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1. Issued by DGFT, Ministry of Commerce and Industry, GoI - Amendment by incorporation of Para 1.04 (k) in Chapter 1 of the Handbook of Procedures 2023 to specify the procedure for furnishing views, suggestions, comments, or feedback from relevant stakeholders including importers/exporters/ industry experts concerning the formulation, amendment or incorporation of specific provision(s) in the Foreign Trade Policy – 02/01/2025
2. Issued by DGFT, Ministry of Commerce and Industry, GoI - Govt amends Foreign Trade Policy, 2023 for Stakeholder Consultation; encourages inclusive decision-making – 03/01/2025
3. Issued by DGTR, Ministry of Commerce and Industry, GoI - Reschedule of Oral Hearing of AD investigation concerning imports of 'PVC Suspension Resins' originating in or exported from China PR, Indonesia, Japan, Korea RP, Taiwan, Thailand and USA – 06/01/2025
4. Issued by MoEF&CC, GoI - Environment Protection (End of Life Vehicles) Rules, 2025– 06/01/2025
5. Issued by DGFT, Ministry of Commerce and Industry, GoI - Notification of Schedule II (Export Policy) of ITC(HS) 2022, in sync with Finance Act 2024 dated 16.08.2024– 13/01/2025
6. Issued by DGFT, Ministry of Commerce and Industry, GoI - EPCG Scheme - Relief in Average EO in terms of the para 5.17(a) of Hand Book of Procedures (HBP) of FTP, 2023 – 21/01/2025
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concerning imports of "PVC Paste Resin" originating in or exported from European Union and Japan – 24/01/2025

10. Issued by MoEF&CC, GoI

(a) Uniform Consent Guidelines under Air Act – 29/01/2025

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IV. UPCOMING EVENTS

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Dear Reader,

The Indian alkali industry has witnessed steady growth of 3.8% over the past decade. Demand drivers witnessing robust growth in last decade, Textiles@ 9-10%, Alumina@ 7.6%, Soaps@ 7.1%, Detergents@ 5.5%, Glass@ 7.6%, and PVC@ 6.3%, have contributed to alkali market growth in the country in recent years. There are announced plans for significant growth in capacities in coming years.

Indian industry is bound to realign its strategy in the light of unprecedented capacity additions in the next few years. Estimates point to a growth in capacities of 9.1% for caustic soda, 4.1% for soda ash and 17.6% for PVC over the next five years. Of these, caustic soda capacity additions will outpace demand growth by a wide margin. In the context of these changes and the evolving dynamics, AMAI is organizing a two-day conference on "Alkali Industry – Trends, Developments and Outlook" on 20th and 21st March 2025 at Ahmedabad. The conference will feature presentations by experts on Global and Indian market scenario, growth drivers in user segments, technology changes, issues relating to sustainability and renewable power, and policy interventions to propel growth. Details of the conference are available on the AMAI website www.ama-india.org.

The new year began on an encouraging note with the announcement of imposition of minimum import price (MIP) on imports of soda ash. The notification, issued in end - Dec 2024, came after months of suspense. Interestingly, (secondary) data for January 2025 showed a spike with imports of soda ash touching almost 1.90 lakh MT, the highest ever so far. A significant portion (1.48 lakh MT constituting 78% of imports in Jan 2025) have come from USA and Turkey, the two countries who also share the dubious distinction of exporting large quantities at prices below the MIP. This is cause for concern. With total imports during the 10-month period this year (Apr 2024 – Jan 2025) averaging 1 lakh MT per month, the industry looks for relief through early imposition of anti-dumping duties on imports.

The Finance Minister, Ms. Nirmala Sitharaman tabled the Economic Survey 2024-25 on January 31, 2025 in Parliament. The Economic Survey has estimated real GDP growth between 6.3% to 6.8% in 2025-26. In 2024-25, India's real GDP is estimated to grow by 6.4%. To become a developed nation by 2047, India would require sustained economic growth of around 8% every year for at least a decade. The industrial sector grew by 6.2% in 2024-25, driven by robust growth in the electricity and construction sectors.

As per IMF projections, India to become a USD 5 trillion economy by FY28 and USD 6.3 trillion by FY30, with a nominal GDP growth rate of 10.2% (FY25-FY30). To reach its Viksit Bharat 2047 goal, India must grow at 8% annually for the next two decades. This is an ambitious target. However, with the government focus on infrastructure development and ease of doing business, this may be within reach. A major concern is the logistics cost which remains high at 13-14% of GDP, limiting industrial competitiveness despite National Logistics Policy efforts. The efforts of state governments in improving their business environment to attract investments, together with the central government's focus on providing a stable policy framework should facilitate an accelerated growth, in sync with the roadmap for Viksit Bharat 2047.

K. Srinivasan
Secretary General



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Metal Coatings for Corrosion Protection

Dr. S.K. Chakravorty, Consultant (Plant Engineering)

Introduction:

It is essential to understand the advantages and disadvantages of each metal coating type to select the one that is best for your application. Metallic coatings protect other metals by providing a combination of barrier and galvanic protection. They offer a form of protection that is unmatched in its sheer number of applications and cost-effectiveness. For centuries, metals have been used extensively in our everyday lives. From aluminum and copper in electrical wiring to gold and silver in jewelry, silverware and electronics, metals have been used for a variety of purposes. One of the most widely used metals today is iron, or more specifically, its more popular alloy form steel. Steel has become one of the most versatile products, used in appliances, automotive panels/parts, equipment, plant and machinery, buildings and bridges, etc. However, like other metals, steel is prone to corrosion.

Understanding the Corrosion Process in Metals:

To understand how metallic coatings protect metals, it is important to know what corrosion is and how it is caused. Corrosion is a natural electrochemical reaction that converts a refined metal to a more chemically stable state. For corrosion to occur, three components must be present:

- An anode (in this case, the iron found in steel)
- A cathode (oxygen)
- An electrolyte solution (such as the moisture found in air)

During the corrosion process, the iron

in the steel undergoes an oxidation reaction due to the presence of oxygen to form hydrated iron (III) oxide, commonly known as rust. Unlike mild corrosion in aluminum, which is beneficial because the oxide provides a protective layer that prevents further corrosion, rust is brittle and easily flakes away, exposing more of the metal to the atmosphere and resulting in further corrosion and degradation. This continuous corrosion eventually leads to the loss of material thickness, decreased material strength, formation of perforation and reduced service life.

For centuries, metals have been the go-to choice for multiple of applications due to their durability, versatility and strength. However, among the challenges that people face when using metals, corrosion is arguably the most common and widely recognized.

Multiple solutions have been proposed to increase the longevity of metallic structures and enhance their corrosion resistance. Among them, metal coatings stand out as one of the most effective and convenient protection methods. There are numerous methods for coating metallic surfaces, each with its own set of limitations and benefits. In the following sections we will take a detailed look at some of the most common types of metal coatings, and discuss their suitability for various applications.

How Metal Coatings Protect Surfaces and Structures:

Metal corrosion is a deteriorative process that occurs

under specific conditions. The most common type of corrosion occurs when metals react with moisture and oxygen to create various corrosion products. Iron, for example, reacts with water and oxygen in the atmosphere to form iron (III) oxide, or rust. The logic behind metal coatings, therefore, is to create an inert (non-reactive) barrier around the metallic object being protected to prevent it from reacting with air and moisture. Basically two Common Types of Metallic Coatings can be applied to steel to provide a layer of protection, thereby allowing steel to be used in various challenging environments. Metallic coatings offer two main types of protection: barrier protection and, in specific cases, galvanic protection.

Barrier protection:

When a metallic coating such as zinc is applied to steel, it dries and hardens, forming an impervious barrier that prevents moisture intrusion. This removes one of the essential components needed for corrosion to occur. Without the electrolyte (moisture/water), oxidation cannot occur and therefore rust cannot form.

Another important aspect of barrier protection is called corrosion film protection. As mentioned previously, some metals, such as aluminium, react with oxygen to form a protective oxide film (film of corrosion product) on its surface. This oxide film is resilient and firmly adheres to the surface of the aluminium to prevent moisture intrusion and further corrosion. This makes aluminium an ideal material for sheet metal.

Zinc, most commonly used to coat

structural steel, reacts with the oxygen and moisture in the atmosphere to form corrosion products that create a defensive layer that protects the underlying steel. Freshly exposed zinc reacts with oxygen to form zinc oxide, and with water to form zinc hydroxide. When zinc hydroxide reacts with carbon dioxide in the atmosphere, the resulting product is zinc carbonate. These corrosion film products, like the film that forms on aluminium, are resistant to water intrusion and tightly adhere to the steel's surface so that it does not easily flake off like the corrosion formed on iron. Zinc, however, is a reactive metal and will slowly corrode and erode over time. The degradation rate of zinc is still several times less than that of steel and will therefore significantly prolong the service life of the steel it is meant to protect.

Galvanic protection:

It involves the strategic application of a more reactive metal, often zinc, to act as a sacrificial anode. This sacrificial metal corrodes preferentially, protecting the underlying metal from deterioration. Zinc is a commonly used metal for sacrificial anode protection due to its reactivity and cost-effectiveness. A zinc coating is a protective layer applied to steel to provide galvanic protection. It acts as a barrier, preventing corrosive elements like moisture and oxygen from reaching the steel surface as discussed above. Additionally, zinc serves as a sacrificial anode, corroding before the steel, extending the steel structure's lifespan. Galvanic zinc coatings are used for the cathodic corrosion protection of steel. The zinc coating dissolves first, thereby protecting the component against corrosive attacks.

Common Types of Metal Coatings and Their Benefits:

A list of the most common types of metal coatings used across various industries, and the advantages and

disadvantages of each has been compiled and given below:

Anodizing:

Anodizing is a process used to promote the formation of a protective oxide layer on the surface of a metal. The resulting oxide layer forms more rapidly and is usually thicker than if it was produced naturally. While several non-ferrous metals can be anodized, aluminium responds most effectively to this process.

Anodizing is performed by immersing the aluminium component in a tank filled with an electrolytic solution along with a cathode (usually aluminium or lead). An electrical current is passed through the aluminium, causing it to oxidize and form a protective barrier.

Anodized finishes are perhaps the easiest to maintain of all the coatings mentioned in this article. Anodized surfaces can be easily periodically cleaned using mild detergents. Finished anodized surfaces are also chemically stable and do not decompose under normal conditions, allowing for a long-lasting coated surface. Furthermore, because anodizing is a natural process, it is non-toxic and does not produce any harmful or dangerous by-products.

The most significant drawback of this process is that it is only useful on a handful of metals. This process is unsuitable for ferrous metals, which means that common materials like steel and iron cannot be anodized. Additionally, due to the processes used, the colours that can be achieved by anodizing is limited.

Galvanizing:

Galvanizing involves immersing the metal (mostly steel or iron) in a molten zinc bath. Once removed, the coated metal reacts with oxygen and carbon dioxide in the atmosphere to form a protective zinc carbonate layer.

The galvanizing process has multiple advantages that make it a popular choice for numerous applications. For example, the zinc oxide coating is highly stable and adheres tightly to the metal substrate; it is very durable and does not flake off easily.

Galvanizing is also renowned for its galvanic protection. In other words, if the metal's surface becomes exposed due to scratches, cuts or dents, the zinc coating will sacrifice itself by corroding preferentially. This process helps protect the steel substrate between maintenance operations

The biggest disadvantage of the galvanizing process is its cost. While hot-dip galvanizing (HDG) may be cheaper for coating large steel structures, it can be less cost-effective for smaller pieces such as nuts and fasteners. Additionally, galvanized surfaces have a dullish grey appearance that may not be aesthetically pleasing for some applications.

Newly developed precision hot-dip galvanizing and electrolytic coating systems in steel plants use servo-hydraulic adjustment systems, providing a fast reaction time and high-precision coating thickness. This may be used for galvanizing hot-rolled as well as cold-rolled steel coils and steel wires. Newly developed dynamic air knives help high-quality wiping of the steel strip surface as its leaving the molten zinc bath, thus minimizing zinc coat thickness deviation and ensuring high standards of surface quality. It also provides an aesthetically pleasing decorative super finish to meet the requirements of the appliance, automotive and construction sectors.

Electroplating:

Electroplating, also known as electrodeposition, involves depositing a thin layer of one metal on the surface of another metal. During electroplating, both metals are placed in an electrolytic solution. The metal to be

coated acts as the anode, while the metal to be protected by coating acts as the cathode. An electric current is applied to the electrolytic cell, causing metal ions to move from the cathode to the anode, thus forming the coating.

Electroplating offers excellent corrosion resistance and can enhance some of the metal's mechanical properties. Electroplating also produces an aesthetically pleasing surface finish, making it ideal for coating jewellery and ornaments.

However, electroplating can produce non-uniform coating thicknesses, making it unsuitable for high-precision applications. Also, the process itself has numerous requirements and is too costly to be used on an industrial scale.

Potentially toxic and harmful compounds are used as electrolytes in the electroplating process. Therefore, care must be taken when discarding electrolyte chemicals to avoid environmental contamination.

Powder Coating:

Powder coating, as its name implies, involves coating an object with a powder-based substance. Although versions of the powder coating process were being experimented with prior to 1950, fluidized bed powder coating did not gain much attraction until the 1960s. However, the popularity of spraying the powder coating with a gun that electrically charged the powder coating particles became popular in the 1960s and 1970s.

One of the most popular methods used to apply powder coatings is electrostatic gun spraying. During this process, the spray gun not only propels the electrostatic paint, but gives them a positive electrical charge as well. The base material is charged negatively, thus creating an attraction between it and the negatively charged powder coating particles. Once

the attraction between the two is established, both are heated until the powder coating particles melt and adhere to the base material. The base material is then allowed to cool and a durable powder coating is created.

Another common method to apply a powder coating is the fluidized bed method. To perform a fluidized bed operation, a base material is heated. Once the base material reaches a specified temperature, it is immersed in or fed through an aerated bath or bed of powder coating particles. The heat from the base material causes the powder coating particles to melt and adhere to its surface. The base material is then allowed to cool and the coating solidifies. The coated object is then heat-treated in an oven to harden the coating.

Powder coating processes are usually more efficient than other coating methods for several different reasons. One reason is that there is less overspray. This is because the electrically charged substrate has a negative polarity and the electrically charged powder coating particles have a positive polarity, thus creating an attraction between the two. This reduction in overspray means that less coating material is required.

Another benefit is that it usually requires less time for the operator to spray the substrate. Adding to the efficiency of the powder coating process is the magnitude of the coating thickness that can be applied in one spraying. Coatings such as liquid paint spraying require the first coat to be applied, then waiting for the dry-to-recoat time and cure time, then another coat, and so on until the desired thickness is achieved. With powder coatings, greater coating thicknesses can be achieved in one application and curing cycle. The time that was spent waiting for curing and applying a subsequent coat can be spent coating another batch of parts or another portion of the structure.

Powder coatings have a high quality finish. During the powder coating application, the charged powder coating particles automatically level themselves to a certain degree. This reduces the risk of uneven coatings that can easily occur when applying a liquid coating. Furthermore, powder coatings are not susceptible to running or dripping. This also decreases the possibility of uneven coatings. As mentioned previously, powder coatings require fewer layers than many liquid coating systems. This helps prevent the possibility of a powder coating having defects between layers.

Powder coatings also have advantages with regard to their mechanical properties. Powder coatings are known for being ductile enough to bend and yield with many of the base materials to which they are adhered. Many powder coatings, such as epoxies, have excellent impact strength as well, which lessens the chance of chipping upon collision with other materials. Many other coating types are prone to this type of failure mode. Abrasion resistance is also an advantage of powder coatings over other coating materials. This is partially as a result of the bonding that occurs during the curing process.

Powder coatings are renowned for their durability and aesthetically pleasing appearance. Additionally, because powder coatings do not contain solvents, there are little to no volatile organic compound (VOC) emissions.

While powder coatings may be cost-efficient in the long-term, the initial start-up costs can be significant. The coating process requires special spray booths, ovens and spraying equipment. This can also limit the size of objects that can be coated. It is also difficult, or even impossible, to achieve thin coating layers. Furthermore, the finished surface is not the smoothest when compared to other coating methods. Projects that

require a coating thickness of less than six mils should rely on another coating process.

Nitriding

Nitriding is an excellent method of controlling corrosion, as well as wear and fatigue, in metals. The main aim of surface engineering is to improve the superficial mechanical properties of materials while the bulk properties—such as mechanical strength, impact resistance, density, etc.—are still maintained. The surface aspects of materials, which engineers consider in their design processes, are mostly categorized as wear, fatigue, and corrosion. Although wear and fatigue are considered to be mechanical damage, they are often coupled with corrosion. When these types of damage are combined, the results can be complicated. In the presence of a corrosive environment, the fatigue limit of the materials is greatly reduced, and thus determining the fatigue limit becomes more difficult. That is why it is very important to enhance the corrosion resistance of materials while also improving wear or fatigue resistance.

As elemental diffusion is a function of time and temperature, these processes are performed at high temperatures. The elements that are chosen to diffuse into the steel parts are usually elements with a small atomic radius, such as carbon, nitrogen and boron. These kinds of elements have a higher diffusion rate in steel, and small amounts of them can increase the hardness of steel drastically. Surface modification is predominantly used to improve surface features against mechanical damage. However, some of them have excellent corrosion resistance as well. Therefore, some of these coatings can be good candidates to protect against both mechanical damage (wear and fatigue) and corrosion simultaneously.

Nitriding, can improve the surface corrosion resistance of steel parts

along with increasing wear and fatigue resistance. In this process, which was invented in the early 1900s, atomic nitrogen penetrates the steel surface and reacts with substrate atoms (predominantly iron) to produce nitrides. The metallic nitrides are hard and enhance the wear resistance of the surface. The hardness of the nitride layer reaches up to 65 RC while the substrate hardness is usually around 45 RC. The corrosion resistance of the nitrid layer is excellent in many environments. It is possible to induce both nitrogen and carbon atoms into the metallic surface simultaneously. This process is called nitrocarburizing or caronitriding, depending on which element is predominant in penetrating. Corrosion engineers should consider nitriding as a method to mitigate corrosion, particularly when the corrosion is likely to be accompanied by mechanical damage.

Thermal Nano-Spray Coatings

Tungsten carbide/cobalt (WC/Co) thermal spray coatings have been adopted for the corrosion protection of equipment and component surfaces for many decades. In recent years, researchers are focusing their efforts on the development of nano-materials and spray processes to deposit nano-structured composites of ceramics with metals on substrates. The advantages of nanoparticle coatings include high corrosion protection as well as abrasion protection, while retaining the advantage of good fracture toughness. Nano-structured WC/Co particles are processed in the lab with grain growth inhibitors as well as alloying additions and used as thermal spray feed-stocks. Machine parts require effective surface treatment in order to enable them to work under various corrosive environments. However, nano-particles in some cases cannot be used in thermal spray on account of their very low mass. They cannot be directly carried in a high velocity gas stream to be uniformly deposited on a

component surface.

Cathodic Sputtering:

This method is carried out under a partial vacuum. The substrate to be coated is attached to the anode. Argon, or a similar inert gas, is admitted at low pressure. A discharge is initiated, and the positively charged gas ions are attracted to the cathode. Atoms are dislodged from the cathode as the gas ions collide with the cathode. These atoms are attracted to the anode and coat the substrate. This method can be used for non-conducting as well as conducting materials. The major disadvantages are the heating of the substrate and low deposition rates. Some of the most commonly used metals deposited by sputtering are aluminium, copper, chromium, gold, molybdenum, nickel, platinum, silver, tantalum, titanium, tungsten, vanadium, and zirconium.

Diffusion Coating:

This method requires a preliminary step followed by thermal treatment and diffusion of the coating metal into the substrate. A commercial material known as galvanized steel is made by coating steel with zinc followed by heat treatment and the formation of an iron-zinc inter-metallic coating by diffusion.

Flame Spraying:

The coating metal is melted and kept in the molten condition until it strikes the substrate to be coated. Aluminium and zinc are applied in this manner. Flame sprayed aluminium has a lower density than pure aluminium because of voids in the coating.

Plasma Spraying:

This method is similar to flame spraying except that forms of heating other than a flame are used.

Vacuum and Vapour Deposition:

This method is used primarily for

the formation of metallic coatings on nonconductive substrates. Common deposited coatings using this method include aluminium coatings on plastics and rhodium coatings on mirrors.

Gas Plating:

Some metal compounds can be decomposed by heat to form the metal. Typical examples are metal carbonyls, metal halides, and metal methyl compounds.

Fusion Bonding:

Coatings of low melting metals such as tin, lead, zinc, and aluminium may be applied by cementing the metal as a powder on the substrate then heating the substrate to a temperature above the melting point of the coating metal.

Explosion Bonding:

This method produces a bond between two metals by the exertion of a strong force that compresses the two metals sufficiently to develop a strong interfacial interaction.

Metal Cladding:

The most common method is roll bonding that produces full-sized sheets of clad (coated) material. The bond formed is partly mechanical and partly metallurgical; consequently, metallurgically incompatible materials cannot be produced.

A typical list of metal coatings on steel describing process used, coating metal, dry film thickness (DFT), application, and or limitation, is given below in Table-1, as a guideline.

Table-1: Typical List of Metal Coatings on Steel

Conclusion:

For industrial applications, paint coatings are slowly being replaced by other coating methods. Some paints may contain toxic elements and other volatile organic compounds (VOCs), making them harmful to the environment. Their durability is also

PROCESS	COATING	DFT,mils	USE/LIMITATION
Aluminizing	Aluminium	1-6	Factory Process
Cathode Sputtering	Metals Ceramics	4	Special Applications
Diffusion Coatings	Metals Silicates	0.01-30	Special Applications
Electroplating	Aluminium	0.25	Wire, Sheet. Small Parts
	Cadmium	0.15-0.5	
	Chromium	0.005-20	
	Copper	0.01-30	
	Brass	0.07-0.1	
	Gold	0.03-0.8	
	Silver	0.1-1.0	
	Iron	>125	
	Lead	0.25-50	
	Nickel	0.1-2.2	
	Platinum	0.1-1.0	
	Palladium	0.1-0.2	
	Rhodium	0.01-0.02	
Tin	0.2-2.0		
Zinc	0.1-1.0		
Explosion Bonding	Metals	60-750	Plates, Tube sheets, Strip
Flame Spraying	Aluminium	4-8	Porous*
	Zinc	2-5	Porous*
	Tin	3-15	-
	Metals	5-60	-
	Ceramics	-	Low melting Alloys
Fusion Bonding	Metals	60-750	Plates/Tubes
Galvanizing	Zinc	0.5-5.0	Max length 80'
Gas Plating	Metals	0.01-70	Special Application
Metal Cladding	Aluminium	10-300	Sheets, Plates, Strips, Tubes, Transition Jts
	Brass	60-750	
	Copper	60-750	
	Lead	-	
	Magnesium	-	
Plasma Spraying	Metals	0.01-100.0	Better Quality, High temperature melting metals
	Ceramics	0.25-25.0	
Vacuum Deposition	Metals Ceramics	0.01-3.0 -	Special Applications
Vapour Deposition	Aluminium	0.5-1.0	Special Applications
	Chromium	0.1-1.0	
	Iron	-	
	Nickel	1.0-100.0	
	Graphite	-	

*X – Needs Sealing

lower than other coating methods, as they are likely to fade, peel or flake off due to prolonged environmental exposures.

The combination of barrier and galvanic protection that metallic coatings provide offer a form of corrosion protection that is unparalleled in terms of application, cost and versatility. They are an

effective way to protect other metals such as steel (which is technically a metal alloy) from degradation due to corrosion. This protection allows vulnerable metals to be used in a number of demanding applications that would otherwise be deemed unsuitable.

Industries in the United States alone bear a loss of about 3.5% of its GDP

every year (the losses in India is about 6% of GDP) due to corrosion. Metal coatings, if used correctly, can be effective in prolonging the service life of many metal assets. However, its important to remember that all coatings are susceptible to failure. Therefore, it is essential to understand the advantages and disadvantages of each coating type to select the one that is best for your application.

Rethinking Risk (Endeavour = Opportunity + Risk)

Vinay Mehta, Independent Consultant

Every endeavour is taken up for an expected reward. Expectations are different for different organisations, groups and individuals depending on the goals they put value on.

As individuals, restricting ourselves to four major groups, the Rewards may be in the areas of Health, Relationships, Recognition/Reputation and Money.

These may be the applied in a metaphorical way for organisations too, where :

- Health may relate to growth and sustainability,
- Relationships may mean committed customers, Investors, employees, Vendors, partners, Society and community, other stakeholders
- Recognition/Reputation as reliable partners, nice place to work, community caring, Law abiding etc.
- Money may mean Cash flow, Liquidity, Profits etc.

Most Chemical plants were set up at a

distance from cities. The surrounding population and the neighbouring activity intensity (eateries, ancillaries, settlements etc.) increases as the time passes on and the risk factors change.

Increased sizing of the plants leads to venturing into territories where the design capabilities, internal and external practices, are tested to standards which are yet to adapt to new normals.

This requires more objective discussions to ensure the associated risks are evaluated vis a vis how they have changed over a period of review.

Technologies, scales and complexity of the systems are changing exponentially. Beyond a tipping point, existing measures and previous trends are not adequate in analysing the future scenarios.

Thus, there also is a need to add subjectivity to risk and opportunity assessment as we enter into areas where unknown unknowns are increasing.



Mr. Vinay Mehta is an Independent Consultant specializing in industrial operations, sustainability, and stakeholder engagement. Expertise in Chlor-Alkali, Power, Electrical systems, and EHS, with a proven track record in energy conservation, production milestones, and cost optimization. Empaneled Independent Director, focused on risk management, data-driven decision-making, and future industry trends. Passionate about innovation and tackling challenges.

A hypothetical discussion matrix may be as below.

AREA		HEALTH		
Discussion Agenda		Impact of Emerging Technologies for Hydrogen Production and transportation for use as Fuel. Onsite hydrogen manufacturing by Customers		
Concern		Hydrogen economics for Chlor Alkali plants		
	KNOWLEDGE	PRECAUTIONS	MOATS	COPING
POSSIBILITY	Customer Shift, Reduced value	Long term contracts,	Pipeline customers	Value add products,

AREA(s) AFFECTED	Revenue, Bottom Line	Compression cost improvement	Technical, Other	Operations and transportation review
SEVERITY	Percentage loss of customers	Transport at say @ 350-650 Bar to reduce cost	Improving Compression Cost	Uses as in house resource
FREQUENCY	Customer migration in next 3 to 5 Years	Market expansion opportunities	Collaborating with customers to leverage expertise	Dovetailing to Hydrogen Economy to increase market base
DURATION	New normal	Be a part of Hydrogen new normal to take advantages of expected increase in scales	Rethinking Operations, storage and transportation	Exploring ODC technology, Leveraging expertise in Electrolyser operations to provide services to hydrogen consumers

As famously said, It is not lack of intelligence but lack of Imagination which makes us not anticipate and prepare for events which have low probability but high impact.

As an example, Emerging hydrogen economy will open up new opportunities as the scales expand exponentially.

Initially it may lead to a fall in value for Chlor Alkali Plants and introduce new technical risks as hydrogen storage and transportation dynamics change.

Compression up to, say 350 to 650 Bars, may become a new normal

introducing changes in plant operating practices.

Hydrogen transportation may increasingly use Hydrogen fuelled vehicles so that drivers are already trained for specific safety.

There may emerge other factors which need attention, especially in the regulatory domain.

The brainstorming should throw up the actionables which can then be put in the risk metrics table for reviewing periodically.

Acknowledging possible risk and associated Hazard is an important first

step in Risk and Hazard mitigation efforts.

The physical risks to people, plant, community apart, the risk assessment should also consider other stakeholders like customers, vendors, community, especially where reputational risks are being assessed.

This is a brief suggestion to acknowledge future risks and accept responsibility.

To emphasise again, It is not lack of intelligence but lack of Imagination which makes us not expect the presently unexpected.

Transportation of Dangerous Goods – Responsibility of Consigner, Transporter and Driver

Hari Saran Das, Honorary SHE Advisor, AMAI

Responsibilities of Consigner, Vehicle Owner/ Transporter and Driver for safe transportation of Dangerous Goods have been defined in the Central Motor Vehicle (CMV) Rules 1989 and the same has to be followed strictly. The Responsibility of Consigner, Owner/Transporter and Driver as defined in the Central Motor Vehicle (CMV) Rules 1989 for transportation of Dangerous Goods is given below.

Responsibility of the Consigner (CMV Rules 131)

- Consigner will ensure that the goods carriage has a valid registration to carry the Dangerous goods
- Consigner will ensure that the vehicle is equipped with necessary first-aid, safety equipment and antidotes as may be necessary to contain any accident.
- Consigner will ensure that the transporter or the owner of the goods carriage has full and adequate information about the dangerous or hazardous goods being transported.
- Consigner will ensure that the driver of the goods carriage is trained in handling the dangers posed during transport of such goods.
- Every consigner shall supply to the owner of the goods carriage/ Transporter full and adequate information about the dangerous or hazardous goods being transported and also shall comply with the requirements of CMV rules 129 to 137 to enable the owner and its driver make aware of the risks

created by such goods to health or safety of any person.

Responsibility of the Consigner (CMV Rules 129 129A)

Every owner of a goods carriage or Transporter transporting any dangerous or hazardous goods shall display a distinct mark of the class label appropriate to the type of dangerous or hazardous goods specified in column 3 of the Table I to rule 137.

The vehicle shall be fitted with technograph (an instrument to record the lapse of running time of the motor vehicle; time speed maintained, acceleration deceleration, etc).

Every goods carriage carrying goods of dangerous or hazardous nature to human life shall be fitted with a spark arrester as per CMV Rules 129A

Responsibility of Owner or Transporter (CMV Rule 132) The Owner or The

Owner or the Transporter should ensure that the vehicle to carry dangerous or hazardous goods has a valid registration and the carriage is safe for the transportation of the said goods.

The Owner or Transporter should ensure that the vehicle is equipped with necessary first-aid, safety equipment, tool box and antidotes as may be necessary to contain any accident.

The Owner or Transporter of the goods carriage shall satisfy himself

that the information given by the consignor is full and accurate in all respects and correspond to the classification of such goods specified in the rule.

The Owner or Transporter Shall lay down the route for each trip which the driver shall be bound to take unless directed or permitted otherwise by the Police Authorities.

The Owner or Transporter shall Fix a time table for each trip to the destination and back with reference to the route so laid down.

The Owner or Transporter shall ensure that the driver of the goods carriage carrying dangerous or hazardous goods holds a driving license.

The transporter/owner should satisfy himself that the driver has Sufficient understanding of the nature of such goods and Risks involved in the transportation of such goods and also Capable of taking appropriate action in case of an emergency.

The owner of a goods carriage shall provide relevant information to the driver in writing as per annexure V, Transport Emergency Card (Road).

Transport Emergency Card (Road) Annexure-V CMV Rule 132(2)

Responsibility of Owner or Transporter (CMV Rule 135)

The owner of every goods carriage transporting dangerous or hazardous goods shall ensure to the satisfaction of the consignor that the Driver of the Goods carriage has received adequate

Sl No	Description	Particulars
01	Cargo	Mention the Chemical Identity of the Dangerous Goods being Transported
02	Nature of Hazard	Mention the Hazard as per class Label, such as explosive, corrosive, Flammable etc
03	Protective Devices	Mention the recommended PPES
04	Emergency Action	Notify Police and Fire brigade immediately
05	Spillage	Mention spillage control methods
06	Fire	Mention fire extinguishers type for fire fighting
07	First Aid	First Aid kit
08	Additional information	Mention additional information if any provided by the manufacturer or sender

instructions and training, Understand the nature of the goods he transports, Understands the nature of the risks arising out of such goods and Knows what precaution have to be taken by him in case of Emergency while the goods carriage is in motion or stationary.

Responsibility of the Driver (CMV rule 133)

- The driver shall keep in the driver's cabin the information pertaining to the hazardous or dangerous goods given to him in writing and should be available at all time during it's transportation.
- Driver shall observe at all times all the directions necessary for preventing fire, explosion or release/spillage of dangerous or hazardous goods carried by him while the goods carriage is in motion.
- Driver shall ensure that the goods carriage is parked when not in motion in a place which is safe from fire, explosion and any other risk.
- All the time during transportation the vehicle shall remain under the control and supervision of the driver or some other competent person above the age of 18 years.

Driver to report to the police CMV Rule 136

The driver of a goods carriage transporting any dangerous or hazardous goods shall, on the

occurrence of an accident involving any dangerous or hazardous goods transported by this carriage shall report forthwith to the nearest police station and inform the owner of the goods carriage or the transporter regarding the accident

Action to be taken by the driver during transportation in case of Emergency due to fire, Spillage, leakage, vehicle accident etc.

- If possible drive the vehicle out of populated areas.
- For identification of the Cargo and instruction for emergency handling refer to labels and TREM Card.
- In case of a major leak of highly inflammable gas/ Vapour, it is advised not to start the engine.
- Direct on lookers to leave the affected area
- Prevent pilferage of the leaked substance.

- Secure the accident area and divert traffic.
- Remove affected persons for first aid.
- Isolate the battery of the vehicle In the event of electrical fire.
- In case of fire, inform Fire Station.
- Avoid inhalation of fumes, use required gas masks.
- In case of leaks, try to arrest the leakage if it can be arrested easily.
- Contain small spills by covering with sand.
- Avoid direct contact of the spilled material with skin.
- Use necessary protective clothing like PVC apron for handling leakage/spillage.
- In case of contact of the spilled/ leaked chemical with eyes or skin, wash with plenty of water.
- For any major contamination, remove clothing immediately

Correct fire extinguishing techniques (Extinguishing medium, Water based). Direct stream at base of fire.



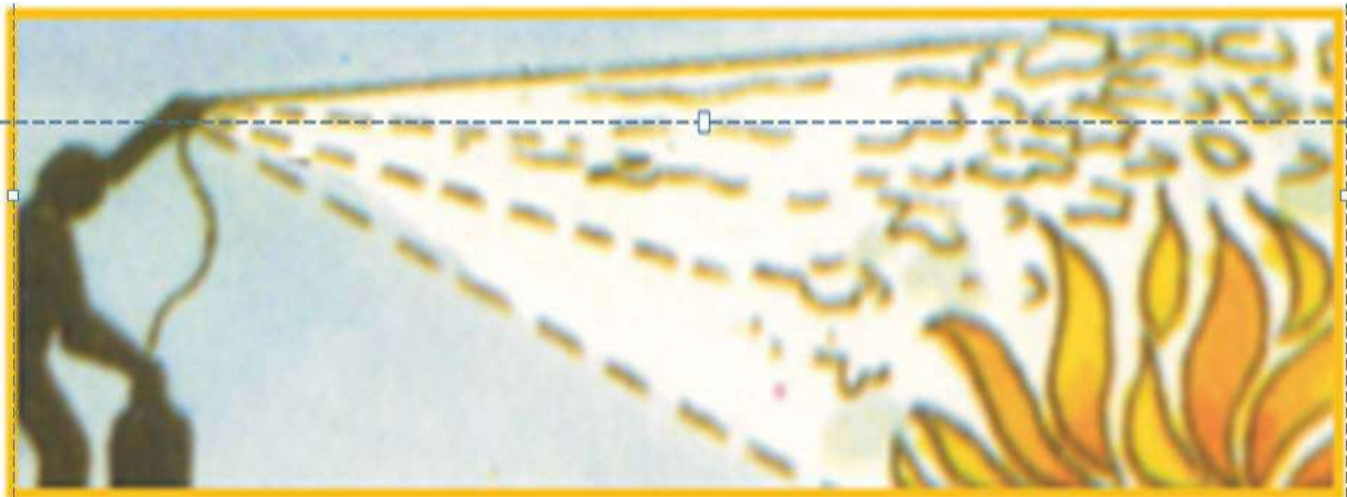
Correct fire extinguishing techniques (Extinguishing Medium-Dry powder)
Start at the base of the flame and move up where burning



Correct fire extinguishing techniques (Extinguishing medium-CO2 and Halon)
Discharge as close to fire as possible from edge of flame forwards and upwards



Correct fire extinguishing techniques (Extinguishing medium, Foam)
Do not play stream onto the burning liquid. Allow foam to fall lightly on fire.



To be Continued---

Why Manufacturers must Review their Chemical Safety Protocols

Suresh Tanwar, Head of Audit and Consultancy, British Safety Council India

India's chemical manufacturing and processing industry is among the largest and most diverse sectors. Globally, India ranks among the top 6 largest producers of chemicals. The sector comprises petrochemicals, fertilisers, pesticides, pharmaceuticals, and paints, collectively accounting for over 70,000 commercial products that contain or are made from chemicals. Of these, several are hazardous chemicals. A media report states India produces and stores over 3,000 hazardous chemicals. Those involved in manufacturing, handling, or distributing these goods know the importance of good safety protocols. However, being aware is not enough. Companies that work in such sectors should also ensure that they review their chemical safety protocols periodically. Because not doing so can have severe consequences on workers' health, communities, and the environment.

Accident impacts

The National Disasters Management Authority (NDMA) estimates that 130 significant chemical accidents were reported in India in the last decade, causing 259 fatalities and injuring 563 people. The NDMA points to about 1,861 Major Accident Hazard units across 301 Districts, 25 States and 3 Union Territories. These numbers do not include thousands of hazardous factories and unorganised sectors that deal with hazardous materials that can pose severe and complex disaster risks.

The World Health Organization (WHO) estimates that two million

people lost their lives due to exposure to hazardous chemicals in 2019, compared to 1.56-million in 2016, indicating a 29% rise in fatalities due to chemical exposure. Another report from the UN Special Rapporteur on Human Rights and Hazardous Substances and Wastes states that one life is lost every 30 seconds due to toxic exposure at the workplace. With 2.78-million deaths per year attributable to unhealthy or unsafe workplaces, the report warned that women, children, migrant workers, and the poor are especially vulnerable to work-related fatalities, injuries and ill health.

According to the WHO, most deaths from exposure to hazardous chemicals are preventable. The solutions to solve this global crisis of public occupational health require the participation of businesses, governments and not-for-profit organisations.

The impact of chemical cocktails on the environment also must be tackled. New research in the UK in 2023 showed the presence of harmful toxic chemical cocktails in over 1,600 water bodies, including rivers, lakes, and groundwater sites.

The alarming statistics call for a new approach focusing on a sustainable future. The strategy should focus on embedding stricter standards, stringent testing, more rigid controls, comprehensive monitoring, and research so we know what's in our rivers and air and how it affects us, our environment, and our natural world.

Chemical Safety Rules in India

There is a chemical safety law in the works in India. The country put together its fifth draft of Chemical Safety Rules in 2020. The draft is still in the proposal stage but is expected to close the gap between India's limited chemical regulations and the more inclusive ones overseas.

While the country awaits the new set of rules, manufacturers should do their bit to improve workplace safety. A chemical safety risk assessment is the first step in that direction. A safety audit will determine whether companies should be going back to the drawing board on their chemical safety protocols.

UK regulations

In the UK, COSHH (Control of Substances Hazardous to Health) is a set of regulations to protect workers at risk from working with hazardous chemicals. It defines the critical responsibilities of employers in key focus areas outlined below:

Exposure – Employers must provide appropriate personal protective equipment (PPE) where applicable to prevent or control exposure to hazardous substances.

Control measures – Employers must implement robust control measures around hazardous substances. The control systems must be properly maintained, clean, and in complete working order.

Instruction – Employers must ensure workers are provided

with information, instruction and training on working with hazardous substances.

Procedures – Employers must put in place procedures to deal with accidents and emergencies relating to hazardous substances.

Surveillance – Employers should ensure workers exposed to hazardous substances are under proper surveillance.

Risk assessments – Employers must undertake periodic COSHH risk assessments.

Limits – Employers must ensure they don't expose workers to hazardous materials beyond the Workplace Exposure Limits (WELs).

Supervision – Supervisors must scrutinise if employees are carrying out tasks as per the protocol.

Similarly, employees must comply with the above guidelines to carry out the tasks safely without harming themselves or others. COSHH is not mandated by law in India yet; however, following the precepts may help organisations get a head-start when REACH/ CMSR takes effect in India.

Organisations must strive for continuous improvement in safety

Continuous improvement entails assessing and enhancing safety processes and protocols to ensure their efficacy and relevance. Continuous improvement can be achieved through various strategies, such as utilising safety audits and establishing safety committees. Safety audits identify potential safety hazards within the manufacturing process, while safety committees facilitate the discovery and implementation of safety enhancements. Furthermore, manufacturers can employ safety metrics to monitor safety performance over time, like tracking the frequency of accidents and near misses, and evaluating the effectiveness of safety controls.

By minimising injuries and illnesses, companies can save money by avoiding the direct and indirect costs of chemical exposures. An employee's injury often leads to work absences and the need to hire or train replacement workers, resulting in decreased productivity. Incident investigations and corrective actions also consume time and effort,

constituting further indirect costs. Direct costs include medical expenses related to chemical exposure incidents.

Adhering to best practices for chemical storage safety significantly reduces the risk of property damage. Proper segregation of incompatible chemicals helps prevent fires and explosions, which can otherwise result in substantial financial losses due to property damage. If a workplace facility is destroyed in a fire, manufacturing operations are halted, leading to significant revenue losses.

By prioritising chemical safety measures, organisations can safeguard the well-being of employees, reduce costs associated with injuries and property damage, and enhance overall productivity in the workplace. Therefore, chemical manufacturers and associated industries that deal with hazardous materials must prioritise safety and continually review their safety protocols and procedures to guarantee their continued effectiveness and alignment with current standards.

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Gen-AI can Help Chemical Industry Regain Value Creation Ability for Investors

Ravi Raghavan, Editor, Chemical Weekly

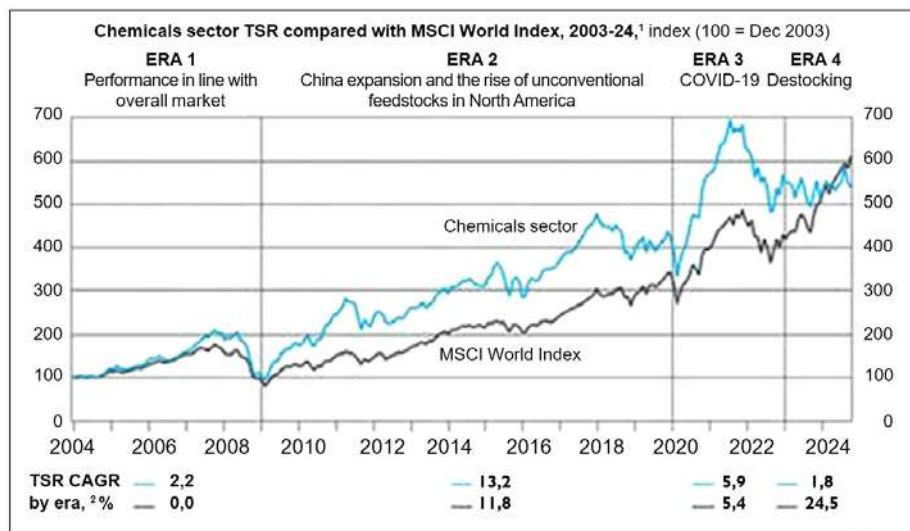
The chemical industry's value creation to investors has in the last 20 years consistently exceeded the broader capital markets in most major economies, India included. It reached record highs in the aftermath of Covid-19, but since then the story has been very different. As most industry players will assert, profitability in many value chains is now under pressure and total shareholder returns (TSRs) have declined.

A new analysis by McKinsey (The state of the chemicals industry: Time for bold action and innovation) notes that the industry is entering a new era, evident from the fact that even as global indices have increased 24% per year since late 2022, chemical stocks grew just 2% per year. More worrying is the fear that the change brought about by overcapacity, slowing demand due demographic changes, high energy prices, new regulations & sustainability pressures, and regionalisation, will fundamentally alter the industry's growth dynamics.

But stakeholders can still significantly enhance value creation by a strong emphasis on innovation, including using the remarkable capabilities that Generative Artificial Intelligence (Gen-AI) provides.

What drove the strong growth?

Several factors contributed to the strong performance of the global chemicals industry over the last 20 years (setting aside the last three). At the top of the list was strong demand, coming from the large populous countries of Asia, notably China



and India. The seemingly insatiable demand for base chemicals in China not just drove global demand, but also investments there, in the Middle East, Southeast & Northeast Asia, and North America. By the end of this period China's base chemical demand came to account for almost half of global demand, and more than three-quarters of incremental demand. While India too showed strong growth – 7-9% per annum in the period – this did not move the needle due the low base (about 2% of global demand).

Access to new feedstocks, notably shale gas in the US, provided ethylene producers a strong cost position. Improvements in productivity, through incremental changes in process technologies, energy management, utilities consumption, byproduct utilisation, as also business process efficiencies, also contributed.

As a consequence of all of the above, in the period from 2003 to 2021,

the industry delivered (on an annual basis) TSR of 11%; revenue growth of 5%; and Return on Invested Capital (ROIC) of 14%.

What has changed?

The underperformance of the chemical industry in terms of TSR as compared to the broader market can be attributed to several reasons. For Europe, soaring energy prices in the wake of the Russia-Ukraine conflict has been a key factor. The stocking up of depleted inventories due Covid-19 provided a demand impetus in the post-pandemic years, but that effect has worn off.

McKinsey believes more fundamental changes are now afoot. For one, the industry is reaching the limits of linear demand growth in the developed world. The historical linkage between GDP and chemical industry growth has altered and slower growth is anticipated for the industry. As

importantly, capacity additions, mainly in Asia, in the last five years have far exceeded demand growth. Between 2023 and 2028, China is expected to add more than 20-mtpa of ethylene capacity, while annual demand is expected to increase by less than 10-mt. In addition, cost advantaged projects in the Middle East and the US are further putting pressure on margins.

Another significant change is that fundamental innovation appears to have stalled, and many products are commoditising faster than ever before. “The traditional strategy of end-market application tailoring has become increasingly competitive,” says the analysis by McKinsey, lamenting that “the focus has shifted to incremental innovation rather than on designing transformative solutions that address unmet needs for end users and command higher margins.”

The tightening regulatory environment – particularly in Europe – is also a contributory factor, adding complexity and compliance costs.

Creating value through AI

So where does the industry go from here? The identification of new markets, while navigating geopolitical risks, remains vital to growth for companies in mature economies (not the case in India). The erstwhile approach of expansion by investing in growing Asian markets, especially China, and locating back-office work to low-cost countries (like India), the consultancy says, is outdated, and companies need to look beyond for value creation.

One of the prime drivers for regaining value creation capabilities is through technology, in particular digital innovations, among which Gen-AI is widely seen as game-changing by impacting across business functions. Gen-AI can process varied sets of unstructured data (such as lab notes, technical specification sheets, scientific literature, and sales presentations) as well as structured data (such as customer relationship management and transactional data) to aid synthesis, suggestions, and new content generation.

Gen-AI-enabled R&D, for example, can be leveraged for optimization of materials, processes, and formulations. In materials, for instance, Gen-AI can enable the development of diverse alloys, crystals and molecules – all without time-consuming and expensive experiments. In drug design, algorithms can help screen the most promising drugs in instants, instead of relying on expensive and long trials, and suggest brand new drugs that do not exist yet, but which are likely to be effective against certain diseases, while still being edible, soluble, etc. For novel formulations, models can be trained to predict the properties of recipes in the making, optimize existing recipes, or generate new ones. McKinsey estimates Gen-AI can provide a more than 30% acceleration in achieving the desired formulation with approximately 5% savings on costs.

In application development, Gen-AI can discover new applications for existing chemicals; significantly

reduce the time spent in application identification and developing business cases; and prioritize opportunities based on potential market size and growth. By deeply analyzing vast data sources such as web content, scientific literature, company reports, and market updates, Gen-AI can reveal new opportunities for growth. Gen-AI models can also dive into huge amounts of public data (such as patents, publications, and grants) and suggest chemistries or formulations. The results from lab experiments or scale-up testing are then fed back into the models to further improve the properties. Google DeepMind, for example, has already predicted structures for 2.2-mn new materials, of which more than 700 have been created in the lab and are now being tested.

At an operational level, McKinsey reckons technology-enabled improvements, deploying advanced analytics, sensor technologies and predictive maintenance, amongst others, can add a 5-10% improvement in productivity.

Slow mover

But the chemical industry is still a slow mover when it comes to adopting Gen-AI. A recent McKinsey Global Institute survey estimates that energy and materials, which includes chemicals, has the lowest exposure to Gen-AI tools at 14%, compared with the cross-industry average of 23%. The emphasis still seems to be for back office, supply chain and commercial functions, but that must change if the industry is to improve on its current value creation record.

(Reproduced with permission from Chemical Weekly January 28, 2025).

12 hospitalised after Chlorine gas leak in Lalru, Mohali, Punjab

Hari Saran Das, Honorary SHE Advisor, AMAI

INCIDENT

Chlorine gas leaked from a chlorine cylinder in the afternoon of Monday, the 3rd July 2023 in Chaundheri village, near Lalru Town, Dera Bassi Tehsil, District Mohali Punjab.

Chlorine is used for chlorination of water tanks by Lalru Municipal Corporation. The chlorine cylinder was kept in a Tube well. Due to the chlorine leakage from one of the chlorine cylinders, 12 people, including five children and three women of the nearby area were affected after inhaling leaked chlorine gas. Several animals also fell ill after inhaling the leaked chlorine gas. Some of the affected persons were

identified as Harpreet Singh, Rubal Devi, Mohit, Jassi, Sandeep, Seema Karketa, Chaundheri, Suman, Nargis, Jansita Mondo, Age 7, Priya, Age 5, and Idveen, Age 3.

Persons who inhaled leaked chlorine gas complained of rashes, itching and a burning sensation in eyes. All the 12 affected persons were immediately admitted to Dera Bassi sub divisional hospital. Gagandeep Singh, Engineer, Lalru Nagar Council junior made arrangements for transportation of affected persons to the hospital.

Out of the twelve affected persons, a boy of 12-year-old, a 32-year-old pregnant woman and her husband were rushed to Government Medical College and Hospital in Sector 32, Chandigarh. Others affected persons were treated at the Dera Bassi civil hospital. Mr Dharminder Singh, Dera Bassi senior medical officer (SMO), Dera Bassi informed that the admitted patients were primarily suffering from shortness of breath. They were administered high-flow oxygen. Their condition was stable, but kept under observation for some more time.



INCIDENT CONTROL

Fire department was informed about the incident. On receiving information, fire fighters from the Dera Bassi fire station rushed to the scene and controlled the leak. Dera Bassi station fire officer Baljeet Singh said they received information about the gas leak around 2.20 pm.

A villager under treatment at the Dera Bassi civil hospital. (HT)

ROOT CAUSE

Filled chlorine cylinders were stored in the tube well storage area. One of the stored filled chlorine cylinder was very old and was leaking. Repair work of the damaged motor installed in the tube well was being carried out at the time of the incident. The filled old chlorine cylinder was taken out by contactor worker not realising that it was leaking. As soon as the leaking chlorine cylinder was taken out from the storage area and placed in the open, the chlorine gas leaked from the cylinder and the leaking gas spread in the densely populated area. The leak continued as the tube well staff could not control the leakage. Those who inhaled the leaking chlorine gas were affected causing shortness of breath and eye irritation. The situation could have been avoided, if the attending tube well staff stopped the leakage from the cylinder. Quick response of fire fighting staff avoided a major disaster.

RECOMMENDATIONS

- Chlorine cylinders should not be stored for a longer period as it is likely to develop leakages. It is preferable to use the cylinders within one month of receipt.
- Chlorine cylinders should be used on first come first use basis.
- The stored chlorine cylinders should be checked daily for chlorine leakage with an ammonia

torch. While checking with ammonia torch, If a white cloud forms then it indicates chlorine leakage from that place. Even if any slight leakage observed in any cylinder, it should be attended immediately.

- While taking out any cylinder from storage for use, the leakage test should be done to ensure that the cylinder is not leaking.
- Untrained contract labourers should not be allowed to handle chlorine cylinders. Persons trained

on safe handling of chlorine should handle chlorine cylinders.

- Operating staffs should be trained to handle small chlorine leakages by themselves.
- Proper PPEs including breathing apparatus should be available near chlorine handling site and persons should be trained for use of PPEs.
- Chlorine safety kits must be available at the chlorine handling site and persons should be trained to use chlorine safety kits in case of emergency.

- A chlorine neutralisation with sufficient quantity of dilute caustic soda should be available for neutralisation of leaking chlorine gas.
- People in the vicinity should be informed about chlorine and steps to be taken by them in case of chlorine leakage.

Source: The Tribune, 4th July 2023

See Something, Say Something

January 2025



Figure 1. Identical hose reels

An audit team was touring a newly installed load/unload station. A team member saw two hose reels near the station, both with the same-colored hose and the same connectors. One was labeled compressed air; the other nitrogen. A team member asked how the hoses were used. The air hose was for use with pneumatic tools and the nitrogen to inert tank trucks during loading.

The team member pointed out that if those identical hoses were reversed, a tank truck that was supposed to be nitrogen-inerted could instead be in the flammable range. No one during the design reviews or the Prestart-up Safety Review identified this hazard. The air hose was locked out until the situation could be implemented and reviewed using MOC. A second hazard also existed. If someone connected nitrogen to an air-powered tool, they could be exposed to an oxygen-deficient atmosphere and pass out.

This is an example of someone asking a simple question that may have prevented two potentially serious incidents. It emphasizes the need to speak up when something appears to be incorrect.

Did You Know?

- A weak signal is an indication that something may be wrong. In Figure 1, the weak signal is identical hoses and the potential to use the wrong one.
- Equipment that is making a different noise or vibrating are both weak signals that something is wrong and needs attention.
- Weak signals often increase until they become a strong signal – an equipment failure or leak that cannot be ignored.
- Many major incidents had weak signals or warning signs that were ignored before the incident. After the incident, these signals were obvious.
- Notify others about a weak signal. It is better to review the situation and know it's OK versus hoping it's not important.
- People notice differences, but the hazard will only be addressed if those differences are raised to someone who can correct them.
- A poorly written procedure is also a weak signal. They may be fine for an experienced operator but confuse a newer employee.

What Can You Do?

- When you see something that does not seem correct, notify the area supervisor. They can bring the right resources to review this situation and start repairs if needed.
- During rounds or field inspections watch for things that changed since your last inspection. Note them and ask about it.
- Confusing procedures should be corrected. If adding a diagram or picture would improve the procedure, suggest that to your supervisor.
- Watch for specific issues while in the field – open electric boxes, sample taps with no plug, or unreadable gauges are all situations that need to be corrected to prevent a possible incident.

If something looks wrong - ASK! You may save a life!

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NEWS DIGEST

General

PM: Nation on track to \$5tn eco; focus on value addition

The Asian Age | 29 January 2025

Prime Minister Narendra Modi stressed on India's accelerated growth towards becoming the world's third-largest economy as he addressed the "Utkarsh Odisha Make in Odisha Conclave 2025" in Bhubaneswar.

He reiterated that the country is rapidly heading toward its ambitious target of a \$5 trillion economy, emphasising that its economic future lies in the value-added manufacturing sector and innovative service industries.

Highlighting India's transformation, Mr Modi said, "The milestone of a \$5 trillion economy is not far away. India has started emerging stronger in manufacturing. Our economy has two major pillars — a thriving service sector and quality products." He stressed the need to shift from the export of raw materials to the addition of value within the country, citing Odisha as a prime example of this vision.

The Prime Minister also criticised the outdated practice of extracting raw minerals and seafood from India, only to have processed products imported back. Mr Modi reaffirmed the government's commitment to ensuring that industries related to local resources, particularly minerals and seafood, are set up within Odisha. This, he noted, aligns with the government's larger vision to stimulate the local economy and create jobs.

Mr Modi's address also touched on India's growing focus on green energy and sustainability. He discussed how the world is increasingly leaning toward green solutions and a sustainable lifestyle. "India is focusing heavily on green energy such as solar, wind, and green hydrogen to ensure energy security," he said.

https://www.pressreader.com/india/the-asian-age/20250129/281715505298109?srltid=AfmBOoo1kSJQZOK7z4Vnkpn2MxkhOhdLZzg_heCfTX8hS9wOK7NueURf

MSMEs: Centre may review import barriers that 'protect' big players

The Indian Express | 27 January 2025

After intense lobbying by Indian Steel Association (ISA), an industry body led by big steel companies, the Ministry of Commerce in December initiated a safeguard duty probe on the import of certain steel items. Protection for domestic steel producers has been in place at least since 2010, but calls for a sharp 25 per cent duty hike has triggered a pushback from MSMEs this time around — the Engineering Export Promotion Council (EEPC) told the government that domestic steel prices are much higher than imports.

Despite concerns flagged internally over market concentration in India's solar panel industry and its potential to inflate household electricity tariffs, the Ministry of New and Renewable Energy brought back its mandate to source modules from select domestic manufacturers starting April 2024,

potentially raising the cost of solar generation and giving an upper hand to select players.

Between 2021 and 2023, the government brought in quality control orders (QCOs) on polyester and viscose fibres, key inputs for synthetic textiles, effectively restricting imports. While the Confederation of Indian Textile Industry (CITI) continues to flag high domestic costs and supply shortages, big companies Grasim Industries and Reliance Industries benefit.

A rise in QCOs, tariffs, and other trade barriers on key raw materials, that serve to protect the domestic industry from external competition, is turning counterproductive — strengthening monopolies at the expense of smaller players. Now, MSMEs are pushing back against such protectionist measures.

In a pre-Budget meeting with the Chief Economic Advisor and Finance Ministry officials, the Federation of Indian Micro and Small & Medium Enterprises (FISME) said the use of tariff and non-tariff barriers like QCOs on the import of critical raw materials such as steel, copper, aluminum, and polymers is creating an uncompetitive environment for Indian industries, particularly MSMEs.

Not only bodies representing MSMEs, there is some pushback from within the government too. NITI Aayog Vice-Chairman Suman Bery cautioned against high tariffs and trade barriers at a press briefing in December, and said the government has to be "very careful" to not close off imports to the point where India starts "cultivat-

ing local monopolies". "An economy frankly gains more from its imports than it gains from the exports because imports are what provide competition," he said.

Chemicals: Between 2021-22 and 2023-24, DGTR, India's apex trade watchdog, recommended an anti-dumping duty in the final findings of 92 anti-dumping investigations. The Central Board of Indirect Taxes and Customs (CBIC) under the Finance Ministry accepted DGTR's recommendation in exactly half the cases, of which 37 per cent covered goods manufactured by either a sole domestic producer or just two producers.

Most of these targeted chemical goods and were initiated by "sole producers" like Laxmi Organics Industries Ltd, Sudarshan Chemical Industries Ltd, Cabot Sanmar Ltd, Arch Pharamalabs Ltd, Gujarat Narmada Valley Fertilisers & Chemicals Ltd (GNFC Ltd), and Vinati Organics Ltd, according to an analysis of DGTR documents by The Indian Express.

GNFC Ltd, sole producer of toluene di-isocyanate (TDI) in India, told this paper that its "capacity is sufficient to cater to the majority of domestic TDI demand" and that "unabated dumping of TDI in India is grievously injuring the domestic industry."

In some instances, CBIC did not accept DGTR's recommendation in anti-dumping cases initiated by sole producers. The impact of anti-dumping duties on downstream users, who benefit from cheap imports of raw materials, is a major consideration in the Finance Ministry's decision to accept or reject a recommendation by DGTR, sources said.

<https://indianexpress.com/article/business/budget/msmes-centre-may-review-import-barriers-that-protect-big-players-9801057/>

India, Oman trade ministers discuss advancing FTA negotiations pact

Business Standard | 27 January 2025

Trade ministers of India and Oman reviewed progress of the proposed free trade agreement (FTA) between the two countries and focused on advancing the negotiations for the pact.

The agreement was discussed between Commerce and Industry Minister Piyush Goyal and Oman's Minister of Commerce, Industry and Investment Promotion Qais bin Mohammed Al Yousef in Muscat.

"Our talks focused on advancing negotiations on the Comprehensive Economic Partnership Agreement (CEPA), strengthening trade and investment ties, and exploring avenues to further deepen our bilateral partnership," Goyal said on X.

Goyal is in Muscat for the Joint Commission Meeting, which will be held on January 28.

On January 14, India and Oman held the fifth round of talks for the agreement, aiming to boost bilateral economic ties. The negotiations for the agreement, officially dubbed CEPA, formally began in November 2023.

In such agreements, two trading partners either significantly reduce or eliminate customs duties on a maximum number of goods traded between them. They also ease norms to promote trade in services and attract investments.

Oman is the third largest export destination among the Gulf Cooperation Council (GCC) countries for India. India already has a similar agreement with another GCC member UAE which came into effect in May 2022.

The bilateral trade has declined to USD 8.94 billion (exports USD 4.42 billion and imports USD 4.5 billion) in 2023-24 from USD 12.39 billion

(exports USD 4.47 billion and imports USD 7.91 billion) in 2022-23.

India's key imports are petroleum products and urea. These account for over 70 per cent of imports. Other key products are propylene and ethylene polymers, pet coke, gypsum, chemicals, and iron and steel.

With a population of 1.4 billion compared to Oman's 5 million, India represents a vast consumer market for Oman.

However, Oman's higher per capita income (\$25,060) compared to India's (\$2,370) could mean a demand for more diversified and possibly higher-value goods and services in Oman, which India could aim to supply, the GTRI has said. PTI n New Delhi

https://www.business-standard.com/external-affairs-defence-security/news/india-oman-trade-ministers-discuss-advancing-fta-negotiations-pact-125012701027_1.html

CBIC notifies rules for entities to get temporary identification number under GST

The Times of India | 24 January 2025

Entities that are not required to get a GST registration but are required to make a tax payment under the GST Act provision can now obtain a Temporary Identification Number (TIN). The Central Board of Indirect Taxes and Customs (CBIC) has notified an amendment to GST rules to issue TIN to entities that are not required to register under the GST Act but need to make payments under some specific provision.

Under Goods and Services Tax (GST) rules, registration is mandatory for businesses with an annual turnover of Rs 40 lakh and Rs 20 lakh in the manufacturing and services sectors, respectively.

The decision to issue TIN to entities that are otherwise not required a GST

registration was taken by the GST council in its meeting last month.

<https://timesofindia.indiatimes.com/business/india-business/cbic-notifies-rules-for-entities-to-get-temporary-identification-number-under-gst/articleshow/117513444.cms>

Indian economy to grow in range of 6.5-6.8% in current fiscal: Deloitte

Millennium Post | 21 January 2025

Deloitte India projected India's GDP to grow at 6.5-6.8 per cent in the current fiscal and said India will have to adapt to the evolving global landscape and harness its domestic strengths to drive sustainable growth. In its Economic Outlook report, Deloitte India also said the country needs to decouple from global uncertainties and harness its domestic potential. Despite global and domestic challenges, India is moving up the global value chains, as highlighted by the rising share of high-value manufacturing exports, particularly in electronics and machinery and equipment.

Deloitte India, in its latest Economic Outlook, has revised its annual GDP growth projection for FY2024-25 to 6.5-6.8 per cent, with expectations for 6.7-7.3 per cent in the following year. The adjustment reflects the need for cautious optimism as the economy navigates rising global trade and investment uncertainties. In its Economic Outlook report in October, Deloitte India had projected the country's economic growth higher at 7-7.2 per cent for the current fiscal.

As per the first advance estimates released by the National Statistics Office (NSO) earlier this month, India is expected to grow at a 4-year low pace of 6.4 per cent in the current fiscal. The RBI expects growth to be 6.6 per cent in the current fiscal.

A tempered global growth outlook, potential shifts in trade regulations

among industrial nations, and more stringent monetary policies than previously anticipated in India and the US may hinder the synchronised recovery in Western economies that we anticipated for this fiscal year, she added. Deloitte in its report said the government acknowledges the growing importance of retail investors and is likely to focus on strengthening their participation in the upcoming Union Budget 2025-26. Measures may include simplifying investment processes, enhancing safety mechanisms to protect household savings from market volatility, and promoting financial literacy through campaigns and incentives. Additionally, the budget is expected to prioritise capital expenditure, advance skilling initiatives, and accelerate digitisation to bolster economic resilience and mitigate the impact of ongoing global uncertainties. "India's demographic dividend and growing middle-class wealth are often celebrated for driving consumption demand and strengthening the labour market. But now we know they are also enhancing the stability of the country's financial markets," Deloitte said.

<https://www.millenniumpost.in/business/sensex-nifty-climb-in-early-trade-after-7-day-decline-598763>

India, EU have better understanding of ambitions, sensitivities

Business Line | 21 January 2025

India and the EU have a better understanding of each other's ambitions and sensitivities, and there is a no doubt that there's a lot to gain on both sides from the proposed bilateral free trade agreement (FTA), according to Maros Sefcovic, European Commissioner for Trade and Economic Security.

"We have agreed to focus our attention on building a commercially meaningful market access package in industrial goods and services. We

are aiming for a win-win outcome that supports our two economies in developing clean tech supply chains that will be fit for decades to come," said Sefcovic, following a two-day high-level trade and investment dialogue with Commerce Minister Piyush Goyal in Brussels over the weekend.

"We have addressed several areas that in the past looked difficult to overcome. We are looking at simplification of process, finding cost competitive ways to expand trade for the benefit of our businesses, especially MSMEs, farmers and fishermen," Goyal said.

Last month, after Sefcovic and Goyal met virtually, the Commerce Ministry issued a statement pointing out that following nine rounds of intensive negotiations, the FTA discussions required strategic political guidance to conclude a commercially significant and mutually beneficial agreement, with due consideration given to each side's sensitivities.

While the average tariffs in the EU bloc of countries are much lower than in India, the nontariff barriers are high. New Delhi has been emphasising on the need to bring down nontariff barriers because an FTA with the bloc would be useful to Indian exporters and lead to increased market access only if these are lowered.

The positive outcomes for EU-India trade talks in Brussels include a shared political objective to take partnership to a new win-win level and identify the path forward for an ambitious trade & investment package, Herve Delphin, EU's Ambassador to India, posted on social media platform X.

He also noted that both sides had agreed to increase the pace of negotiations for the India-EU FTA.

The FTA talks between India and the EU first began in 2007, but reached a stalemate in 2013 over issues such as market access for specific goods, specifically automobiles and wines and spirits. The talks were restarted in

2022 but are facing issues in several areas, including rules of origin (ROO), which determine the national source of a product.

<https://www.pressreader.com/india/businessline-delhi-9WVW/20250121/281590951229464?srltid=AfmBOop-w2ei4376rzzDnnbHmpqK3uNRF08fRbeg-GRWnkYYm-HfjoXFA>

Infra sector needs Rs 15 lakh cr annual outlay to achieve Viksit Bharat target: Mandaviya

Millennium Post | 20 January 2025

Union Minister Mansukh Mandaviya said the government's infrastructure investment budget should be Rs 15 lakh crore per annum, against Rs 11.5 lakh crore at present, for the next 25 years to achieve 'Viksit Bharat @2047' and social security for all. This assumes significance in view of India's 100 years of independence in 2047 and the government's goal of 'Viksit Bharat@2047'. Addressing the inaugural of ISSA-ESIC International Seminar 'Formalization & Social Security Coverage for Workers in the Informal Sector Challenges & Innovation', Mandaviya stated that the infrastructure investment budget was Rs 1.2 lakh crore in 2012 and this budget was Rs 2.4 lakh crore in 2014 under the Narendra Modi-led government.

Mandaviya noted that the social security coverage was 24 per cent a decade ago, in 2014. Now, he said, it is 48 per cent which excludes food security and if we add food security to this, then the social security coverage in the country is 68 per cent, which is a big achievement. India has 1.4 billion population and under these circumstances, the government has done unmatched work in providing social security in the last decade, he noted. Social security means health, pension, livelihood and food security. Today 600 million population

have health security in India who get free treatment of up to Rs 5 lakh, he explained.

India has brought 800 million people under the food security ambit. Every citizen gets 5 kg of foodgrains free of cost, he noted. He said that informal workers are getting benefits from all these schemes in the country. In the last 10 years of the Modi government, 250 million people have come above the poverty line, mainly because of getting social security, he pointed out. Today 630 million people are in the workforce in India and the female ratio in the workforce participation has increased from 22 per cent a decade ago to 44 per cent at present, he noted. India is emerging as a big market with FDI flowing and ease of doing business ranking has improved to 63 rank from 140 a decade ago, he noted.

<https://www.millenniumpost.in/business/infra-sector-needs-rs-15-lakh-cr-annual-outlay-to-achieve-viksit-bharat-target-mandaviya-595518>

Lower import tariffs on inputs, other incentives sought

Financial Express | 20 January 2025

The coming general Budget could undertake adjustments of taxes and unveil incentives for Indian industry to take advantage of the opportunity that could emerge, if Trump administration's moves escalate the worldwide trade tensions, according to experts.

For several months, Donald Trump has been open about increasing tariffs on imports from everywhere to 10%, and on Chinese imports to 60%. In addition to tariffs, the US has put other curbs to block access to advanced technologies and raw materials to China. China too has retaliated with curbs on exports of critical minerals used in electric vehicle batteries and technologies hurting everyone else, not just the US.

In the big power fight that is expected in the days ahead, India will have to be building up fresh capacities in the tech and capital-intensive sectors locally by massive doses of local and foreign direct investment (FDI) to get ready for the situation, and the budget announcements can pave the way for it, economist at Deloitte Rumki Majumdar said.

Industry chambers have asked for reduction of duty on many of the raw material, inputs and freed stock to zero in their pre-budget recommendations to the Ministry of Finance. The products on which nil duty has been asked for include coking coal, non coking coal, telecom networking products and capital goods for defence business. Other sectors where reduction in duties have been asked for are chemicals and metals.

<https://www.financialexpress.com/policy/economy-lower-import-tariffs-on-inputs-other-incentives-sought-3719726/>

Weakening Rupee has not Supported Exports: GTRI

Asian Age | 19 January 2025

Rupee, which has weakened 41 per cent against the US dollar in the past 10 years, has not supported exports much as merchandise shipments have grown lower by 39 per cent. Between 2015 and 2025, the rupee weakened by 41.3 per cent against the US dollar, falling from 61.4 to 86.7. While economists believe currency depreciation should make exports more competitive, India's experience shows that rising input costs and inflation often negate these benefits, finds the study by GTRI.

During the 2014 to 2024 period, overall merchandise exports grew by 39 per cent. Low-import sectors like textiles and clothing experienced negative growth, even though the weaker rupee should have made their goods more competitive globally. On the

other hand, high-import sectors like electronics, machinery, and computers have seen higher growth. Electronics exports surged by 232.8 per cent, and machinery and computer exports grew by 152.4 per cent. Chemicals, pharmaceuticals, and automobiles, all with significant import content, also performed strongly.

Weaker rupee hurts the labour intensive exports most and helps import driven exports with low value add. Higher import costs for items like crude oil, coal, vegetable oil, gold, electronics, and chemicals lead to rising energy costs, inflation, which often cancel out the benefits of currency depreciation. India's high raw material, industrial power, capital and logistics costs makes the situation worse.

<https://www.asianage.com/nation/weakening-rupee-has-not-supported-exports-gtri-1855101>

80% Indian firms mark AI as core priority surpassing global average, but lag in workforce readiness: BCG study

Financial Express | 16 January 2025

India is emerging as a frontrunner in artificial intelligence adoption, with 80% of companies marking AI as a core strategic priority; surpassing the global average of 75%, according to Boston Consulting Group's latest AI Radar report.

The study finds that Indian enterprises are planning significant investments, with 72% allocating up to \$25 million for AI initiatives in 2025, while 16% plan to spend between \$26-50 million, positioning India among the major global spenders in AI technology.

Amongst key global markets, India ranks ahead of several developed economies in planned AI investments for 2025, with only Japan (53%), US (59%), and Singapore (63%) showing lower percentages of companies planning investments up to \$25 million.

The higher percentage of Indian companies in this investment bracket (72%) indicates a more widespread adoption approach across the corporate landscape, though the proportion of firms planning investments above \$50 million remains relatively smaller compared to global leaders.

The report, titled "From Potential to Profit: Closing the AI Impact Gap," which surveyed 1,803 C-level executives across 19 markets and 12 industries, also highlights the growing attention towards autonomous agents; AI systems that achieve goals with minimal human input gaining significant traction as 67% of executives globally consider them for AI transformation.

However, it reveals a concerning gap in India's AI readiness; particularly in workforce upskilling. Only 26% of Indian companies have trained more than a quarter of their workforce on AI/GenAI tools, falling below the global average of 29% and significantly behind leaders like Singapore (44%) and Japan (38%). BCG, however, anticipates this spending to increase in 2025. Yet, assuming that global counterparts will also keep up with increased spending, this may mean that in India, where supply often outweighs demand in most functions, individual initiative in skill development may continue to play a crucial role alongside organisational efforts.

The upskilling challenge is particularly crucial as organisations grapple with the dual needs of training both users and producers of AI tools. "As learning and development agendas evolve, companies are actively working to upskill their employees on scaling use cases and enabling thinking functions to conceptualise new applications," said Nipun Kalra, MD & Partner, BCG India, and India Leader, BCG X.

However, contrary to widespread concerns about AI-driven job losses, only 7% of executives globally anticipate a decrease in headcount due to AI automation. "Most CXOs are focused on augmenting existing workforces rather

than replacement. The conversation is centred around making functions 30-50% more productive and enabling employees to do more with the same resources, Kalra added.

<https://www.financialexpress.com/life/technology-80-indian-firms-mark-ai-as-core-priority-surpassing-global-average-but-lag-in-workforce-readiness-bcg-study-3716373/>

Imported inflation, fiscal costs remain key worries

The Economic Times | 14 January 2025

The rupee's sharp slide has the immediate effect of jacking up imported inflation. It also has adverse fiscal implications as higher costs of imported fertilisers, crude oil and natural gas could inflate the subsidy bill. The situation is compounded by the spike in crude prices after a rather long spell of relatively moderate rates – Brent surged past \$81/barrel on Monday. Typically, prices of several commodities, including key industrial feedstock, move in tandem with crude.

Any rise in costs of imported coal or steel could result in economy-wide cost-push inflation. White goods and electronic items could get costlier for consumers. The price rise will initially be limited to imported finished goods, but over time, domestically manufactured ones, too, may turn dearer as even these have substantial import content, and companies may opt to pass the rising costs.

A major effect of the rupee's fall will be on India's \$100-billion industrial goods imports from China. These imports could become expensive. The volatility in global exchange rates might increase over the next few weeks when Donald Trump unveils his tariff measures. Trade and currency market experts, however, expect things to settle down in the second quarter of the next fiscal.

<https://www.financialexpress.com/policy/economy-imported-inflation-fiscal-costs-remain-key-worries-3714216/>

Cut customs duty, simplify structure to boost mfg, exports

The Economic Times | 14 January 2025

The government should simplify the customs duty structure by reducing slabs from over 40 to 5, and ensure that raw materials are taxed lower than finished goods in the forthcoming Budget to cut import bills, boost manufacturing and exports, think tank GTRI said.

It asked for an inter-ministerial review of tariff policies to refine India's tariff framework, avoid international scrutiny, and align tariffs with national goals. Suggesting lowering India's average tariff to about 10 per cent, the Global Trade Research Initiative (GTRI) said this can be achieved without major revenue loss. Currently, 85 per cent of tariff revenue comes from just 10 per cent of tariff lines (or product categories), while 60 per cent of tariff lines contribute less than 3 per cent to the revenue.

It added India's customs duties, once a major contributor to government revenue, now account for just 6.4 per cent of the gross tax revenue, compared to corporate tax (26.8 per cent), income tax (29.7 per cent), and GST (27.8 per cent). Given the declining share of customs duties, they are no longer a key revenue pillar and it is time to re-evaluate tariffs as a strategic tool to support domestic manufacturing and global trade, the GTRI said.

<https://manufacturing.economictimes.indiatimes.com/news/industry/cut-customs-duty-simplify-structure-to-boost-mfg-exports/117241483>

Budget must tweak import duties to boost local manufacturing: GTRI

Financial Express | 14 January 2025

As import taxes cease to be a major revenue source for the government, the Budget for FY26 should be used to

strategically adjust the rates to boost domestic manufacturing and bring average tariffs down, trade policy think tank GTRI said. Customs duties account for just 6.4% of the gross tax revenue, compared to corporate tax (26.8%), income tax (29.7%), and GST (27.8%).

The Global Trade Research Initiative (GTRI) suggests lowering India's average tariff to around 10% from 17.1% now, which can be achieved without any major revenue loss and will also help avoid international scrutiny. India's tariffs have always drawn strong reactions from developed countries, including the US.

Currently, 85% of the tariff revenue comes from just 10% of tariff lines, while 60% of tariff lines contribute less than 3% of revenue. Simplifying the tariff structure by reducing slabs from over 40 to five, capping maximum tariffs at 50%, and ensuring raw materials are taxed lower than finished goods would foster economic growth, reduce import reliance, and promote exports, GTRI said.

The report also suggested ending IGST, cess and basic customs duty exemptions under the Manufacturing and Other Operations in Warehouse Regulations (MOOWR) to support local capital goods manufacturers. The current scheme allows duty-free import of machinery even when the goods made from it are sold domestically.

<https://www.financialexpress.com/policy/economy-budget-must-tweak-import-duties-to-boost-local-manufacturing-gtri-3714115/>

Revamped interest equalisation scheme for exports may include only value-added items

Business Line | 13 January 2025

The revamped interest equalisation scheme for exporters may be extended only to value added products and

exclude non value-added items, raw materials and cereals such as cotton yarn and rice, sources have said.

The interest equalisation scheme, under which beneficiaries are extended export credit by banks at a subsidised interest rate, was first implemented in April 2015 for five years. It covered non-MSME exporters of about 410 identified products and all exporters from the MSME sector.

The scheme was subsequently extended for limited periods of time and the last extension, which was only for MSME exporters, lapsed on December 31, 2024.

"It is being hoped that once the list of exported items eligible for interest subvention from the non-MSME sector is re-worked, the revamped scheme will be announced for all. The non-MSME exporters will be covered for all items. The relaunch of the revamped scheme may happen in this year's Budget," the source said.

The interest equalisation rates, which were earlier lowered to 2 per cent for non-MSME exporters and 3 per cent for MSME exporters, are expected to remain unchanged, the source added. This is because the Finance Ministry has budgetary constraints and may also place a limit on the benefit amount.

The initial list of 410 items covered under the scheme included items such as readymade garments, toys, sports goods, fabrics, handicrafts, medical and scientific instruments, auto components, bicycles and parts, leather goods, footwear, cosmetics and processed agriculture and food items.

Under the interest equalisation scheme, the banks are compensated by the government for the subsidised rate of credit offered to beneficiaries.

<https://www.thehindubusinessline.com/economy/revamped-interest-equalisation-scheme-for-exports-may-include-only-value-added-items/article69096393.ece>

Govt mulls setting up marketing support fund to boost exports to US, other key markets

Business Line | 12 January 2025

Budget 2025 may provide some succour to the country's exporters if a proposed marketing support fund with an estimated annual corpus of about ₹1,000 crore finds favour with the Finance Ministry.

The idea is to help promote exports to promising markets, including the US, where a potential tariff penalisation of China by the Trump administration could open up more opportunities, sources have said.

"The Commerce Department is holding discussions with the Finance Ministry on the possibility of making provisions for a marketing support fund for exports in the forthcoming budget. The outlay could be around ₹1,000 crore annually but it is still being negotiated. This would push exports of key products in important markets," a source tracking the matter told businessline.

The proposed marketing support fund could be used by beneficiary exporters not only for participating in exhibitions, fairs and road-shows in foreign markets but also meeting various regulatory requirements for products such as pharmaceuticals, the source said.

"The Commerce Department believes that if the country has to go for massive growth in exports keeping the \$1 trillion goods exports target by 2030 in mind, then marketing is the key and a dedicated fund could help," the source said.

Efforts to push exports of six identified items in 20 identified high potential markets has already begun. The Commerce Department recently hosted a meeting with commercial heads from Indian missions in these countries to discuss growth strategies. The countries include US, Australia, France,

China, Russia, the UK, Japan, South Korea, Singapore and Indonesia. The focus items include engineering goods, electronics and pharmaceuticals amongst others.

Following a decline in 2023-24 by 3.11 per cent (year-on-year) to \$437 billion, goods export growth inched up in the April-November 2024 period by 2.17 per cent to \$ 284.31 billion. But exports in November 2024 fell 4.8 per cent to a 25-month low of \$32.1 billion.

<https://www.thehindubusinessline.com/economy/budget-2025-govt-mulls-setting-up-marketing-support-fund-to-boost-exports-to-us-other-key-markets/article69092332.ece>

Indian economy likely to be 'a little weaker' in 2025, says IMF MD

Millennium Post | 11 January 2025

The Indian economy is expected to be "a little weaker" in 2025 despite steady global growth, IMF Managing Director Kristalina Georgieva has said. Georgieva also said she expects quite a lot of uncertainty in the world this year mainly around the trade policy of the US. In her annual media roundtable with a group of reporters, she said global growth is expected to be steady in 2025, but with regional divergence. Georgieva said she expects the Indian economy to be a little weaker in 2025. However, she did not explain it any further. The World Economy Outlook update week will have more details about it. "The US is doing quite a bit better than we expected before, the EU is somewhat stalling, (and) India a little weaker," she said.

Brazil was facing somewhat higher inflation, she said. In China, the world's second-largest economy, the International Monetary Fund (IMF) was seeing deflationary pressure and ongoing challenges with domestic demand, she said. "Low-income countries, despite all the efforts they are making, are in a position when

any new shock can affect them quite negatively," Georgieva said. "What we expect in 2025 is to have quite a lot of uncertainty, especially in terms of economic policies. Not surprisingly, given the size and role of the US economy, there is keen interest globally in the policy directions of the incoming administration, in particular on tariffs, taxes, deregulation and government efficiency," Georgieva said. "This uncertainty is particularly high around the path for trade policy going forward, adding to the headwinds facing the global economy, especially for countries and regions that are more integrated in global supply chains, medium-sized economies, (and) Asia as a region," she said.

<https://www.millenniumpost.in/business/indian-economy-likely-to-be-a-little-weaker-in-2025-says-imf-md-594380>

Industrial growth rises to six-month high of 5.2% in November

Business Line | 10 January 2025

The growth, measured on the basis of changes in Index of Industrial Production (IIP), was 3.5 per cent in October. According to a Statistics Ministry, the growth rates of three sectors – Mining, Manufacturing and Electricity – for November were 1.9 per cent, 5.8 per cent and 4.4 per cent, respectively. These were 0.9 per cent, 4.4 per cent and 2.8 per cent in October.

The previous high growth rate at 6.3 per cent was recorded in May. It grew by 4.9 per cent in June and 5 per cent in July. The IIP growth was flat in August before picking up at 3.1 per cent in September and 3.7 per cent in October. The growth in the factory output, measured in terms of the IIP, in April-November 2024 grew by 4.1 per cent against 6.5 per cent in the year-ago period, the data showed.

"ICRA expects the IIP growth to moderate to 3-5 per cent in December 2024 (+4.4 per cent in December

2023) from 5.2 per cent in November 2024 (+2.5 per cent in November 2023), partly on account of an unfavorable base," Nayar said.

<https://www.thehindubusinessline.com/economy/industrial-growth-rises-to-six-month-high-of-52-in-november/article69084674.ece>

India asks missions in 20 nations to boost market opportunities, export

Business Standard | 09 January 2025

The commerce ministry has asked the commercial wings of Indian Missions of 20 countries to specifically identify market opportunities in six goods and services to promote India's exports, an official said.

Ways to increase the exports were discussed during a three-day meet, concluded on January 8, between senior officials from the ministry and commercial wings of Indian Missions.

The official said the missions were asked to market opportunities in six sectors, competitors and specific companies.

The meeting was important as the commerce ministry is in the process of formulating a strategy to push exports of six key product categories, including engineering goods and electronics, to 20 focus countries, including the US, Australia, France, China, Russia, the UK, Japan, South Korea, Singapore and Indonesia.

These countries, including the US and the European Union nations, account for a major chunk of India's total exports.

After recording double-digit growth in October 2024, India's exports in November contracted 4.85 per cent year-on-year to US\$ 32.11 billion.

Cumulatively, during April-November this fiscal year, exports increased by 2.17 per cent to US\$ 284.31 billion and imports by 8.35 per cent to US\$

486.73 billion.

Services exports reached an all-time high of US\$ 34.31 billion in October, registering an increase of 22.3 per cent year-on-year.

https://www.business-standard.com/economy/news/india-asks-missions-in-20-nations-to-boost-market-opportunities-export-125010900803_1.html

Role Of BIS Standards In Ensuring Safe Drinking Water Crucial: Researchers

The Free Press Journal | 06 January 2025

Experts, researchers, policymakers and students discussed the critical role of standards in assessing water quality and fostering sustainable water resource management at a one-day workshop titled "Standards in Measuring Water Quality" organized recently by the department of civil engineering, IIT Indore in collaboration with the Bureau of Indian Standards (BIS) and the Centre for Narmada Basin Management Studies.

The participants explored how standardising water quality assessment processes could improve measurement accuracy, emphasized the critical role of BIS standards in ensuring safe drinking water and highlighted the importance of adopting consistent methods for water analysis across regions.

The event also aimed at fostering collaboration among researchers and policymakers to address emerging water contamination challenges, enhancing public awareness about water safety standards and integrating advanced scientific techniques into water management practices for better decision-making and sustainable development.

Prof Manish Goyal, faculty at IIT Indore said, "The workshop emphasised on the growing concerns of water pollution in India, with particular

focus on the north-eastern region and major river basins like the Narmada and Brahmaputra. The objective of the workshop was to create awareness about the Bureau of Indian Standards (BIS) guidelines for water quality and to encourage innovative research approaches for addressing water contamination issues. The workshop also stressed the need for greater public awareness of these standards and for actionable steps to combat water pollution."

The sessions included a comprehensive overview of water pollution in the north-eastern region, focusing on the Brahmaputra river, absence of sewage treatment plants, presence of harmful contaminants like arsenic and iron and the over-reliance on groundwater.

There was also a detailed analysis of the water contamination trends in the region and regulatory measures in place to control industrial discharge with outlining potential solutions to improve compliance with environmental standards. An insightful lecture on sustainable water resource management, with particular focus on groundwater depletion and the urgent requirement for renewable sources was also delivered.

<https://www.freepressjournal.in/indore/role-of-bis-standards-in-ensuring-safe-drinking-water-crucial-researchers>

FDI in India growing rapidly: Goyal

Daily Pioneer | 06 January 2025

FDI inflows into the country are surging, with investors from the Middle East, Japan, European Union, and the US recognising India's status as a top investment destination, driving rapid economic growth and generating millions of new jobs, Commerce and Industry Minister Piyush Goyal has said.

He said that global investors are showing keen interest in India as the country offers several advantages such

as strong domestic market, skilled and talented workforce and rule of law.

"I can clearly see FDI (foreign direct investment) in India once again growing rapidly and creating millions of jobs. Countries in the Middle East, EFTA region, Japan, and investors from the EU and the US are all realising that India continues to be the most preferred destination for FDI," Goyal told PTI.

He added that India's stable and predictable regulatory framework, coupled with a favourable business environment and progressive policies aimed at enhancing ease of doing business, is attracting an increasing number of investors from around the world.

India is averaging over USD 4.5 billion in monthly foreign direct investment (FDI) inflows since January this year despite global uncertainties and challenges.

In the January-September period this year, FDI into the country rose by about 42 per cent to USD 42.13 billion. The inflow was at USD 29.73 billion in the year-ago period.

The inflows during April-Sept 2024-25 grew by 45 per cent to USD 29.79 billion against USD 20.48 billion in the same period previous fiscal. Total FDI in 2023-24 was a healthy USD 71.28 billion.

The key sectors attracting the maximum of these inflows include the services segment, computer software and hardware, telecommunications, trading, construction development, automobile, chemicals, and pharmaceuticals.

FDI is allowed through the automatic route in most of the sectors while in areas such as telecom, media, pharmaceuticals and insurance, government approval is required for foreign investors.

<https://www.dailypioneer.com/2025/business/fdi-in-india-growing-rapidly-goyal.html>

Govt Amends Foreign Trade Policy 2023 To Enhance Stakeholder Participation

Business World | 04 January 2025

The Union Ministry of Commerce and Industry has amended the Foreign Trade Policy (FTP) 2023 to strengthen stakeholder engagement in policy formulation. The Directorate General of Foreign Trade (DGFT) notified the addition of Para 1.07A and 1.07B, mandating consultations with stakeholders, including importers, exporters, and industry experts, before introducing or amending trade policies.

This amendment aims to formalise the mechanism for gathering views, suggestions, and feedback from relevant parties, enhancing transparency and inclusiveness in the decision-making process.

Additionally, it requires the government to provide reasons for not incorporating any suggestions, ensuring accountability in policy making.

The initiative is part of the government's broader commitment to promoting Ease of Doing Business (EoDB) in India. By encouraging participation from diverse stakeholders, the policy aims to create a collaborative environment for shaping India's trade framework.

However, recognising the complexity of balancing conflicting opinions from multiple stakeholders, the government has reserved the right to take final decisions in exceptional circumstances.

This provision ensures smooth functioning while respecting the sovereign power of the state to address contingencies through suo moto actions.

The notification highlights the government's intention to usher in a new era of inclusiveness in trade policy decisions. It reflects a shift towards more participatory governance, where stakeholders have an official platform to share their inputs.

The amendment, dated 2 January 2025, is expected to yield long-term benefits as the government actively engages with stakeholders to refine policies and procedures affecting imports, exports, and transit of goods. This move aligns with the government's vision of fostering a robust trade environment, driven by collaboration and transparency.

<https://www.businessworld.in/article/govt-amends-foreign-trade-policy-2023-to-enhance-stakeholder-participation-54380>

Exporters stare at uncertainty over RoDTEP

The Hindu | 03 January 2025

With the expiry of the Remission of Duties and Taxes on Exported Products (RoDTEP) scheme for exports under advance authorisation (AA), export-oriented units (EOU), and special economic zones (SEZ) schemes on December 31, 2024 and no communication regarding its extension, exporters are uncertain about RoDTEP benefits for these schemes.

An advisory, issued by the Office of the Commissioner of Customs - NS II, Centralised Export Assessment Cell, Jawaharlal Nehru Custom House, on January 2, urging exporters and customs brokers filing shipping bills under AA, EOU, or SEZ schemes to "carefully opt" for the RoDTEP scheme, was withdrawn on January 3, adding to the confusion.

In September last year, the Directorate General of Foreign Trade issued a notification that the RoDTEP scheme was extended till September 30, 2025 for export goods manufactured in the domestic tariff area and till December 31, 2024 for goods exported under AA, SEZ or EOU schemes.

"[Now] The system does not accept RoDTEP applications under AA, EOU or SEZ schemes. Exporters need the support to be competitive," said a forwarding agent in Coimbatore.

<https://www.thehindu.com/business/exporters-stare-at-uncertainty-over-rodtep/article69057879.ece>

Exports Likely To Breach \$800 Bn: GTRI

Bizz Buzz News | 02 January 2025

India's total exports of goods and services in 2024 are projected to exceed Rs.69,58,886 crore (\$814 bn), which represents a 5.58 per cent increase compared to the corresponding figure of Rs.65,69,907 cr (\$768.5 bn) in 2023, according to figures compiled by Global Trade Research Initiative (GTRI).

This growth is driven by a robust 10.31 per cent rise in services exports to Rs.31,82,793 crore (\$372.3 bn), while merchandise exports are expected to grow at a more modest pace of 2.34 per cent to Rs.37,74,384 cr (\$441.5 bn) amid global geopolitical uncertainties such as the Israel-Hamas conflict and the Ukraine-Russia war.

The report highlights India's evolving export landscape, with high-value sectors like electronics and machinery gaining a bigger share in the export basket since 2014, while traditional sectors such as garments and textiles are witnessing a decline. "These trends underscore India's growing capabilities in higher-value sectors, a necessary shift for long-term export resilience," said GTRI founder Ajay Srivastava.

<https://www.bizzbuzz.news/eco-buzz/exports-likely-to-breach-800-bn-gtri-1347418>

GST mop-up at Rs 1.77 lakh crore in December

Financial Express | 02 January 2025

The gross Goods and Services Tax (GST) collections in December came in at Rs 1.77 lakh crore, up 7.3% on year, data released by the finance ministry on Wednesday showed.

With this, the monthly gross GST mop-up has now stayed above the Rs 1.7-lakh-crore mark for ten consecutive months.

However, the pace of year-on-year growth slowed to a three-month low in December. In the April-December period, gross GST collections stood at Rs 16.33 lakh crore, up 9.1% on year, which is lower than the 11% growth anticipated earlier by the finance ministry officials.

As GST collections reflect the state of demand in the economy, a lower-than-expected growth in the mop-up may prompt the government to look at measures to boost consumption in the Budget for 2025-26, say experts. According to Pratik Jain, partner, PwC India, one of the ways to boost consumption is to rationalise the GST rates, which the GST council is currently working on.

<https://www.financialexpress.com/policy/economy-gst-mop-up-at-rs-1-77-lakh-crore-in-december-3705224/>

Chemicals and Petrochemicals

India initiates anti-dumping probe into PVC resin imports from EU, Japan

The Economic Times | 27 January 2025

India has initiated a probe into the alleged dumping of PVC paste resin, used to make artificial leather and other technical textiles' products, from the European Union (EU) and Japan, according to a notification. The commerce ministry's investigation arm, Directorate General of Trade Remedies (DGTR), is probing the dumping as imports are allegedly hurting the margins of the domestic industry.

Chemplast Sanmar Ltd has led an application seeking the imposition of anti-dumping duty, stating that the cheap imports are causing material injury to the domestic industry

India has already imposed anti-dumping duty on several products to tackle

cheap imports from various countries, including China. Last month, the DGTR recommended the imposition of an anti-dumping duty of up to USD 707 per tonne on imports of PVC paste resin from six countries, including China, for five years, with an aim to guard domestic producers.

<https://economictimes.indiatimes.com/news/economy/foreign-trade/india-initiates-anti-dumping-probe-into-pvc-resin-imports-from-eu-japan/articleshow/117597237.cms?from=mdr>

Chemical industry seeks changes in customs duties to boost mfg

Millennium Post | 21 January 2025

The chemicals industry has sought tweaking in customs duties in the forthcoming Budget on certain products such as Polyethylene Terephthalate and Polyvinyl Chloride with a view to cut imports from China and boost domestic manufacturing. China is currently the world's biggest exporter of key products like Polyethylene Terephthalate (PET) resins, Purified Terephthalate Acid (PTA), Polyvinyl Chloride (PVC) and polyester fibre. Industry sources said that this global overcapacity, coupled with flat demand growth in many countries and a changing geopolitical landscape, poses a threat of cheap imports flooding into India.

Though India has significantly increased its domestic capacity for PET bottle-grade chips, there has been an increase in the low-cost imports, especially from China. Similarly, in the case of PVC, a critical material used in sectors like construction, needs a relook in terms of tariff treatment considering its crucial role in the economy. "Restoring PVC duty back to pre-2022 levels of 10 per cent would provide desired impetus for creating domestic capacity," they added. Further in the Man-made Fiber (MMF) polyester segment where domestic capacity utilisation is being hindered by low-cost imports, especially from

China warrants an upward revision of tariff to 10 per cent. "A tariff increase on polyester would not only safeguard domestic manufacturers from unfair competition but also bolster local production capacities, aligning with the ambitious textile sector growth target of \$350 billion by 2030," the source said.

<https://www.millenniumpost.in/business/chemical-industry-seeks-changes-in-customs-duties-to-boost-mfg-595745>

Plastics drive oil companies' growth amid energy transition

Fiber2fashion | 17 January 2025

As the world accelerates its transition towards sustainable energy, petrochemical production—especially hydrocarbon-based plastics—is becoming a significant growth engine for oil companies. With global demand for plastics projected to surpass that of combustion-engine vehicles by 2050, major players in the oil and gas sector are shifting their focus towards petrochemical investments.

Abu Dhabi National Oil Company (ADNOC) is at the forefront of this transition, making a strategic move to expand its presence in the sector. The company has announced a ₹15 billion acquisition of Germany's Covestro, a leading polymer manufacturer, underscoring its commitment to strengthening its position in the global plastics market.

Industry analysts note that while oil demand for transportation fuels is expected to decline with the rise of electric vehicles and renewable energy, the petrochemical segment offers long-term growth opportunities. From packaging to automotive components and medical applications, plastics remain indispensable across industries, further driving investments from oil companies seeking to diversify their revenue streams.

However, due to concerns over plastic waste and environmental impact,

companies are now exploring sustainable solutions, including advanced recycling technologies and bio-based alternatives, to align with global sustainability goals. With increasing demand and strategic investments, the petrochemical sector is poised to play a crucial role in shaping the future of oil companies amid the energy transition.

<https://www.fibre2fashion.com/news/textile-news/plastics-drive-oil-companies-growth-amid-energy-transition-300229-newsdetails.htm>

India's Plastic Pipe Industry Set For Rs 500 Billion Market In FY25

KNN India | 15 January 2025

India's plastic pipe industry holds substantial growth potential due to its significantly lower per-capita pipe consumption compared to global standards, according to a recent report by investment bank Jefferies.

This untapped market potential positions the sector for considerable expansion, particularly when compared to consumption rates in the US, Europe, and China.

The industry has demonstrated robust performance with an 8 percent compound annual growth rate from FY15 to FY24. Market projections indicate the sector will reach Rs 500 billion in FY25, driven by renewed capital expenditure and a strong housing cycle.

This projection aligns with Techsci Research's valuation of the market at Rs 474.47 billion in 2023, highlighting the sector's crucial role in infrastructure development, including water supply, sewage systems, and gas distribution.

However, the industry faces significant challenges from volatility in polyvinyl chloride prices, a key raw material in pipe manufacturing.

Nevertheless, Jefferies forecasts a recovery in volumes during the second half of 2025, supported by renewed

capital investments and increased business-to-business activity.

The plastic pipe segment has notably outperformed the tiles sector in volume growth over the past two years, a trend analysts expect to continue.

Despite the near-term challenges posed by raw material price volatility, the long-term outlook for India's plastic pipe industry remains optimistic.

The sector's growth trajectory is supported by favorable market dynamics and increasing infrastructure investments, positioning it for sustained expansion in the coming years, according to the Jefferies report.

<https://knnindia.co.in/news/news-details/sectors/indias-plastic-pipe-industry-set-for-rs-500-billion-market-in-fy25>

Study finds petrochemical industries behind winter ozone pollution

The Times of India | 12 January 2025

Severe wintertime ozone (O₃) pollution may be driven by alkene emissions from local petrochemical industries, and can be detrimental to human health, finds a study. Researchers from the Hong Kong Polytechnic University focussed on wintertime O₃ pollution in Lanzhou, China.

Traditionally associated with warm weather and strong solar radiation, hourly O₃ levels exceeding 100 parts per billion by volume (ppbv) were recorded during cold January days in 2018, peaking at an alarming 121 ppbv. In the paper, published in the journal *Environmental Science and Ecotechnology*, the researchers noted that they found that "O₃ concentrations in Lanzhou were extremely high in winter". This is "contrary to the consensus that O₃ pollution mainly occurs in warm weather with strong solar radiation," said the researchers.

For the study, the team used an advanced photochemical box model, which is a numerical model that

simulates photochemical smog at the urban scale.

The team identified alkene ozonolysis as the dominant driver of O₃ formation, rather than the traditional radical sources initiated by photolysis.

This chemical reaction occurs without sunlight and produces Criegee intermediates that rapidly generate reactive radicals (hydroxide (OH), hydroperoxyl radical (HO₂), and organic peroxy radical (RO₂)), which then accelerate O₃ production. Ultimately, alkenes contributed to nearly 90 per cent of the O₃ during the episodes.

The research highlights key alkene species -- trans/cis-2-butene and propene -- as major contributors to this unusual pollution. Importantly, the study proposes actionable mitigation strategies: reducing alkene levels by 28.6 per cent or nitrogen oxides by 27.7 per cent during early afternoon hours could significantly reduce O₃ levels.

"This study updates how we understand O₃ pollution, proving that intense O₃ formation can occur in cold, low-light conditions," said the authors Jin Yang and Yangzong Zeren.

They called "for targeted action in industrial regions".

Long-term exposure to ozone pollution can damage the tissues of the respiratory tract, causing inflammation and irritation. It can also lead to coughing, chest tightness, and worsening of asthma symptoms.

<https://timesofindia.indiatimes.com/science/study-finds-petrochemical-industries-behind-winter-ozone-pollution/articleshow/117176350.cms#:~:text=Study%20finds%20petrochemical%20industries%20behind%20winter%20ozone%20pollution,-IANS%20%2F%20Updated%3A%20Jan&text=Wintertime%20ozone%20pollution%20in%20Lanzhou,sunlight%20and%20accelerates%20O3%20production.>

Cracker of an expansion Nayara's \$8 bn Petchem Plan

Economic Times | 09 January 2025

Rosneft-backed Nayara Energy is looking to invest Rs 68,000 crore (\$8 billion) to set up a 1.5 million tonne per annum (mtpa) ethane cracker at its 20 mtpa refinery at Vadinar in Gujarat, according to people aware of the development.

This will be the first substantial investment by an overseas company in the Indian petrochemical segment. "Nayara has commenced work on front-end engineering for the petrochemicals project," said a senior industry executive.

Nayara Energy didn't respond to queries. The company said in its FY24 annual report that it had "adopted a phase-wise asset development strategy in 2018 to enter into the petrochemicals sector and is wellpositioned to become a strong petrochemical player due to its unique advantages in terms of opportunity of integration with the refinery, proximity to the port, and location of the refinery in western India which is the largest petrochemical consumption region of the country".

In the past year, Gail India, Indian Oil Corp, Bharat Petroleum Corp and

others have announced investments of over ₹1.5 lakh crore to expand petrochemical operations. Adani Enterprises subsidiary Adani Petrochemicals announced on Monday that it has formed an equal joint venture with Thailand's Indorama Resources to foray into the refinery, petrochemical, and chemical business.

India's petrochemical capacity is projected to rise to 46 million tonnes in 2030 from 29.62 million tonnes now, according to the ministry of petroleum and natural gas.

An ethane cracker breaks down the hydrocarbon, a component of natural gas, into ethylene-the key

chemical used in making plastics, adhesives, synthetic rubber-and other petrochemicals. Traditionally, petrochemical companies have been using naphtha as primary feedstock, but demand for ethane has been picking up over the past few years. Cracking ethane can yield over 80% ethylene against 30% from naphtha.

Reliance Industries imports 1.6 mtpa of ethane for its ethane crackers in Dahej and Hazira in Gujarat and Nagothane in Maharashtra

Last year, state-run Gail India announced plans to set up a 1.5 mtpa ethane cracker project at Ashta, Madhya Pradesh, with a product slate of various ethylene derivatives, at an investment of ₹60,000 crore. State-owned refiner Bharat Petroleum is investing close to \$6 billion to develop an ethane-fed cracker at its 156,000 barrels a day Bina refinery in Madhya Pradesh.

Nayara Energy runs India's second-largest, single-location refinery in Vadinar with a capacity of 20 mtpa. A Rosneft-led consortium acquired Essar Oil in 2017 for \$12.9 billion and renamed the company Nayara Energy. The company is expanding capacity to enhance its presence in the petrochemical and alternate energy sectors. Nayara has already set up a polypropylene unit at Vadinar.

The market size of the nation's chemicals and petrochemicals sector is expected to grow to around \$300 billion in FY25, up from \$220 billion in FY24. India's petrochemical sector is projected to attract investments exceeding \$87 billion in the next decade, representing over 10% of global petrochemical growth.

<https://manufacturing.economictimes.indiatimes.com/news/energy/cracker-of-an-expansion-nayaras-8-bn-petchem-plan/117073861#:~:text=of%20the%20development,-,This%20will%20be%20the%20first%20substantial%20investment%20by%20an%20overseas,didn't%20respond%20to%20queries.>

PetroChem Summit 2024: India remains a bright spot for investments into petrochemicals

Indian Chemical News | 03 January 2025

The Indian petrochemical sector is poised for robust growth, but the journey requires navigating a complex landscape of opportunities and challenges. Strategic investments, underpinned by innovation and sustainability, will be key to unlocking the sector's full potential.

In this context, the leading experts from the petrochemical industry shared the latest trends at the third session of the second edition of PetroChem Summit 2024 titled 'Investment: Opportunities and Challenges' organized by the Indian Chemical News in New Delhi on December 18, 2024.

The session was moderated by Ankur Singh, Vice President & Head, Strategy – Chemicals Division, DCM Shriram Limited. Sharing an overview of the global trends, Singh informed, "The chemical sector in India is doing good but going forward the way world dynamics are changing, the US has already got an energy positive ecosystem and China is playing differently as the country is attracting investment despite the local issues. The latter is operating on a mini cracker ecosystem where they want to decrease their dependence on the US energy circle. The Middle East, knowing the limited future for the traditional oil feed stock, is going into the oil to chemicals (O2C) ecosystem aggressively. Suddenly the whole petrochemical ecosystem has changed as there is rise of electricity mobility and green energy in the European ecosystem. It would be interesting to see how the future of the global value chain will shape up and since it has become a regional play, India's role in profitability and cost curve, especially when it has been traditionally disadvantaged with feedstocks."

Sharing his global perspective on untapped opportunities in petrochemicals, Manas Majumdar, Partner - Energy & Chemicals, PwC said, "Petrochemicals is and will continue to be a growth industry but there are challenges. Global petrochemical industry is almost north of US\$ 1100 billion (3 trillion) and of course China dominates it both as a consumer and producer of petrochemicals. India too has US\$ 180 billion worth market with 30-35% petrochemicals being imported for consumption. Globally, Europe has shrunk as a consumer market and the Middle East continues to lead in oil production and will diversify into petrochemicals. Equivalent to that is the US market which has both a producing and consuming market. It has the of having naphtha and steam crackers. A large player BASF is looking at setting up a production plant in China. There is a secular growth in petrochemicals irrespective of a few pockets of disturbance. Overall, there is a secular growth in petrochemicals in India and the country remains a bright spot, witnessing about 9% consumption led growth.

"There is an overhang of specialty as the market is lucrative due to growing demand as compared to petrochemicals. The technology is well known and is essentially cost competitive. There is a huge capacity building coming up. Indian Oil is expanding in its Paradip complex with the US\$ 7 billion (Rs 65,000 crore) investment that has been signed off by its Board. PSUs such as IOC are looking at expansion and so is GAIL at its Vijaypur facility. BPCL as a part of its Bina expansion is also looking at it. The growth is mostly PSU led except Reliance Industries. While most of the petrochemical is naphtha based, Reliance is looking at off gas and investing into vinyl. Adani may also look at it in the longer run. Overall, the investment sentiment is cautious. There is aptitude but there is timing factor and other challenges. The time taken between announcement and commissioning of the projects is long," added Majumdar.

Providing a policy perspective, Keshav Shrivastava, Mid-Level Consultant - Investment Promotion, Department of Chemicals & Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. of India said, "In terms of policy, we have a multi-ministerial approach in the petrochemical industry. We have the Ministry of Petroleum and Natural Gas which is ensuring the feedstock for the petrochemical industry and we have the Ministry of Chemicals and Fertilizers to ensure the supply chain for petrochemicals. We also have PCPIR policies for developing the petrochemical infrastructure in the country. In terms of downstream processing, we have the Ministry of Textiles that is helping with textile parks and other initiatives. In terms of a clean economy, we are moving towards clean fuel consumption which is also pushing the government in the whole ecosystem. This is where the government approach lies in promoting this sector."

"We have plans in place such as 310 MMT of petrochemical feed-stock by 2030. These plans are a way of pushing the cost reduction. In terms of ensuring a policy framework for feedstock and value addition, we have seen downstream investment. In Dahanu, we have seen the downstream investments. 100% FDI in the chemicals and petrochemicals. We have seen the World Competitive Index where we have achieved 40th rank from 83rd rank in 2015. We are working on supply chain for cost competitiveness. We are looking for various forums such as the Indo-Pacific Economic Forum finding viable solutions. Internally, we are developing the capacities through PSU and also ensuring that there is no crunch in our future plans and policies. PM GATI Shakti promises to reduce the logistics cost in the petrochemical movement. We are trying to map the major infrastructure projects and help reduce the costs," added Shrivastava.

Highly optimistic about the future growth potential of Indian petrochemical sector, Sanjay Kumar Papneja,

Chief General Manager - Petrochemical Projects, IOCL said, "India has a strong dearth of petrochemical products and we imported 10 MMT of petrochemicals post corona period. With rapid urbanization and rising income levels, we could see the import to 40 MMT if not supplemented by additional production in India. The availability of feed-stock is met in India. Energy sector is under transition. Ethanol blending is under progress and the EV and hybrid has reached to 50% levels in China. India is at the initiation levels but eventually the share of fossil fuel in transport will go down. Be it PSU or private sector, we are preparing for it as the demand is going to increase. Therefore, there will be an increase in 10-12 MMT capacity in 5-6 years. We have done too much on commodities but now specialty chemicals need to be focused upon.

"More than 80-85% product comes from C2-C3 value chain which is majorly derived from crackers. There are other technologies available as well but a cracker plays a critical role as it is the heart of the industry. There is no difference between China and India in terms of import of feedstock. Europe is a similar case. Only the US and Middle East are different as they have ample feed-stock. India has the disadvantage that it imports the feed stock but it also has a huge demand centre and good geography for consumption. That can be witnessed through how good existing crackers are doing. In terms of cost competitiveness, how 70-75% of Indian capacities are with the integrated set up. Integration leads to cost e

The PetroChem Summit 2024 themed 'Identifying New Opportunities For Value Creation' was supported by the industry associations including Alkali

Manufacturers Association Of India (AMAI) and Chemicals & Petrochemicals Manufacturers' Association (CPMA). The Platinum Sponsor was Somaiya Vidyavihar University and Gold Sponsor, Tubacex Group.

Members' News

RIL inks Rs 3 lakh crore investment MoU with Maha govt

The Statesman | 23 January 2025

The Reliance Industries Limited signed an MoU with the Maharashtra government to invest approximately Rs 3.05 lakh crore which is projected to create more than 3,00,000 jobs. The deal was signed at the World Economic Forum (WEF) in Davos, according to a tweet posted on the official X account of the Maharashtra Chief Minister Devendra Fadnavis.

CM Fadnavis said that the investment would span various sectors such as petrochemicals, polyester, renewable energy, green hydrogen, green chemicals, industrial area development, retail, data centres, telecommunications, hospitality, and real estate.

<https://www.thestatesman.com/business/ril-inks-rs-3-lakh-crore-investment-mou-with-maha-govt-1503390000.html>

Adani partners with Thailand's Indorama for petrochemical expansion

Business Standard | 23 January 2025

Billionaire Gautam Adani's group has teamed up with Thailand's Indorama Resources Ltd for a foray into

the petrochemical business as the ports-to-energy conglomerate looks to expand in adjacencies.

Adani Petrochemicals Ltd, a subsidiary of the group's flagship Adani Enterprises Ltd, "has completed the incorporation process of a joint venture company namely Valor Petrochemicals Ltd (VPL)... with Indorama Resources Ltd, Thailand," Adani Enterprises said in a stock exchange filing.

Adani Petrochemicals and Indorama will hold 50 per cent stake each in the joint venture.

"VPL is incorporated with the objective to set up a refinery, petrochemical and chemical business," it said.

Adani Petrochemicals was incorporated to set up refineries, petrochemicals complexes, speciality chemicals units, hydrogen and related chemicals plants and other similar units in a phased manner.

Group chairman Gautam Adani had in 2022 stated that the conglomerate is looking to invest more than USD 4 billion in a petrochemical complex in Gujarat.

The firm's first project is a 2 million tonnes PVC capacity to be constructed in a phased manner. While Phase I comprises the development of 1 million tonnes PVC plant by 2026, the second phase of equal capacity will be commissioned by early 2027.

https://www.business-standard.com/companies/news/adani-partners-with-thailand-s-indorama-for-petrochemical-expansion-125010601083_1.html



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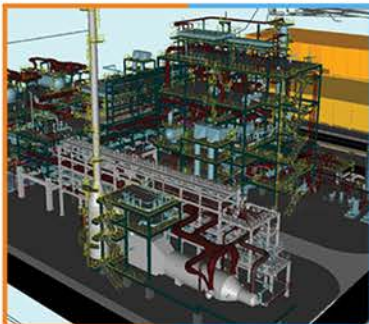
2200 TPD Chlor - Alkali Plant, **India**



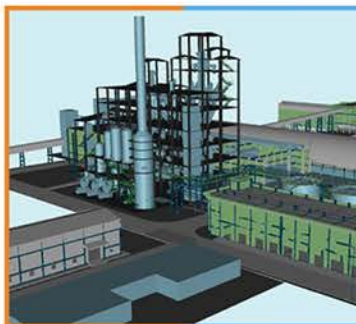
Hydrogen Fueling Station, **India**



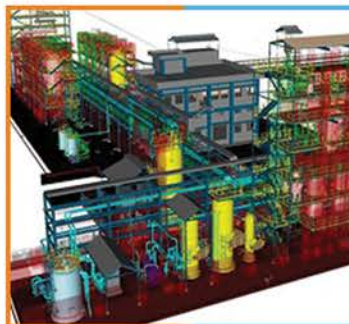
Propylene Purification Plant, **India**



Sulphur Recovery Unit, **India**



NPK Fertilizer Plant, **India**



Bio-Ethanol Plant, **India**



Sulfuric Acid Plant, **Turkey**

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NOTIFICATIONS/PRESS RELEASES/MEMORANDA/ORDERS

1. Issued by DGFT, Ministry of Commerce and Industry, GoI - Amendment by incorporation of Para 1.04 (k) in Chapter 1 of the Handbook of Procedures 2023 to specify the procedure for furnishing views, suggestions, comments, or feedback from relevant stakeholders including importers/exporters/ industry experts concerning the formulation, amendment or incorporation of specific provision(s) in the Foreign Trade Policy – 02/01/2025
<https://avantiscdnprodstorage.blob.core.windows.net/legalupdatedocs/38330/DGFT-notified-regarding-the-amendment-by-incorporation-of-Para-1-04-k-in-Chapter-1-of-the-Handbook-of-Procedures-2023-JAN.pdf>
2. Issued by DGFT, Ministry of Commerce and Industry, GoI - Govt amends Foreign Trade Policy, 2023 for Stakeholder Consultation; encourages inclusive decision-making – 03/01/2025
<https://pib.gov.in/PressReleasePage.aspx?PRID=2089866>
3. Issued by DGTR, Ministry of Commerce and Industry, GoI - Reschedule of Oral Hearing of AD investigation concerning imports of ‘PVC Suspension Resins’ originating in or exported from China PR, Indonesia, Japan, Korea RP, Taiwan, Thailand and USA – 06/01/2025
<https://www.dgtr.gov.in/sites/default/files/OH%20Notice%20%2834%29.pdf>
4. Issued by MoEF&CC, GoI - Environment Protection (End of Life Vehicles) Rules, 2025– 06/01/2025
<https://moef.gov.in/storage/tender/1736422173.pdf>
5. Issued by DGFT, Ministry of Commerce and Industry, GoI - Notification of Schedule II (Export Policy) of ITC(HS) 2022, in sync with Finance Act 2024 dated 16.08.2024– 13/01/2025
<https://worldtradesscanner.com/50-DGFT%20Notification%2050-13.01.2025.pdf>
6. Issued by DGFT, Ministry of Commerce and Industry, GoI - EPCG Scheme - Relief in Average EO in terms of the para 5.17(a) of Hand Book of Procedures (HBP) of FTP, 2023 – 21/01/2025
[https://worldtradesscanner.com/Policy%20Circular%20No.%2011%20\(2024-25\)%20dated%2021.01.2025.pdf](https://worldtradesscanner.com/Policy%20Circular%20No.%2011%20(2024-25)%20dated%2021.01.2025.pdf)
7. Issued by BEE, Ministry of Power, GoI - Comments on Identified Methodologies in Offset Mechanism under CCTS – 23/01/2025
 - (a) Letter seeking comments on Methodologies Offset Mechanism
https://beeindia.gov.in/sites/default/files/2025-01/Letter_seeking_comments_on_Methodologies_Offset_Mechanism.PDF
 - (b) Identified Methodologies in Offset Mechanism under CCTS
https://beeindia.gov.in/sites/default/files/2025-01/Identified_Methodologies_Offset_Mechanism_CCTS.pdf
8. Issued by MoEF&CC, GoI - Plastic Waste Management (Amendment) Rules, 2025 – 23/01/2025
<https://egazette.gov.in/WriteReadData/2025/260415.pdf>
9. Issued by DGTR, Ministry of Commerce and Industry, GoI – Initiation notice of AD investigation concerning imports of “PVC Paste Resin” originating in or exported from European Union and Japan – 24/01/2025
<https://www.dgtr.gov.in/sites/default/files/Initiation%20PVC%20Paste%20Resin%20English.pdf>
10. Issued by MoEF&CC, GoI
 - (a) Uniform Consent Guidelines under Air Act – 29/01/2025
<https://www.legalitysimplified.com/wp-content/uploads/2025/02/Uniform-Consent-Guidelines-under-Air-Act.pdf>
 - (b) Control of Water Pollution Guidelines, 2025– 30/01/2025
<https://www.legalitysimplified.com/wp-content/uploads/2025/02/Control-of-Water-Pollution-Guidelines-2025.pdf>

UPCOMING EVENTS

AMAI Organise Conference on
"Alkali Industry - Trends, Developments & Outlook"

20th-21st March 2025 at Taj Skyline, Ahmedabad

AMAI

CONFERENCE ON
**ALKALI INDUSTRY-
TRENDS,
DEVELOPMENTS
& OUTLOOK**

20-21 March 2025 (Thursday & Friday)

Taj Skyline
Ahmedabad, Gujarat

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About the Conference

The Indian alkali industry is poised for steady growth, driven by increasing domestic demand and export potential. By embracing technological advancements and sustainability practices, it can secure a strong position in the global chemical market while contributing significantly to India's industrial and economic development.

The Indian alkali industry has witnessed steady growth of 3.8% over the past decade. Demand drivers witnessing robust growth in last decade, Textiles@ 9-10%, Alumina@ 7.6%, Soaps@ 7.1%, Detergents@ 5.5%, Glass@ 7.6%, and PVC@ 6.3%, have contributed to alkali market growth in the country in recent years.

India is among the leading producers of alkalis, with a significant installed capacity for both caustic soda and soda ash. The caustic soda segment has seen steady growth due to its wide-spread industrial applications. Indian industry is bound to realign its strategy in the light of unprecedented capacity additions in the next few years. Estimates point to a growth in capacities of 9.1% for caustic soda, 4.1% for soda ash and 17.6% for PVC over the next five years. Caustic capacity additions may exceed demand growth. Soda capacities will keep pace with demand and PVC capacity additions is expected to significantly reduce the demand-supply gap.

Against this background of huge investments in capacity additions, it is imperative to have a close look on the emerging opportunities in India and overseas countries, adoption of new technologies, moving towards green and sustainable solutions and the new drivers for growth.

AMAI's Conference on "Alkali Industry – Trends, Developments and Outlook" will analyse the present status and future path of the alkali industry besides upstream and downstream industry sectors. International market consultants will cover status of global markets and the new opportunities for Indian alkali and PVC producers.

The conference will also cover issues relating to sustainability, renewable energy, policy interventions and technology trends.



The Conference will cover



Why Attend?

- Get first-hand information from International and Indian experts
- Get an update on innovations and emerging trends
- Network with peers and stakeholders
- Explore business opportunities

CONFERENCE ON
**ALKALI INDUSTRY-
TRENDS,
DEVELOPMENTS
& OUTLOOK**

20-21 March 2025 (Thursday & Friday)

Taj Skyline
Ahmedabad, Gujarat

Speakers

The conference brings together thought leaders, experts, and innovators from across the globe:



Market Experts
(International Market Consultants like Argus Media, CMA and ICIS)



Industry Leaders
(Alkali and PVC Industry Leaders, ISMA, Consuming Sector and other Industry Experts)



Technology Pioneers
(thyssenkrupp-nucera, AKC, Chemours India, and other Technology Suppliers)



Sustainability Specialists
(American Chemistry Council (WCC), Ericson USA, Dhir & Dhir Associates and other Professionals)

Event Highlights



Engaging Sessions

5 insightful sessions covering market trends, technological advancements, sustainability, and more.



Exhibition and Partnership Opportunities

Join as a Partner for a wider reach through branding. Book a dedicated space to showcase your company and an exclusive connect with other participants.



Networking Opportunities

Meet like-minded professionals to exchange ideas and forge partnerships

Participation Fee

Indian Delegates

Members Rs. 20,000/- (+18% GST)
Non-Members Rs. 23,000/- (+18% GST)

Foreign Delegates US\$ 600 (all inclusive)

Registration will be confirmed after receipt of payment.

Contact Person

Ms. Harjeet Kaur Anand

Director
09818904989
hkanand@ama-india.org

Media Partners

Special Discounts *(for Delegates only)*

- **Multiple Delegate Discount:** Discount of 10% for 3-5 delegates; 15% for 6-9 delegates; 20% for ten or more delegates from the same organization.
- Pre-Registration & Pre-Payment is obligatory
- Participation fee is non-refundable, however change in nomination is acceptable up to **17th March 2025**
- Last date of Registration is **17th March 2025**

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Conference 2024 : Some Glimpses



Alkali Manufacturers Association of India

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■ 10 Business Sessions with Interactive Q&A

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- 1. Challenges for OPVC from Traditional Sectors
- 2. uPVC Windows in India Stakeholders Perspective

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■ **Who Attends?**

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Summit Details

Date:

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Venue:

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Mumbai, India

Partnership, Speaker, Registration, and Accounts related queries:

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Ms Harjeet Kaur Anand

Director AMAI

98189 04989 hkanand@ama-india.org

KEY INDICATORS DECEMBER 2024

1 Alkali Imports (MT)

	Qty (Dec 2024)	Qty (Dec 2023)	% Difference (Y-o-Y)	Qty (Nov 2024)	% Difference (M-o-M)	FY 2024-25 (upto Dec)	FY 2023-24 (upto Dec)	% Difference	Total Imports 2023-24
Caustic Soda	12,340	26,042	-52.6%	26,811	-54.0%	1,09,138	1,74,817	-37.6%	2,47,233
Soda Ash	90,060	1,08,312	-16.9%	95,000	-5.2%	7,48,118	8,28,515	-9.7%	11,11,143
Sodium Bicarbonate	3,208	4,793	-33.1%	8,001	-59.9%	36,321	31,499	15.3%	40,205

Average Price in Nov 2024: Caustic Soda - 470 USD/MT(Flakes) & 423 USD/MT(Lye); Soda Ash - 233 USD/MT; Sodium Bicarbonate - 310 USD/MT

1.2 Alkali Exports (MT)

	Qty (Dec 2024)	Qty (Dec 2023)	% Difference (Y-o-Y)
Caustic Soda	46,620	44,401	5.0%
Soda Ash	9,531	60,680	-84.3%
Sodium Bicarbonate	2,886	2,124	35.9%

2 Foreign Trade - Merchandise (US\$ billion)

	Dec 2024	Dec 2023	% Difference	FY 2024-25 (upto Dec)	FY 2023-24 (upto Dec)	% Difference	Total Trade 2023-24
Imports	60.0	57.2	4.9%	532.5	506.4	5.2%	677.2
Exports	38.0	38.4	-1.0%	321.7	316.7	1.6%	437.1
Surplus/Deficit	-21.9	-18.8		-210.8	-189.7		-240.2

Average Price in Nov 2024: Caustic Soda - 535 USD/MT(Flakes), 610 USD/MT(Solids) & 488 USD/MT(Lye); Soda Ash - 259 USD/MT; Sodium Bicarbonate - 299 USD/MT

3 Exchange Rate (Rs./USD)

Dec 2024	Nov 2024	Oct 2024
84.99	84.36	84.03

9 All India Inflation Rates (Base: 2012=100)

Dec 2024	Dec 2023	% Difference
193.5	185.5	4.3%

4 Index of Industrial Production (Base: 2011-12=100)

Dec 2024	Dec 2023	% Difference
157.2	152.3	3.2%

10 Consumer Price Inflation - Industrial Workers (Base: 2016=100)

Dec 2024	Dec 2023	% Difference
NA	138.8	-

5 Index of Core Industries (Base: 2011-12=100)

Dec 2024	Dec 2023	% Difference
167.6	161.2	4.0%

11 Foreign Investment Inflows (US\$ Million)

	Dec 2024	Nov 2024	% Difference
Net Foreign Direct Investment	NA	-2,629	-
Net Portfolio Investment	NA	-2,379	-
Total	-	-5,008	-

6 Index of Industrial Production - Broad Sectors (Base: 2011-12=100)

	Dec 2024	Dec 2023	% Difference
Mining	143.1	139.5	2.6%
Manufacturing	156.2	151.6	3.0%
Electricity	192.8	181.6	6.2%

12 Foreign Investment Promotion Board (FIPB) Approvals (US\$ Million)

Dec 2024	Nov 2024	Oct 2024
NA	72	149

7 Index of Industrial Production - Manufacturing Sub-groups (Base: 2011-12=100)

	Dec 2024	Dec 2023	% Difference
Chemical & Chemical Products	130.3	127.5	2.2%
Textiles	113.8	112.3	1.3%
Paper & Paper Products	76.5	78.1	-2.0%
Basic Metals	234.9	220.2	6.7%

13 Foreign Exchange Reserves (US\$ billion)

Dec 2024 (as on 27 Dec 2024)	Nov 2024 (as on 29 Nov 2024)	% Difference
640	658	-2.7%

#The growth rates over corresponding period of previous year are to be interpreted considering the unusual circumstances on account of Covid-19 since March 2020

8 Index of Industrial Production Country-wise Comparisons (Base: 2015=100)

	Dec 2024	Dec 2023	% Difference
India	NA	127.4	-
Russia	NA	NA	-
Brazil	98.7	96.6	2.2%
European Union (27)	NA	109.9	-
USA	99.1	99.0	0.1%

14 Fiscal Deficit (Apr 2024-Dec 2024)

% of Actuals to Budget Estimates FY 2024-25	% of Actuals to Budget Estimates FY 2023-24
56.7%	55.0%

15 Purchasing Managers Index (PMI)

Dec 2024	Nov 2024	Oct 2024
56.4	56.5	57.5

Index over 50 shows expansion, while below 50 means contraction

Data Source: GOI, OECD, S&P Global & AMAI Research



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