,BCM, CGU , airbag controller	Radar ,emission control sensors, PEPS, specialised ECUs
PCB, Electronic Components and Diodes & Semiconductors	2 layer PCBs, and child parts	4,6 Layer PCB, integrated chips

List of components is representative sample with substantial contribution to localisation/imports

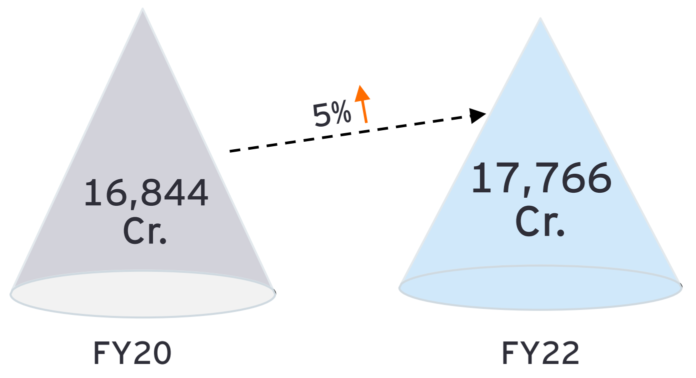
**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

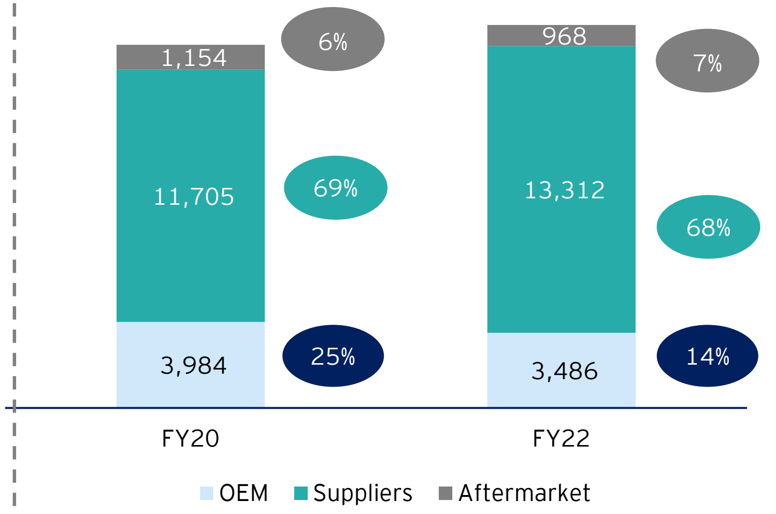
^ The dollar, production volume and inflationary impact has been calculated on the FY 20 BS VI adjusted values

#imports due to consumer/ technology/ regulatory requirements

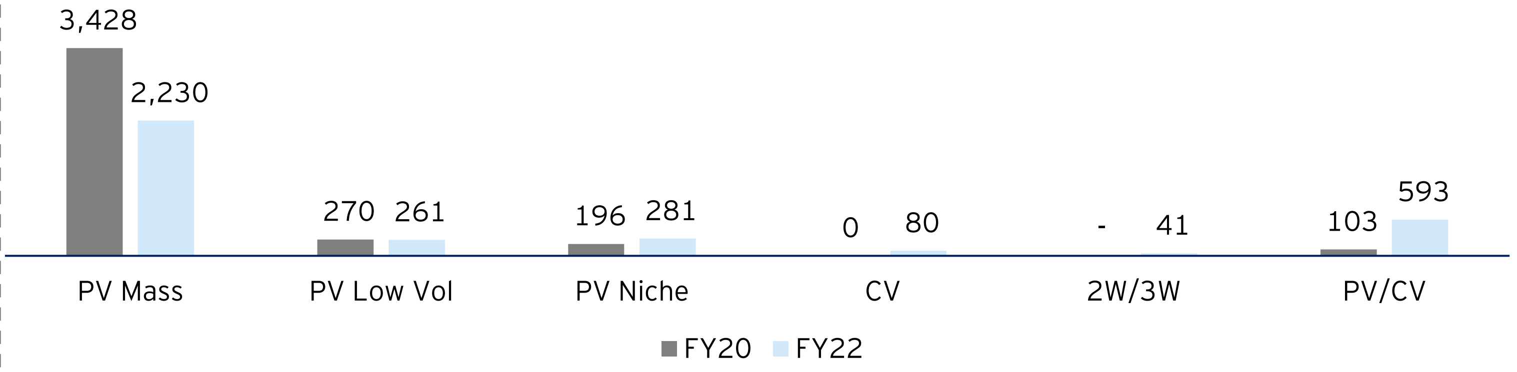
Comparative analysis (1/3): Import analysis at a supplier level and at a segment level

Total value of Electronics imports(in Cr)

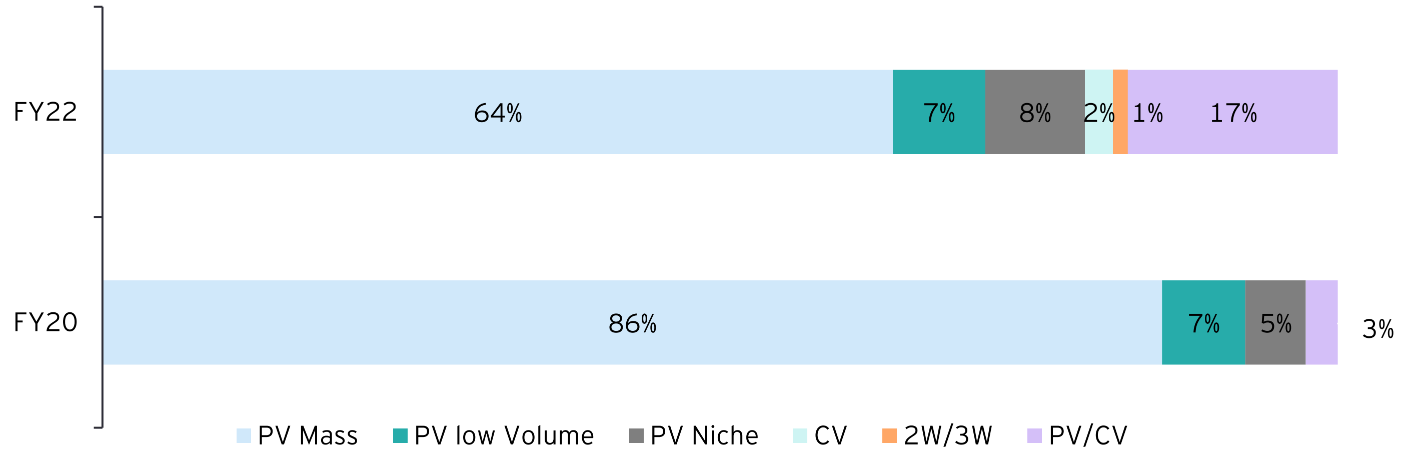




Total value of by OEM segments (in Cr)

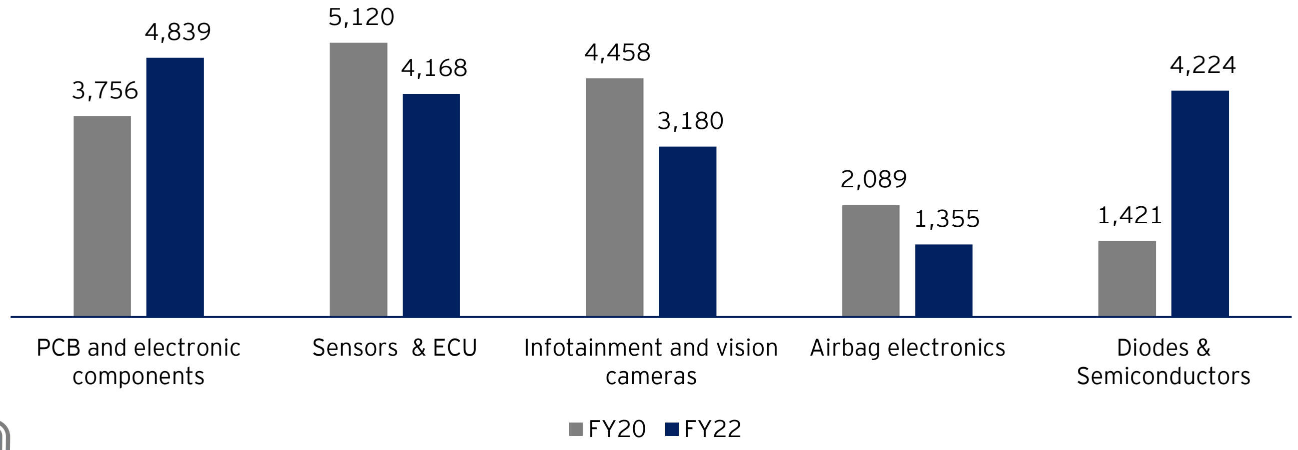


Share of OEM segments in OEM imports

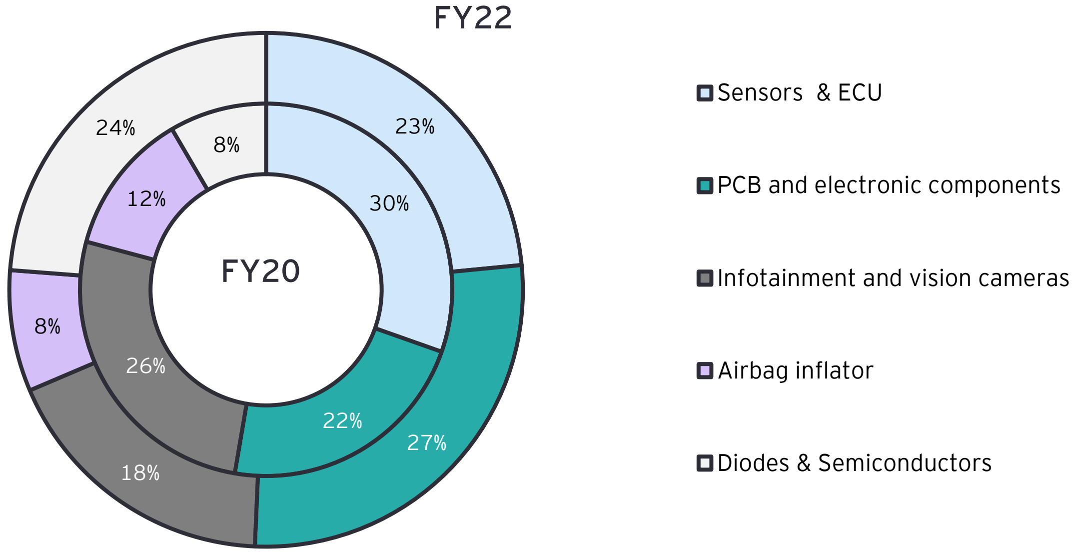


Comparative analysis (2/3): Import analysis at a supplier level and at a segment level

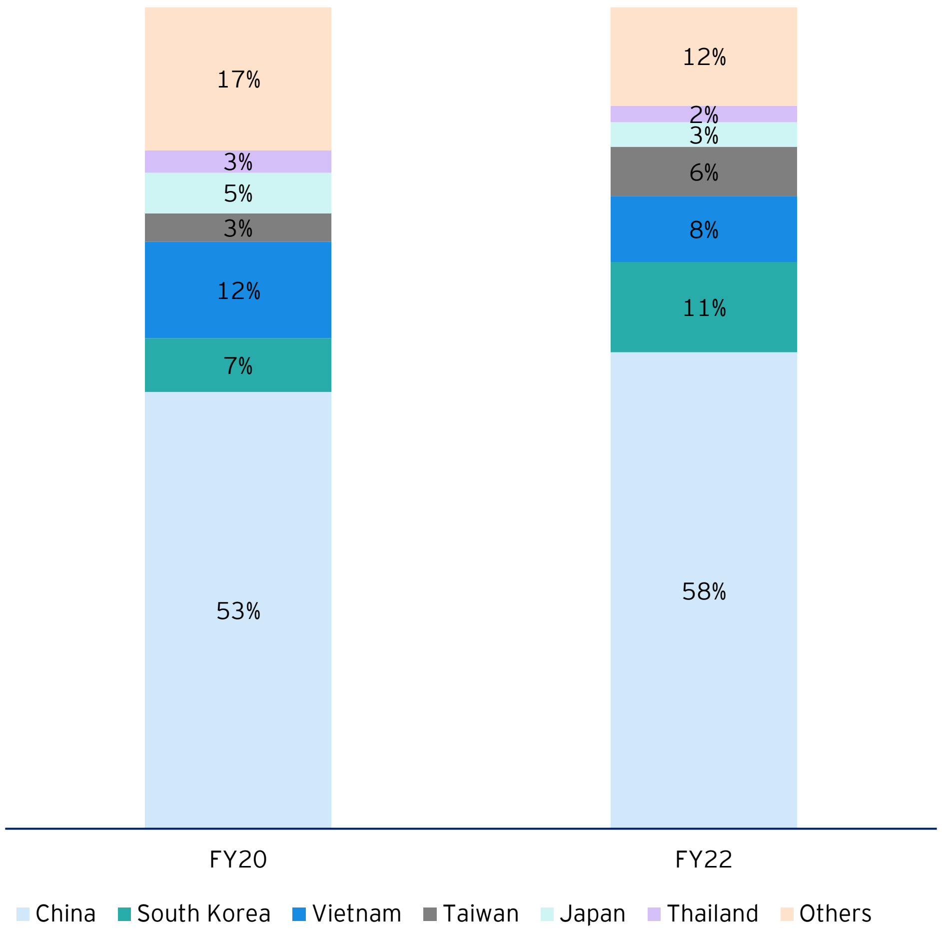
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



Country wise share of import comparison (%)



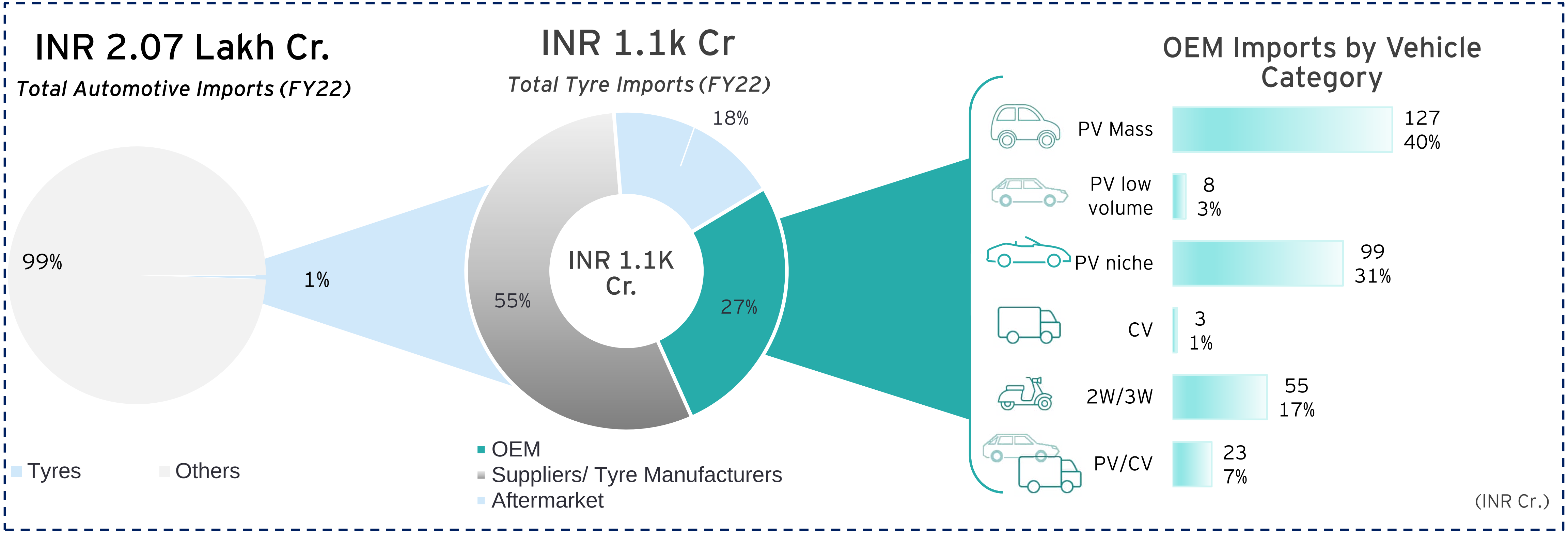
29 6-digit HS Code details for Electronics

HS Code 6 Digit	Description
853810	BORDS,PANELS,CONSOLES ETC.FR INDSTRL USE
854110	DIODES,OTHER THAN PHOTOSENSITIVE OR LIGHT EMITTING DIODES
854129	OTHER TRANSISTOR,OTHER THAN PHOTOSENSITIVE TRANSISTORS
854130	THYRISTORS
854160	MOUNTED PIEZO-ELECTRIC CRYSTALS
854232	ELECTRONIC INTEGRATED CIRCUITS: MEMORIES HS CODE AND INDIAN HARMONISED SYSTEM CODE
870895	SAFETY AIRBAGS WITH INFLATER SYSTEM; PARTS THEREOF
902620	INSTRMNTS AND APRTS FR MSRNG/CHKNG PRESSURE
902910	TAXIMETERS
903289	ELCTRNC AUTOMATIC REGULATORS(CONTROLLERS)
903290	PARTS AND ACCESSORIES OF INSTRMNTS OF 9032
851840	AUDIO-FREQUENCY ELCTRC AMPLIFIERS
854239	PCB COMPONENTS, BATTERY SYSTEM ASSY, CIRCUIT BOARDS FOR STEERING,CAMERA,RADIO ANTENNA
854290	PARTS OF ELECTRONIC INTGRTD CIRCTS AND MICRO ASSMBLIES
854233	IC - CURRENT SENSOR, AMPLIFIER, LED DRIVER
854150	*OTHER SEMI-CONDUCTOR DEVICES
851770	INTEGRATED CIRCUITS, PROCESSOR

HS Code 6 Digit	Description
851810	MICROPHONES AND STANDS THERE FOR
851821	SINGLE LOUDSPEKERS,MOUNTD IN THR ENCLSRS
851822	MULTIPLE LOUDSPEAKERS, MOUNTED IN THE SAME ENCLOSURE
851829	OTHR LOUD SPEAKERS,W/N MNTD IN THR ENCLSRS
851830	HEADPHONES EARPHONES AND COMBINED MICROPHONE/SPEAKER SETS
852190	OTHR VIDEO RECRDNG/REPRDCNG APPRTS
852580	DIGITAL CAMERAS
852721	RADIO BRDCST RECVRS WTH RADIO TELPHONY ETCCMBND WTH SND RECRDNG/REPRDCNG APPRTS, USEDMTR VEHCLS, CAN NT OPERATE WTOUT
852729	OTHR REDIO-BROADCST RCVRS NT CPBL TO OPRT WTHT EXTRNL POWR,USD IN MOTR VHCLS,INCL APPRTS FR RCVNG RADIO-TLPHNY/RADIO-T
852910	OTHR ANTENNA FR OTHR USE
853110	OTHR ALARM
853222	OTHR FXD CAPACITORS,ALMNM ELECTRLYTC
853224	OTHR FXD CAPACITORS,CERAMIC DIELECTRIC,MULTILAYER
853229	OTHER FIXED CAPACITORS
853310	FXD CRBN RESISTORS,COMPOSITION/FILM TYPES
853340	THERMISTORS
853400	PRINTED CIRCUITS

Tyres

Tyres : Category Snapshot FY21-22
Key Takeaways



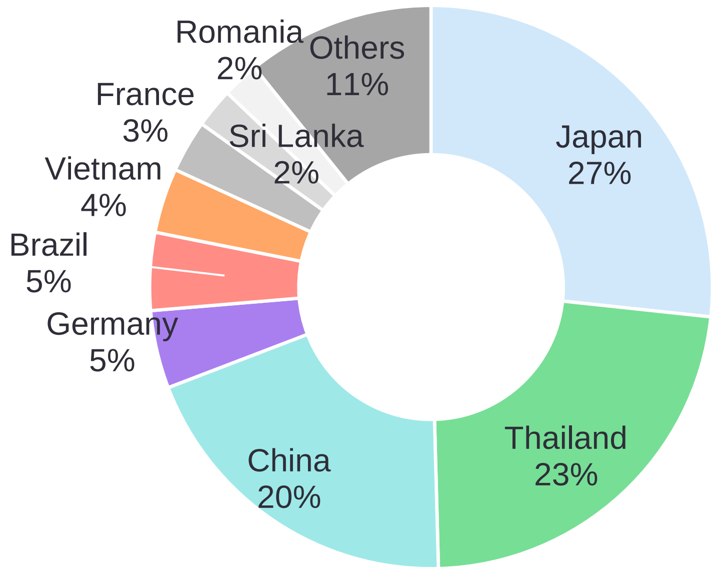
Automotive Suppliers/Tyre Manufacturers & Aftermarket (82%) contribute to substantial imports of Tyres

Among the PV OEMs, Niche players (High value, Low volume) alone contribute to 31% of the total imports

Apart from certain niche segments such as premium vehicles and EVs , tyre manufacturing is localised to a large extent

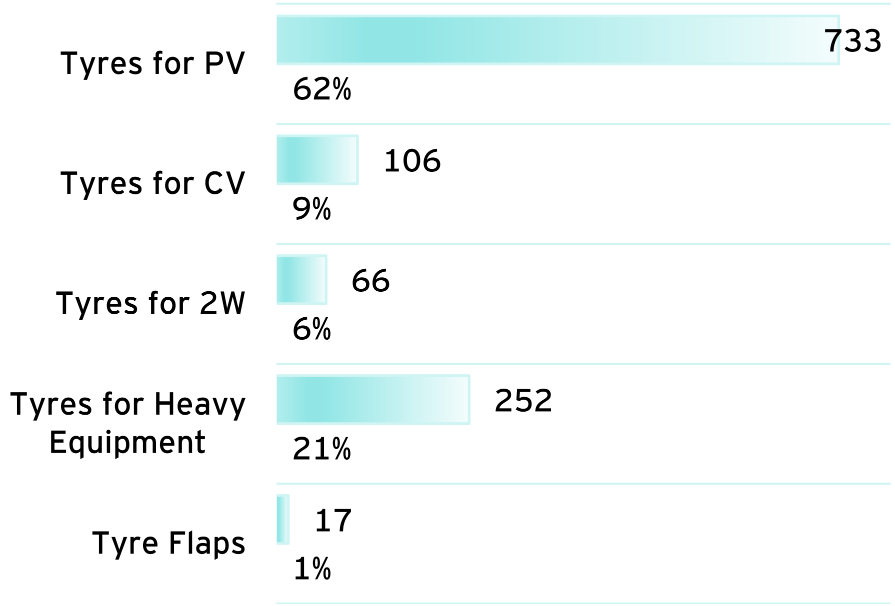
Tyres : Category Snapshot FY21-22
Key Takeaways

Import by Country of Origin



Total Tyre Imports*

(INR Cr.)



Import by Country of Origin : Top 3 Countries

Thai.	China	Ger.
45%	16%	11%

Thai.	Vietnam	Japan
55%	16%	8%

Thai.	Vietnam	China
24%	22%	20%

Japan	China	Brazil
52%	26%	9%

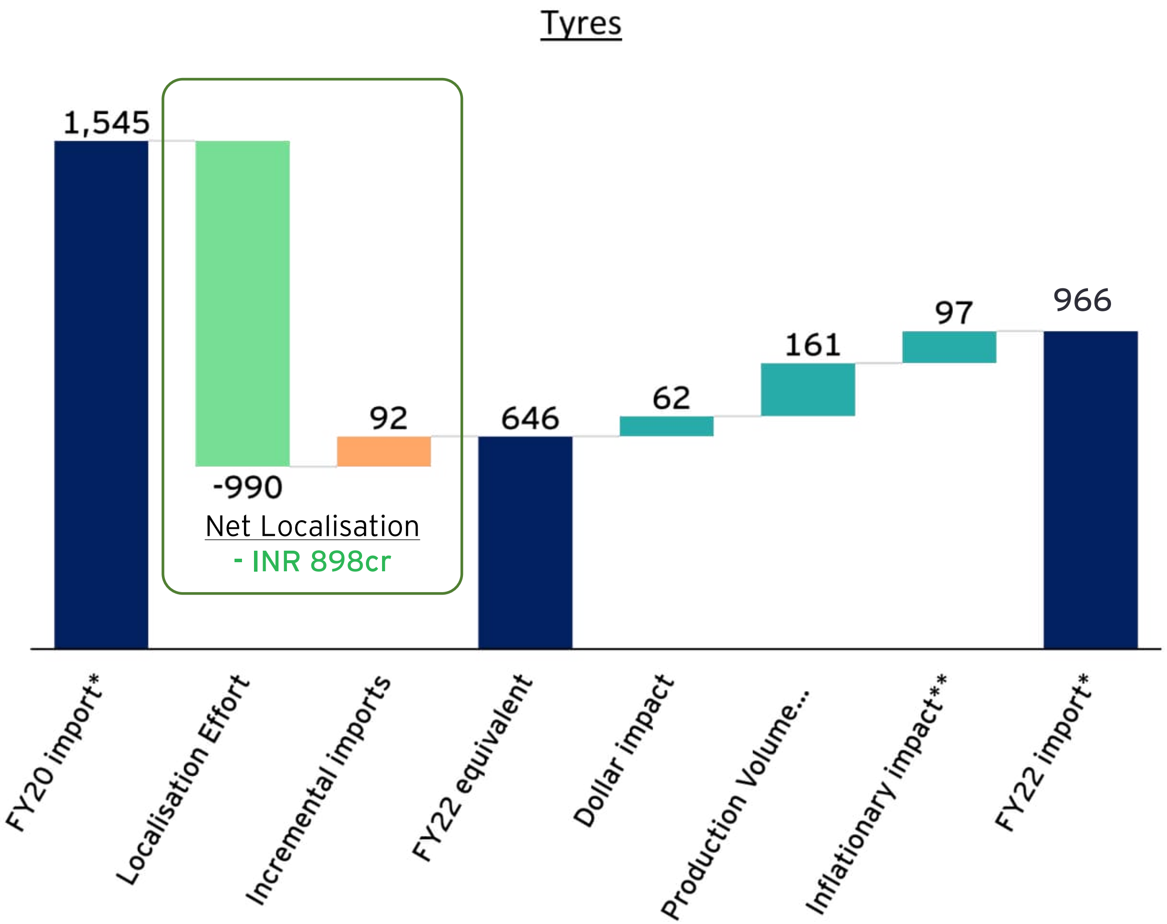
SL	China	Italy
42%	20%	16%

** Impots by OEMs, OESs and Aftermarket segment*

China, Japan & Thailand contribute to a major share (70%) of the Tyre imports into India

Tyre imports for Passenger Vehicles account for 62% of the total Tyre imports

Tyres : Regulatory push has led to localisation of tyres to a large extent barring imports for specific requirements



*Only OEM and OES imports considered
**Includes pricing, insurance, freight

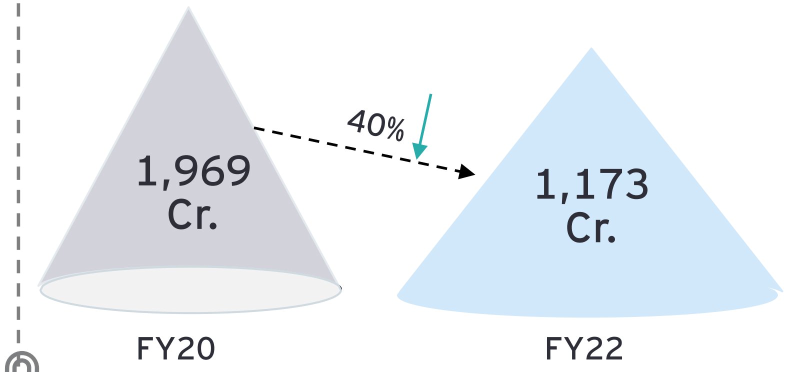
Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Tyres for PV	Tyres for all vehicle segments except luxury vehicles	Niche segment tyres, EV specification tyres	• Luxury segment tires are primarily imported • Specific homologation requirements and customers' preference for select brands of tyres in global markets for PVs lead to imports • Speciality tyres are imported due to non-availability in India

List of components is representative sample with substantial contribution to localisation/imports

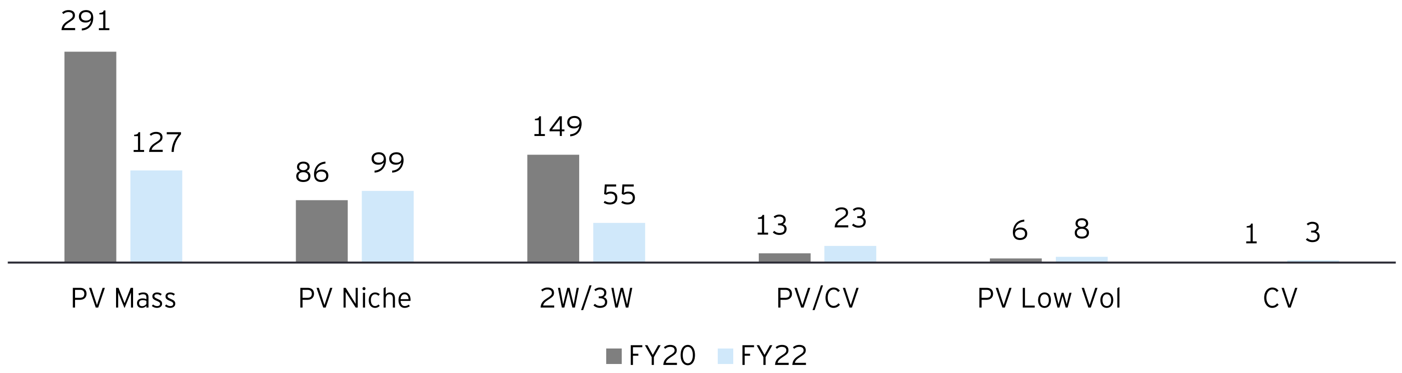
#imports due to consumer/ technology/ regulatory requirements

Comparative analysis (1/2): Import analysis at a supplier level and at a segment level

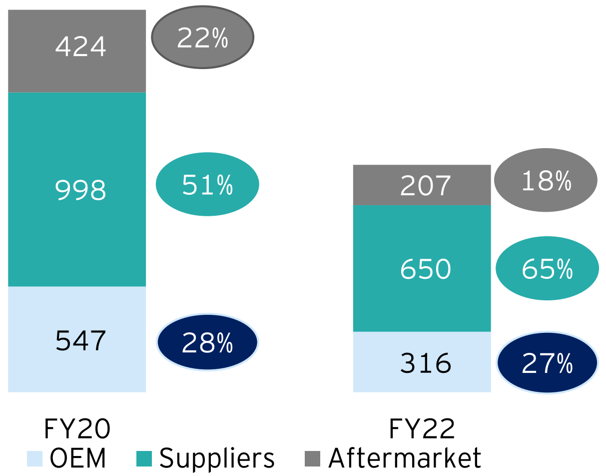
Total value of Tyre imports(in Cr)



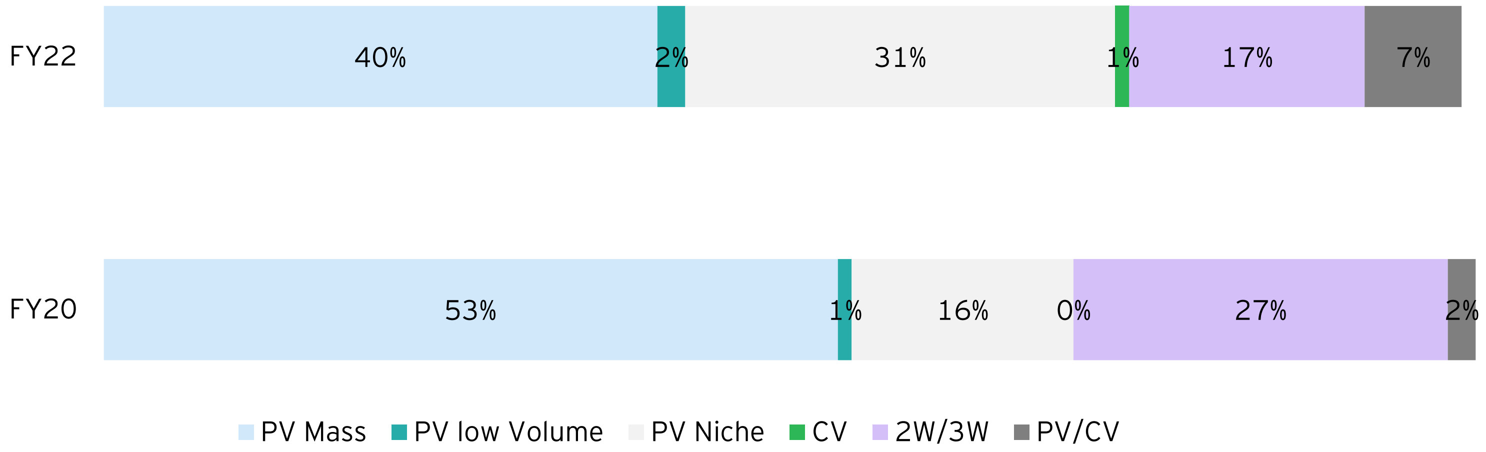
Total value of by OEM segments (in Cr)



Distribution of imports basis type of importer(in Cr)

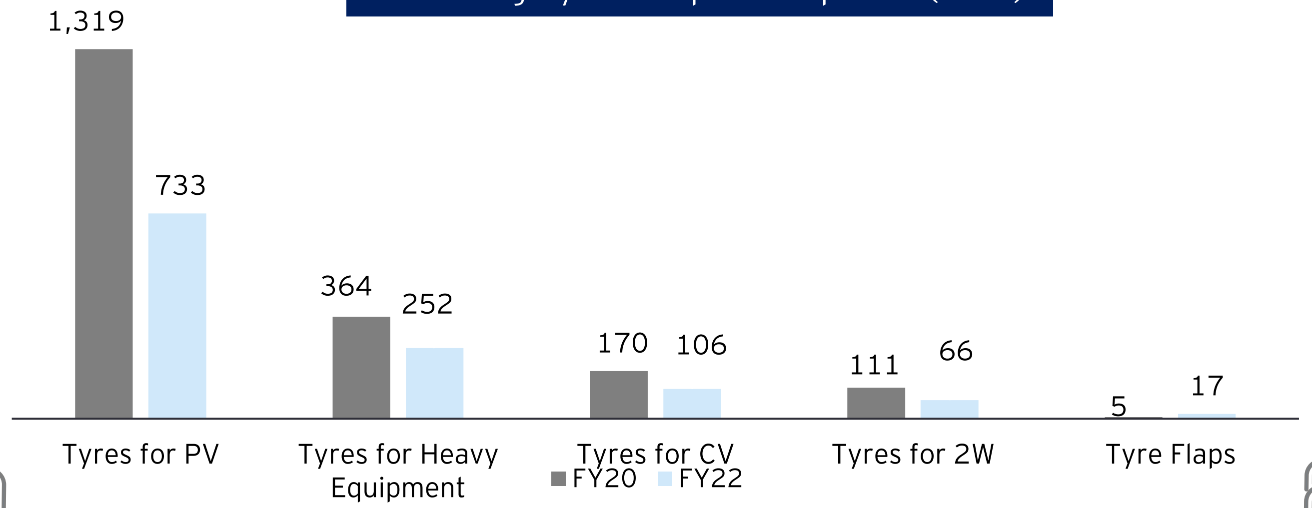


Share of OEM segments in OEM imports

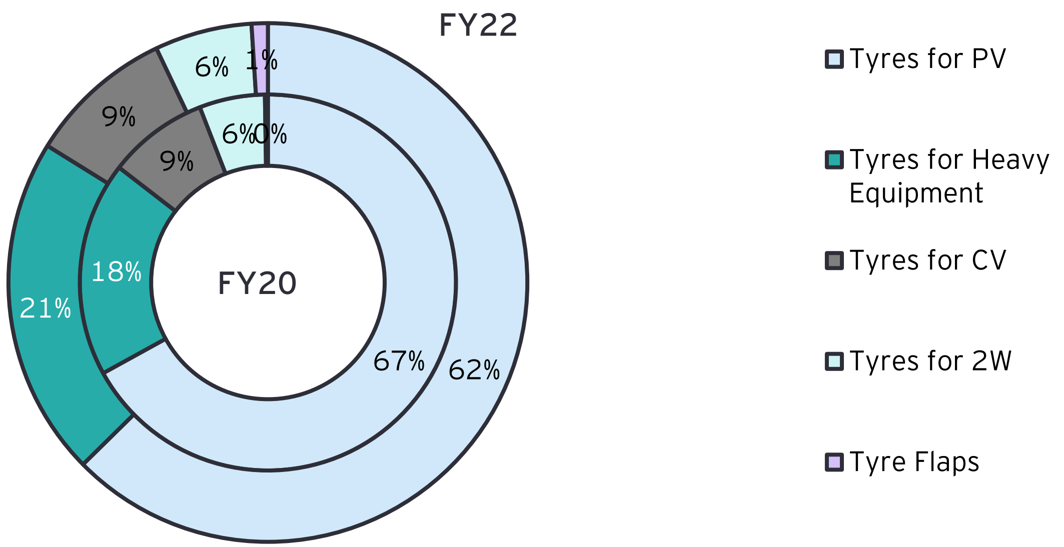


Comparative analysis (2/2): Sub category wise and country of origin comparison

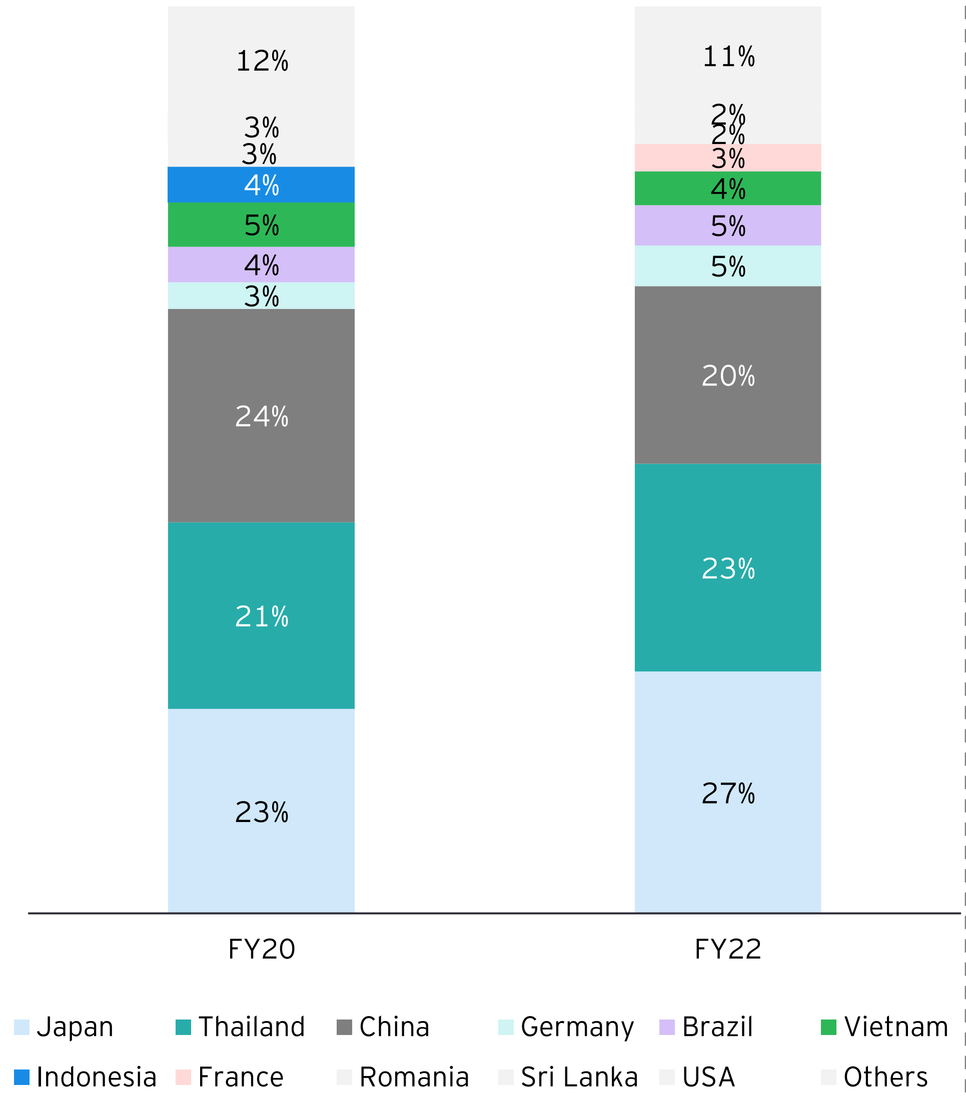
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



Country wise share of import comparison (%)



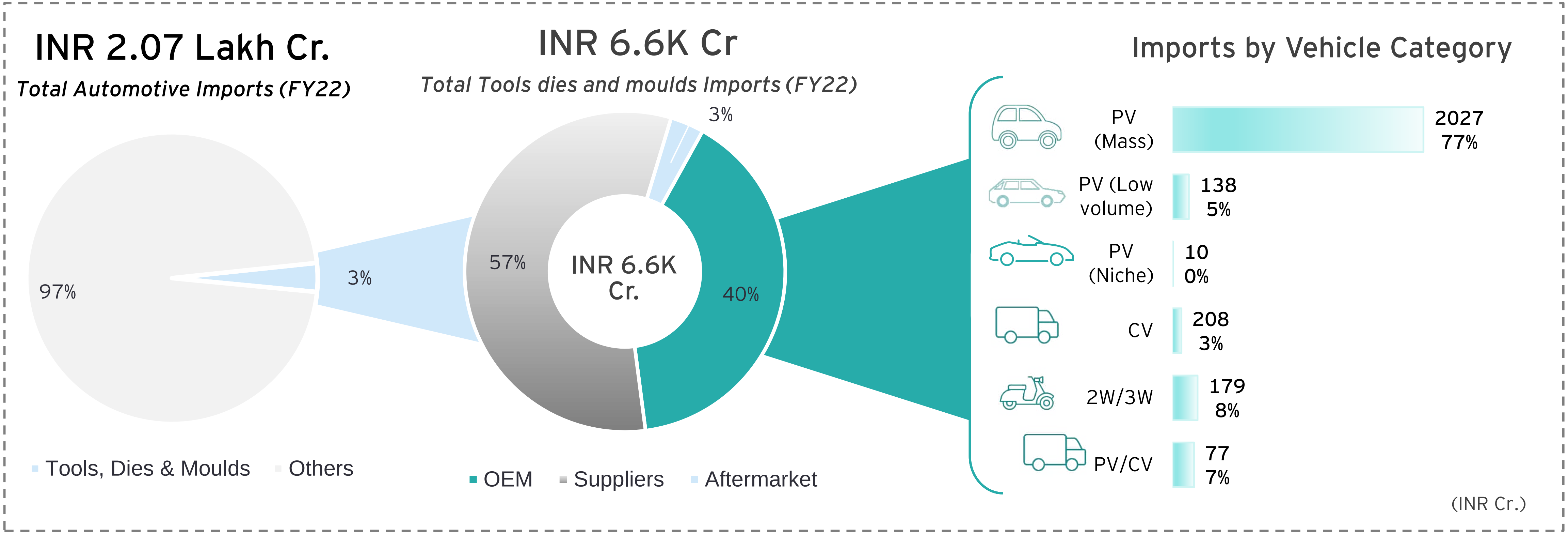
Five 6-digit HS Code details for Tyres

HS Code 6 Digit	Description
401110	New pneumatic rubber tyres used on motor cars (including station wagons and racing cars)
401120	New pneumatic rubber tyres used on buses or lorries : Radials
401140	New pneumatic rubber tyres used on motor cycles and scooters
401180	New pneumatic rubber tyres used on construction, mining or industrial handling vehicles
401290	Solid rubber tyres for motor vehicles, tyre flaps and treads

Tools, Dies & Moulds

Tools, Dies & Moulds : Category Snapshot FY21-22

Key Takeaways



Automotive Suppliers (57%) contribute to almost half the imports of Tools, Dies & Moulds

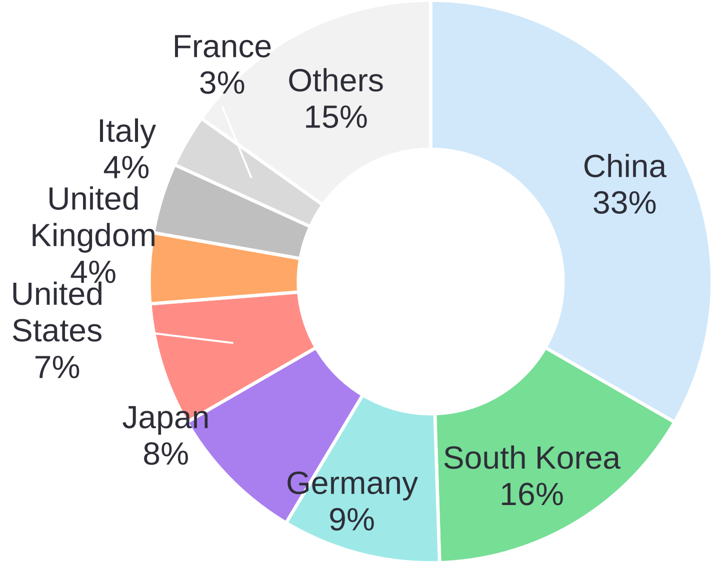
Among the OEMs, PV Mass alone contribute to 77% of the total imports

Tools, Dies & Moulds see import dependency due to faster development times and competitive costs but the industry is showing intent to localise through technology partnerships and investments

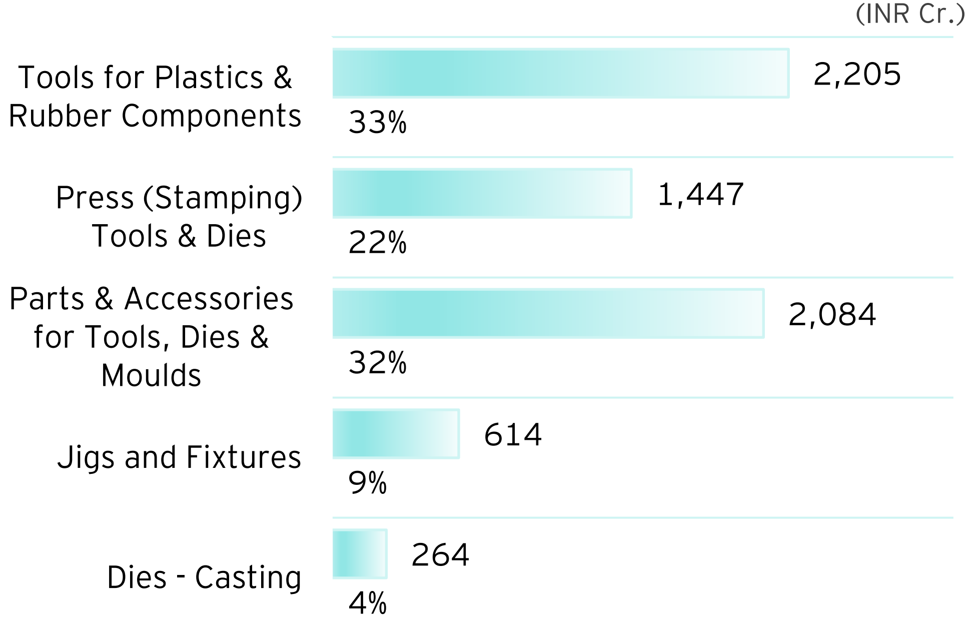
Tools, Dies & Moulds : Category Snapshot FY21-22

Key Takeaways

Import by Country of Origin



Components of Import



Import by Country of Origin : Top 3 Countries

Tools for Plastics & Rubber Components	China 52%	Korea 22%	Japan 5%
Press (Stamping) Tools & Dies	Korea 36%	China 30%	Japan 16%
Parts & Accessories for Tools, Dies & Moulds	China 23%	Ger. 15%	USA 13%
Jigs and Fixtures	Korea 34%	China 27%	Japan 16%
Dies - Casting	China 59%	Korea 12%	Japan 10%

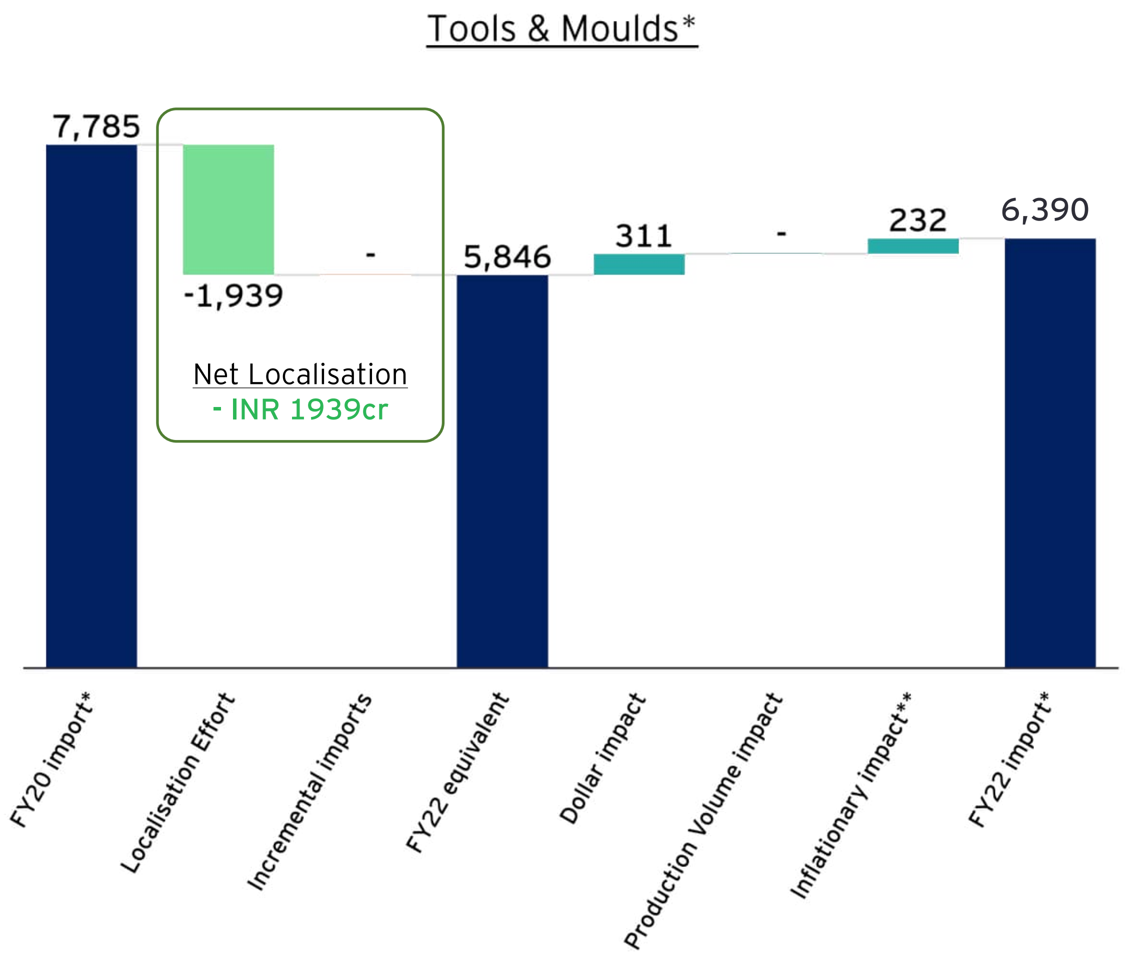
Primary insights

Dies and moulds for **skin panels** see imports due to unavailability of technology and quality constraints

OEMs and OESs have set-up **in-house tool rooms** for applications such as plastic moulding parts, housings etc.

China and Korea's tooling ecosystem offer **short turn-around times** and **competitive costs** for orders leading to higher imports into India

Tools, dies and moulds : India's strengths in casting and forging are evident in the increasing localisation of tooling components



Tools & mould category imports are more closely linked to new product launches than production volume changes.

Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Press (Stamping) Tools & Dies	Transfer tools for BiW and cabin components, die casting tools for control arms, Tooling kits for 2W lamp sets	Tooling kits for lamp sets 4W , Tools for skin panels	• Dependence on tooling for lamps due to technological complexity • High Investments with longer gestation period to reap benefits • Lead time constraints
Tools for Plastics & Rubber Components	Tools for select interior plastic parts like glove box etc.	Moulds for lighting systems	• Limited supplier providing end to end tooling solutions • Lead time constraints

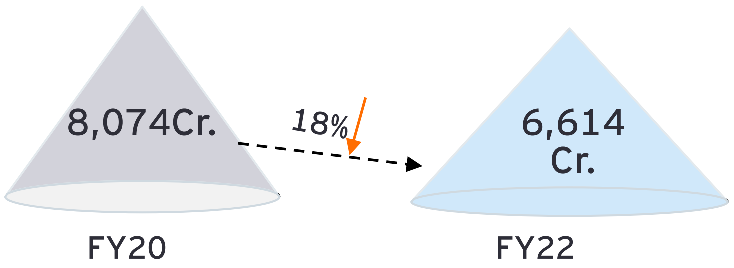
List of components is representative sample with substantial contribution to localisation/imports

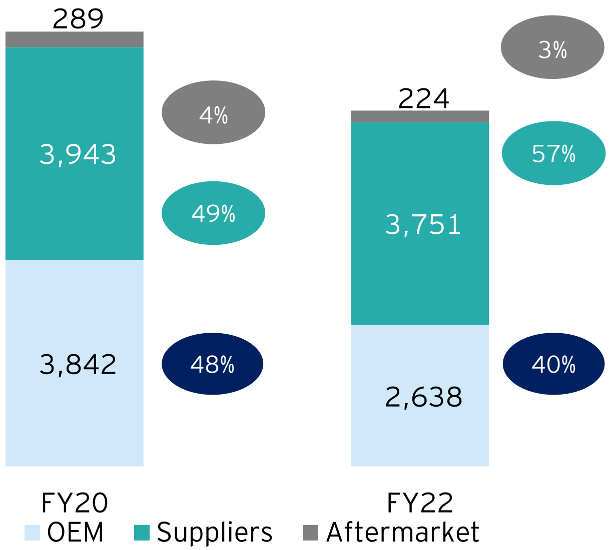
*Only OEM and OES imports considered
**Includes pricing, insurance, freight

#imports due to consumer/ technology/ regulatory requirements

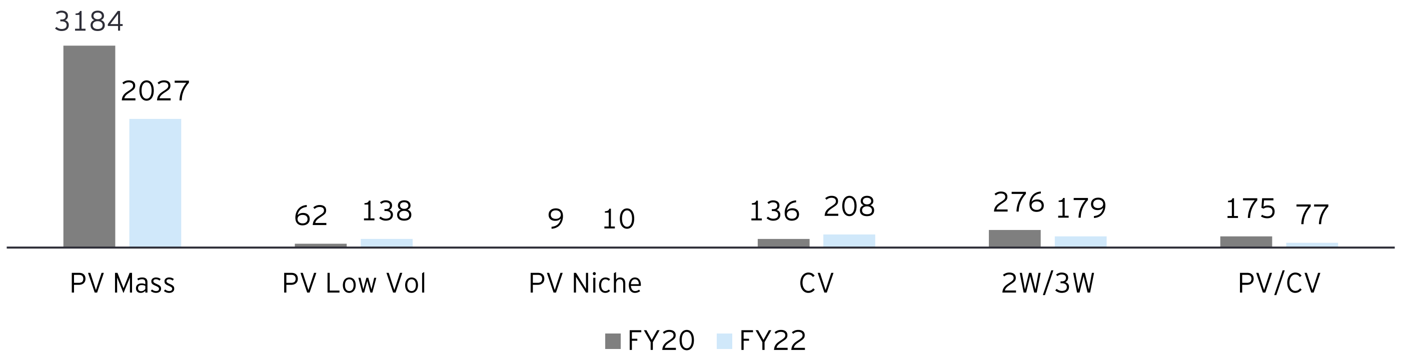
Comparative analysis (1/2): Import analysis at a supplier level and at a segment level

Total value of Tools, dies and moulds imports(in Cr)

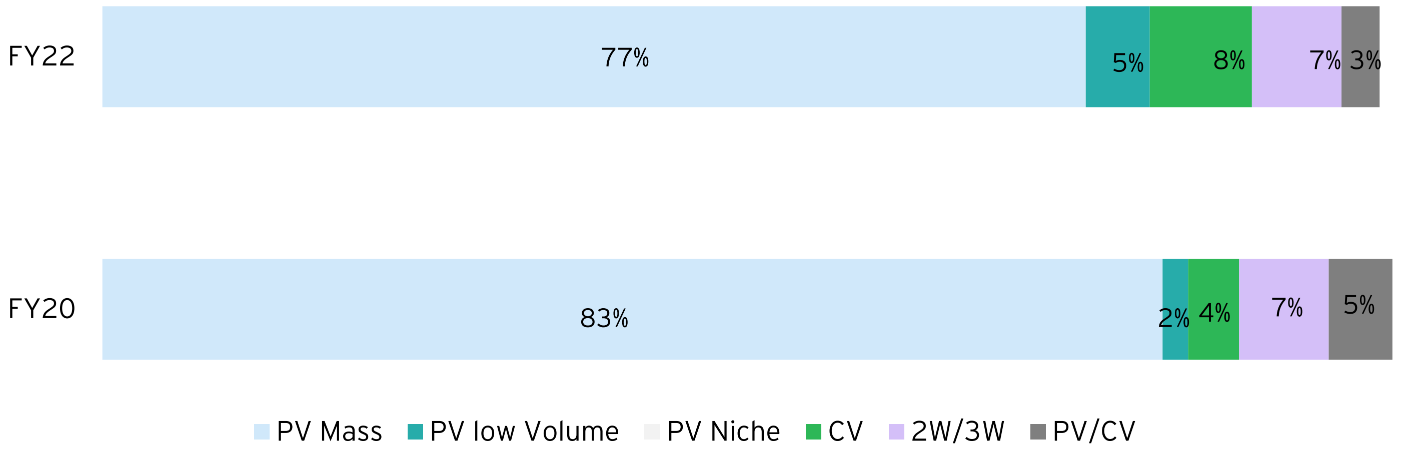




Total value of by OEM segments (in Cr)

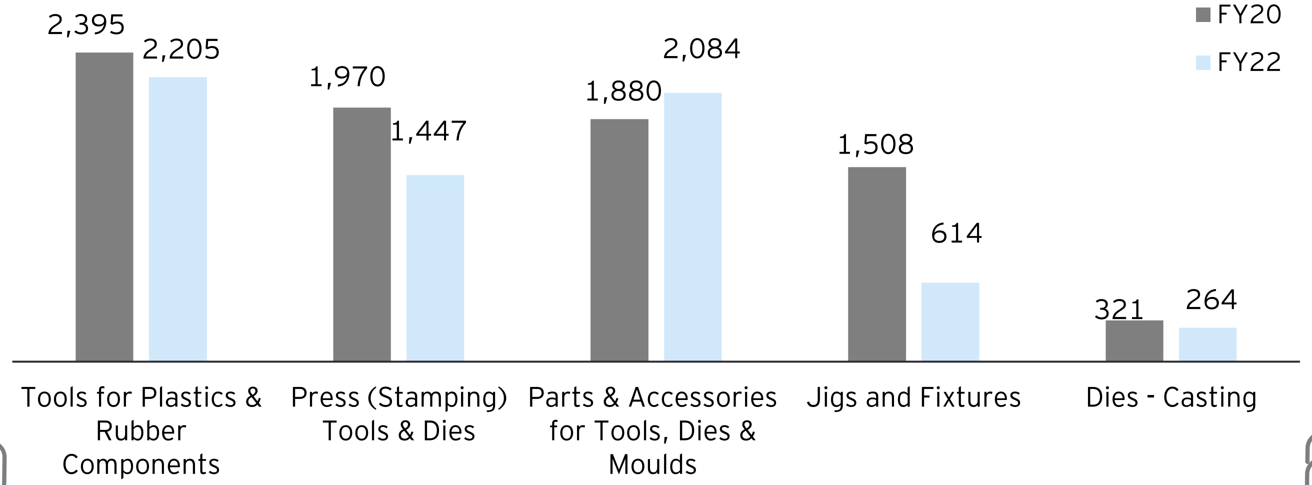


Share of OEM segments in OEM imports

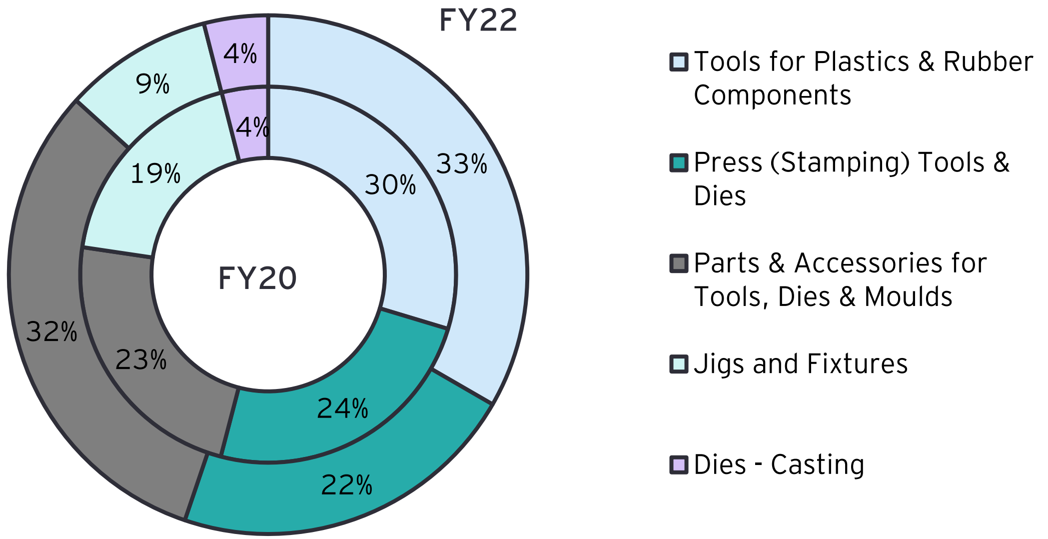


Comparative analysis (2/2): Sub category wise and country of origin comparison

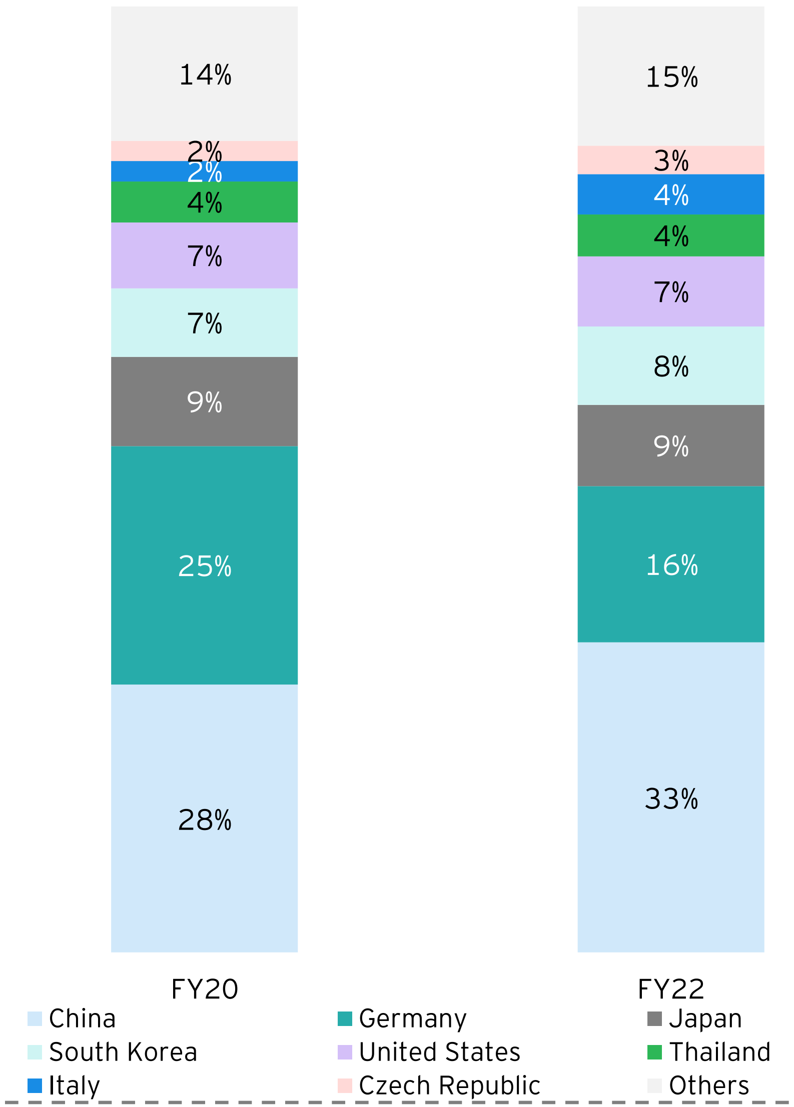
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



Country wise share of import comparison (%)



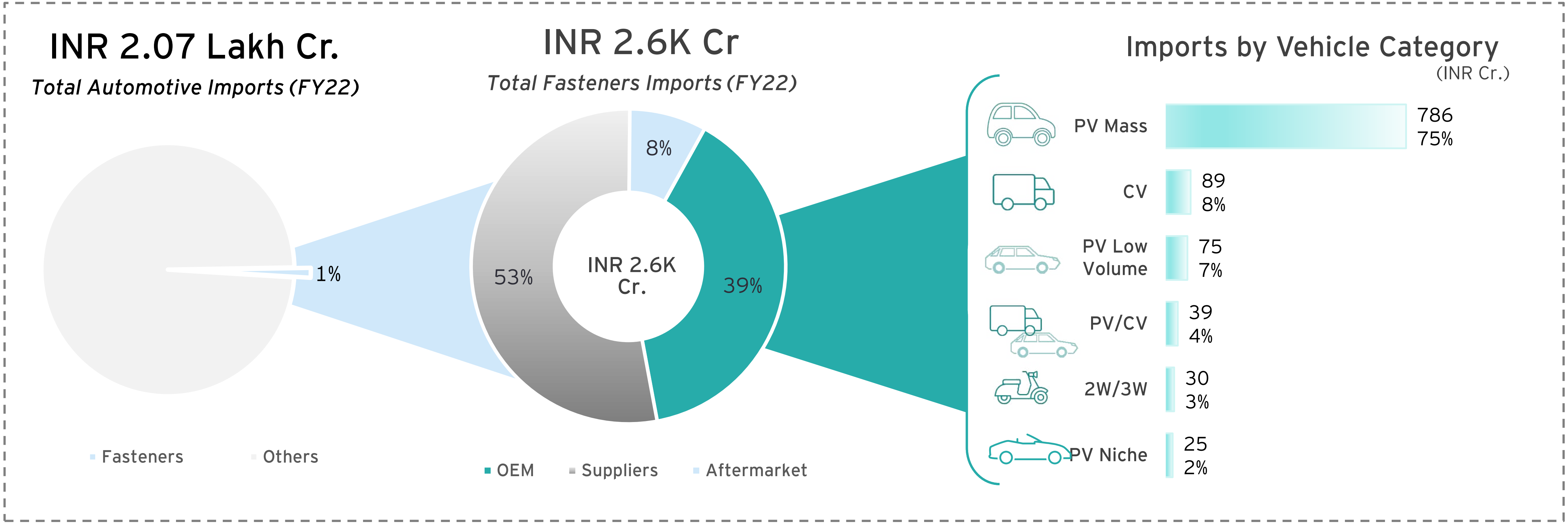
Eight 6-digit HS Code details for Tools, Dies and Moulds

HS Code 6 Digit	Description
820720	DIES FOR DRAWNG OR EXTRUDNG METAL
820730	TOOLS FOR PRESING STAMPING OR PUNCHING
846630	JIGS AND FIXTURES FR MACHINE-TOOLS
848041	INJCTN/CMPRSN TYPE MOULDS FR MTL/MTL CRBD
848049	OTHR MOULDS FR METAL/METAL CARBIDES
848071	INJCTN/CMPRSN TYPE MOULDS FR RUBBR/PLSTCS
848079	OTHR MOULDS FOR RUBBER/PLASTICS
848180	OTHERS

Fasteners

(Nuts, Bolts, Washers & Rivets)

Fasteners : Category Snapshot FY21-22
Key Takeaways



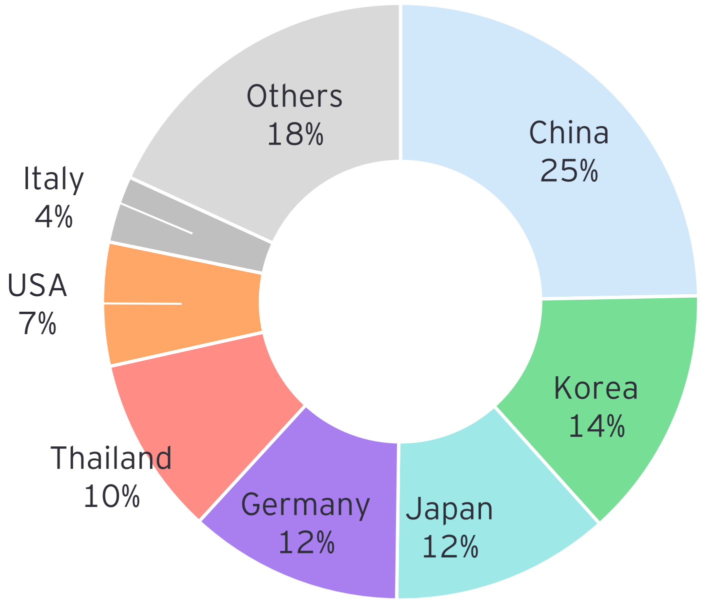
Suppliers (53%) contribute to substantial imports of Fasteners

Among the OEMs, PV Mass alone contribute to 75% of the total imports.

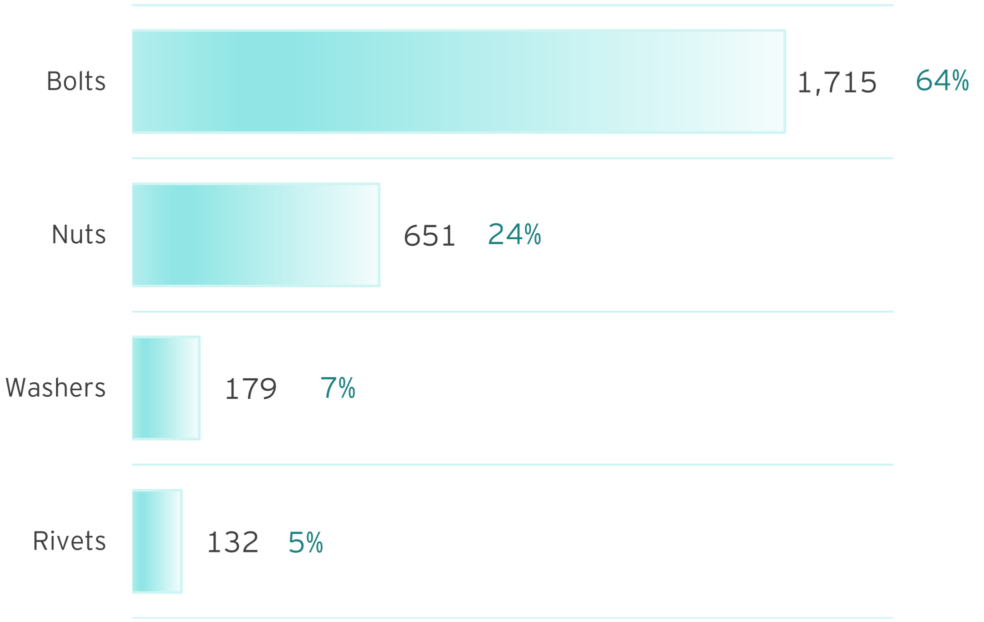
Fasteners as a category take up a small share of imports but are important to analyse due to their use in many safety critical applications

Fasteners : Category Snapshot FY21-22
Key Takeaways based on country lens

Import by Country of Origin



Components of Import



Import by Country of Origin : Top 3 Countries

Bolts	China 24%	Korea 13%	Thailand 12%
Nuts	China 23%	Korea 18%	Japan 17%
Washers	China 22%	Japan 16%	Germany 14%
Rivets	China 51%	Germ. 13%	Japan 7%

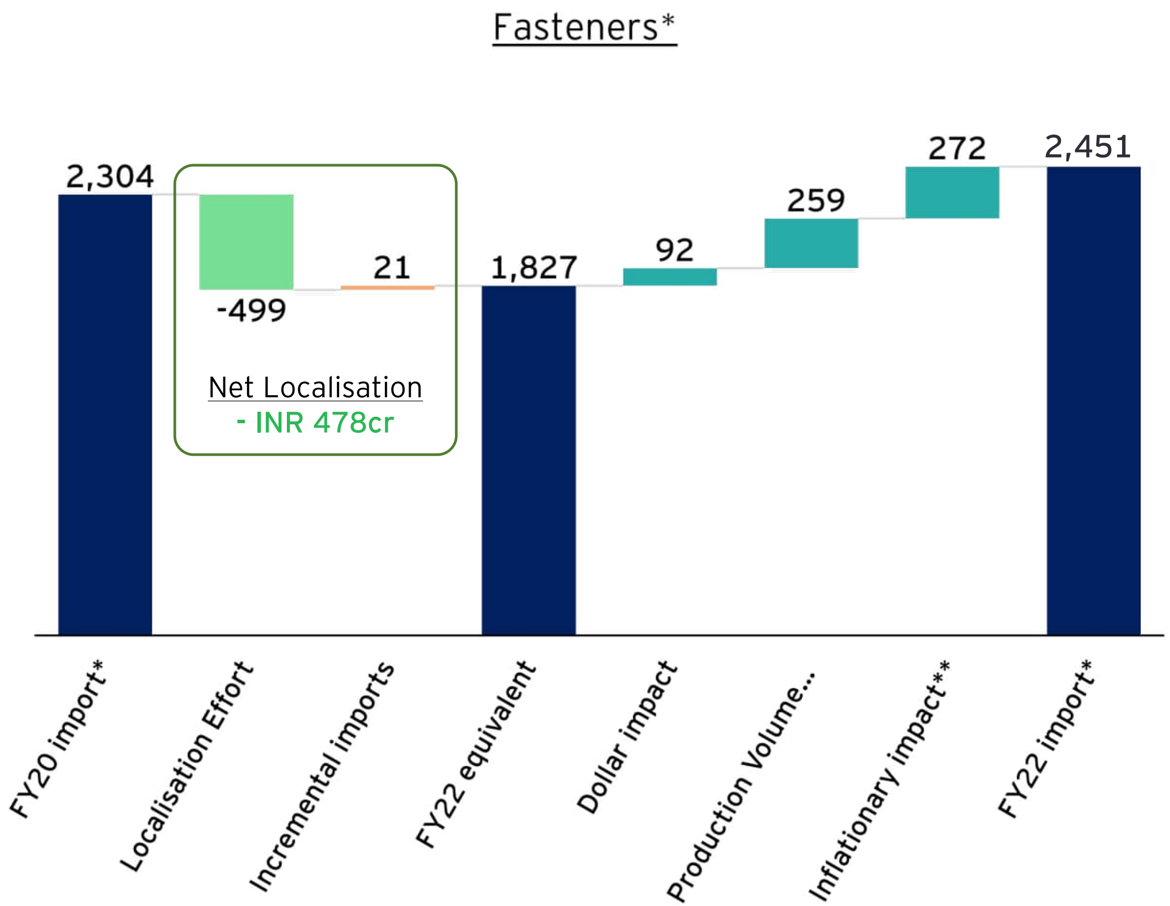
Primary insights

Global design commonization drives OEMs / OESs to import particular grades of fasteners to maintain uniformity

Long approval and testing cycles for safety critical components such as fasteners coupled with their **low part value** make them challenging to localise

Bolts for engine components like cylinder head, bearing cap, crank pulley, connecting rod are being imported from **China, Korea & Thailand**

Fasteners : Significant localisation efforts have paid off; high tensile fasteners continue to be imported for critical applications



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Bolts, nuts, washers, rivets	Knurled Bolts, Flange bolts, Flange nuts, wheel nuts	High tensile fasteners (for safety critical applications)	• Safety critical applications – significantly higher cost of failure – OEMs prefer proven & existing sources • Cost & lead time for switching is high – stringent/rigorous testing & validation needed • Lack of integrated surface treatment for high tensile fasteners

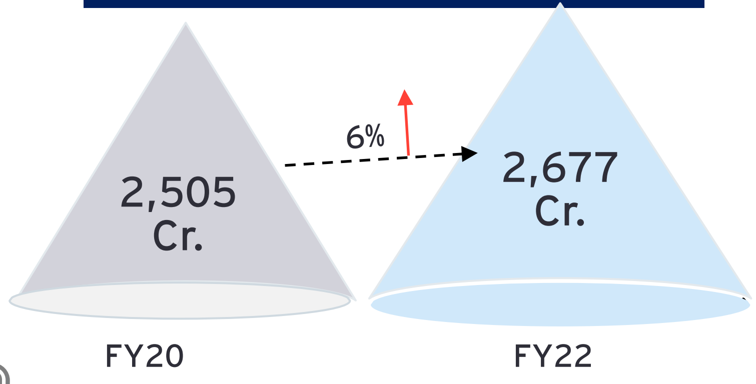
List of components is representative sample with substantial contribution to localisation/imports

**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

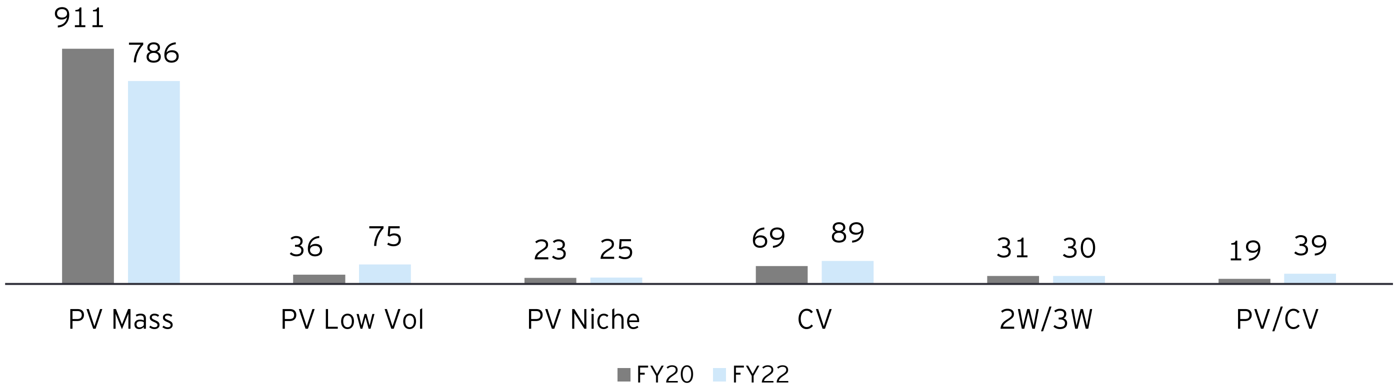
#imports due to consumer/ technology/ regulatory requirements

Comparative analysis (1/2): Import analysis at a supplier level and at a segment level

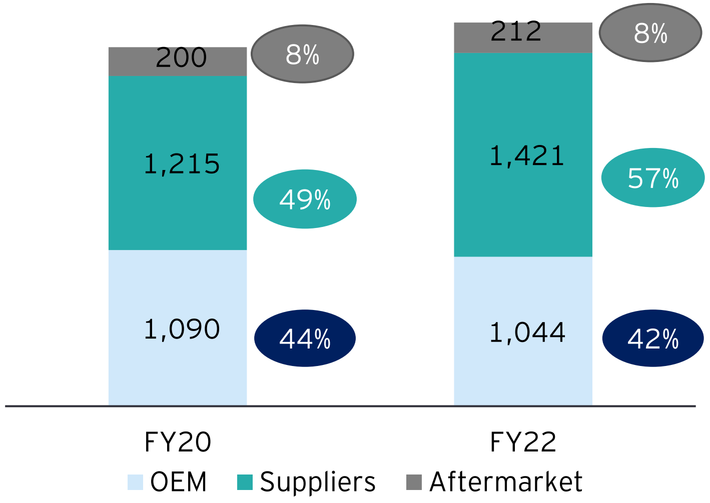
Total value of fasteners imports(in Cr)



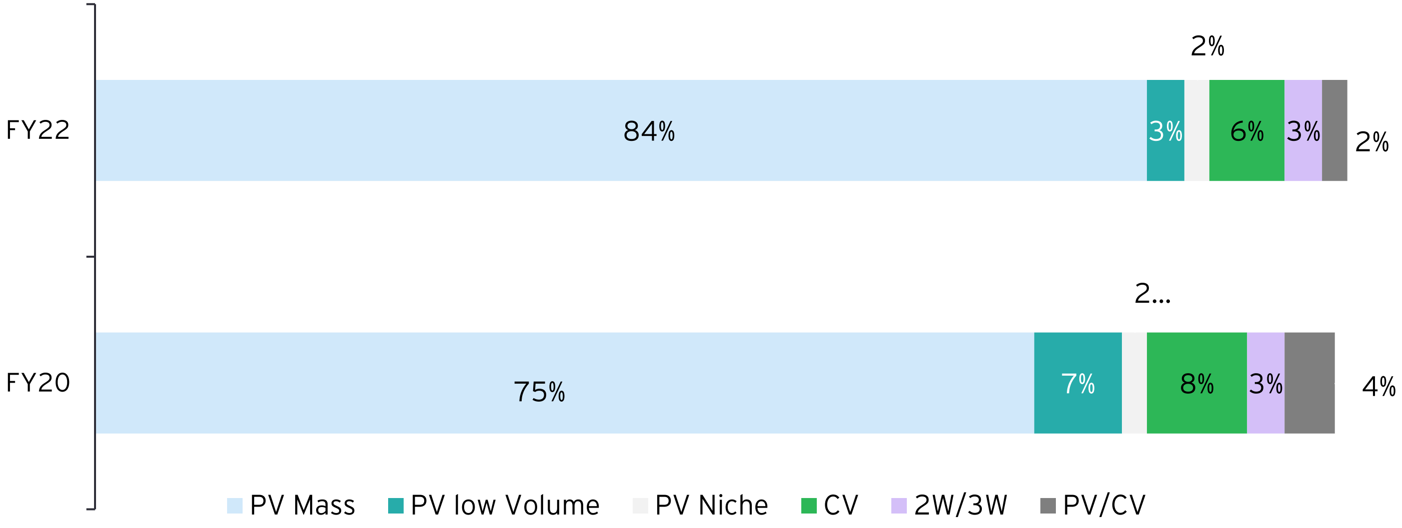
Total value of by OEM segments (in Cr)



Distribution of imports basis type of importer(in Cr)

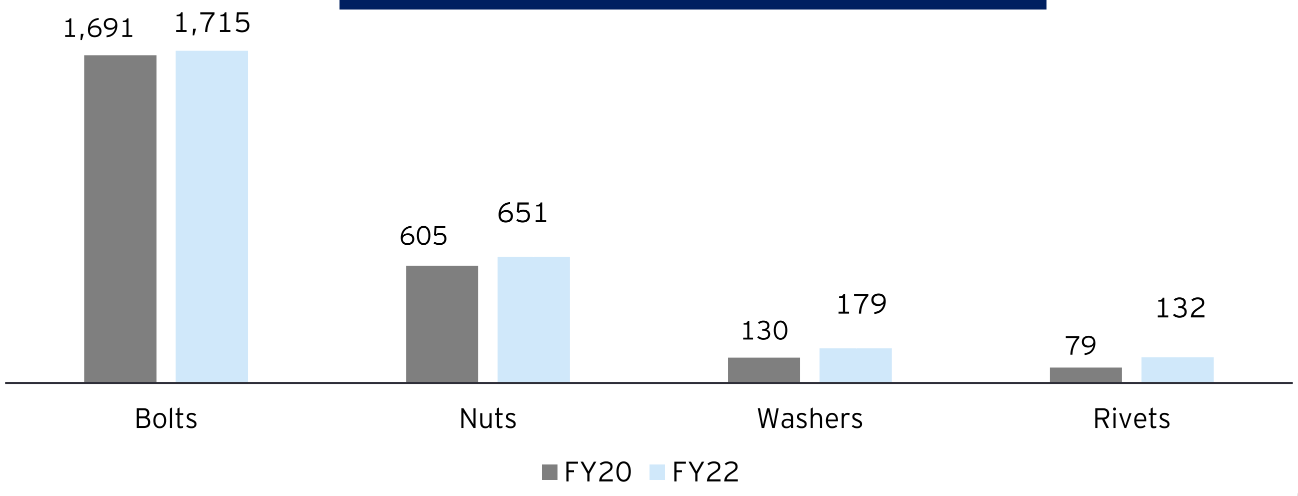


Share of OEM segments in OEM imports

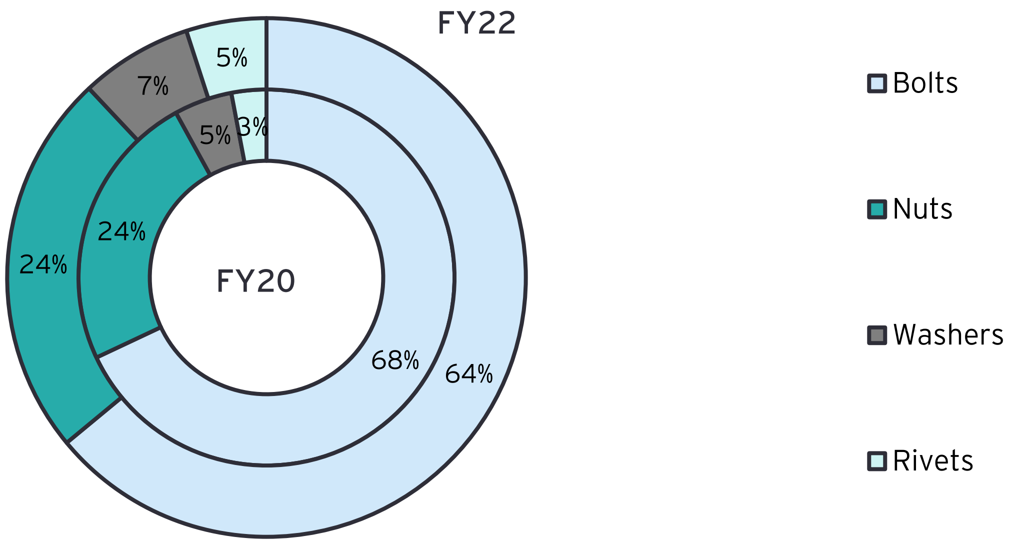


Comparative analysis (2/2): Sub category wise and country of origin comparison

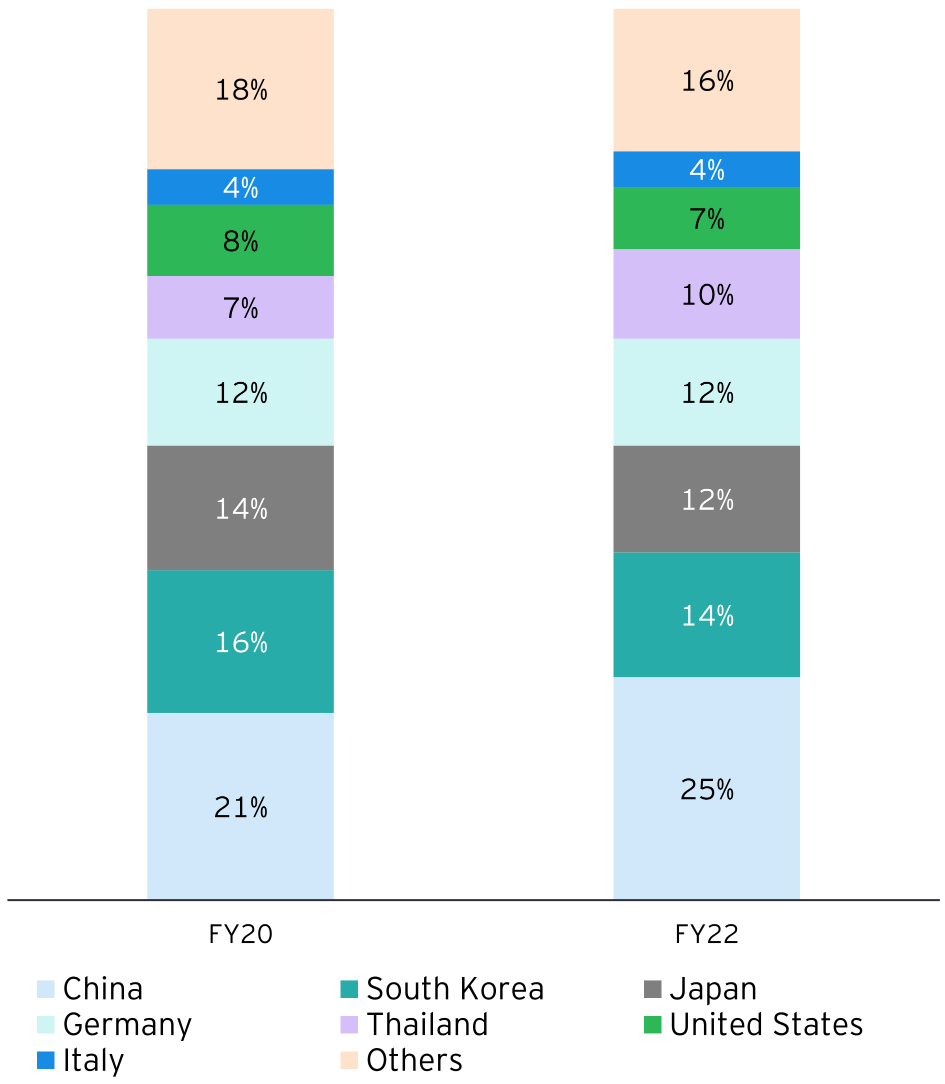
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



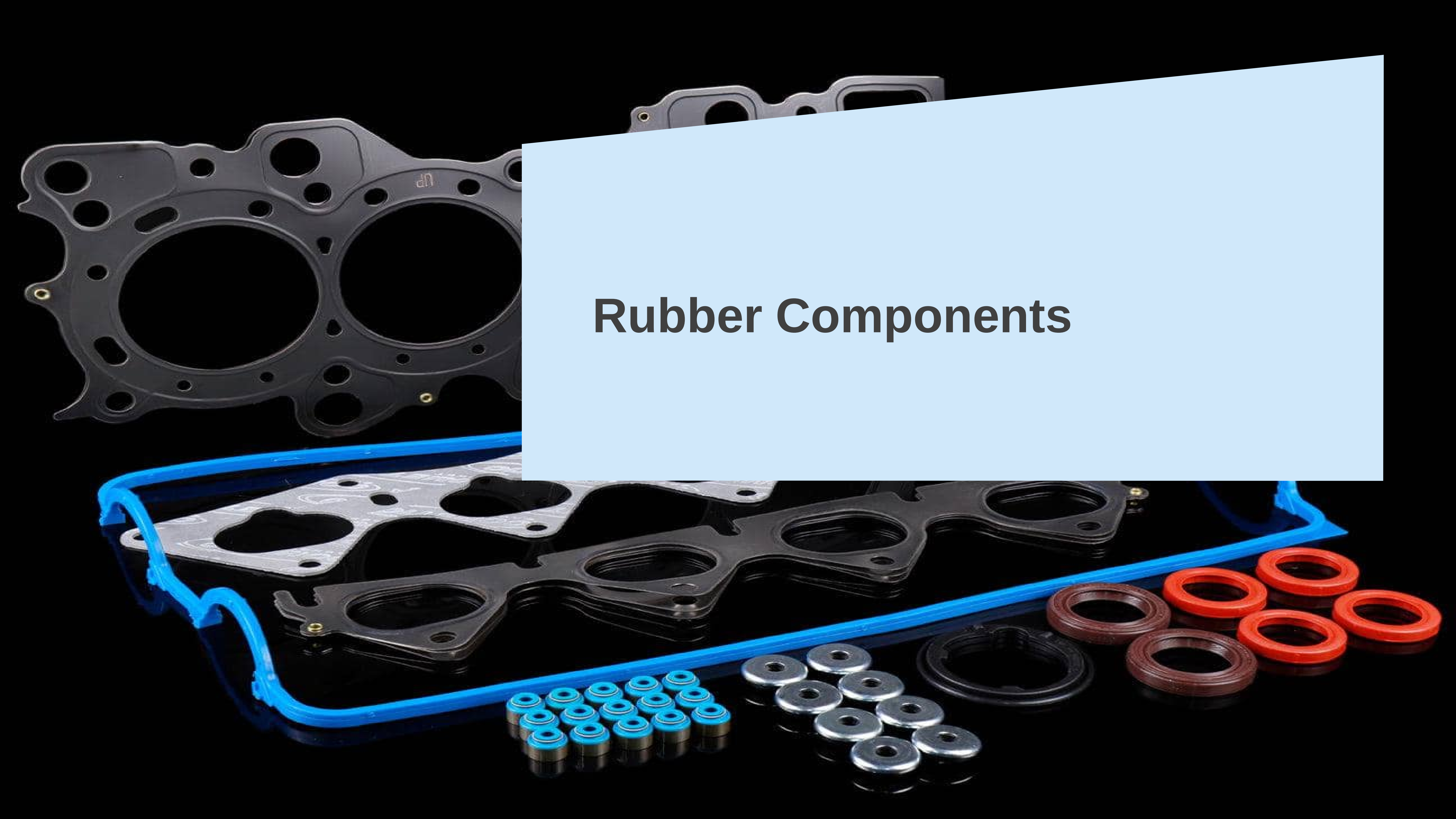
Country wise share of import comparison (%)



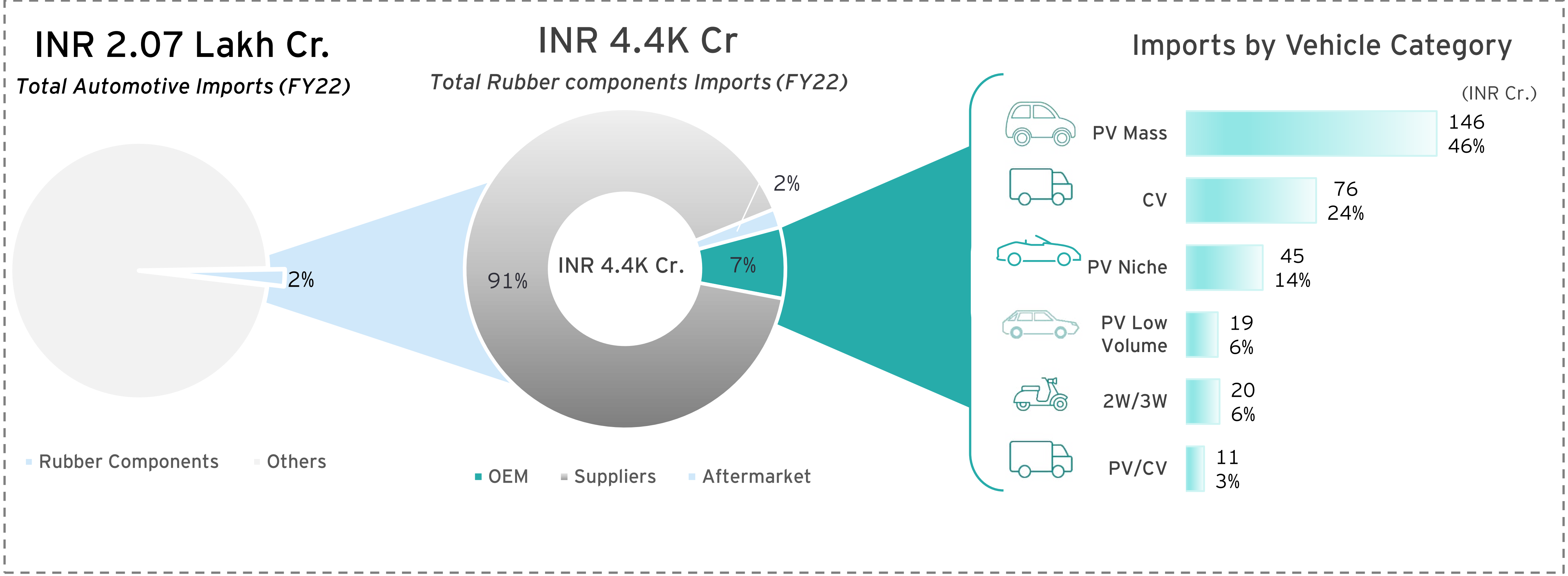
Four 6-digit HS Code details for Fasteners

HS Code 6 Digit	Description
731815	OTHR SCREWS AND BOLTS W/N WTH NUTS OR WASHERS THREADED
731816	THREADED NUTS
731822	OTHER WASHERS,NON-THREADED
731823	RIVETS,NON-THREADED

Rubber Components



Rubber Components : Category Snapshot FY21-22
Key Takeaways



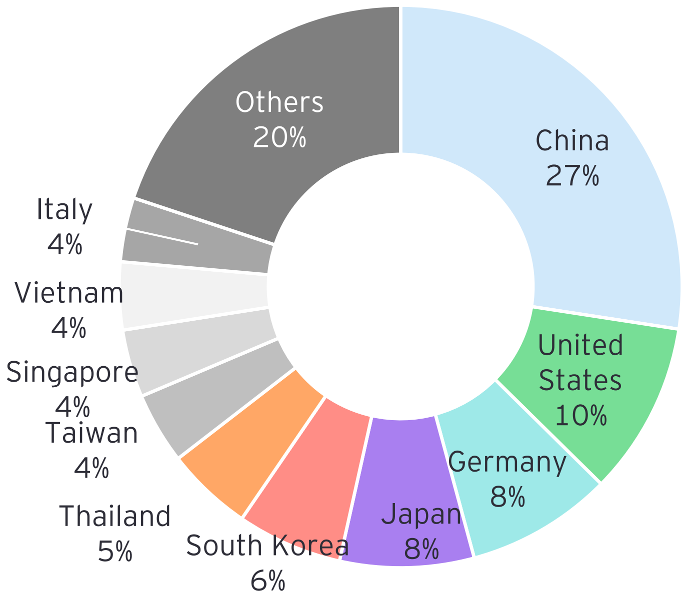
Suppliers (91%) contribute to substantial imports of Rubber components

Among the OEMs, PV Mass alone contribute to 46% of the total imports.

Rubber components are largely localised with technology and capacities available in India with imports happening in niche or low volume applications and due to design constraints

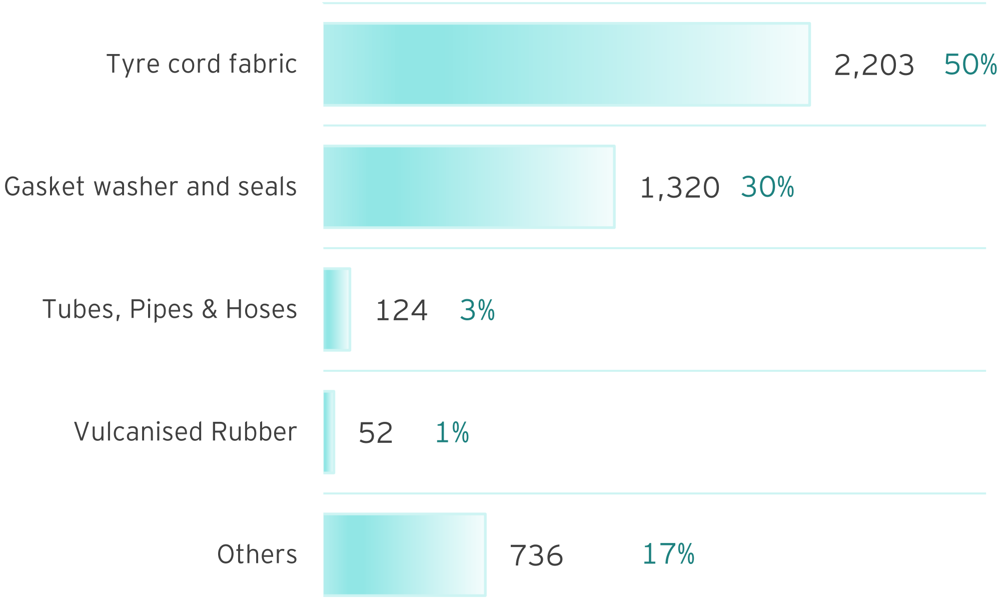
Rubber Components : Category Snapshot FY21-22
Key Takeaways

Import by Country of Origin



Components of Import

(INR Cr.)



Import by Country of Origin : Top 3 Countries

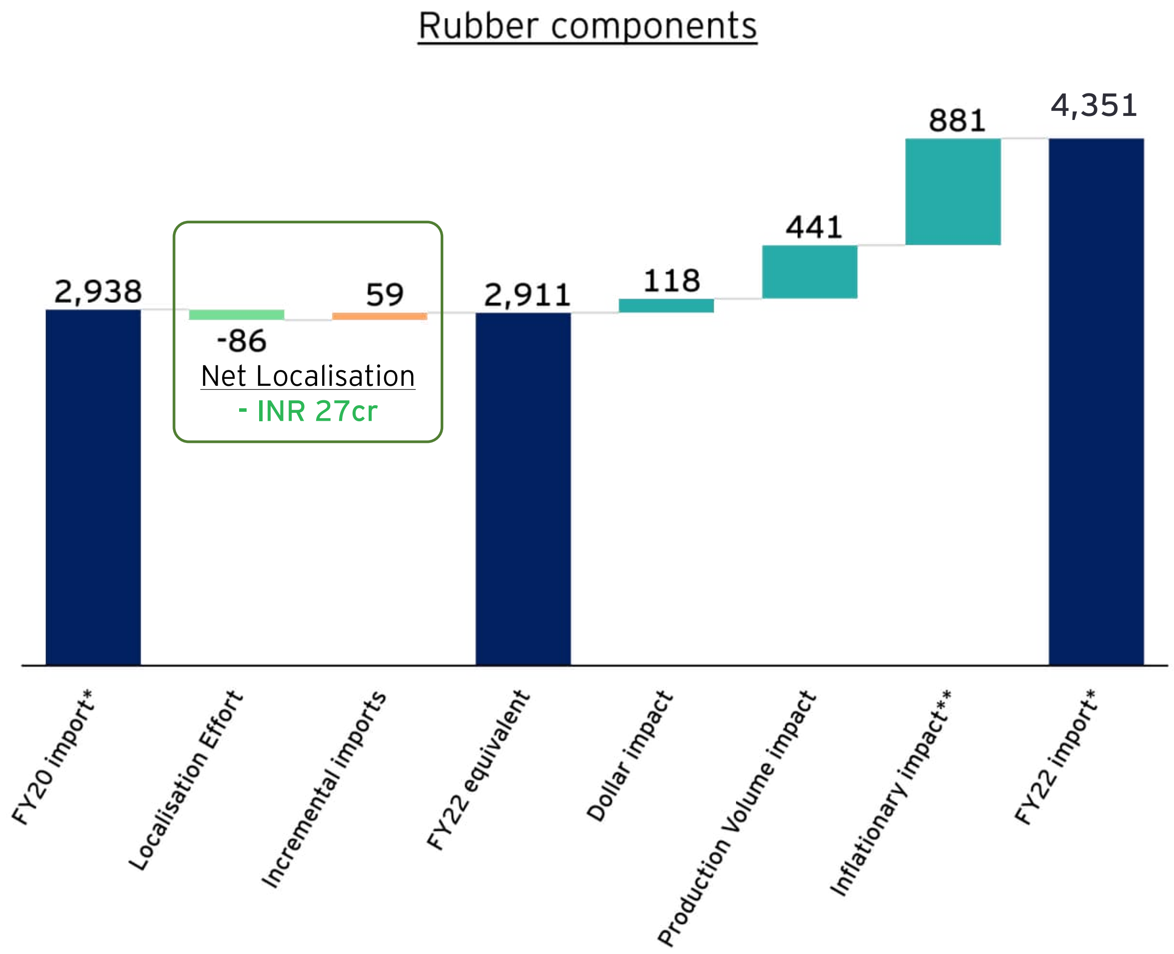
China 57%	Vietnam 11%	Taiwan 10%
Japan 14%	Germ. 14%	China 14%
China 28%	Korea 14%	Japan 8%
China 39%	Hung. 26%	UK 11%
USA 17%	China 15%	Sing. 11%

Primary insights

Tyre cord fabric account for 50% of the total Rubber components imports due to the non-availability of Nylon 66

To maintain **global uniformity in design**, OEMs import rubber components despite availability in India

Rubber Components: Localisation is seen, however volatility in rubber prices and heavy dependency on Nylon-66 for tyre cord fabric have been deterrents



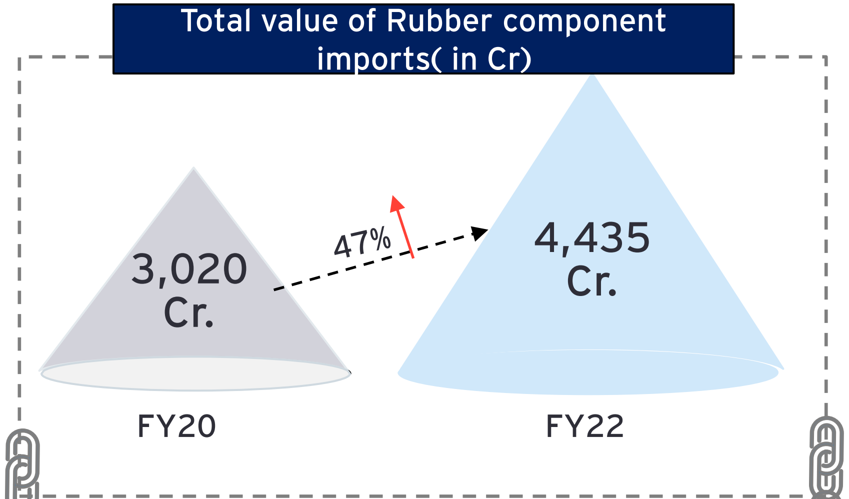
Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Tubes, Gaskets, washers and seals: Pipes & Hoses	Grommets, pipes, hoses for general applications, door seals	Niche segment parts - gaskets, o-rings, seals	Companies also follow global standards and therefore, prefer to source globally
Tyre cord fabric	–	Nylon 66 tyre cord fabric	Shortage/ low availability of Nylon 66 for tyre cord fabric

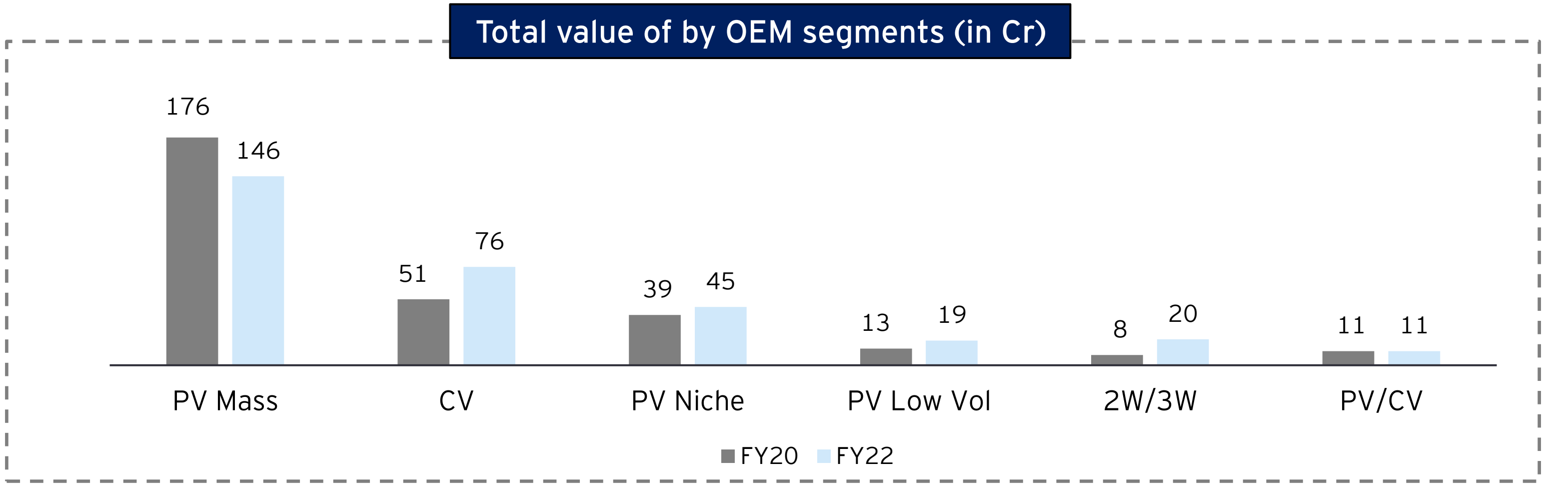
List of components is representative sample with substantial contribution to localisation/imports

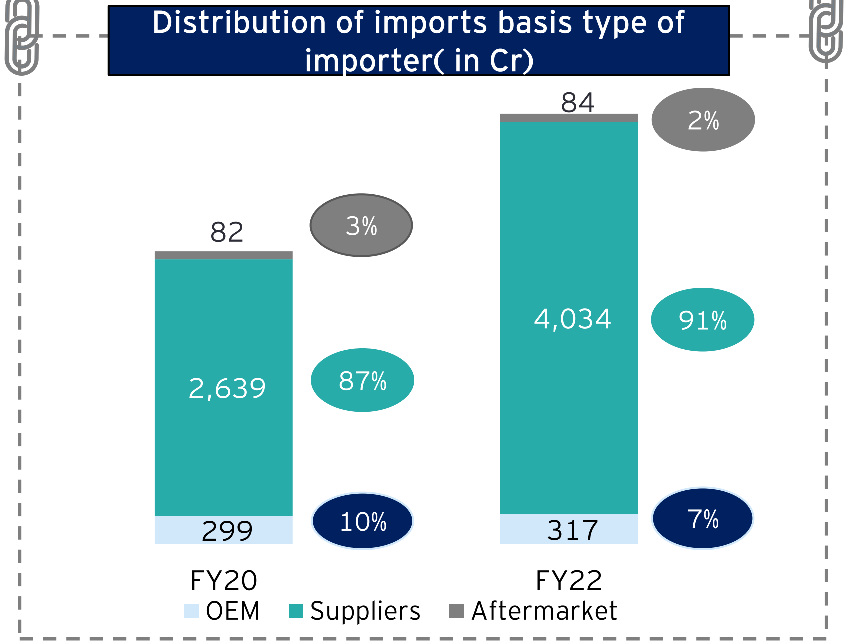
**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

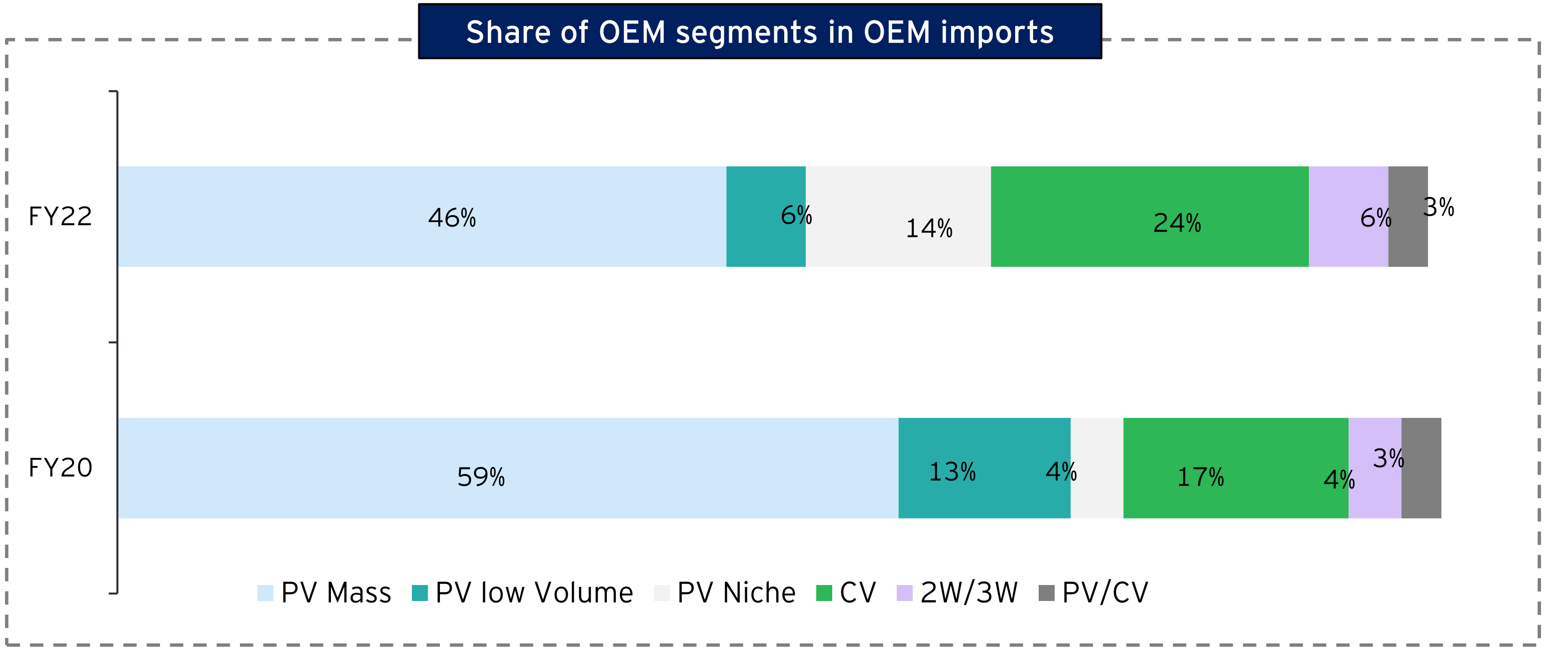
#imports due to consumer/ technology/ regulatory requirements

Comparative analysis (1/2): Import analysis at a supplier level and at a segment level



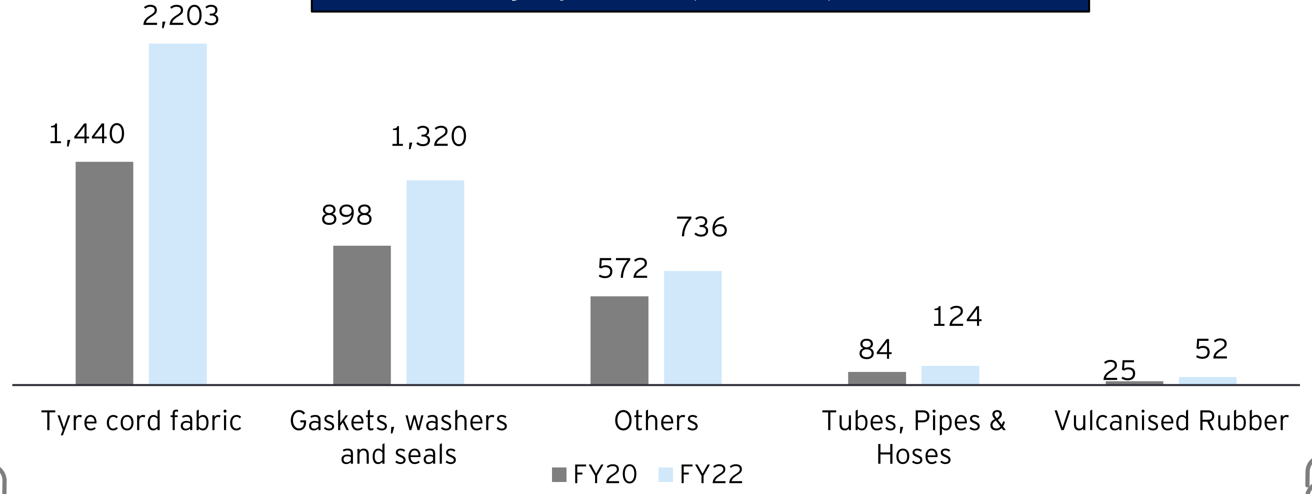




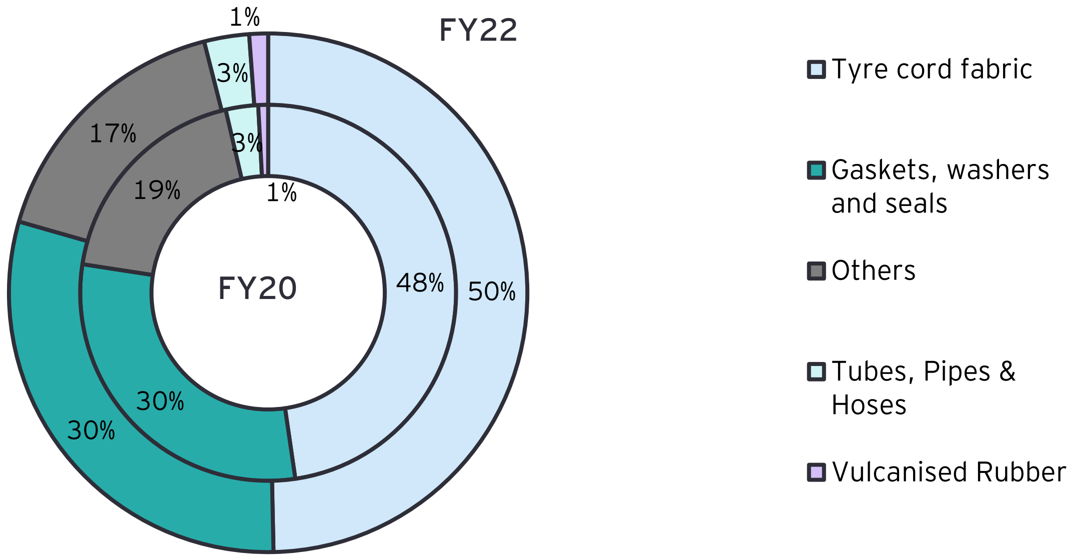


Comparative analysis (2/2): Sub category wise and country of origin comparison

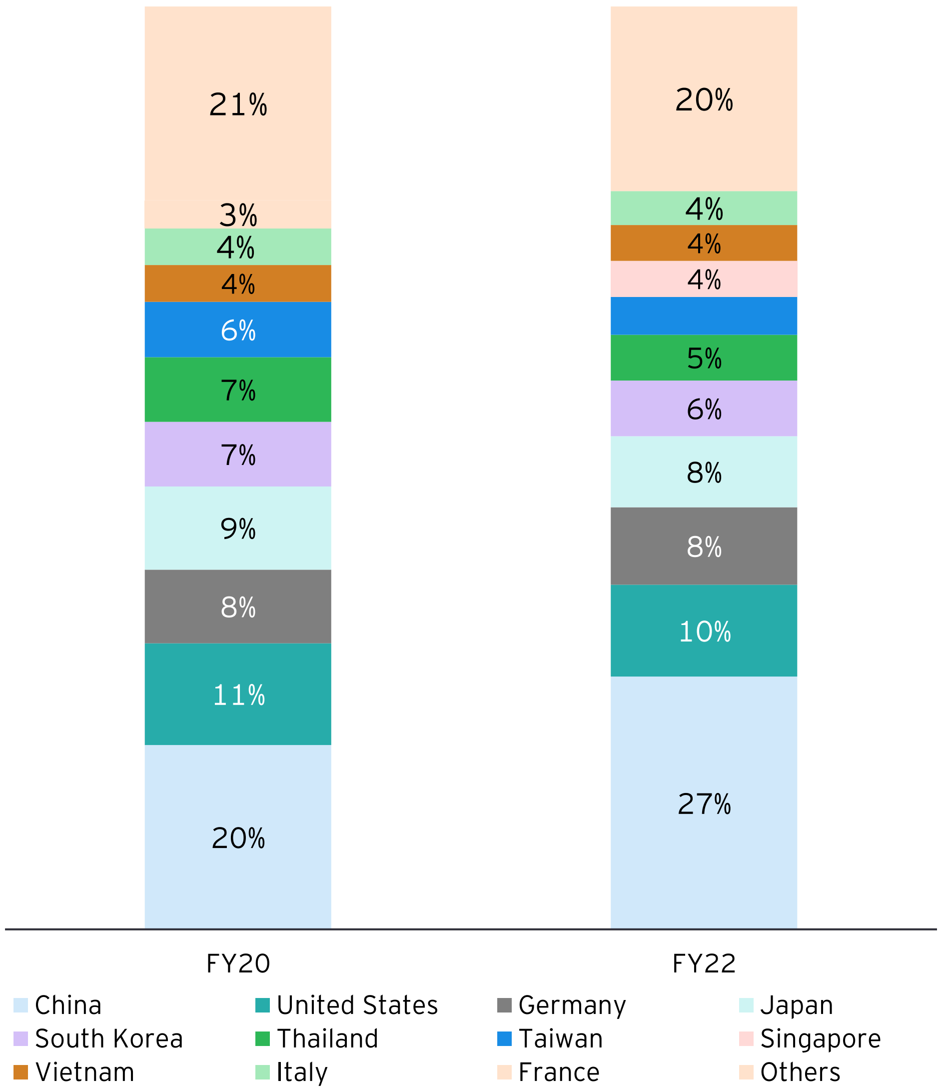
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



Country wise share of import comparison (%)



Eight 6-digit HS Code details for Rubber components

HS Code 6 Digit	Description
400911	TUBES,PIPES AND HOSES OF VULCNSD RUBR NOT REINFORCED/OTHRWSE COMBINED WTH OTHR MATERIALS WITHOUT FITTINGS
400922	TUBES,PIPES AND HOSES OF VULCNSD RUBR REINFORCED/OTHERWSE CMBND ONLY WITH METAL WITH FITTINGS
401310	FOR LORRIES AND BUSES
401693	WASHERS , O RINGS, SEALS, GASKETS
401610	OTHR ARTCLS OF CELLULAR RUBBER
401695	OTHER ARTICLES OF VULCANISED RUBBER OTHER THAN HARD RUBBER: OTHER INFLATABLE ARTICLES: OTHER
401699	RUBBER BUSH
590210	IMPREGNATED RUBBER PRODUCTS

Iron and steel

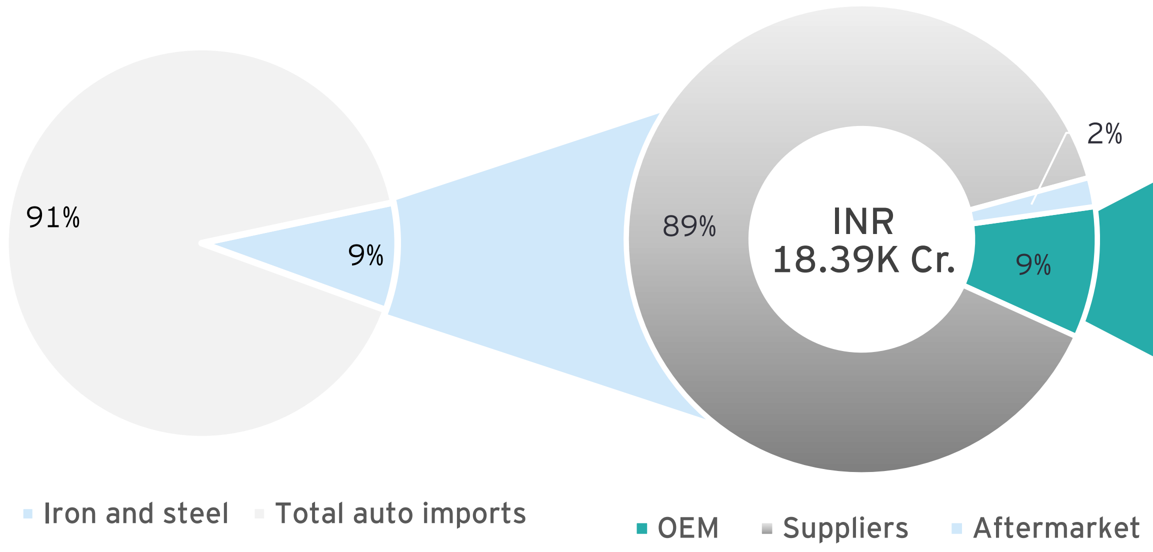
Iron & Steel : Category Snapshot FY21-22
Key Takeaways

INR 2.07 Lakh Cr.

Total Automotive Imports (FY22)

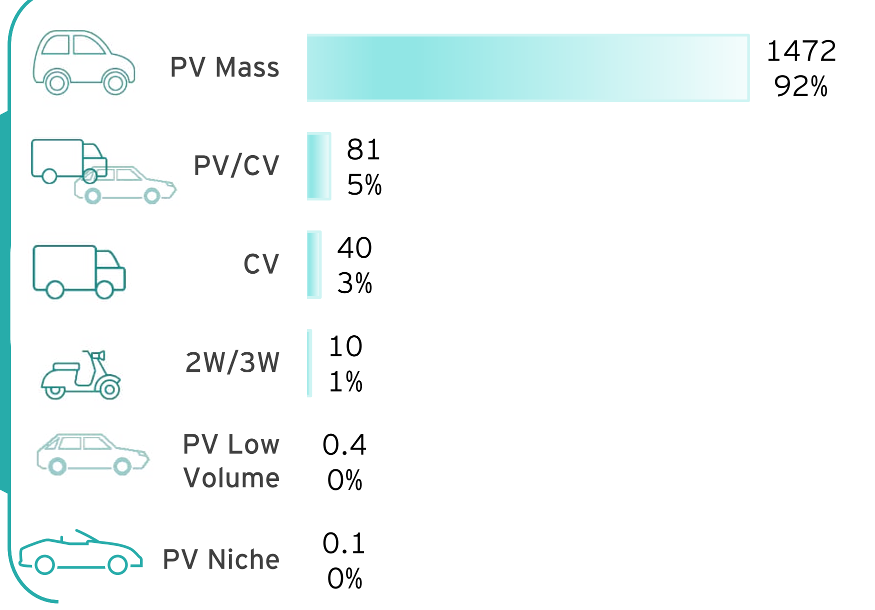
INR 18.39K Cr

Total Iron and Steel Imports (FY22)



Imports by Vehicle Category

(INR Cr.)



Suppliers (~90%) contribute to substantial imports of Iron & Steel

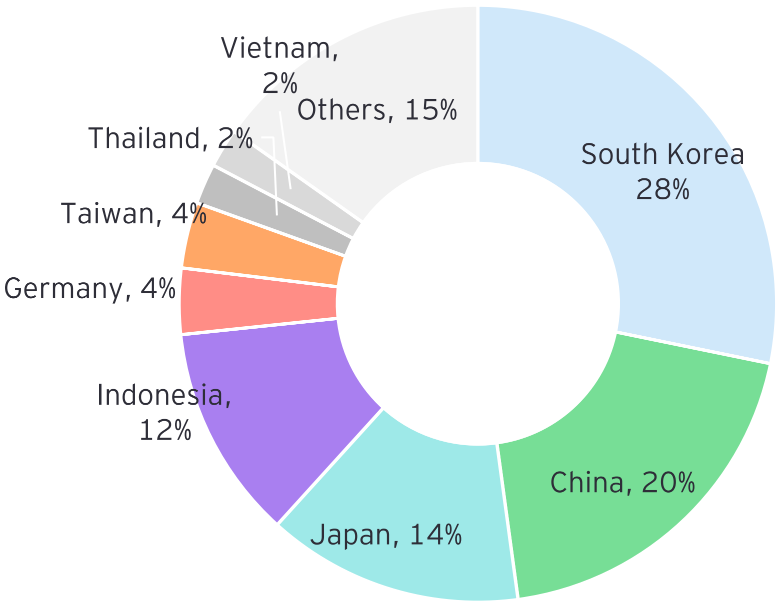
Among the OEMs, PV Mass alone contribute to 92% of the total imports.

~80-85% of Steel for Automotive consumption is produced domestically with Indian steel mills consistently working towards building capacity, capability & competitiveness to support auto requirements in terms of quality and quantity

Iron & Steel : Category Snapshot FY21-22

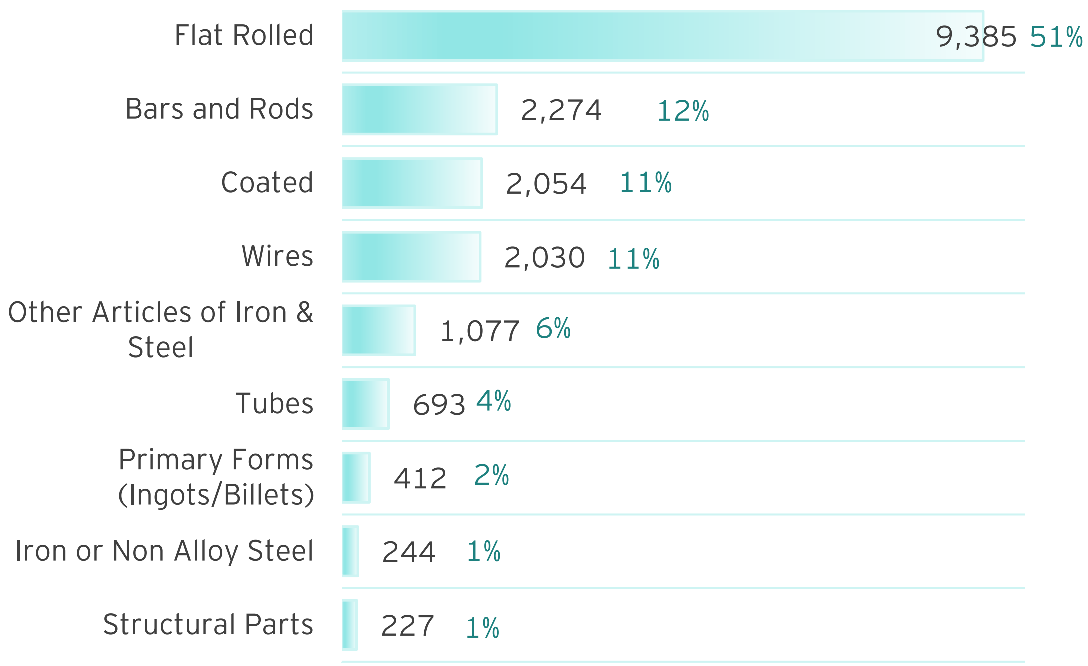
Key Takeaways

Import by Country of Origin



Components of Import

(INR Cr.)



Import by Country of Origin : Top 3 Countries

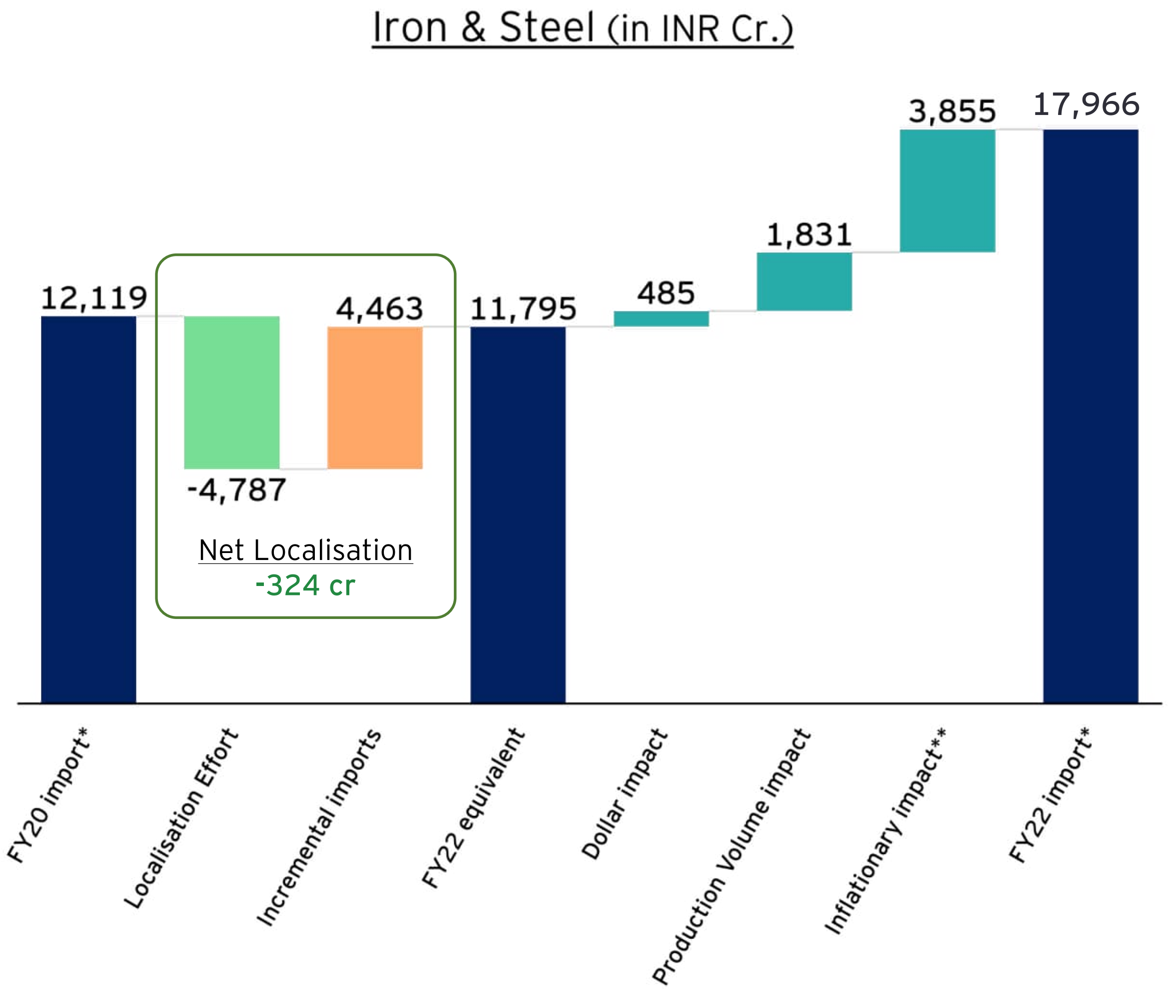
Korea 42%	Indo. 21%	Japan 13%
Japan 33%	China 18%	Germ. 10%
Korea 61%	Japan 33%	China 4%
China 51%	Korea 10%	Malay.. 7%
China 27%	Korea 10%	Italy 8%
China 25%	Italy 16%	Korea 7%
China 39%	Italy 12%	Thai. 9%
Korea 21%	China 21%	Japan 16%
Sweden 50%	Italy 27%	Canada 6%

Primary insights

Steel imports for automotive applications are majorly in certain special grades such as Ultra high tensile strength steel, coated steel, electrical steel etc.

Imports also occasionally happen due to capacity constraints in certain grades in the domestic steel mills

Iron and steel : Import value has been driven up by fluctuating commodity prices, supply chain shocks and increased demand of specialty grade steels



Subcategory	Key components localised in the last 2 years	Key components contributing to import#
Flat Rolled	Stainless steel for EATS applications,	Ultra high tensile steels, Galvanised steel, electric steel, Cold rolled - High tensile steel and
Structural Parts	_	High strength steel

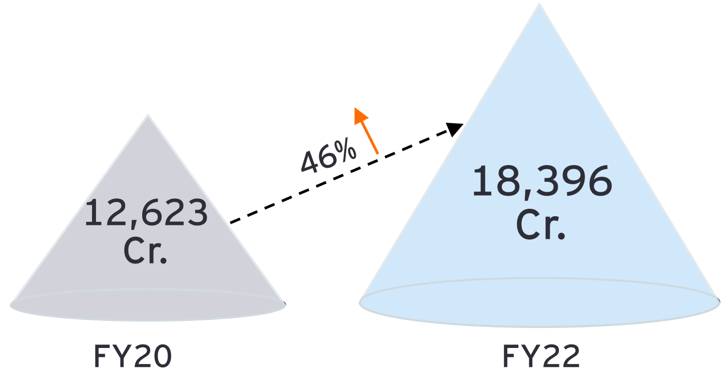
List of components is representative sample with substantial contribution to localisation/imports

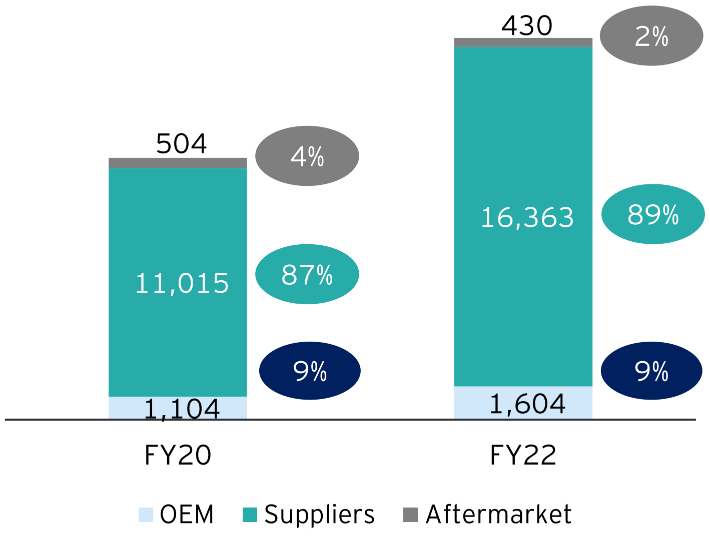
#imports due to consumer, technology and regulatory requirements

**Only OEM and OES imports considered*
***Includes pricing, insurance, freight*

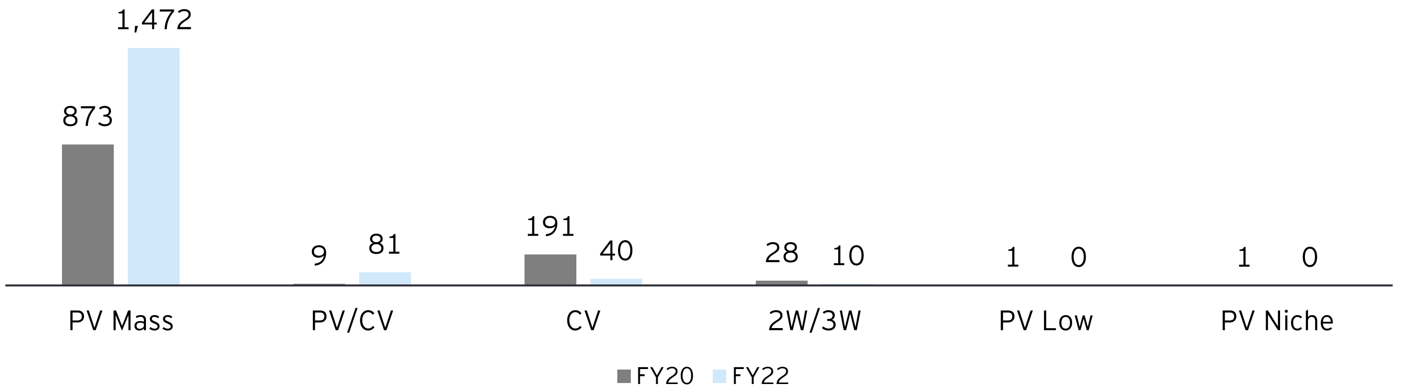
Comparative analysis (1/2): Import analysis at a supplier level and at a segment level

Total value of Iron & Steel (in Cr)

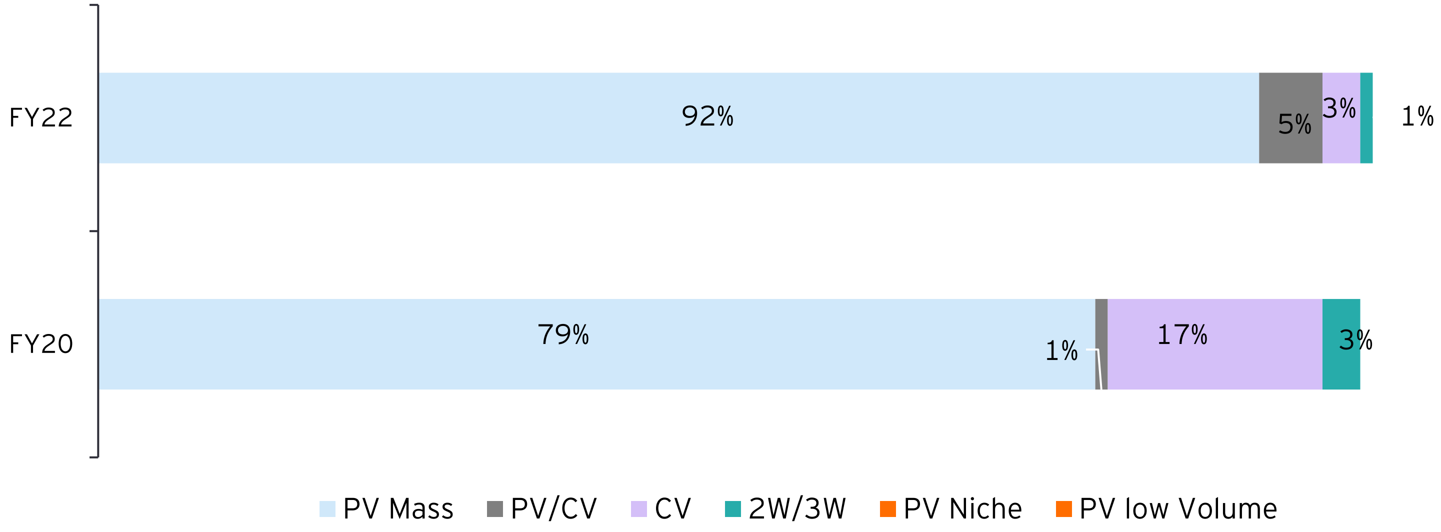




Total value of by OEM segments (in Cr)

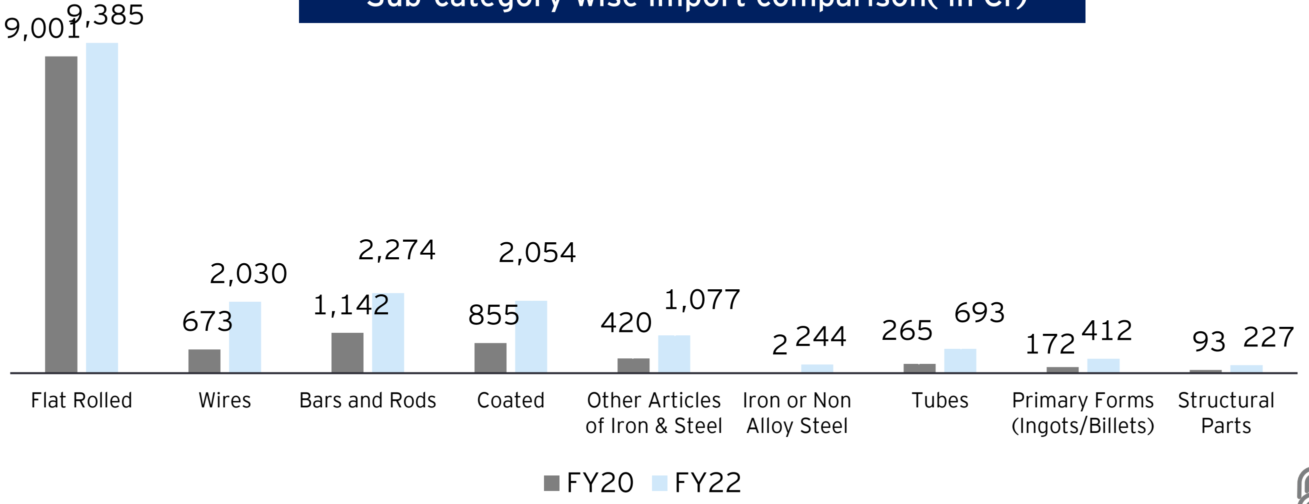


Share of OEM segments in OEM imports

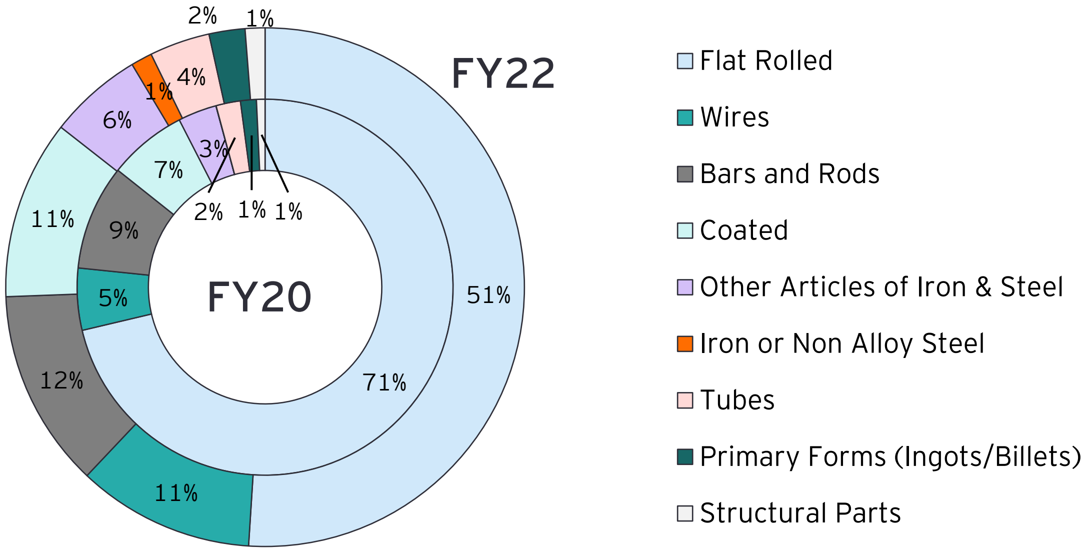


Comparative analysis (2/2): Sub category wise and country of origin comparison

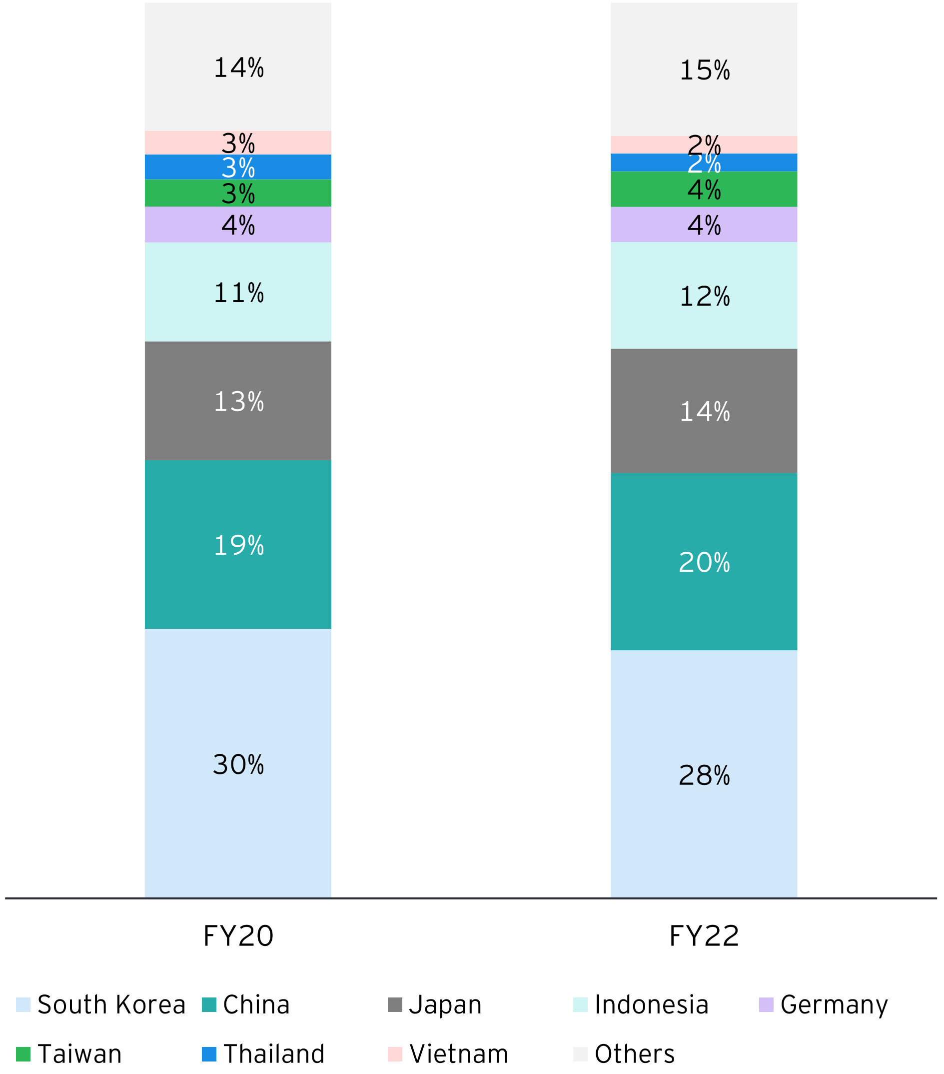
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



Country wise share of import comparison (%)



43 6-digit HS Code details for Iron & Steel

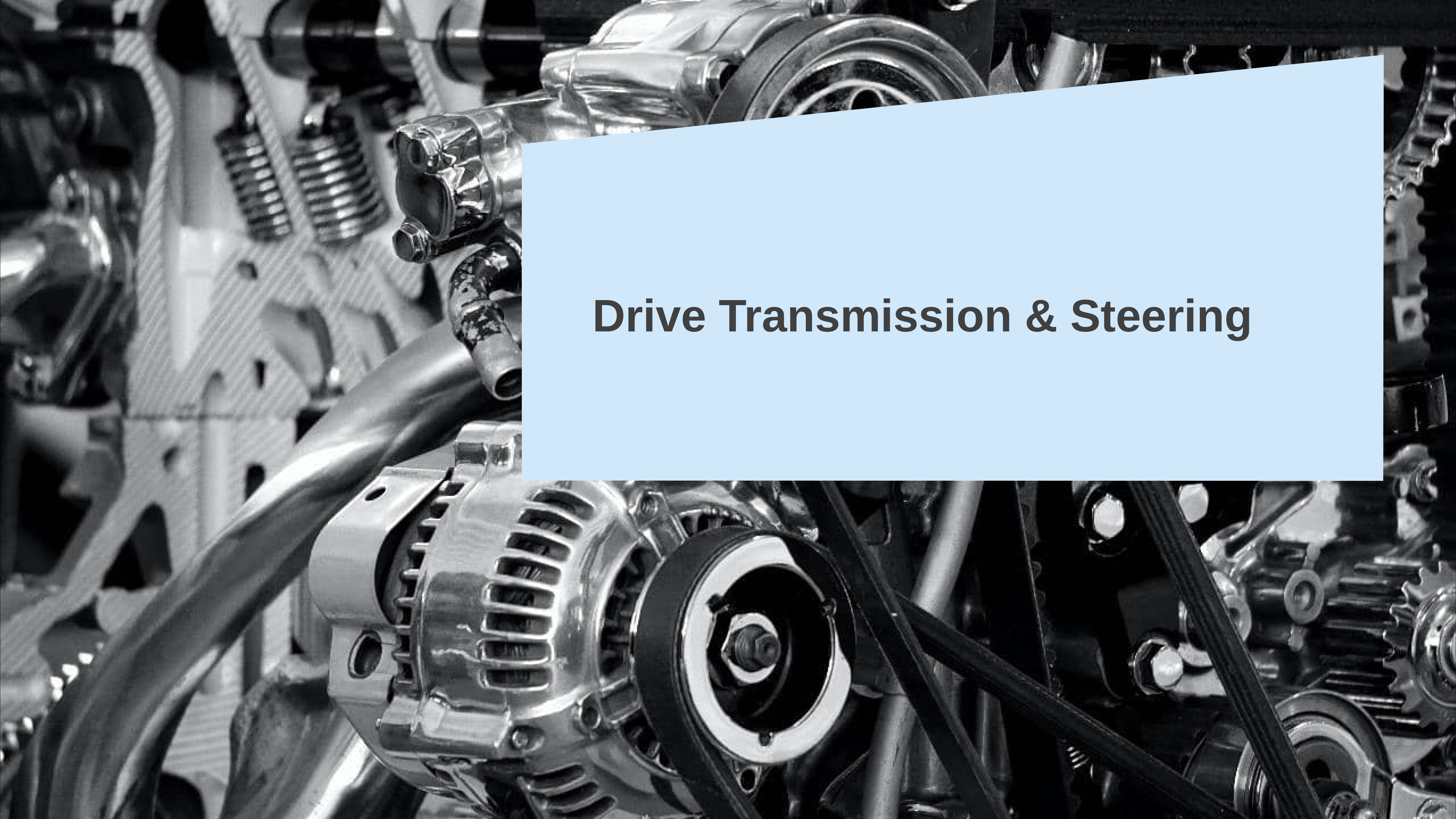
HS Code 6 Digit	Description
720826	SHEETS OF FLAT-ROLD PRDCTS IN COILS OF A THCKNS>= 3MM BUT < 4.75MM HOT-ROLD,PICKLD
720836	PLATES OF FLAT-ROLD PRDCTS IN COILS OF A THCKNS< 10MM HOT-ROLD,EXCL. PICKLD
720837	PLATES OF FLAT-ROLD PRDCTS IN COILS OF A THCKNS>=4.75 BUT< 10MM HOT-RLD,EXCL.PICKL
720838	OTHR FLAT-ROLD PRDCTS IN COILS OF A THCKNS>=3 BUT< 4.75MM HOT-RLD,EXCL.PICKL
720839	OTHR FLAT-ROLD PRDCTS IN COILS OF A THCKNS< 3 MM HOT-RLD,EXCL.PICKL
721049	OTHR PRDCTS OF IRON/NON-ALLOY STEEL OTHERWISE PLTD/COTD WTH ZINC
721069	FLT-ROLD PRDCTS OF IRON/NON ALOY STL PLTD OR COTD WTH OTHER ALOYS OF ALUMINIUM EXCL (EXCL ZINC ALLOY)
721260	FLAT, ROLLED, PRODUCTS
721710	WIRE OF IRON ON NON ALLOY STEEL : NOT PLATED OR COATED, WHETHER OR NOT POLISHED: OF A THICKNESS ABOVE 26 SWG
721730	WIRE OF IRON ON NON ALLOY STEEL : OF A THICKNESS ABOVE18 SWG BUT UPTO 26 SWG, PLATED OR COATED WITH OTHER BASE METALS: OF A THICKNESS ABOVE 26 SWG
721790	OTHER
721899	BILLETS

HS Code 6 Digit	Description
721912	FLAT-ROLLED PRODUCTS OF STAINLESS STEEL, OF A WIDTH OF 600 MM OR MORE - OF A THICKNESS OF 4.75 MM OR MORE BUT NOT EXCEEDING 10 MM
721913	HT-RLLD PRDCTS IN COILS OFTHCKNS >= 3 MM BT < 4.75 MM
721933	OTHR COLD ROLD PRDCTS OF THCKNS >1MM BUT < 3MM N.E.S.
721934	COLD ROLD PRDCTS OF STAINLESS STEEL OF A THCKNS >=0.5MM BUT < 1MM OF OTHR TYPES
722211	BARS, RODS, STAINLESS
722220	BARS, RODS, STAINLESS
722230	OTHERS
722300	WIRE, STAINLESS, STEEL
722410	INGOTS AND OTHER PRIMARY FORMS
722490	OTHER ALLOY STEEL IN INGOTS OR OTHER PRIMARY FORMS; SEMI-FINISHED PRODUCTS OF OTHER ALLOY STEEL: OTHER
722519	FLAT, ROLLED, PRODUCTS
722530	OTHER HOT-ROLLED PRODUCTS IN COILS
722550	COLD-ROLLED,OF THCKNS <3MM
722592	FLT ROLD PRDCTS OF OTHER ALLOY STEEL OTHRWSE PLTD/COTD WTH ZINC
722790	COLD HEADING QUALITY

43 6-digit HS Code details for Iron & Steel

HS Code 6 Digit	Description
722810	BARS, RODS, HIGH
722830	OTHERS
722850	OTHERS
722880	OTHER HOLLOW DRILL BARS AND RODS
730490	OTHR SEAMLESS TUBES/PIPES AND HOLOW PORFILES
730799	NON-GALVANISED
730890	OTHER STRUCTURE AND PARTS OF STRUCTURES OF IRON AND STEEL(EXCL FLOATING STRUCTURES)
730900	RESERVRS,TANKS,VATS ETC.OF IRN/STL N.E.S.
731029	OTHERS
731210	WIRE ROPES,GALVANISED , OTHERS(E.G.TRANSMISSION BELTING)
731290	PLAITED BAND,SLINGS AND LIKE OF IRON OR STEEL NT ELECTRCALLY INSULATED

HS Code 6 Digit	Description
731519	PARTS OF ARTICULATED LINK CHAIN
732510	OTHR ARTICLES OF NON-MALLEABLE CAST IRON
732599	OTHER CAST ARTICLES OF IRON OR STEEL N.E.S



Drive Transmission & Steering

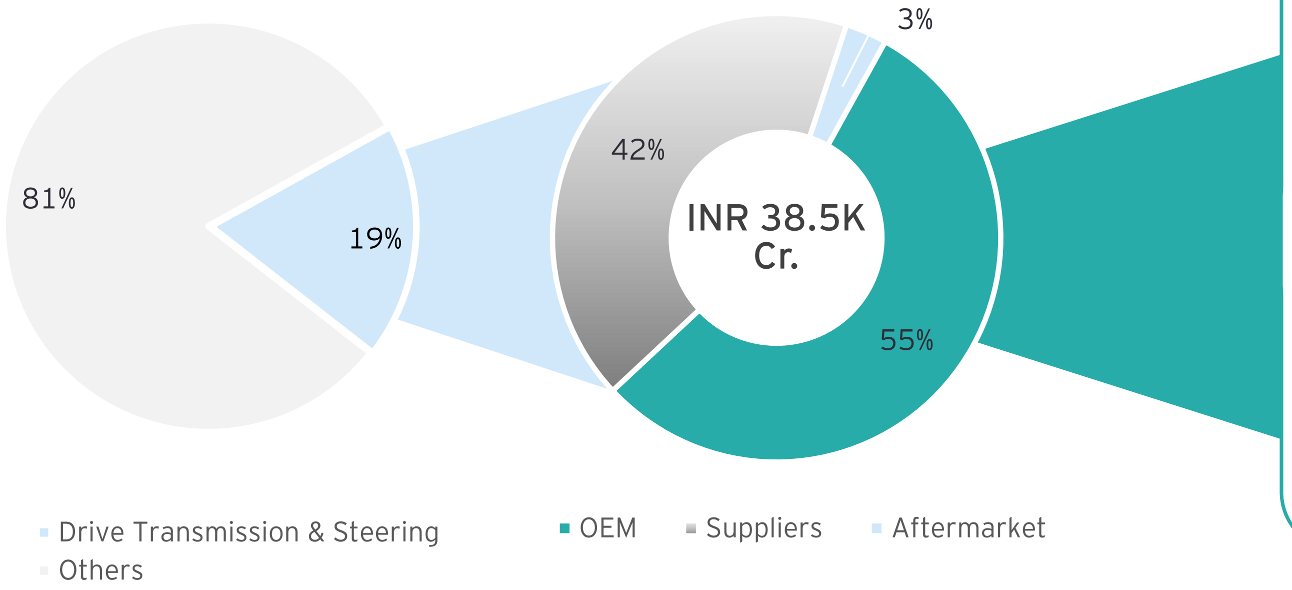
Drive Transmission & Steering : Category Snapshot FY21-22
Key Takeaways

INR 2.07 Lakh Cr.

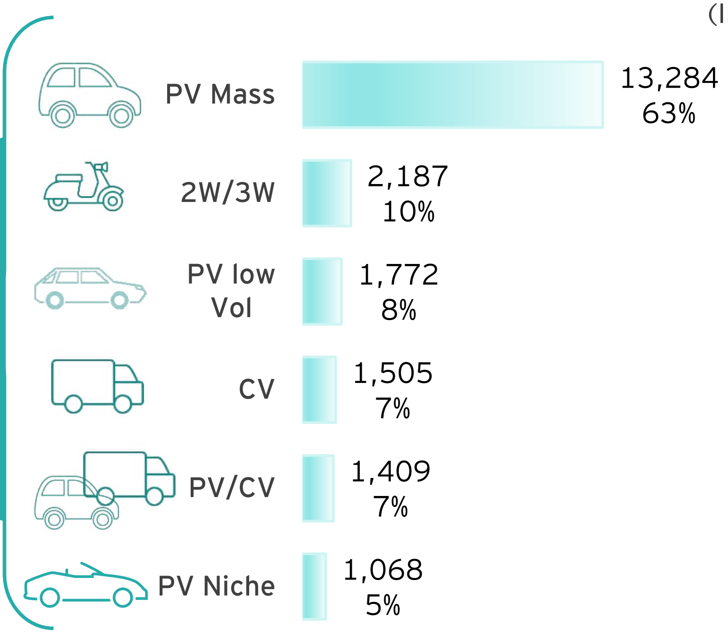
Total Automotive Imports (FY22)

INR 38.5K Cr

Total Drive Transmission & Steering Imports (FY22)



Imports by Vehicle Category (INR Cr.)



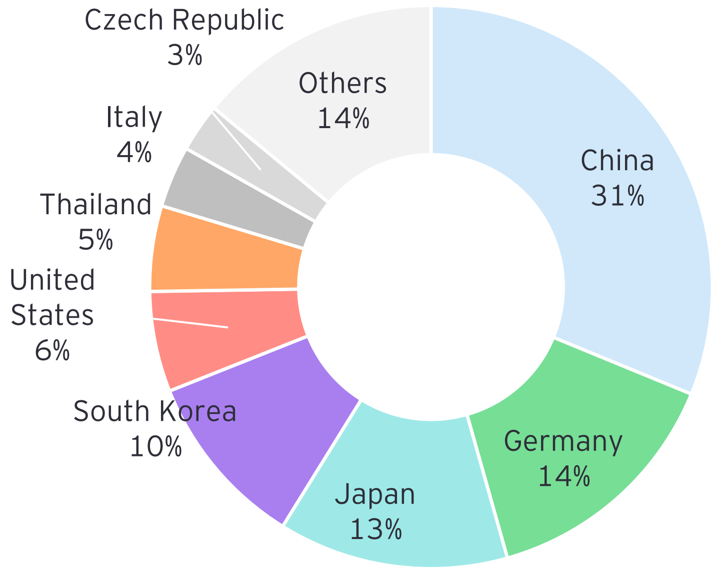
OEM's (55%) contribute to substantial imports of Drive Transmission & Steering Parts

Among the OEMs, PV Mass alone contribute to 63% of the total imports

Rapid rate of adoption of comfort features like AT and its various classifications and forms of EPS has driven OEMs and suppliers to resort to imports

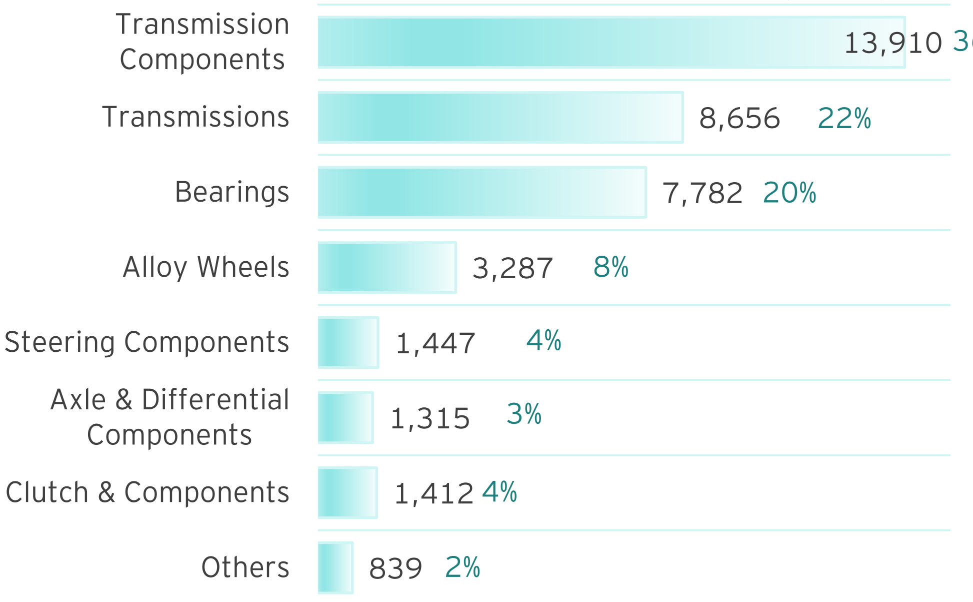
Drive Transmission & Steering : Category Snapshot FY21-22
Key Takeaways

Import by Country of Origin



Components of Import

(INR Cr.)



Import by Country of Origin : Top 3 Countries

China 29%	Germ. 19%	Japan 9%
Japan 32%	Korea 26%	USA 10%
China 42%	Germ. 16%	Japan 11%
China 80%	Indo. 5%	Japan 4%
China 40%	Japan 14%	Thai. 13%
China 27%	Germ. 16%	Thai. 15%
Korea 21%	China 20%	Germ. 19%
China 21%	Japan 16%	Germ. 14%

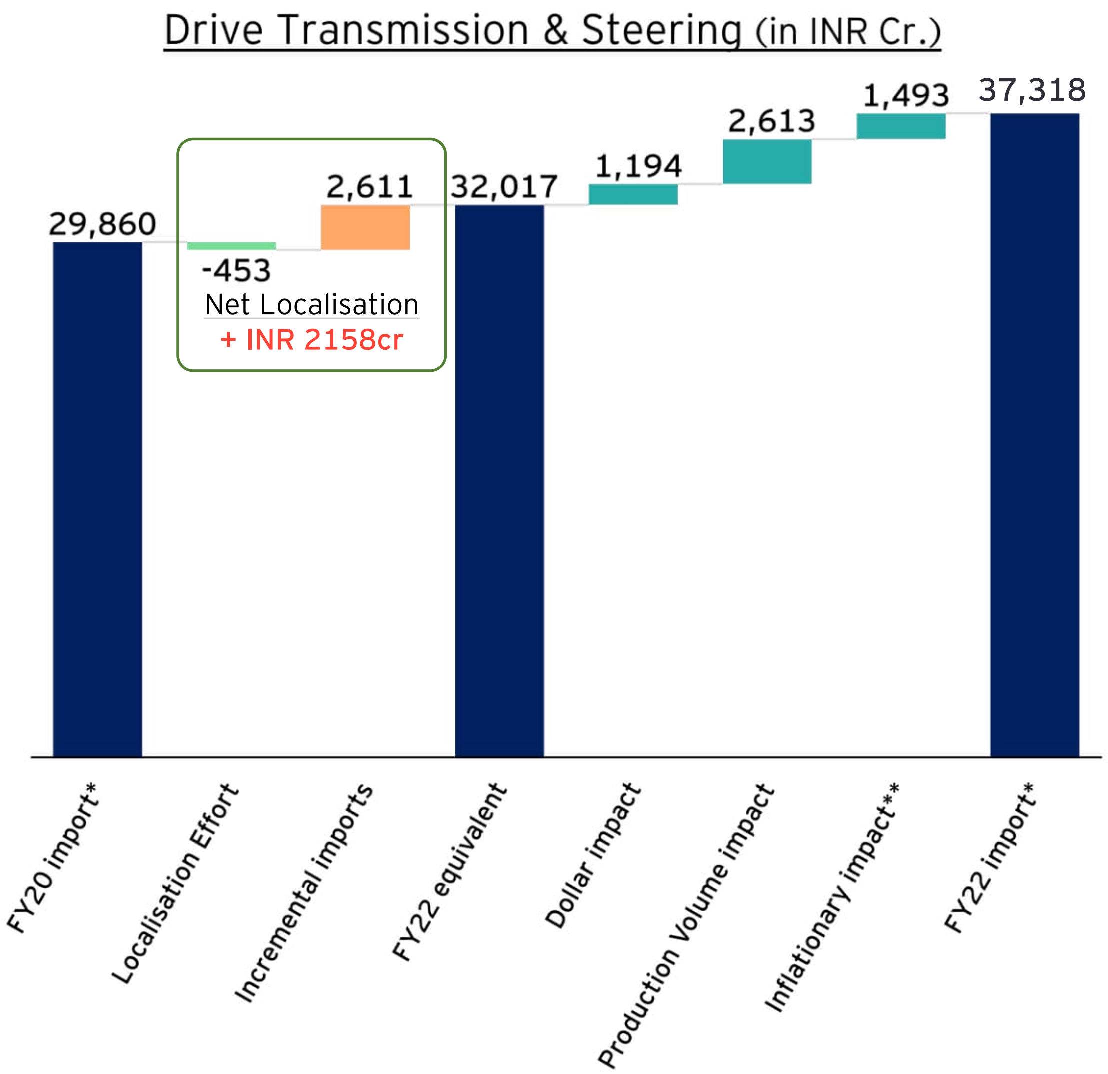
Primary insights

Consistent efforts of OEMs and suppliers culminated in localising AMT system, alloy wheels and EPS parts

AT technology is concentrated with few global players and OEMs are forging partnerships to bring in innovative solutions to the Indian market

AT manufacturing facilities require annual demand upwards of **500k units per annum** which was a **barrier for setting up local units**. However, with rising adoption of AT it is set to change.

Drive Transmission and Steering : Localisation has been minimal due to a rising trend of increased adoption of automatic transmission and its related components



*Only OEM and OES imports considered
**Includes pricing, insurance, freight

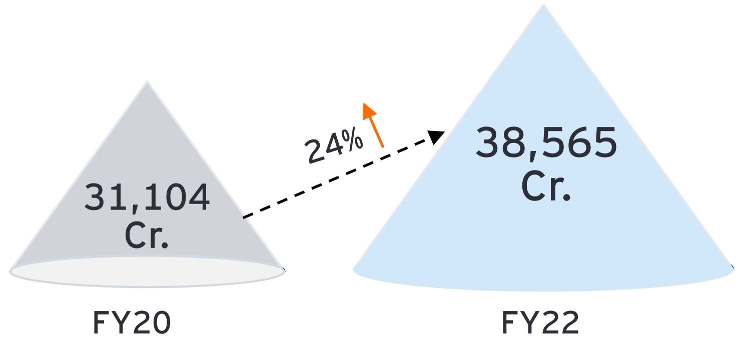
Subcategory	Key components localised in the last 2 years	Key components contributing to import#
Transmissions and Transmission components	AMT system and child parts	Automatic transmission systems, Torque converter, Higher precision gears and shafts and other child components
Steering Components	EPS motor yoke, gear reduction , Steering wheel armature, Steering column	Power steering motor assembly
Alloy Wheels	Alloy wheels for PV segment	Alloy wheels for 2W segment

List of components is representative sample with substantial contribution to localisation/imports

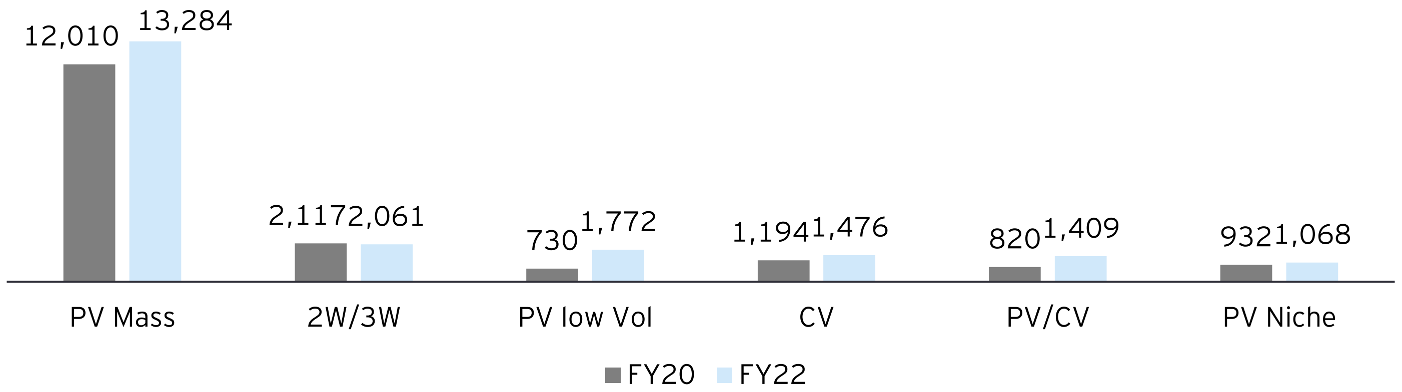
#*imports due to consumer/ technology/ regulatory requirements*

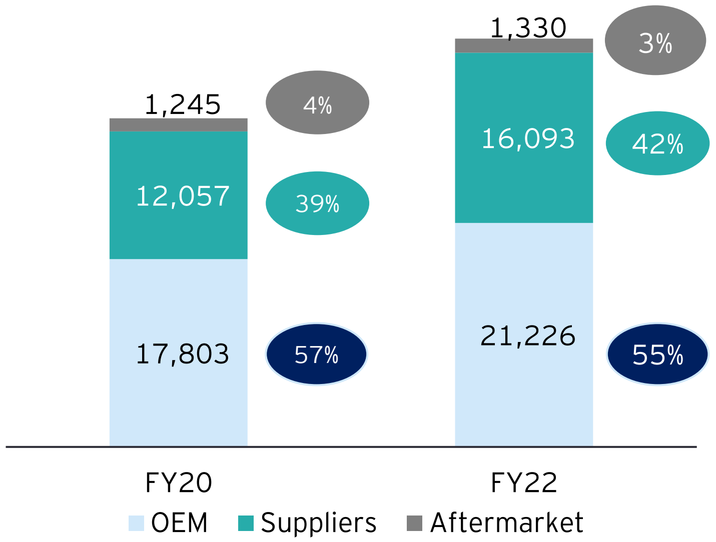
Comparative analysis (1/2): Import analysis at a supplier level and at a segment level

Total value of Drive transmission and steering imports(in Cr)

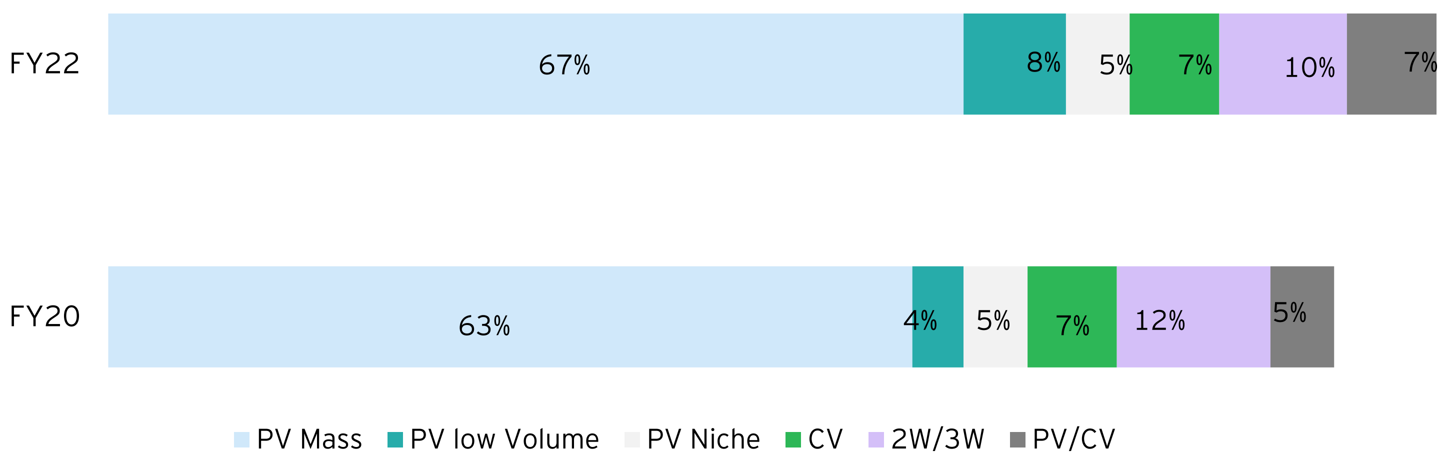


Total value of by OEM segments (in Cr)



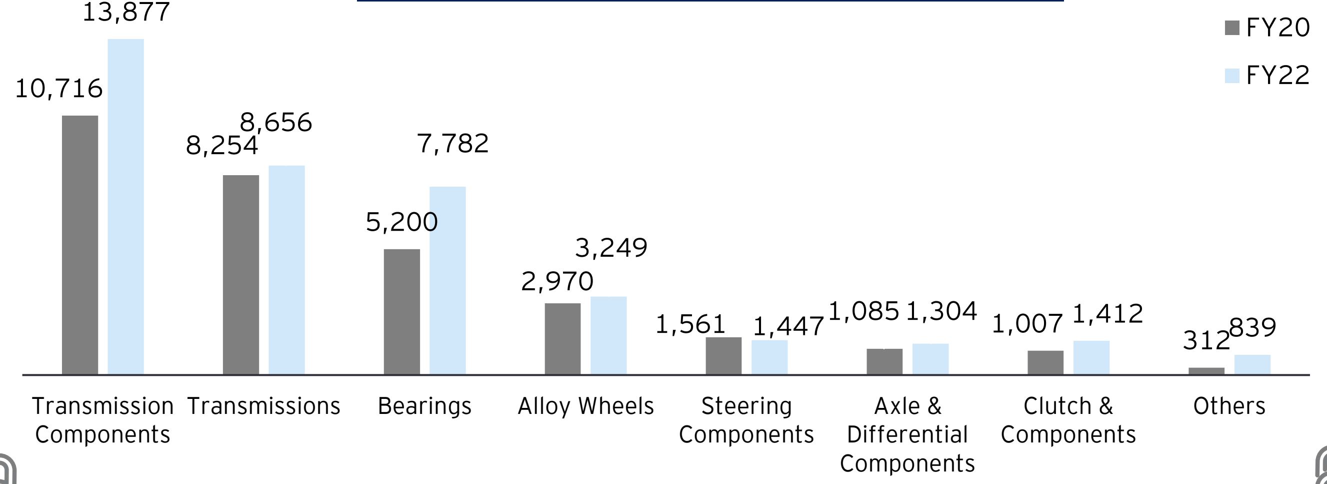


Share of OEM segments in OEM imports

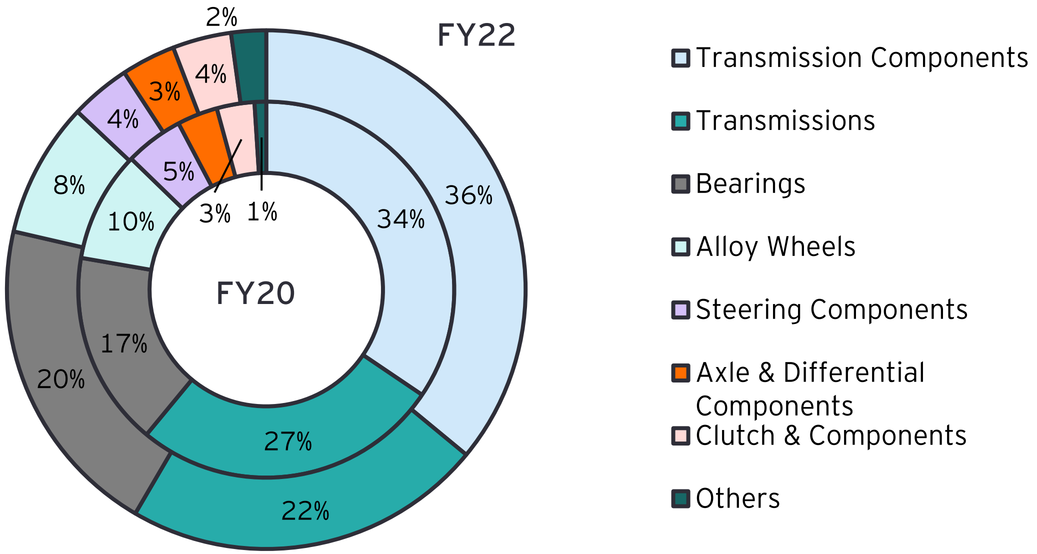


Comparative analysis (2/2): Sub category wise and country of origin comparison

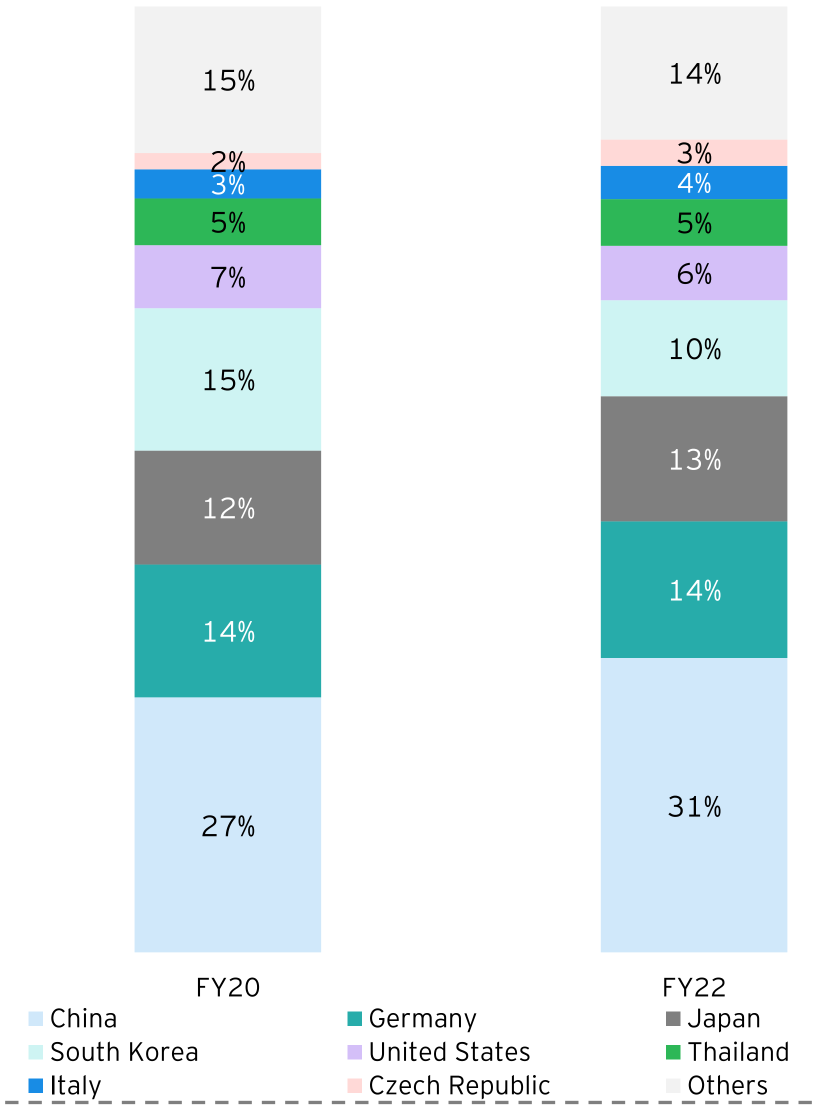
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



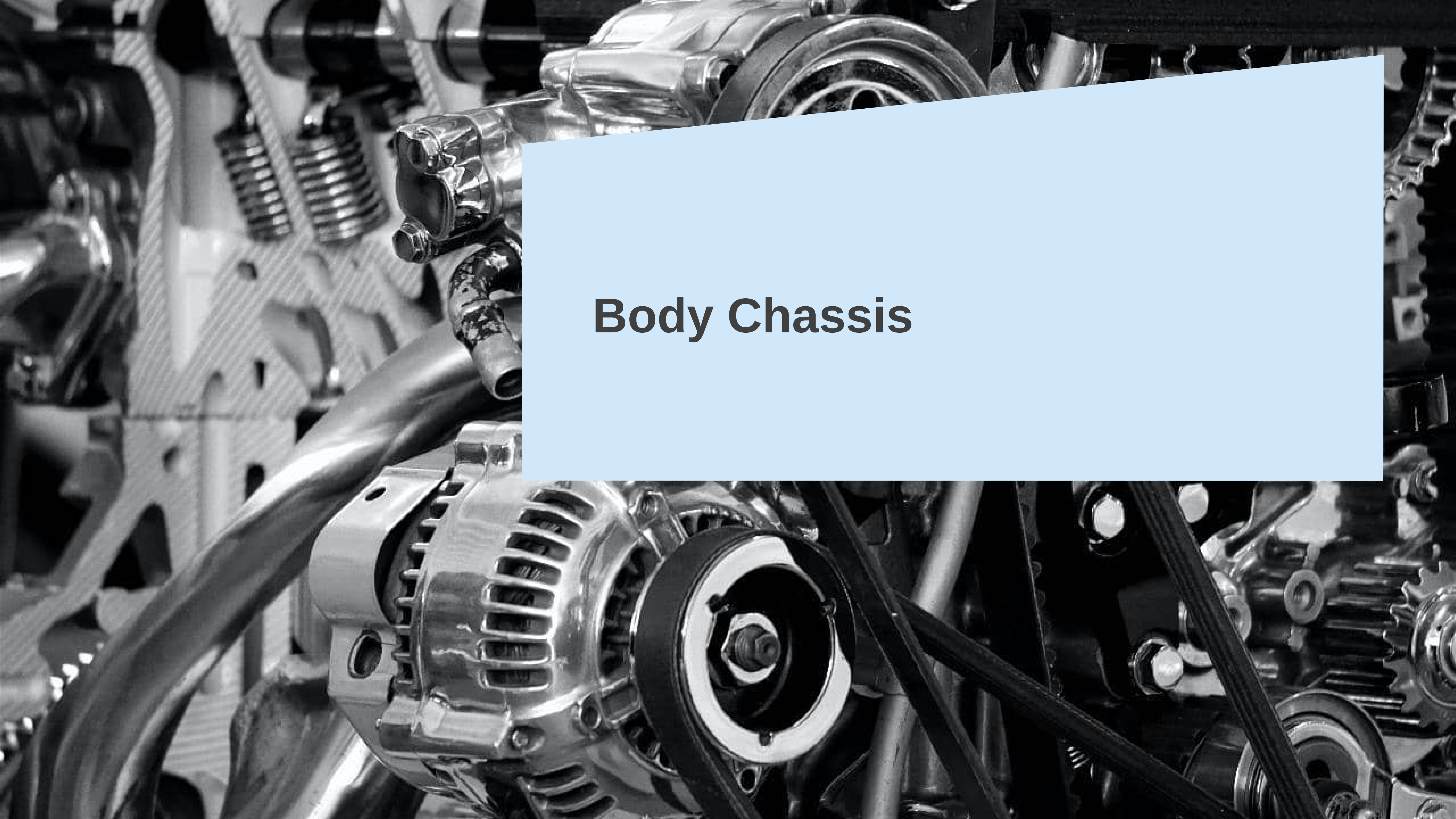
Country wise share of import comparison (%)



27 6-digit HS Code details for Drive Transmission and Steering

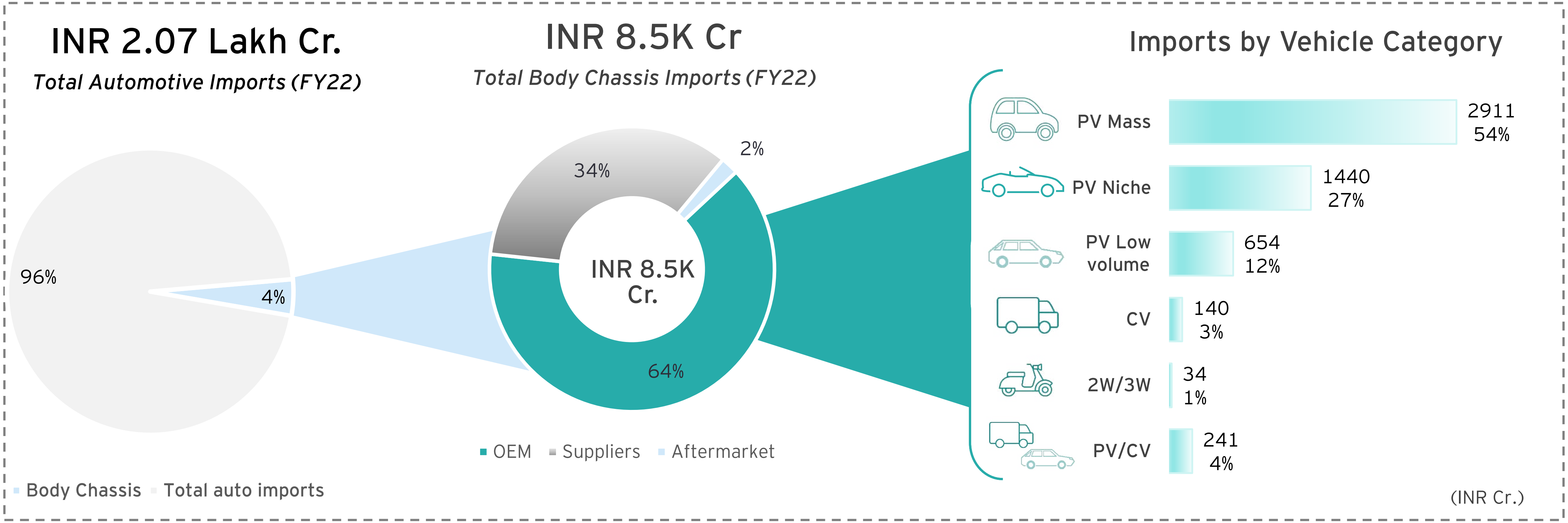
HS Code 6 Digit	Description
848120	VALVES FR OLEOHYDRAULIC/PNEUMATIC TRNSMSNS
841221	LINEAR ACTING (CYLINDERS),HYDRAULIC POWER ENGINES AND MOTORS
841290	PARTS OF OTHER ENGINES AND MOTORS
848210	ADAPTER BALL BEARINGS(RADIAL TYPE) <=50MM OR 2 INCHES BORE DIAMETER
848220	TAPPERED ROLLER BEARINGS(RADIAL TYPE) <=50 MM OR 2 INCHES BORE DIAMETER
848230	SPHERICAL ROLLER BEARINGS
848240	NEEDLE ROLLER BEARINGS
848250	RADIAL TYPE ROLLER BEARINGS,EXCL TAPERED, <=50MM OR 2 INCHES BORE DIAMETER
848280	OTHR BALL OR ROLLER BEARINGS INCL CMBIND BALL/RLLR BEARNGS
848291	NEEDLES
848299	OTHER BALL/RLR BEARNG PARTS
848320	BEARNG HOUSNG,INCORPORTNG BALL/RLLR BEARN
848330	BEARING HOUSUNGS,NOT INCORPORATING BALL OR ROLLER BEARINGS;PLAIN SHAFT BEARINGS
848340	GEARS AND GEARNG,EXCL TOOTHD WHEELS,TRNSMSN ELMNTS PRSNTD SEPRTLY;BALL SCRWS;GEAR BOXSAND SPEED CHNGRS,INCL TORQUE C

HS Code 6 Digit	Description
848350	PULLEYS,POWER TRANSMISSION
848360	FLEXIBLE COUPLING
848390	PARTS OF THE ITEMS OF HDG 8483
848410	ASBSTS MTLC PCKNGS AND GSKTS(EXCL GSKTS OF ASBSTS BOARD REINFRCD WTH MTL GAUZE/WIRE)
870840	GEAR BOXES
870850	DRIVE AXLES WITH DIFFERENTIAL W/N PROVIDEDWITH OTHER TRANSMISSION COMPONENTS
870893	CLUTCHES AND PRTS THEREOF
870894	STERNG WHEELS,STERNG COLUMNS AND STERNG BOXS
870899	OTR PRTSANDACCSSRS OF VHCLS OF HDG 8701-8705
870990	PARTS OF THE VEHICLES OF HDG 8709
871420	OF CARRIAGES FOR DISABLED PERSONS: MECHANICALLY PROPELLED
871496	PEDALS AND CRANK-GEAR, AND PARTS THEREOF
871410	SADDLES



Body Chassis

Body Chassis : Category Snapshot FY21-22
Key Takeaways



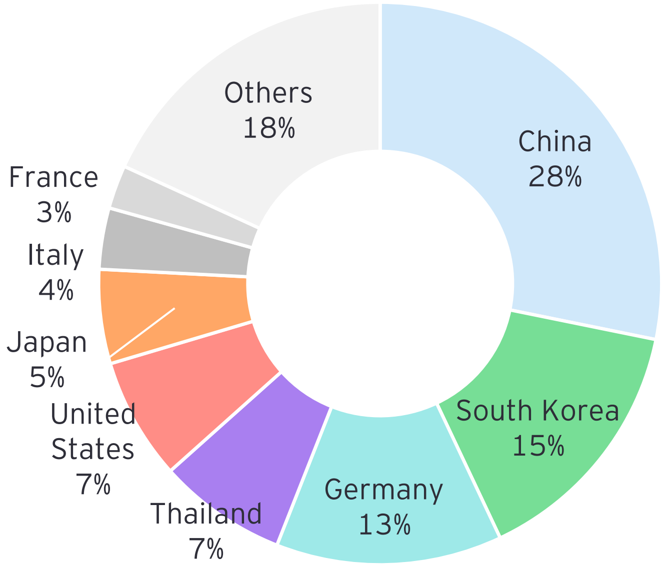
OEM's contribute (64%) to substantial imports of Body Chassis Components

Among the OEMs, PV Mass alone contribute to 54% of the total imports.

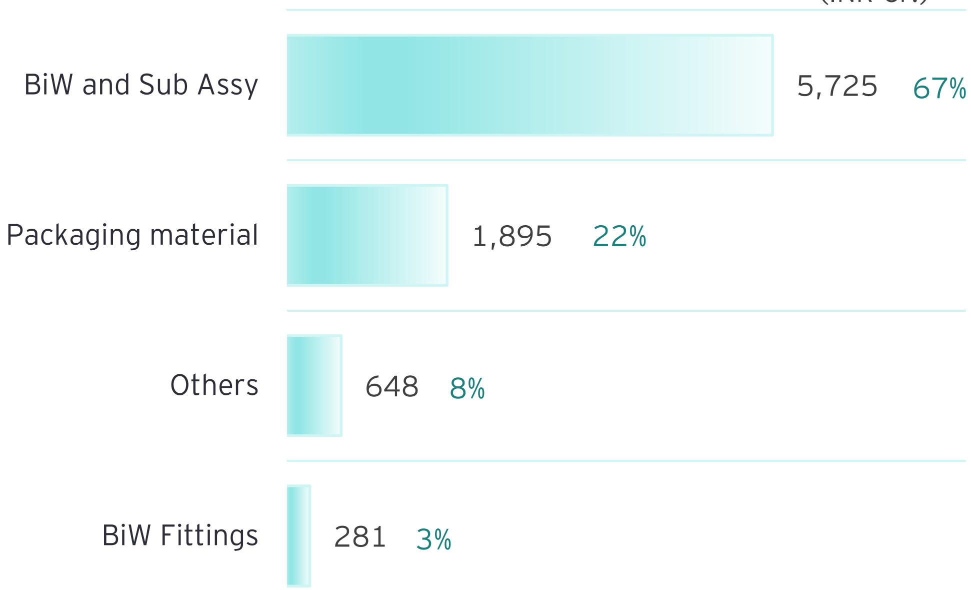
This category is defined by body-in-white parts and other structural subassemblies such as sunroofs.

Body Chassis : Category Snapshot FY21-22
Key Takeaways

Import by Country of Origin



Components of Import



Import by Country of Origin : Top 3 Countries

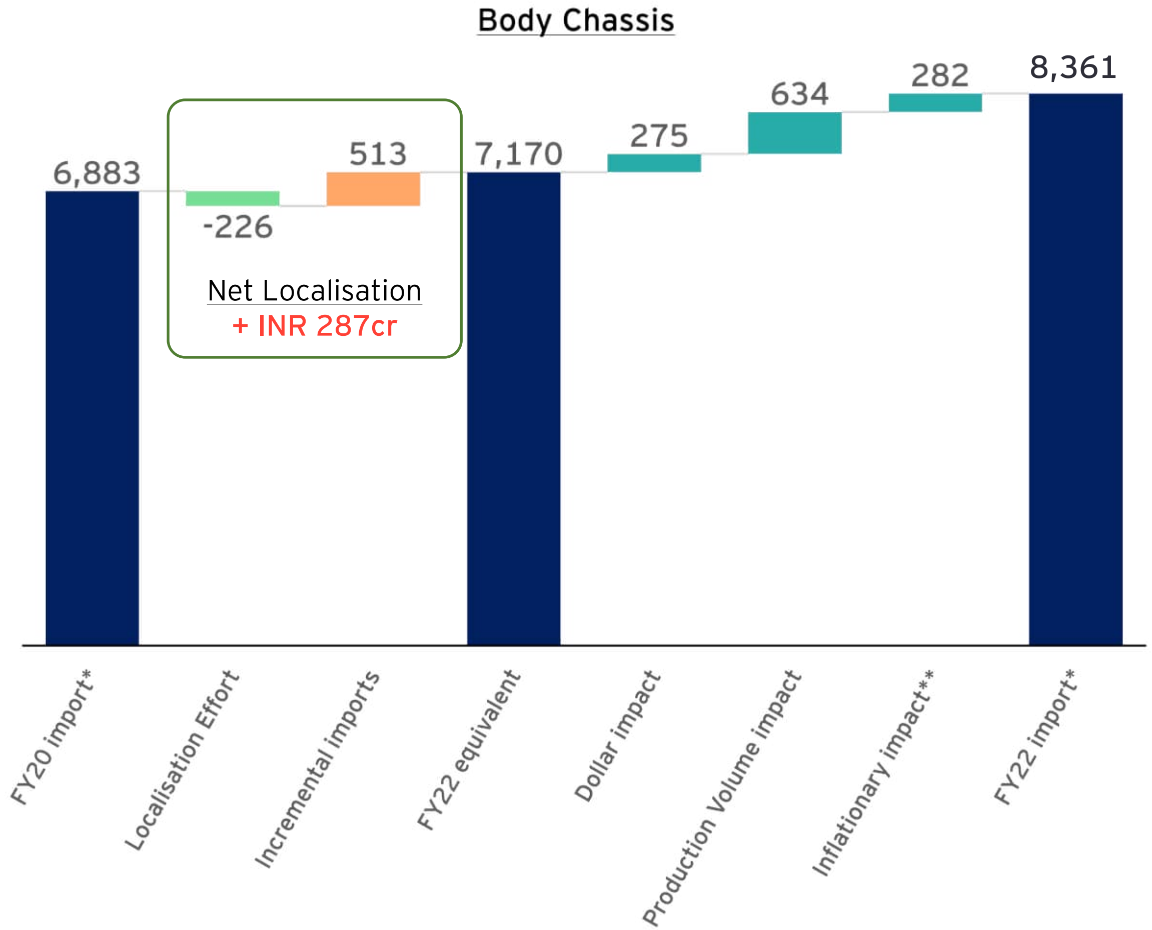
China	Korea	Germ.
25%	22%	20%
China	Japan	Vietnam
26%	9%	7%
China	Korea	Germ.
29%	19%	10%
Korea	China	Germ.
28%	22%	14%

Primary insights

Imports in BiW parts are seen in niche and premium segments but steps are being taken to address them through local steel procurement and development of stamping suppliers

Sunroof assemblies, which are enjoying high popularity among customers, are on the agenda of localisation for major OEMs and global suppliers have set up facilities to support the same

Body Chassis : Increased adoption of features such as sunroofs and electrically adjustable ORVMs have negated the impact of localisation efforts in the category



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
BiW Fittings	Miscellaneous brackets, tabs, holders, Door latches	Mountings for sensors and clamp assemblies for critical applications	
BiW and Sub Assy	Sheet metal parts, body panels	Sunroof assemblies, Electrically adjusted ORVM	Sunroof systems have emerged as an important category with adoption increasing to 10-12 % in SUV's and 2-3% in sedans from negligible adoption rates

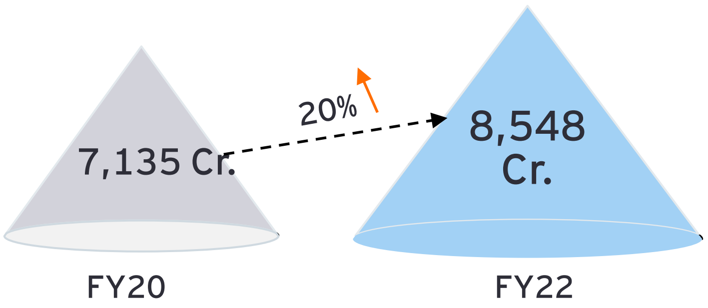
List of components is representative sample with substantial contribution to localisation/imports

*Only OEM and OES imports considered
**Includes pricing, insurance, freight

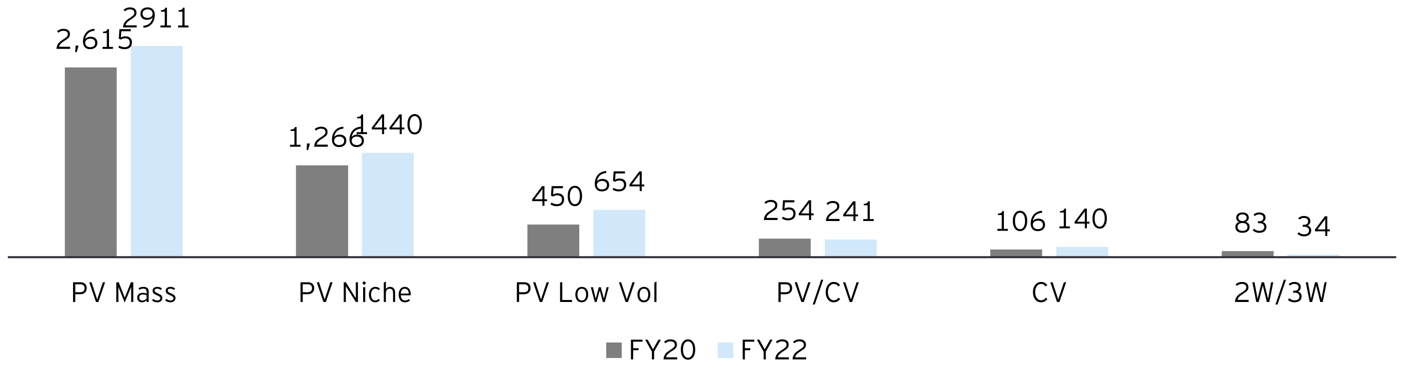
#imports due to consumer/ technology/ regulatory requirements

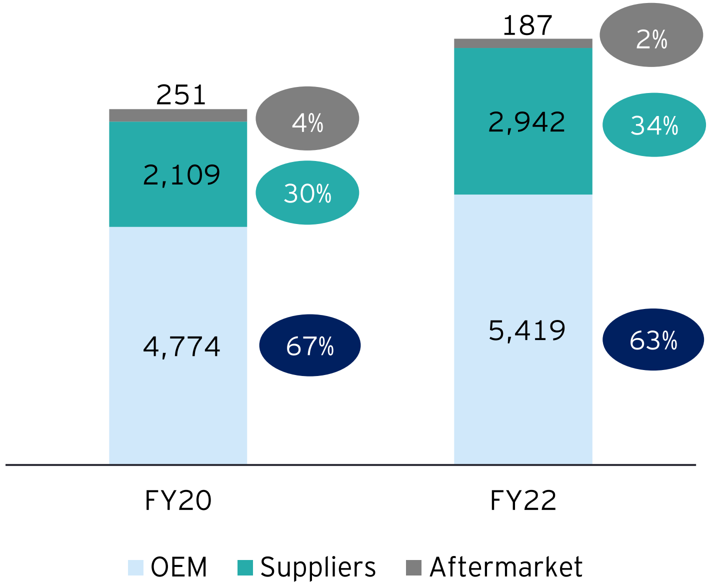
Comparative analysis (1/2): Import analysis at a supplier level and at a segment level

Total value of Body Chassis imports (in Cr)

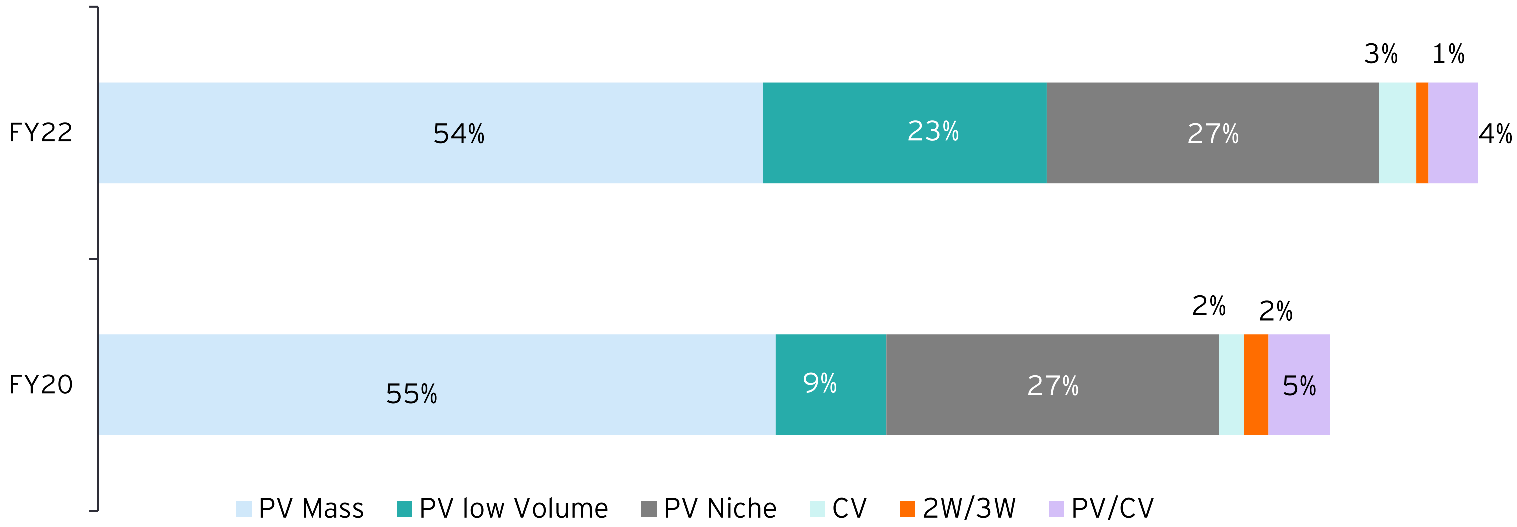


Total value of by OEM segments (in Cr)



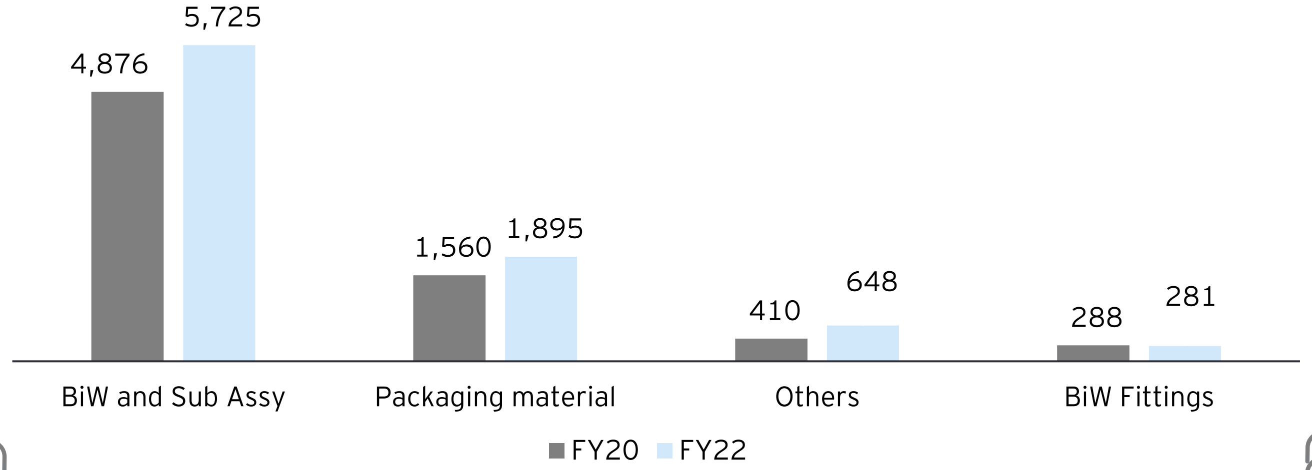


Share of OEM segments in OEM imports

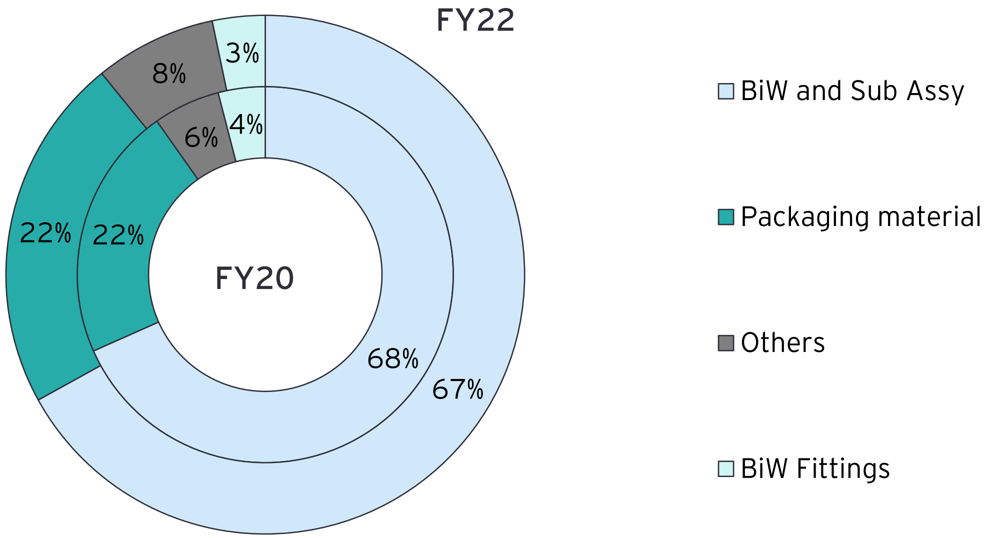


Comparative analysis (2/2): Sub category wise and country of origin comparison

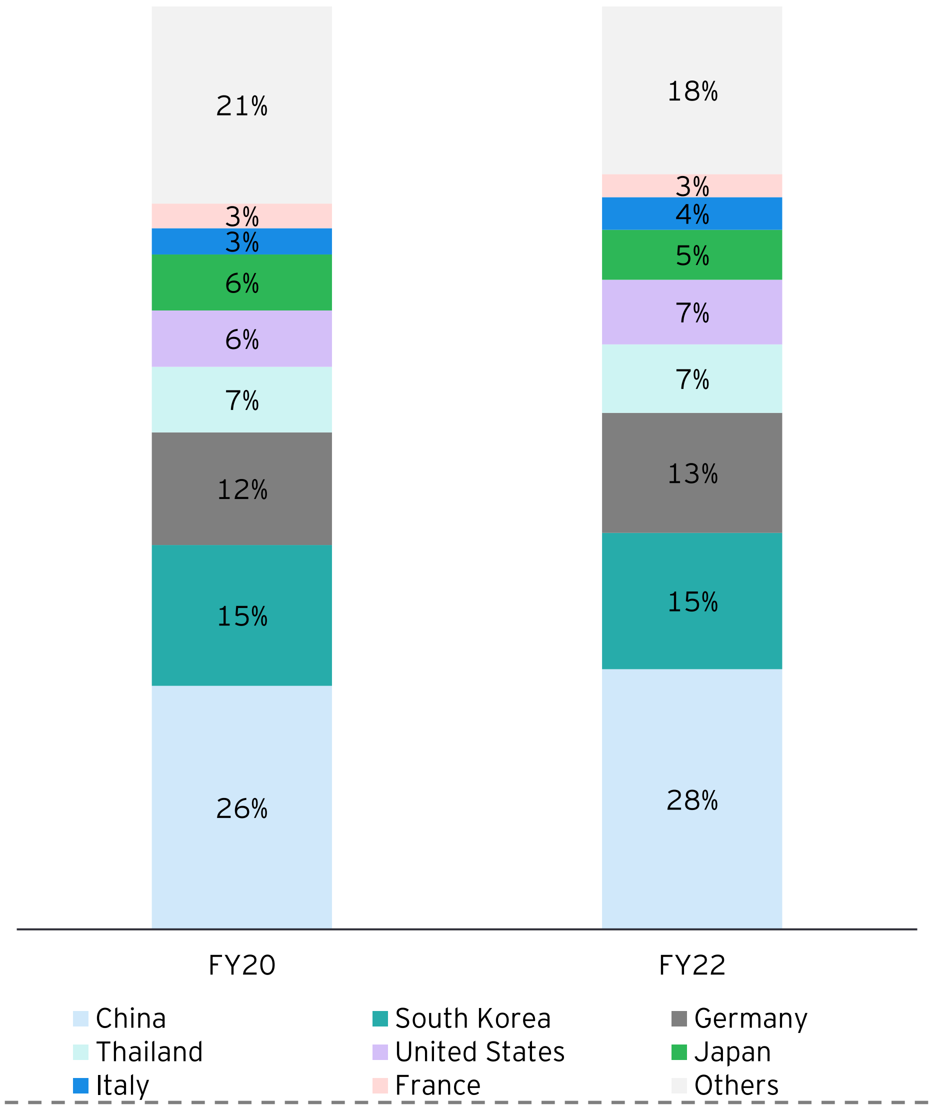
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



Country wise share of import comparison (%)



15 6-digit HS Code details for Body/Chassis

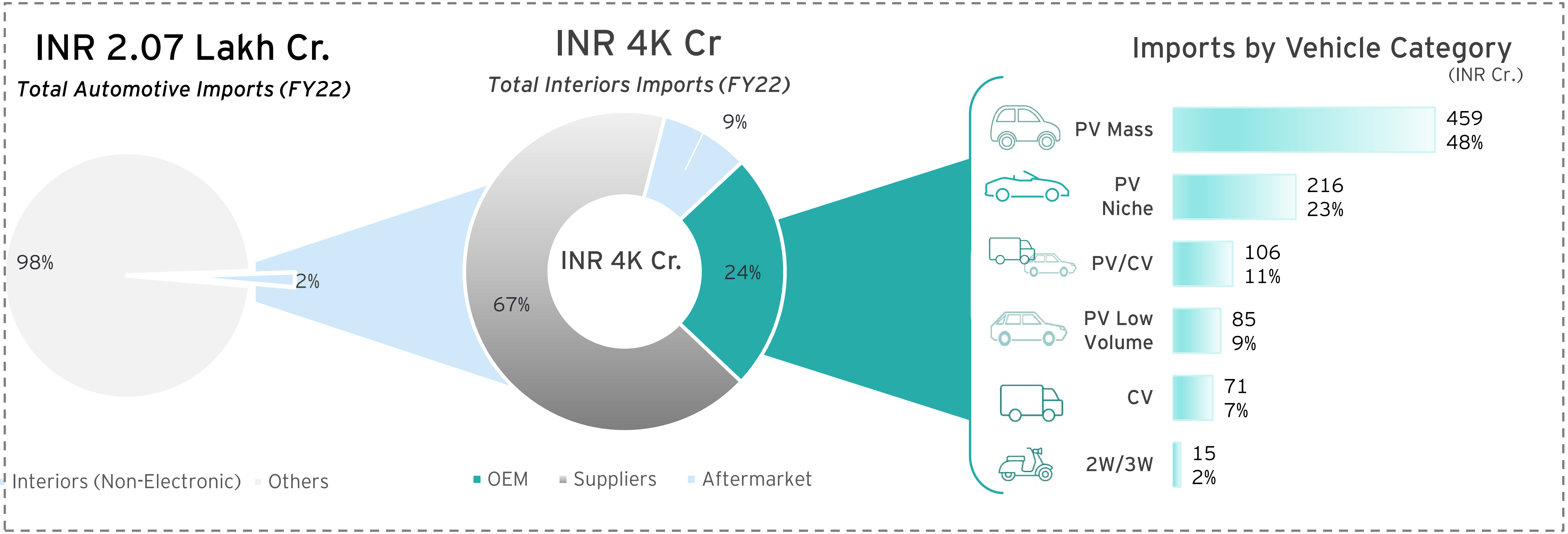
HS Code 6 Digit	Description
730721	FLANGES OF STAINLESS STEEL
731511	ROLLER CHAIN
732619	OTHERS OF OTHER ARTICLES OF FORGED OR STAMPED BUT NOT FURTHER WORKED
732690	ALL OTHER ARTICLES OF IRON/STEEL NES OTHER STEERING OR RUDDER EQUIPMENT FOR SHIPS AND BOATS, N.E.S.
830120	LOCKS OF A KIND USED FOR MOTOR VEHICLS
830230	CURVE DRIVE STAKES
870600	CHASSIS FITTED WITH ENGINES, FOR THE MOTOR VEHICLES OF HEADINGS 8701 TO 8705 - FOR THREE WHEELED VEHICLES

HS Code 6 Digit	Description
870710	BODIES FOR VEHICLS OF HDG NO 8703
870790	OTHER BODIES
870810	BUMPERS ETC FOR OTHR VHCLS BUMPERS ETC FOR TRACTORS
870821	SAFETY SEAT BELTS
870829	OTHR PRTS AND ACCSSRS OF BODIES(INCL CABS)
871491	FRAMES,FORKS AND PRTS
871492	OTHERS
871690	PARTS AND ACCESSORIES OF TRAILERS , PRTS AND ACSRS OF OTHR VHCL NT MCHNCLY PRPLD

Interiors (non-electronics)

Interiors (Non-electronic) : Category Snapshot FY21-22

Key Takeaways



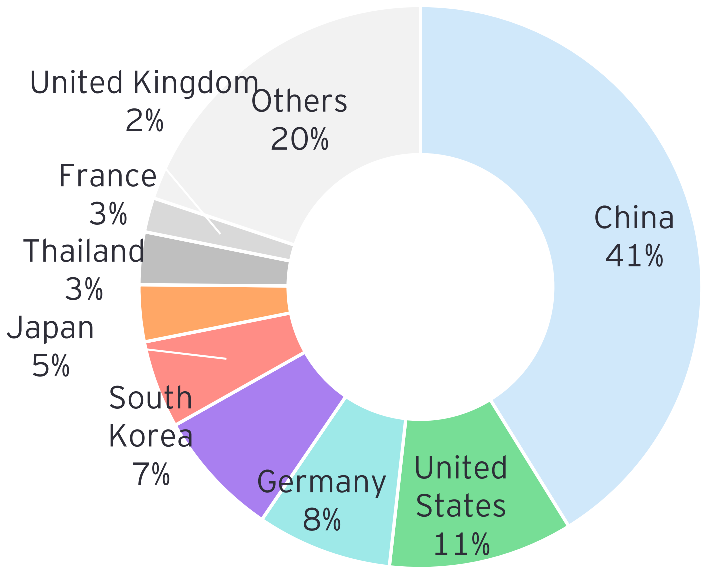
Suppliers contribute (67%) to substantial imports of Interiors (Non-Electronic)

Among the OEMs, PV Mass alone contribute to 48% of the total imports

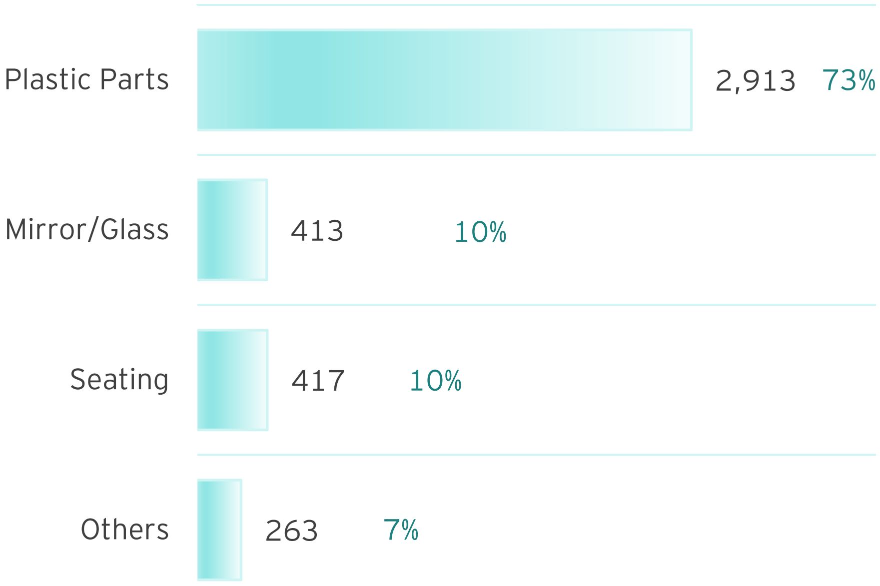
This category witnesses growth in imports due to rising premiumization in the seating category and prevalence of wide variety of product types in the interiors plastics space

Interiors (Non-electronic) : Category Snapshot FY21-22
Key Takeaways

Import by Country of Origin



Components of Import



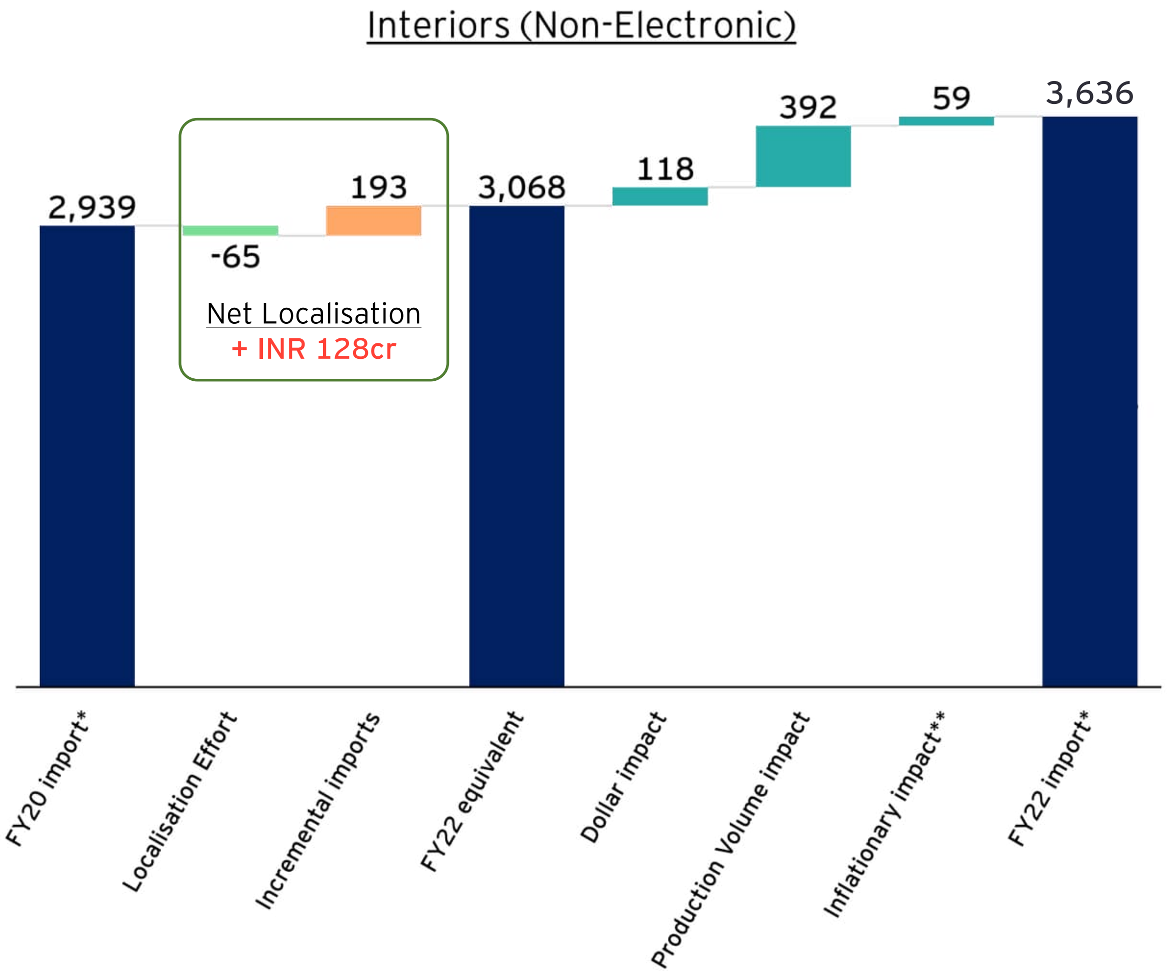
Import by Country of Origin : Top 3 Countries

China	USA	Korea
42%	11%	8%
China	USA	Germ.
46%	14%	10%
China	Thai.	Germ.
31%	30%	14%
Japan	Den.	China
24%	20%	14%

Primary insights

- Consistent efforts of OEMs and suppliers culminated in localising various seat parts
- Rising comfort levels in a vehicles due to changing customer preferences resulted in import of seat ventilation systems
- Tool rooms have been established by OEMs for components like glove box and other interior plastics to promote localization

Interiors (Non-Electronic) : Localisation efforts in the Interiors category have been offset by rising adoption of comfort features such as ventilated seats



Subcategory	Key components localised in the last 2 years	Key components contributing to import#	Remarks
Seating	Front head rest rod, seat belt reminder switch, seat belt fabric, retractor	Seat ventilation systems, PT seatbelts, micro gas generator	• Increasing customer preference for ventilated seats • Expected regulations mandating the adoption of 3 point seat belts in rear centre seats has seen increased demand

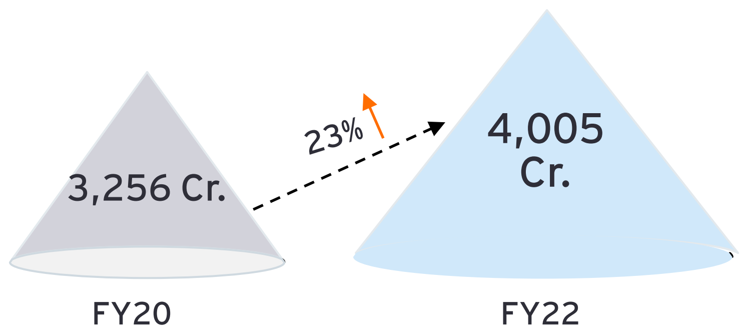
List of components is representative sample with substantial contribution to localisation/imports

*Only OEM and OES imports considered
**Includes pricing, insurance, freight

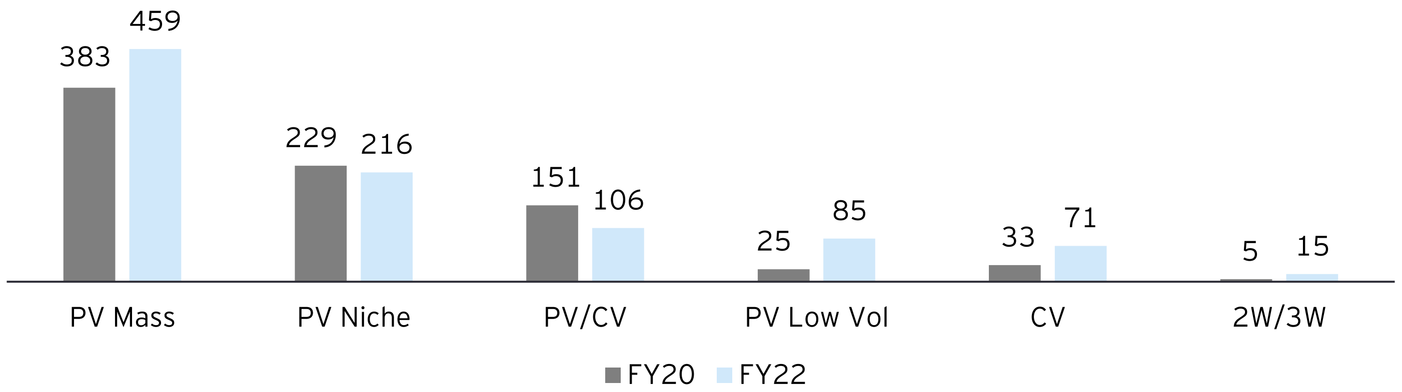
#imports due to consumer/ technology/ regulatory requirements

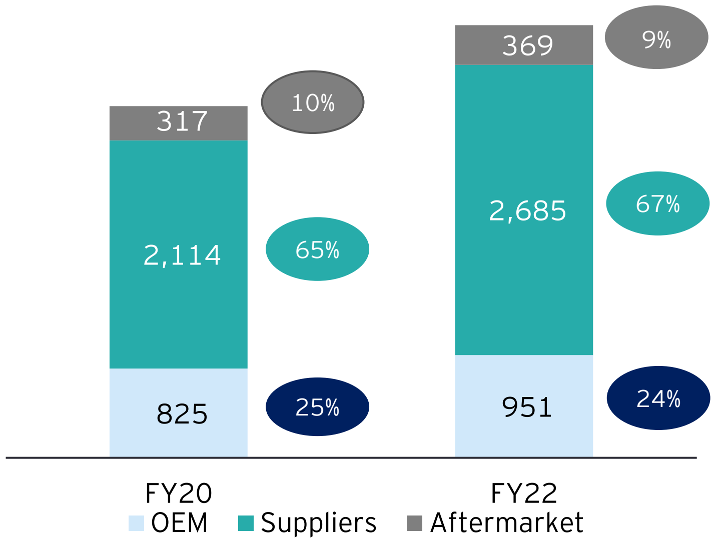
Comparative analysis (1/2): Import analysis at a supplier level and at a segment level

Total value of Interiors imports(in Cr)

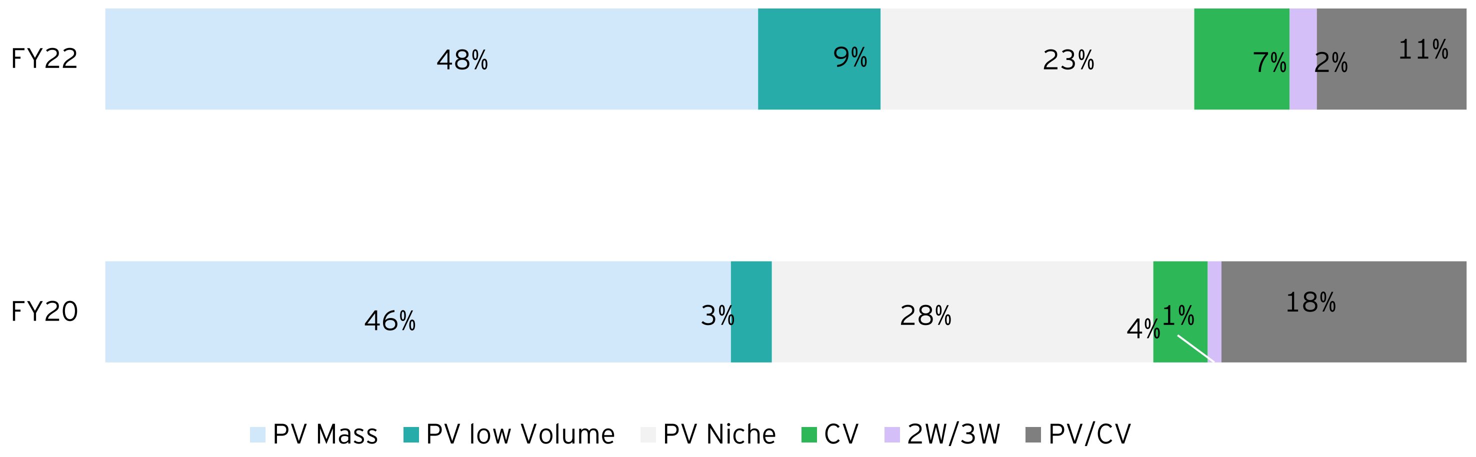


Total value of by OEM segments (in Cr)



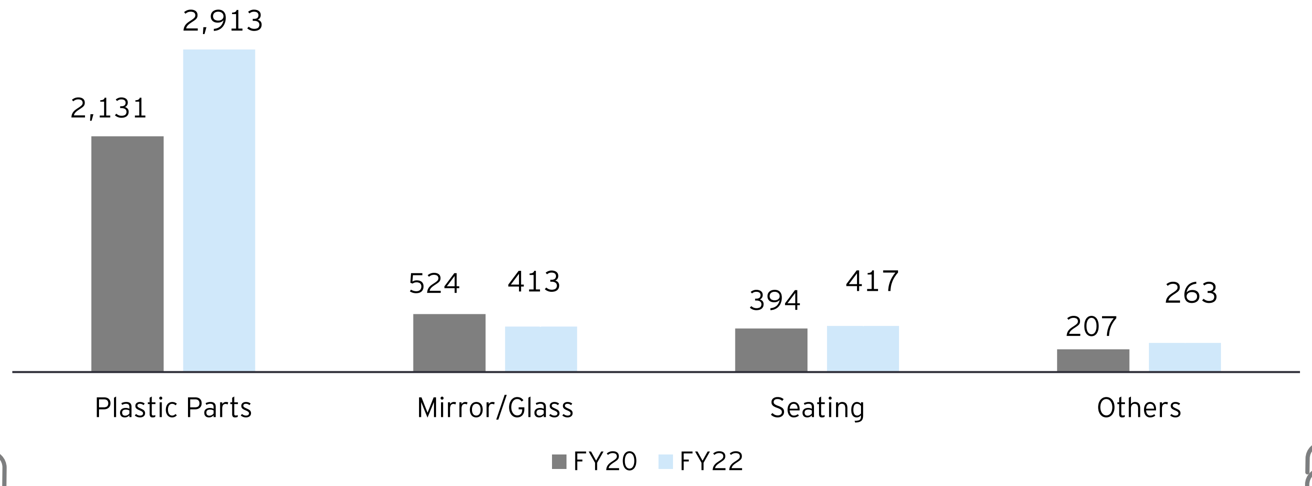


Share of OEM segments in OEM imports

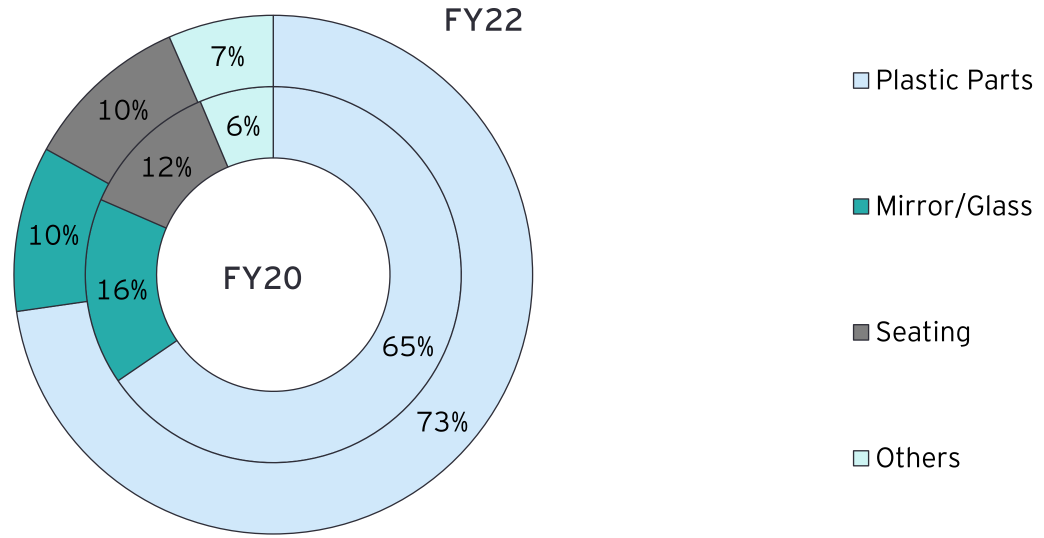


Comparative analysis (2/2): Sub category wise and country of origin comparison

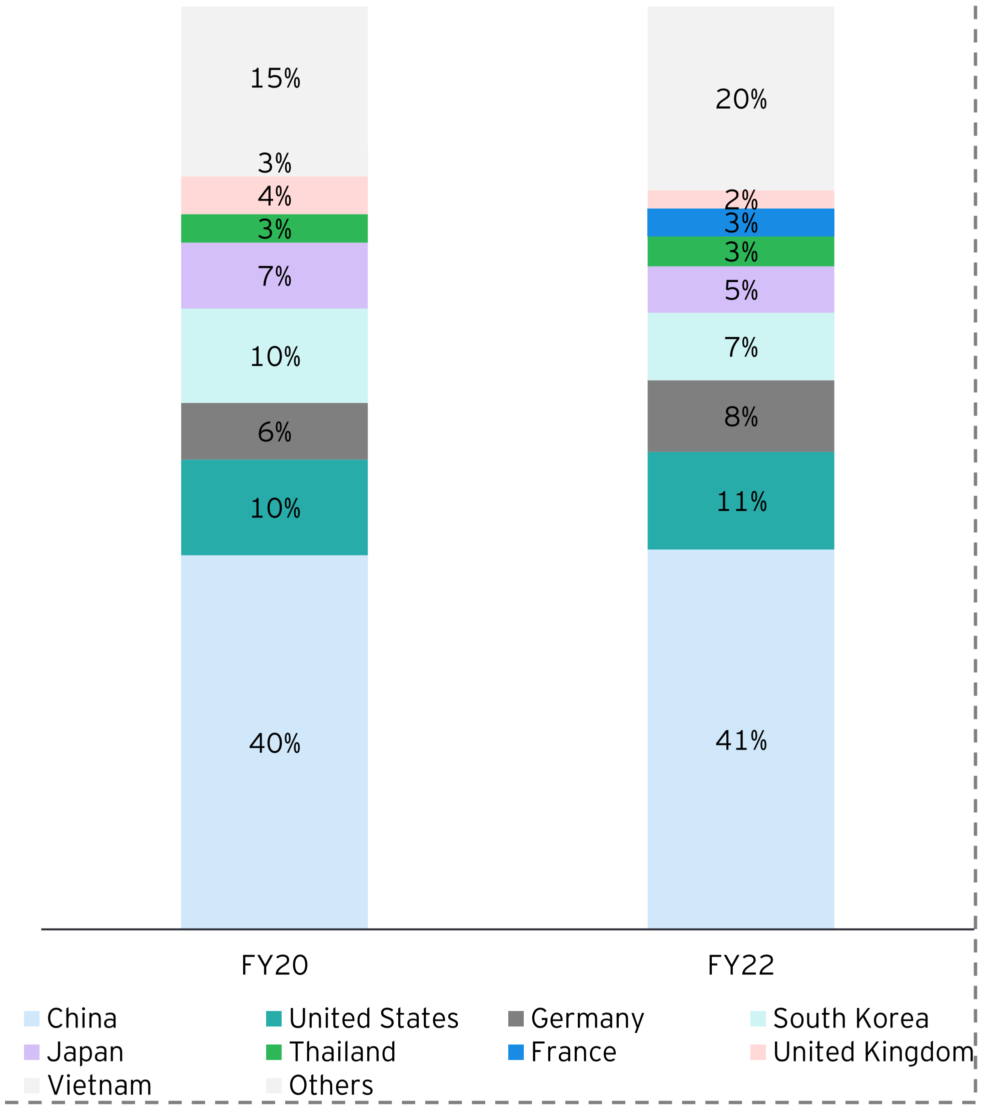
Sub-category wise import comparison(in Cr)



Sub-category wise share of import comparison(%)



Country wise share of import comparison (%)



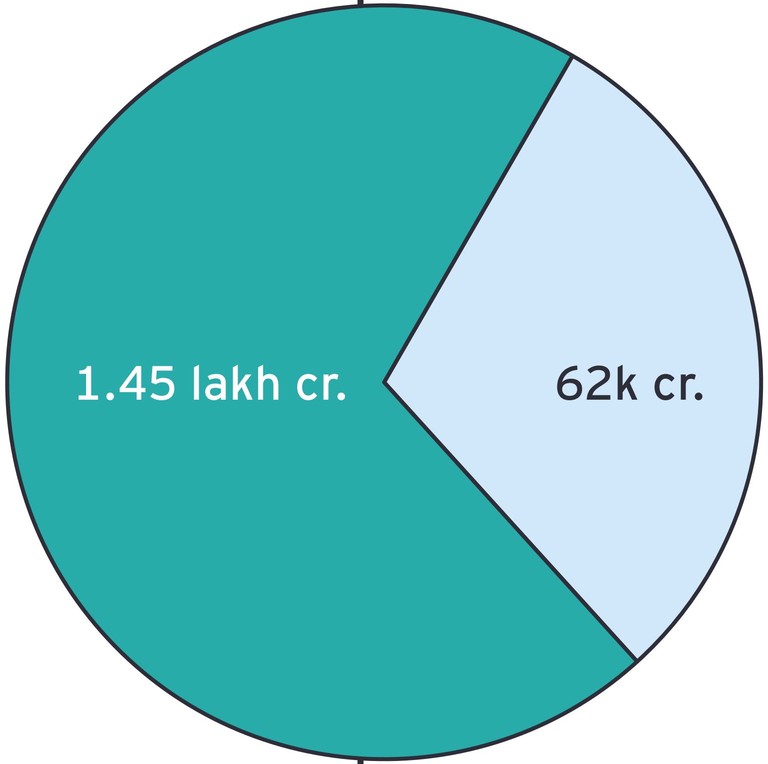
11 6-digit HS Code details for Interiors (non-electronic)

HS Code 6 Digit	Description
391910	SELF-ADHSV PLTS ETC IN RLS,WDTH < = 20CM
391990	OTHER SELF-ADHSV PLTS ETC NES
392690	OTHR ARTICLE OF PLASTIC NES
700711	TOUGHENED(TEMPERED)SAFETY GLASS OF SIZE AND SHAPE SUITABLE FOR INCORPORATION IN VEHICLES AIRCRAFT,SPACECRAFT OR VESS
700721	BULLET PROOF GLASS
700729	OTHER LAMINATED SAFETY GLASS
700910	PRSMTIC REAR VEW MIROR FOR VEHICLE , OTHR REAR VEW MIROR FOR VEHCLE
700992	OTHR GLASS MIRRORS, FRAMED
721250	FLAT, ROLLED, PRODUCTS
902920	TACHOMETERS,NON-ELECTRICAL , SPEEDOMETERS,NON-ELECTRICAL(EXCL AIR/SEA
940120	SEATS OF A KIND USED FOR MOTOR VEHICLES

The top 11 categories constitute 70% of our imports in FY 22 and the rest of the pie is a representation of several small categories

Top 11 categories
(~70% of total automotive industry imports)

Engines
Electricals
Electronics
Tyres
Tools & Moulds
Fastners
Rubber Components
Iron & Steel
Drive Transmission & Steering
Body Chassis
Interiors (Non-Electronic)



Other categories*
(~30% of total automotive industry imports)

Rubber Raw Material
Braking
Suspension systems
Mechatronics
Wheels
HVAC system
Lubes & Oils
Battery & Battery Management
Other EV related components

**Not Exhaustive*

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