



VELVEX[®]
New Age Lubricants & AdBlue[®]

Tackling SCR Bypass Practices: Ensuring Quality & Compliance in the Market

Presented by :



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NPL BlueSky Automotive Pvt Ltd

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Way Forward



Nandan Petrochem Limited

Manufacturing of
Automotive and
Industrial Lubricating
Oils & Greases,
Specialties etc



Nandan Impex Pvt Ltd

Manufacture of Plastic
Containers for lubricants &
Essential Oil
Repacking of Lubricants
CFA for PSU Oil Cos



NutraHelix Biotech Pvt Ltd

Health Food Products



NPL BlueSky Automotive
Technical JV between Nandan Petrochem and KRUSE Automotive GmbH, Germany

Technical JV
with Kruse Automotive
GmbH, Germany
for manufacturing of
AdBlue

NANDAN
Bulk Carriers

Company owned
Inbound | Outbound
Logistics for Bulk
Liquid cargos



NPL BlueSky Automotive

Milestone Journey



Introduction of Mini DEF Plant & AdBlue® Dispensing System... Launch of Velvex coolant

Setting up FDA approved Liquid Paraffin Plant for Pharma & Personal Care

Production capacity increased to 1,00,000 MT for Lube 9000 MT for Grease 9,00,000 MT for AdBlue® Expansion of Pan India Network 24 AdBlue® Plants



Launch of JCB (Person Mobility) & Hyundai MOBIS engine oil in India



VELVEX new logo with refresh packs launched

2020
2021

2022
2023

2023
2024

2024
2025

2025

2018
2020



Expansion of AdBlue® business with set up of 8 plants



Expanded product portfolio to Transformer oils, White oils & RPO.



On boarded major OEM customers & started supplies to TATA, BOSCH, M&M, LIS, MFC



Launched VELVEX Lubricants for Retail market



AdBlue manufacturing plant with the collaboration of Kruse Automotive, Germany

2017
2018

2012
2015

2015

2011



Incorporation of Nandan Petrochem Limited (NPL). Started toll blending for PSU's



Toll Blending for TOTAL, Mobil, BP, Caltex / Chevron



Technical Collaboration with MEGUIN GmbH, Germany



Custom made Genuine oils for Kirloskar & Greaves Cotton



Expansion of facility with 3 fully equipped plants & OEM business - On boarded ESCORTS, BEML

1992

1995
1997

1999

2001

2005
2011



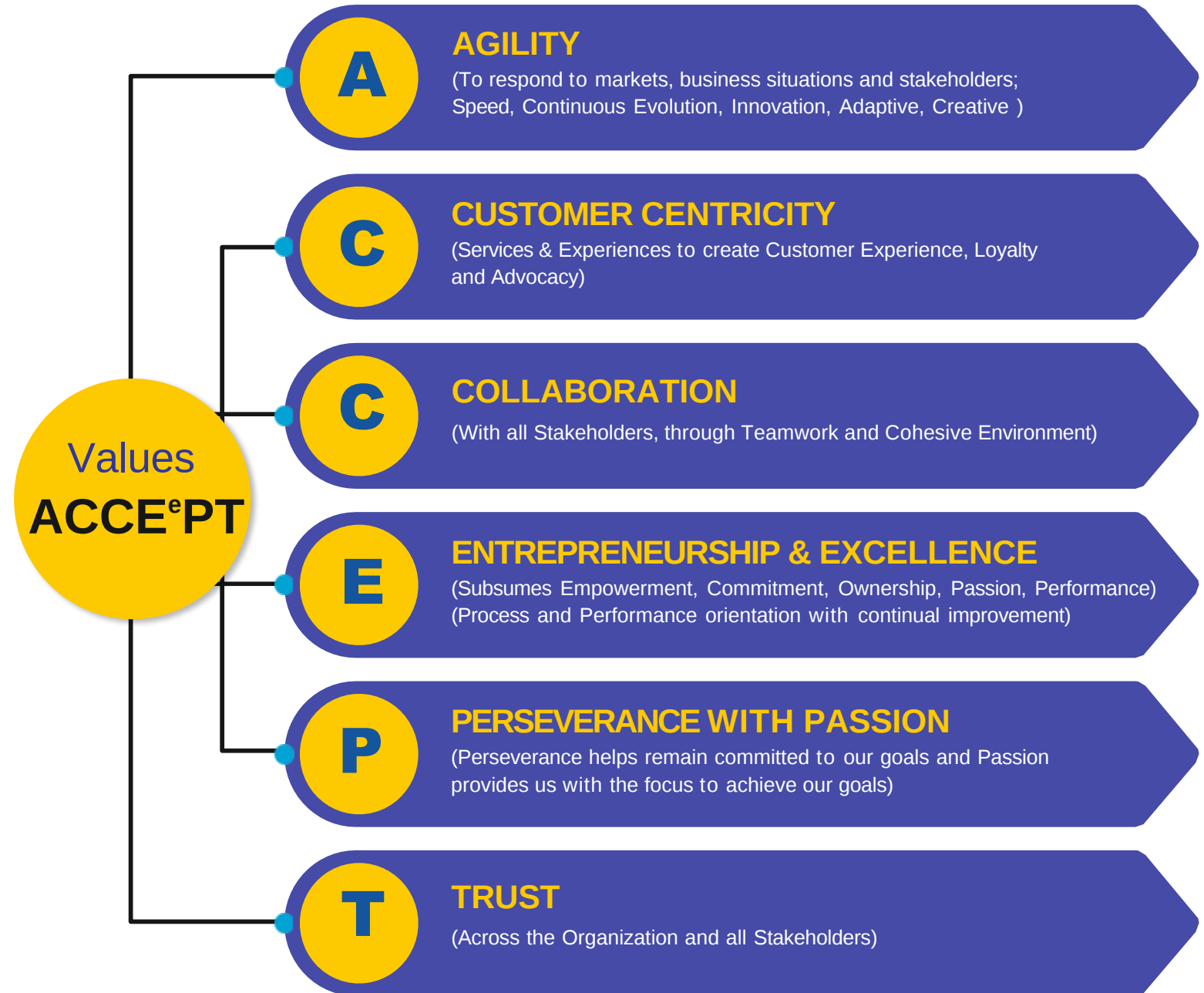
Ambition

“We at Nandan Group as a responsible Corporate, aim to be a preferred Partner delivering stakeholder value in all our endeavours”

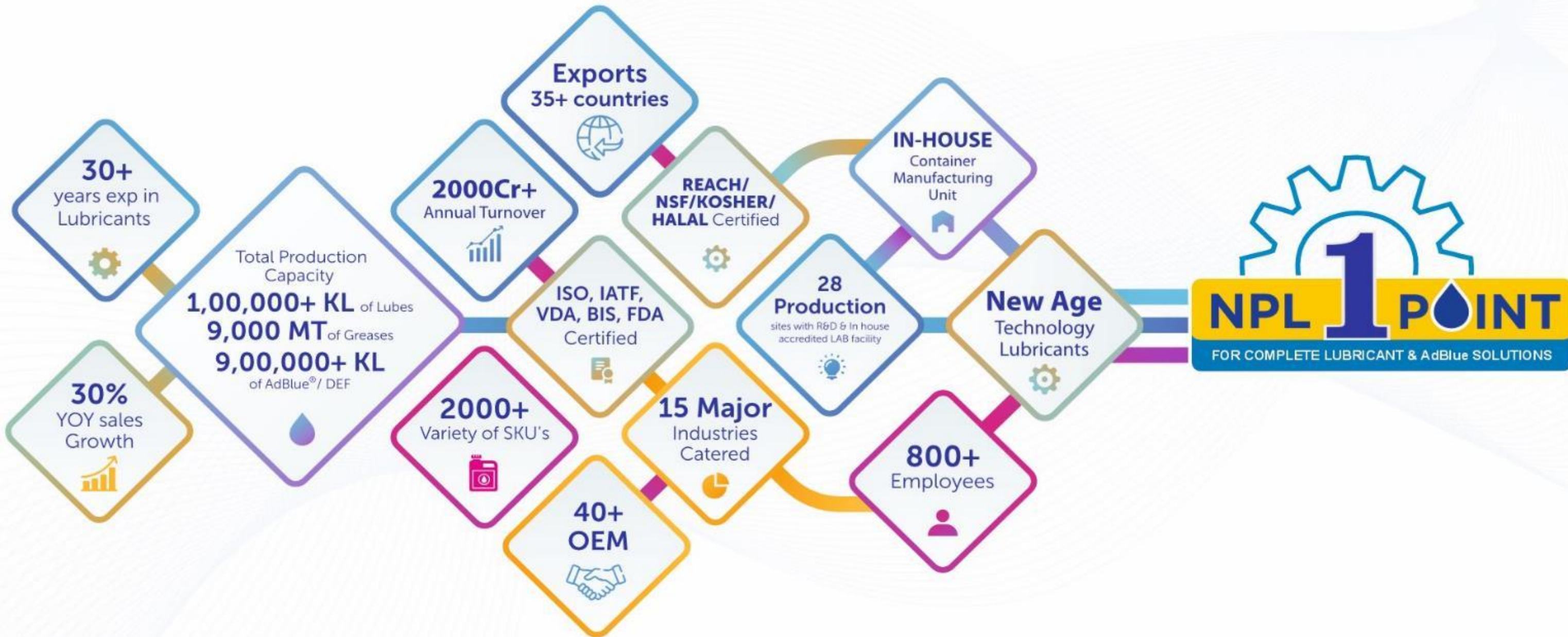


Purpose

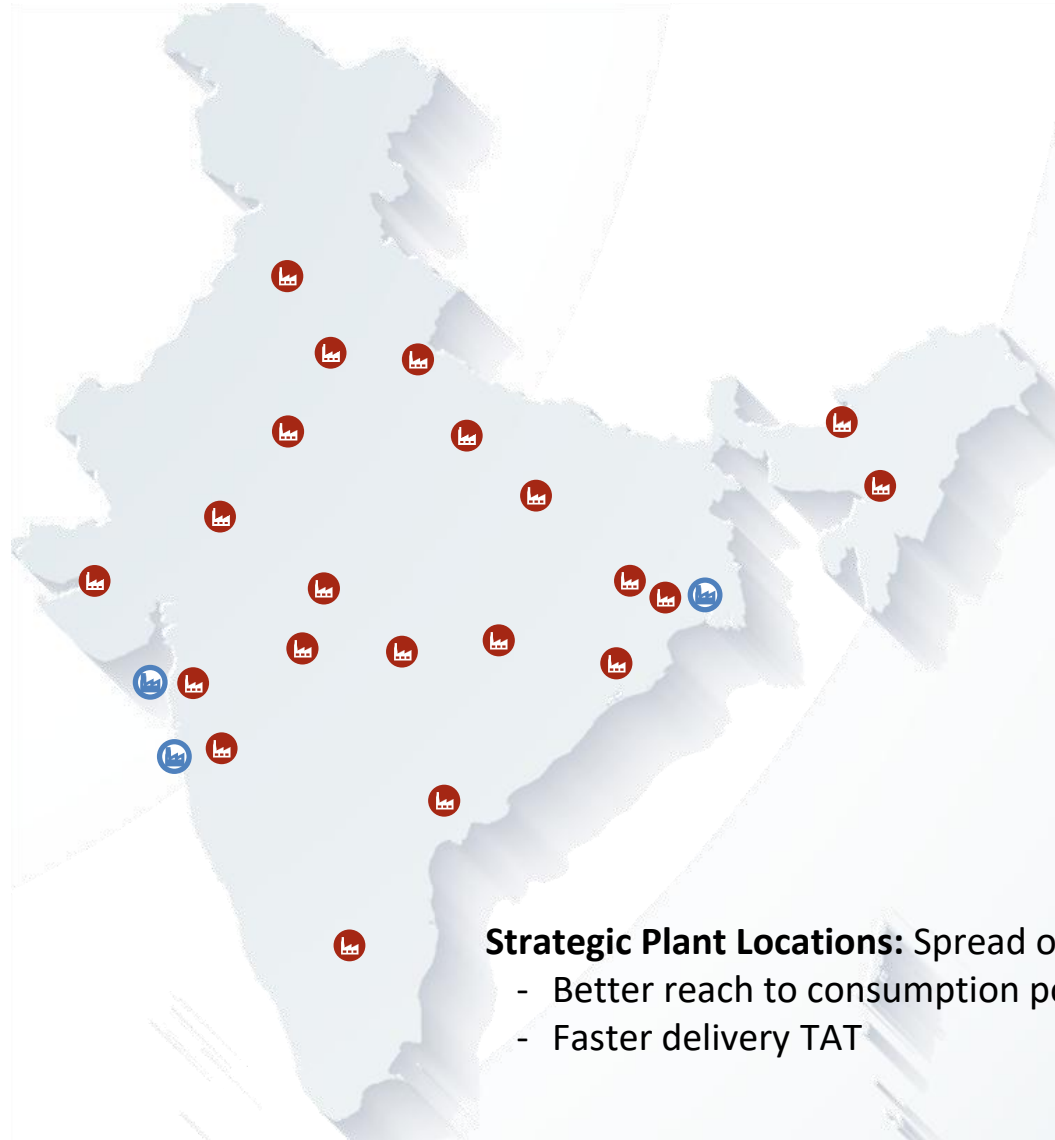
“We believe in providing solutions to make **”Effort Effortless”** and superior experience for **”Contemporary Mobility**”



NPL Group: Business At a Glance



Our PAN India Presence



Strategic Plant Locations: Spread of plants across India offers

- Better reach to consumption points
- Faster delivery TAT

* Reference image not to be scaled

- **Market Leader:** Pioneer and largest manufacturer of AdBlue in India
- **Widest Reach:** Largest number of plants across India, and expanding to meet growing demand.



21 Plants - Total Production Capacity : 9,00,000+ KL of AdBlue



3 Plants - Total Production Capacity : 1,00,000+ KL of Lubricants

Standards & Quality Approval

Licensed by:

VDA

Verband der
Automobilindustrie



Approved by Major OEMS in India

Our Offering – For Genuine AdBlue

Connect Now



Follow us on



www.velvex.in

VELVEX Automated Dispensing System (ADS) For AdBlue®



VELVEX
AdBlue
PREMIUM DIESEL EXHAUST FLUID



Environment
Friendly



Exceeds
18 Parameters



Reduces
NOx Pollution



Pan India
Network

List of Esteemed Clients



k^orloskar

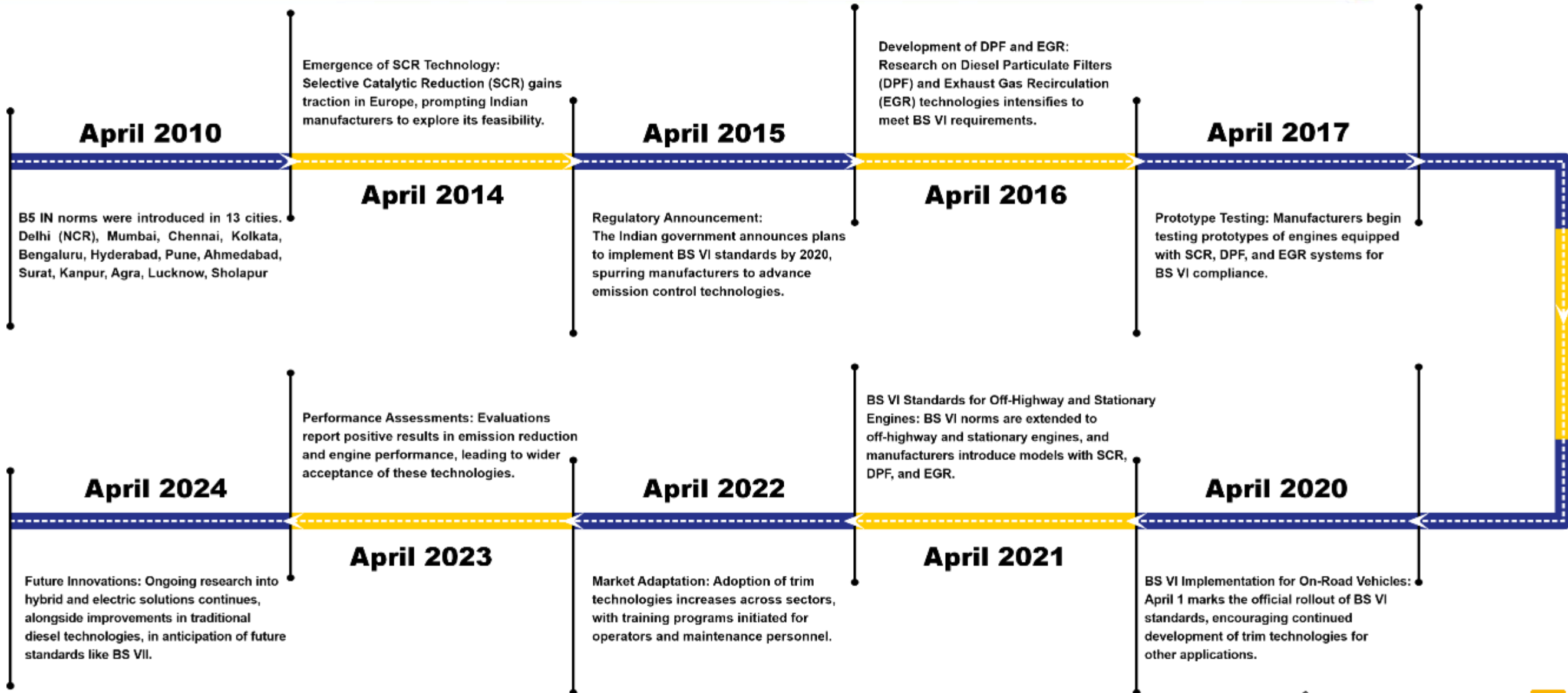
Mahindra
TRUCK AND BUS



GREAVES



Progress of BS-VI Implementation In The Country



APPLICATIONS

Velvex AdBlue® is being used in the following applications



Bus & Coach



Marine (AUS32 and AUS40)



Commercial Vehicles



Stationary Emission



Construction Machinery



Agricultural machinery

What is AdBlue®?

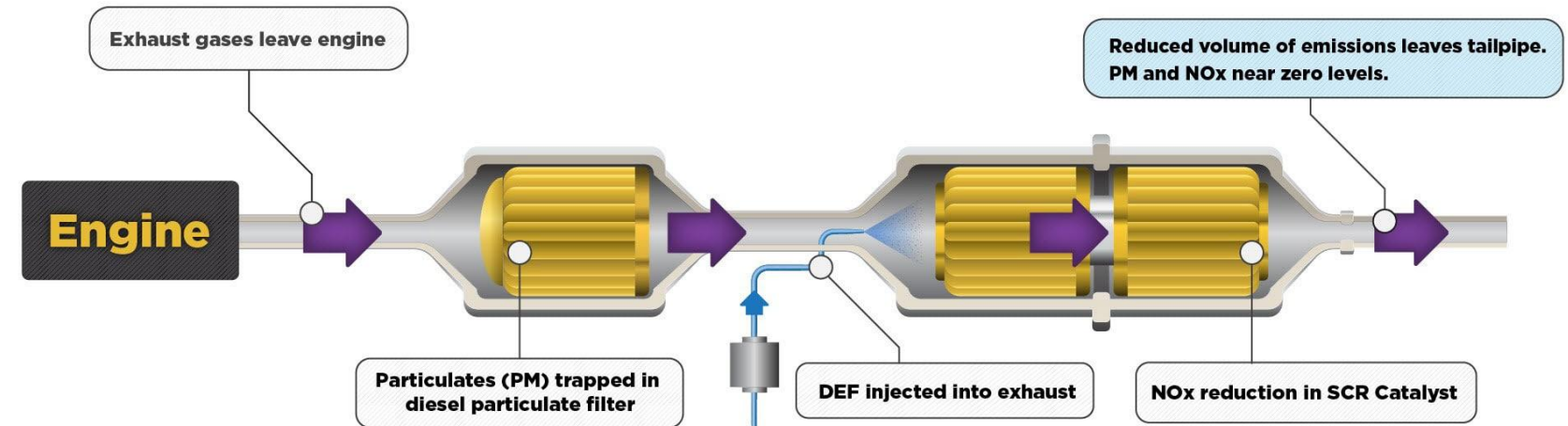
Formaldehyde-Free,
Low Biuret Urea

Deionized Water



Functioning of the SCR System

Diesel Emissions Control System



- A non-toxic, crystal clear, & synthetically produced solution
- Used in SCR system to reduce NOx emissions from exhaust of vehicles
- Filled in an additional tank that is fitted by the vehicle manufacturer
- ISO 22241 standard ensures its consistent quality. In 2006, Euro technology to enable trucks to meet the Euro IV and V limits
- An SCR system uses AdBlue® to convert NOx to water vapor and nitrogen
- SCR technology is more fuel efficient than EGR technology

What is VDA?

- Verband der Automobilindustrie (VDA) is a German interest group representing the German automobile industry. Its members include both automobile manufacturers and component suppliers.
- VDA QMC is the certifying body that audits the suppliers' plants and certifies them to use the AdBlue® brand name.

Diesel Exhaust Fluid (DEF), also known as AUS 32 and marketed as AdBlue, is a key liquid used to reduce air pollution from diesel engines.

Market Insights

- **Annual Consumption:** The DEF market is estimated at 800 to 1,000 million liters per year.
- **Market Share:** Nandan Group holds an approximate 35% share, making it the leading DEF manufacturer in India.
- **Public Sector Units:** Major players like IOCL, BPCL, and HPCL have established their production facilities for DEF.



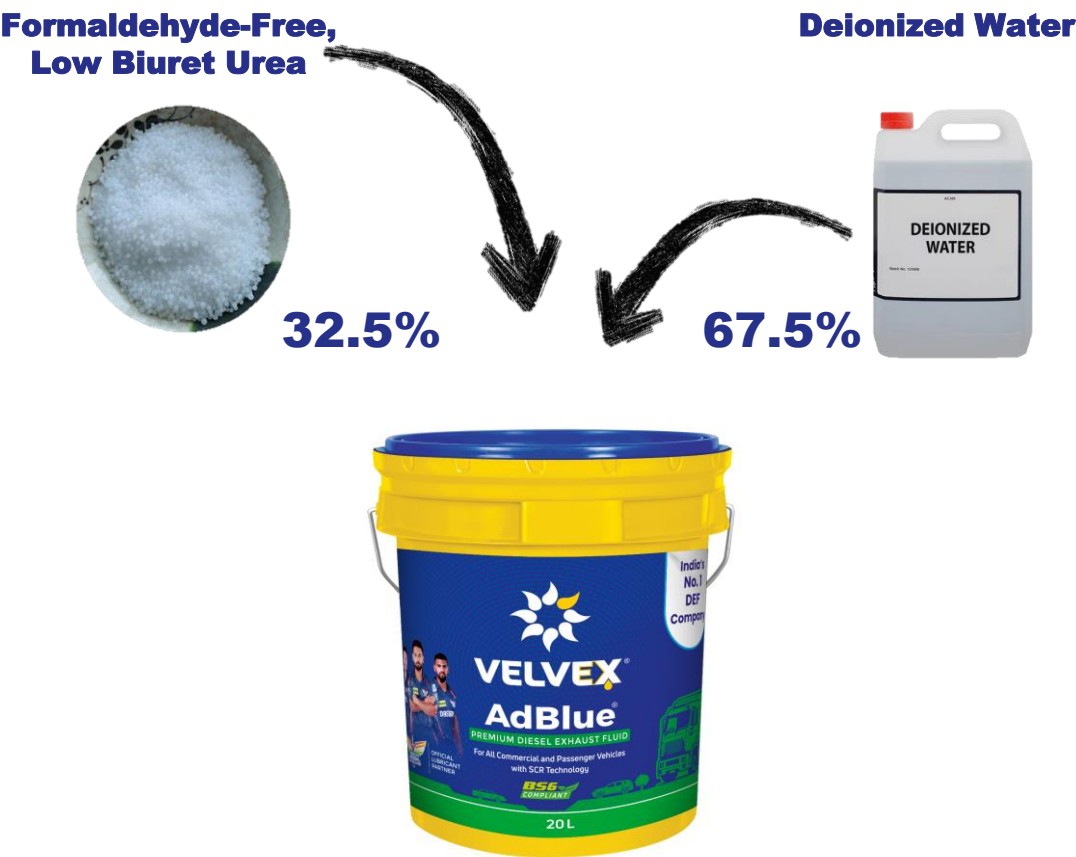
Financial Outlook

- **Market Value:** The DEF market is valued between Rs. 3,500 to 3,800 crores annually.
 - **Growth Rate:** It is projected to grow at a rate of 12% to 15% per annum.
 - **CAGR:** The compound annual growth rate (CAGR) in volume over the past three years has been an impressive 20%.
- This robust growth indicates a strong demand for DEF, driven by regulatory pressures and the increasing adoption of cleaner diesel technologies.



SCR systems are sensitive to potential chemical impurities in the urea solution.

Therefore, it is essential to maintain high-quality standards in AdBlue manufacturing.



Characteristics	Unit	Limits		Significance
		min.	max.	
Urea Content	% (m/m)d	31.8	33.2	It is critical to be in the range for an ideal solution as it provides the lowest freezing point. Also, the SCR system will be calibrated to 32.5% Urea content to get the optimum NOx reduction.
Density @ 20°C	kg/m3	1087	1093	Product Identification, and to check possible contamination
Refractive Index at 20°C	-	1381.4	1384.3	Product Identification, and to check possible contamination
Alkalinity as NH3	% (m/m)d	-	0.2	Determines product shelf life
Biuret	% (m/m)d	-	0.3	Poison to catalyst
Aldehyde	mg/kg	-	5	Form Deposits
Insoluble Matter	mg/kg	-	20	Causes Injector Clog
Phosphate (PO4)	mg/kg	-	0.5	Poison to catalyst
Calcium	mg/kg	-	0.5	Causes Injector Clog
Iron	mg/kg	-	0.5	Poison to catalyst
Copper	mg/kg	-	0.2	Poison to catalyst
Zinc	mg/kg	-	0.2	Poison to catalyst
Chromium	mg/kg	-	0.2	Poison to catalyst
Nickel	mg/kg	-	0.2	Poison to catalyst
Aluminium	mg/kg	-	0.5	Poison to catalyst
Magnesium	mg/kg	-	0.5	Causes Injector Clog
Sodium	mg/kg	-	0.5	Poison to catalyst
Potassium	mg/kg	-	0.5	Poison to catalyst

AdBlue Specifications as per ISO 22241 / IS 17042

- Growth of AdBlue demand in the country.
- Along with reputed organized players, many unorganized players are entering this segment.
- Volume of substandard AdBlue being sold in the market is increasing due to the following reasons:
 - 1) Contamination of AdBlue is taking place due to **Non-Dedicated Dispensing Equipment**.
 - 2) **Cheaper Industrial / Agricultural grade urea and supplies without mandated testing** of the product are some of the mechanisms adopted to reduce the cost of manufacturing.
 - 3) Spurious manufacturers supplying AdBlue / DEF / AUS32 with **lower urea concentration** to cut costs.
 - 4) **Lack of Knowledge**: Many consumers may not be aware of the differences between genuine and substandard products, making it easier for altered products to be sold.
- In addition, there is now increasing use of cheat technology to bypass SCR and avoid AdBlue/DEF refilling.



Quality control order for AdBlue has come into effect from 24th August 2024



Notification dated 27th February 2024 requires all packs of AdBlue/DEF to bear ISI mark



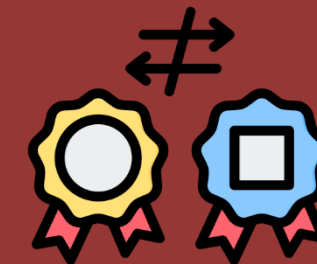
The ISI mark can be licensed after a successful audit by the Bureau of Indian Standards (BIS). The IS part no is IS-17042



The audit requires all AdBlue/DEF manufacturers to have their facilities audited and product approved.



Minimum criteria is for manufactures to invest in laboratory for testing of its product



It is the first battle amongst many in the fight against spurious manufacturers of the product

Substandard and Genuine AdBlue

Substandard AdBlue / DEF / AUS32

Not Certified - NO Quality Assurance



No License Approval



Cheaper Agricultural Grade Urea
With Lower Urea Concentration



Bypass SCR and Harms Engine Life / Longer Vehicle Downtime
Negative Impact on Biodiversity



Genuine AdBlue / DEF / AUS32

Certified - Quality Assurance



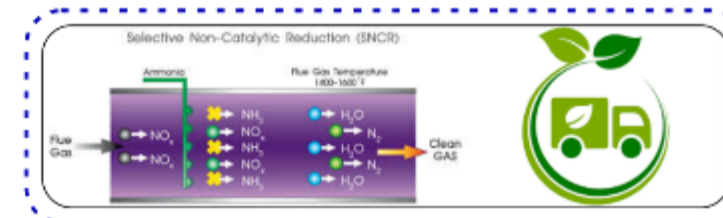
License Approval



Industrial Grade Urea AUS32
(ISO 22241 / IS 17042)



Cleaner Engine and Cleaner Environment



Counterfeit AdBlue in India

- Widespread sale of low-quality or contaminated AdBlue at informal roadside outlets.
- Packaged in unmarked or imitation containers, often without ISI certification.
- Poses serious risks: damages SCR systems, increases wear, and reduces emission control efficiency.
- Threatens public health by contributing to higher NOx emissions.
- Undermines fair market practices and compliance with BS-VI regulations.



Only ISI-marked, certified AdBlue ensures vehicle performance, emission compliance, and cleaner air.

QCO Implementation To Address Substandard Product Issues

BIS in India



ISO 22241

- Standards Applicable globally
- Typically voluntary, but widely adopted
- Currently in effect



ISO 17042

- Tailored for the Indian market
- Mandatory for Indian manufacturers
- Applicable from Aug 24th, 2024

- Limits on various contaminants like aldehydes, phosphates, and metals to ensure they do not damage the SCR system
- BIS certification through facility assessment and testing
- Mandatory to mention product name, BIS mark, batch number, and dates on product packaging
- Penalties for non-compliance include fines, license suspension, and sales prohibition

IS 17042



Part 1 : 2020

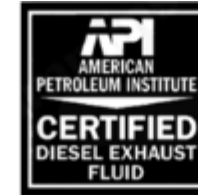
For details of BIS certification please visit www.bis.gov.in

Steps Taken in Other Countries



Europe

AdBlue is a registered trademark of **VDA**.
VDA **audits** the manufacturing plants and certifies them to use the AdBlue trade mark.



USA

American Petroleum Institute (API), on lines of VDA, has set up an **audit and licensing** framework. Manufacturers qualifying the audit can use the API logo on their packs.



Brazil

The In metro (Brazilian Institute of Metrology) is responsible for **conformity assessment** of a range of products manufactured and sold in Brazil.



China

In April 2015, the Internal Combustion Engine Industry Association set up a **certification system** for AdBlue and those enterprises who meet the manufacturing specification are authorized to use their trademark called CGT.



NPL BlueSky Automotive

Cheat Technology – Bypass of SCR Systems

- Rise in tampering of SCR systems in India.
 - SCR Equipment lines are removed from the system
 - Use of OBD emulators to bypass the SCR system
 - Counter Technology Services Providers
 - Diagnostic tools with version program files
 - Bypass of SCR systems is happening in both BS-IV and BS-VI vehicles.



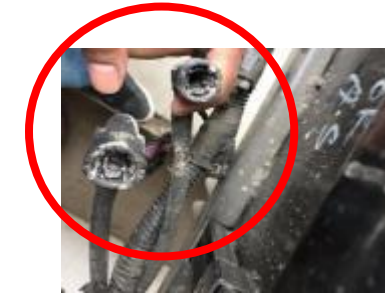
AdBlue Removal 8 in 1 Emulator



Mercedes Euro6 AdBlue Emulator



Volvo Euro6 AdBlue Emulator





ENVIRONMENT:

- Increase in NOx emissions increases air pollution, contributing to **smog, acid rain and degradation of air quality.**
- It will also directly impact public health-giving rise to **respiratory problems and other health issues.**
- Environmental degradation with **negative impact on biodiversity.**



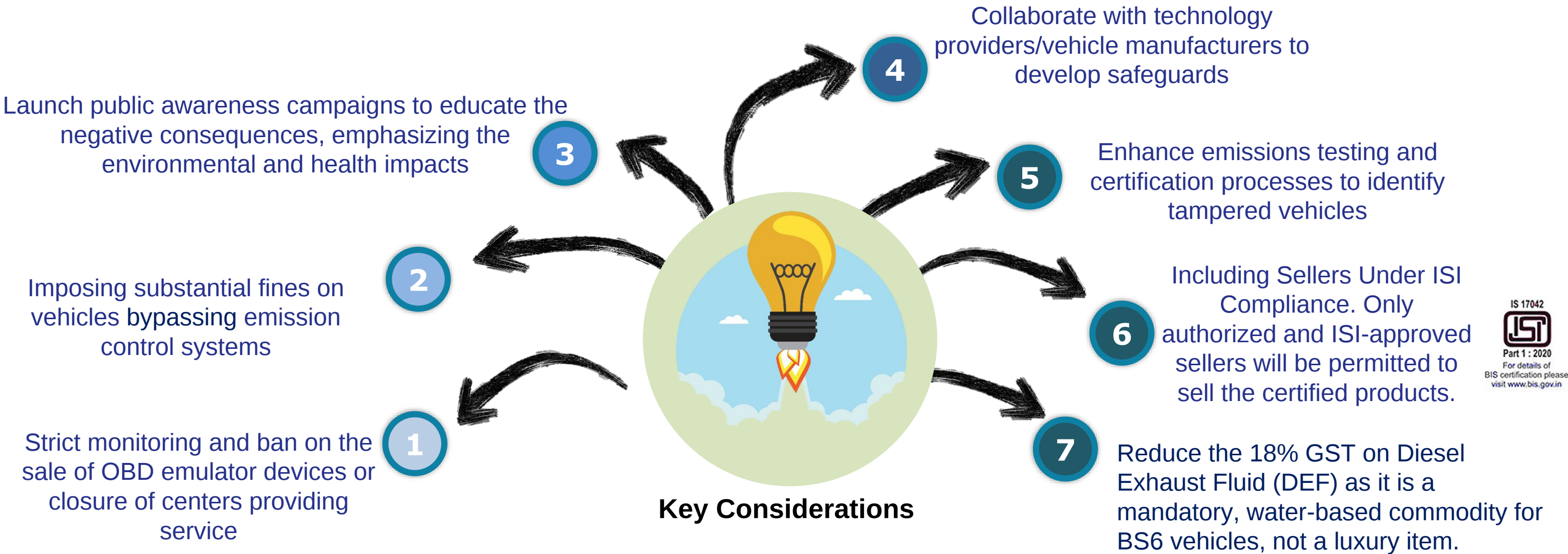
OEMs

- Negative perception on BS-VI technology **affecting Brand Equity.**
- Future regulatory challenges to implement and maintain emissions standards.



VEHICLE OWNERS:

- Loss of business due to **frequent breakdown.** Higher combustion temperatures leads to increased engine wear.
- Provides **unfair competitive advantage** over law abiding businesses.
- **Decreased resale** value as consequences of such modifications.
- Loss of warranty coverage for engine-related issues.



Vehicles running with inferior quality or without AdBlue / DEF / AUS 32 are more harmful to the environment and society as they emit more NOx than BS I standard.

It will impact vehicles SCR system along with public health-giving rise to respiratory problems and other health issues.

Efforts by us

Policy Advocacy

Submitted representations to the:

1. Ministry of Environment
2. Forest and Climate Change
3. Ministry of Consumer Affairs
4. Ministry of Heavy Industries
5. Ministry of Road Transport and Highways
6. National Clean Air Program (NCAP)
7. Automotive Research Association of India (ARAI)

On the risks of SCR bypass and spurious AdBlue.



Market Integrity

Provided documented evidence of spurious DEF practices, including roadside dispensing of fertilizer-grade urea, causing subsidy leakage and environmental hazards.



Regulatory Push

Written to the **Ministry of Chemicals and Fertilizers** requesting that **bulk DEF sellers be brought under BIS licensing** to curb non-compliant roadside sales and diversion of subsidized urea.



Fiscal Measures

Made representation to the **Ministry of Finance** for **GST rate reduction** to ensure affordability of genuine AdBlue.



Thank You!



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