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METAL TUBE INDUSTRIES
64, C. P. Tank Road, Mumbai - 400 004.
Dear Reader,

The government announced a Rs.20 lakh crore stimulus package to revive the economy as part of the “Aatmanirbhar Bharat” or “self-reliant” India movement. This amount is equivalent to 10% of India’s GDP. It has about 1.2 per cent of direct stimulus measures and the remaining 8.8 per cent of the package includes liquidity support measures and credit guarantees that will not directly support growth. The Prime Minister, in his address to the nation, also emphasised domestic sourcing in preference to imports through the slogan of “Be Vocal about Local”.

The Indian alkali industry typifies the spirit of “Aatmanirbhar Bharat”: India is not only self-reliant but also produces superior alkali chemicals using efficient technology. The industry has been highlighting this in various fora with the message that self-reliance will have meaning only if we are able to reduce imports. One measure that the industry has been advocating for a long time is to introduce measures to curb imports of products where adequate capacities are available in the country. In a meeting to discuss high-value chemicals a couple of years ago, it was found that caustic soda and soda ash topped the list with annual imports exceeding Rs.2,200 crores annually. The emphasis on building domestic capacities has to match with corresponding measures to curb non-essential imports. Only then will India become truly self-reliant or “Aatmanirbhar”.

AMAI continued to represent to the government at various levels seeking support and intervention to safeguard the interests of the domestic industry. With a sharp contraction in demand and plants operating at less than 50% capacity since the nation-wide lockdown was enforced in end-March, the industry has been finding it difficult to sustain its operations. Imports continued to freely come in to the country. The only temporary relief was low international trade and ports operating at low levels. As trade picks up and ports resume normal operations, there could be a situation where imports would inundate our market, rendering a crippling blow to our industry which is already in a fragile state. The industry continued to wait, hoping that some measure would be announced by the government to regulate unwanted imports that would offer protection to the domestic industry.

Shri P. Raghavendra Rao, IAS, retired from service as Secretary, Department of Chemicals & Petrochemicals (DCPC) on 31st May 2020, after an eventful tenure. Among the most accessible officers in the Ministry, Shri Rao’s happy demeanour endeared him to the industry. For AMAI, he was a person of many firsts. Within a few weeks of his taking charge as Secretary, DCPC in March 2018, the Department notified caustic soda as the first chemical to be covered under mandatory compliance to BIS Standard. He also constituted an expert committee to develop guidelines for transportation of chlorine through pipeline. This committee submitted its report in March 2019 and chlorine became the first chemical to have guidelines for transportation through pipeline. In May 2018, DCPC’s order on public procurement under the Make in India programme gave a fillip to the alkali industry with three chemicals viz. caustic soda, soda ash and chlorine included in the first list. Issues that were represented to Shri Rao received immediate attention and these were taken up for resolution in earnest. The chemical industry, and particularly AMAI will always remember him as a real friend of the industry. AMAI wishes Shri Rao good health and a happy retired life.

K. Srinivasan
Secretary General
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Fiscal deficit to balloon to 7.9% in FY21: Report
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**III. NOTIFICATIONS/PRESS RELEASES/ MEMORANDA**

Notification No. S.O. 1424 (E) dated 01/05/2020 issued by Ministry of Environment, Forest and Climate Change regarding Reconstitution of National Coastal Zone Management Authority

Notification No. S.O. 1561 (E) dated 21/05/2020 issued by Ministry of Environment, Forest and Climate Change regarding Environment (Protection) Amendment Rules, 2020 - withdrawing cap on ash content in coal used for thermal power plants

Notification No. G.S.R. 343 (E) dated 21/05/2020 issued by Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade - Central Boiler Board) - inviting comments on Draft Indian Boiler (Second Amendment) Regulations 2020 to amend the Indian Boiler Regulations 1950

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Industry, Research bodies for safe usage of disinfectants against Covid-19

Alkali Manufacturers Association of India (AMAI), National Chemical Laboratory, Pune (CSIR-NCL) and the Mumbai-based Institute of Chemical Technology (ICT) have come together to spread awareness on the safe use of disinfectants that is at the centre of ongoing fight against Covid-19.

There have been a large number of instances of disinfection chambers being erected in the country which spray a mist of disinfectants on those passing through the chamber which could do more harm than good, the organisations have said in a statement. Quoting a World Health Organisation (WHO) advisory, they have stated that the use of disinfectants such as sodium hypochlorite is for disinfecting surfaces and not human beings.

“We are privileged to get the support of two leading organisations involved in scientific research who have endorsed our views on safe disinfection after conducting laboratory tests”, said Jayantibhai Patel, President AMAI, therepresentative body of the alkali industry that produces sodium hypochlorite, chlorine, bleaching solution/powder, etc. the major chemicals used for disinfection.

“Sodium hypochlorite (NaOCl) or bleach or hypo must be used with utmost precautions as disinfectant so as to avoid skin contact as it may harm the skin and cause irritation. Eyes should also be protected by using proper goggles / face shields”, said Prof. Ashwini Kumar Nangia, Director, CSIR-NCL. “High concentration of disinfectants can increase chemical exposure to users and may also damage surfaces. The diluted disinfectant solution should be uniformly applied to surfaces and allowed to remain wet and untouched for at least one minute for the chemical to inactivate pathogens and kill any microorganisms”, he added.

“The Bureau of Indian Standards has classified sodium hypochlorite of 4-6% concentration for household use. This concentration available commercially must be diluted with water by a skilled person to make the solution for disinfection”, said Prof. A. B. Pandit, Vice Chancellor, ICT.

CSIR-NCL, ICT Mumbai and AMAI are jointly suggesting 0.05% (500 ppm) of bleach as a safe concentration for localized direct spray on abiotic surfaces, but excluding general misting and indoor/outdoor fogging or fumigation. WHO guidelines do not allow use of any type of mist tunnel, fogging or fumigation of outdoor spaces.

“Spraying individuals with disinfectants (such as in a tunnel, cabinet, or chamber) is not recommended under any circumstances. This could be physically and psychologically harmful and would not reduce an infected person’s ability to spread the virus through droplets or contact”, WHO has stated.

The three organisations are also suggesting 0.1-0.5 % (1000 to 5000 ppm) of bleach for wiping/cleaning surfaces with cloth. The lower concentration of 0.1% (1000 ppm) is suitable for general purpose home/office disinfection and higher concentration of 0.5% (5000 ppm) for hospitals and resistant pathogens settings.

On behalf of AMAI, Mr. K Srinivasan, Secretary General, Mr. Devanand Jajoo, Chairman of SHE Sub-Committee and Mr. Ravindra Sitani, Chairman of Technical Sub-Committee held extensive discussions with the Director and his team from CSIR-NCL, Pune and the Vice Chancellor and his team from ICT, Mumbai.

AMAI conveys its gratitude to Prof. Dr. Ashwini Kumar Nangia, Director, CSIR-NCL, Pune and to Professor A. B. Pandit, Vice Chancellor, ICT, Mumbai and their teams for their support.
MoEFCC has issued Environment (Protection) Amendment Rules 2020 dated 21st May 2020, with respect to Thermal Power Plants and use of coal with uncapped ash content, which was earlier restricted to 34% as per notification issued in 2014. Copy of the notification is enclosed.

MoEFCC had mandated coal based thermal power plants to use raw or blended or beneficiated coal with ash content not exceeding thirty-four percent (34%) vide its notification dated 2nd January, 2014.

AMAI analysed the notification and give below some of the important points which led government issue this notification.

Now with advancement in pollution control technologies,

• Thermal power plants are better equipped to capture fly-ash generated in combustion process and unwashed coal can be used more efficiently and economically

• Thermal power plants are designed for coal with wide variety of ash content and are equipped with dry ash evacuation, handling and supply systems for ash utilisation

• Using washed coal makes power generation costlier and waste of Natural Resource Water

• Fly ash generated in thermal power plants is being used in several beneficial uses like cement manufacturing, brick making, road laying, back-fill material for reclamation of mine voids and low lying areas

• Requirement of maintaining average ash content to 34% prompts industries to undertake import of coal, resulting in outflow of foreign exchange, etc.

• The extent of ash content in mined coal remains the same. With washeries, the ash content gets divided at two places (washeries and the power plant), whereas if unwashed coal is used in power plant, the ash content is handled at only one place viz. the power plant, leading to less pollution and less impact on environment

Therefore, in view of the existing unprecedented COVID-19 pandemic and the resultant immediate requirement of utilization of domestic coal by stimulating coal sector demand for power generation in the country, government felt need of issuing the notification at the earliest.

The above is for kind information of the members having CPPs.

(AMAI Analysis on MoEFCC Notification dated 21st May 2020)
Pandemic hits Global Chlorine Demand, but tightens Caustic Soda

An ICIS INSIGHT by Chris Barker, Bill Bowen, Jonathan Chou, Fergus Jensen and Valentina Cherubin

LONDON (ICIS)--The coronavirus pandemic has had far reaching implications for chloralkali buyers and producers, paradoxically driving down demand for many products even as it causes price increases for others.

In the wider chemicals market, the overall impact of the lockdown has been to severely reduce prices and demand, with the global IPEX hitting its lowest level since April 2009 earlier this month.

This has also been true for the majority of chlorine derivatives, with polyvinyl chloride (PVC) spot prices falling in the US, Asia and Europe.

European PVC export prices fell by more than 22% between 13 March and 17 April. In the domestic market, monthly contract prices for April were being discussed with significant decreases, due partially to lower prices for feedstock ethylene.

“Demand is poor for every segment of PVC profile pipe because of construction. [There is] very limited business activity, demand is very, very weak,” one trader located in Turkey noted.

However, contrary to price trends in most chemical markets, prices for many co-and by-products of the chloralkali and chlorvinyls markets, such as caustic soda, have risen because of lower utilisation rates. Demand for chlorine has fallen more quickly than demand on the other side of the chloralkali equation.

**Chlor Alkali and the ECU**

Caustic soda and chlorine are created via the same process; the electrolysis of sodium chloride solution.

Chloralkali producers’ profits come from a combination of caustic products such as caustic soda and caustic potash, and chlorine derivatives, primarily PVC and also isocyanates and oxygenates, chloromethanes, solvents and epichlorohydrin and other organics and inorganics.

The construction and automotive markets therefore primarily drive downstream demand for chlorine. Both markets were severely affected by the lockdown in activity in Europe, with demand for new construction projects falling and the automotive industry virtually shut down worldwide.

“PVC demand [for April] is relatively low. I think even more of a drop than 30%, [it is] closer to 40%,” a PVC producer noted.

“The UK has almost completely stopped, France has almost completely stopped. The Netherlands and Germany are relatively OK.”

The German market was less severely affected than the rest of Europe according to sources, with some regions keeping DIY stores open and fewer coronavirus cases recorded than in Europe’s other major economies.

“Demand [was expected to be] down 30-50%- it’s more towards 20% for us this month. It’s a short month anyway, and we closed for a couple of days in Easter, six instead of four days,” one German buyer said.

“With 10% less days, 20% less PVC in the climate is not too bad,” it added, noting that the company had originally scheduled maintenance on its production lines but was unable to complete it because there were more orders than expected.

While demand for polyurethane foams was steady and upbeat up to the first half of March this year, most isocyanates industry participants estimated demand to drop, at a minimum, by around half in April, and
there was much uncertainty around how long the downturn will last.

**Chlorine Demand in Other Markets**

The extended national lockdown of India, which is a major import market for chlorine derivative EDC (ethylene dichloride), VCM (vinyl chloride monomer) and PVC (polyvinyl chloride), has curtailed demand and lengthened supply in Asia.

Extended national lockdowns in some southeast Asian countries such as Malaysia and The Philippines have further dampened potential signs of demand recovery and added to mounting inventory pressure. Many integrated chlor-alkali producers in Asia have subsequently lowered their operating rates in April, and are expected to do so throughout May.

**Co-Products Tighten**

Caustic soda demand in Europe has been supported by uses such as pulp and paper and water treatment, which have remained relatively stable, with demand in hygiene applications such as bleach and soaps also rising.

At the same time, chlorine production rates have decreased in Europe according to market sources, which has tightened caustic soda availability.

As a result European spot prices have risen significantly, with average Mediterranean caustic soda prices climbing from $220/dmt (dry metric tonne) FOB (free on board) to $285/dmt FOB between 28 February and 17 April, an increase of almost 30%. Northwest Europe average prices rose by almost 43%, from $192.5/dmt FOB to $275/dmt FOB, over the same period.

To an extent, lack of liquidity and availability has limited further price increases with few northwest European producers having export volumes to spare for sale because of demand from domestic customers.

“[It is] pretty quiet; NWE producers are not allocating spot due to too much uncertainty,” one trader noted.

The contract market is also firm with second quarter and monthly prices trending towards increases in early discussions.

“[Caustic soda] I think is generally following Europe at +€60-80/dmt... there are no homes for chlorine,” a UK-based distributor noted regarding contract price discussions for the second quarter.

Reduced output caused by declining margins in chlorine derivatives, as well as upcoming plant turnarounds in northeast Asia also means that Asia’s co-product caustic soda supply is expected to tighten in the near term.

**By-Products also Firm**

Hydrochloric acid (HCl) availability has also tightened because of lower chloralkali output, in particular for isocyanates, which are historically weak in terms of both prices and demand.
Most HCl in Europe is produced as a byproduct of the isocyanates industry and the vinyls industry. This means that lower chlorine output caused by reduced demand in the downstream markets such as automotives and construction is likely to create tighter availability.

This effect had already kicked in at the beginning of 2020, with annual contract prices increasing in northwest Europe and Iberia as demand in the isocyanates market hit a historic low.

The lockdown, whilst also decreasing HCl demand, has further affected HCl supply with sources seeing additional increases in spot prices.

**Historical Context**

The coronavirus epidemic and the response to it have been unprecedented events for Europe, with few similar points of comparison within living memory.

The anticipated economic effect is also almost off the scale with the UK Office for Budget Responsibility (OBR) predicting that the UK’s economic output may shrink by as much as 35% percent in the second quarter.

One example of economic disruption affecting the chloralkali market was the global recession of 2008-2009. European chlorine demand fell precipitously, which caused average chlor alkali utilisation rates to fall by nearly 20 percentage points in 2009 compared to the previous year.

One of the knock on effects was a tighter caustic soda market, with FOB export prices reaching their highest recorded point at over $800/dmt. This effect was short lived however as buyers re-adjusted to the situation and reduced their caustic soda requirements, with prices falling to close to their lowest recorded point in the following year.

**Analyst view, by Analyst Valentina Cherubin**

- Chlorine demand is expected to be affected by the big drop in GDP growth and poor downstream demand. We expect PVC construction, the main Chlorine end-use sector via the intermediates EDC and VCM, to decrease by around 10% versus 2019.

- Preliminary ICIS analysis suggests that European chlorine demand in 2020 might decline by approximately one eighth versus the same period last year, because of the Coronavirus.

- For caustic soda, the expected demand in 2020 might decline by approximately one tenth versus 2019.

**AMAI acknowledges with thanks for the permission received from ICIS to reproduce the above article dated 21.04.2020**
INTRODUCTION:
Heat exchangers are designed to optimize the surface area of the wall between two fluids to maximize the efficiency, while minimizing resistance to fluid flow through the exchangers within constrain of material cost. Efficiency of heat exchangers could be monitored on-line by tracking the overall heat transfer coefficient based on its temperatures which tends to decline over time due to scaling and fouling. Due to global energy crisis, efficient heat recovery or dissipation of heat has become a vital challenge for Engineers in the industry.

Potential damage toward heat exchangers caused by formation of scale and fouling is very costly as processed water is not invariably treated correctly. Excessive surface area required to overcome the heavy fouling conditions will increase the installation cost (capital cost) as stronger foundation and provision for extra spacing will be needed. Extra fuel may be required if fouling/scaling takes place on the heat exchanger surface in order to maintain the fluid temperature. Planned or unplanned plant shut down due to scaling and fouling can cause large downtime and production loss.

The formation and accumulation of unwanted materials deposit on to the processing heat exchanger surfaces due to fouling normally have very low thermal conductivity and form insulation on the heat exchanger surfaces. It can greatly deteriorate the performance of the surfaces to transfer heat under the temperature difference for which the heat exchanger is designed. Fouling and scaling also increases the resistance to fluid flow resulting in higher pressure drop across the heat exchanger disturbing the process parameters (1).

Therefore, keeping heat exchangers clean is a vital aspect of routine maintenance. But quite often proper care is not being taken due to production pressure/priorities, leading to excessive energy inefficiency of the heat exchanger, inability in keeping optimum process parameters, leakage of heat exchanger tubes due to crevice corrosion, and subsequently forced outage of the exchanger. Heat exchanger inefficiency, product contamination, and forced shutdown due to failure cost hundreds of thousands rupees which is manifold higher than the cost of scheduled cleaning of the heat exchanger.

Maintenance of fouled heat exchangers can conventionally be performed by several methods such as acid cleaning, sand blasting, high pressure water jet, bullet cleaning or drill rods. One of the critical criteria of heat exchanger design is that the exchanger must be designed for ease of maintenance, which usually means cleaning or replacement of parts, tubing, fittings, etc., damaged by ageing, vibration, corrosion or erosion throughout the service period. The design should be as simple as possible particularly if heavy fouling is expected.

CLEANING OF HEAT EXCHANGER:
In order to maintain or restore efficiency of the heat exchanger, it is often necessary to clean the heat exchangers. Methods of cleaning may broadly be classified into two groups: ‘On-line’ and ‘Off-line’ cleaning. In some applications, the cleaning can be done on-line to maintain acceptable performance without interruption of operations. In other cases, off-line cleaning must be used.

On-line Cleaning:
On-line cleaning generally utilizes a mechanical method designed for only tube side and requires no disassembly. The advantage of on-line cleaning is the continuity of service of the heat exchanger with the hope that no cleaning- mandated downtime will occur. However, it adds extra cost of a new heat exchanger installation or the large cost of retrofits and there is no assurance that all the tubes will be cleaned sufficiently. The on-line cleaning methods are discussed below:

1. Circulation of sponge rubber balls—the technique is capable of preventing the accumulation of particulate matter, bio-film formation, and scale and corrosion product deposition. It is only applicable to flow through the inside of tubes (2).

2. Two phases of the ferrous sulphate treatment—the first phase involves the initial laying down of the protective film. The second phase involves the maintenance of the film, which would be otherwise destroyed by the shear effects of flow.

3. Circulating hot wash oil or light distillate through the tubes or shell at high velocity may effectively flush out all deposits. Soft salt deposits may be washed out by circulating hot fresh water.

4. Chlorination can be used for combating bio-fouling (3).

5. Scale inhibitors—a variety of polymeric and non-polymeric scale inhibitors such as polyacrylates (mol wt 900–250,000), acrylate-based copolymers, polyphosphates, etc. are used (4).

6. Magnetic devices—when hard water is used, it is important to arrange for magnetic water treatment for scale prevention as soon as possible. If one waits too long, the treatment may be less...
effective at breaking up the scale and removing the bacteria. As its name implies, magnetic water treatment for scale prevention works by water flowing through a chamber and being exposed to a series of reversing polarity, alternating permanent magnetic fields. As water passes through a hot water heater, it reacts to the magnetic field by changing the fundamental structure of the hard water. It does not remove any minerals from the water. Rather, it makes it more difficult for minerals to stick to the wetted surfaces of the pipes and equipment it is traveling through and form scale build-up (4).

7. Sonic technology—High and low frequency sound emitters (horn) are used to relieve fouling problems on heat exchangers. The use of sound is much less effective in sticky and tenacious deposits that are generally associated with slag.

8. On-line chemical cleaning—Commercially available chemical compounds may be injected into the process streams for removing sludge, scale or coke in case hot water or wash oil, is ineffective. Rydlyme is one of the common biodegradable chemical circulated through the tubes to remove mineral deposits/scale build-up etc in a safe and timely manner.

9. Use of radiation—radiation sterilization of microbial-laden water, use of ultraviolet light, and Gamma rays have been utilized for cleaning purpose

Off-line Cleaning:
An alternative to on-line cleaning is to stop operation and clean the heat exchanger. Off-line cleaning can be classified into off-line chemical cleaning or by mechanical means. The cleaning method without the need to dismantle the heat exchangers is preferred, but usually it is necessary to have access to the inside surfaces. It would be prudent to consider the installation of a “standby” heat exchanger, thereby providing the opportunity to clean the fouled and scaled heat exchanger while at the same time maintain the production. The off-line cleaning methods are described below:

Off-line mechanical cleaning:
1. Water jetting—a three stage cleaning process that includes multi-lance ultra high pressure water jetting (<40000 psi @ 2 g.p.m). It is one of the safest cleaning methods available in the trained hands. It lowers the maintenance cost by negating the need for hazardous chemicals disposal services. It also enables testing of heat exchangers by ‘Eddy Current’ or ‘Ultrasonic Internal Rotating Inspection System (IRIS)’. The internal tube cleaning and the external bundle cleaning by water jetting are shown in Figure-1 & 2, respectively.
2. Tube drilling and Roding—Devices may be applied to the rotating shaft including drills, cutting and buffing tools and brushes that may be made from different materials, for example steel or nylon, or brasses, depending on the tube material and the nature of the deposit (2).

3. Cleaning with explosives—use of controlled explosions are made. The energy used to remove the deposits, is transmitted by a shock wave in the air adjacent to the surface to be cleaned or by the general vibration of the tubes brought about by the explosion. It is a relatively new innovation introduced in boiler plant cleaning. It is possible to begin the cleaning process, while the structure is still hot.

4. Thermal shock—rapid changes in temperature, cause cracking of foulant layer with the possibility of flaking. This technique is similar to steam soaking. The flushing of water carries away the dislodged material and it is repeated until clean surfaces are obtained.

Off-line chemical cleaning:
It is now being extensively used for removing various scales and foreign materials. Inhibited hydrochloric acid, hydrofluoric acid, sulphuric acid, can be used for iron oxides, calcium/magnesium scales and foulant. Inhibited hydrofluoric acid is by far the most effective agent but cannot be used if deposits contain more than 1% w/v calcium (5). Chlorinated or aromatic solvents followed by washing are suitable for heavy organic deposits for example, tars and polymers (foulants) (6). Alkaline solutions of potassium permanganate or steam-air docking are suitable for cleaning carbon (foulant) deposits (7).

Robotic heat exchanger cleaning technique:
Robotic heat exchanger cleaning technique allows tube cleaning and inspection maintenance to be performed without pulling the heat exchanger. It is a brilliant cost saving
technique for plant operators looking to minimize downtime and associated costs with scaffolding, nuts and bolts, gaskets, third party costs, risk associated with pulling, etc. Figure-3 shows robotic heat exchanger cleaner rig. The five special features of robotic heat exchanger cleaning are given below:

1. Records videos and images--The new robot is equipped with a high definition camera to record videos and images of blockages identify any areas of concern and capture footage of the cleaning taking place. The camera allows detailed feedback to be given to the cleaning/maintenance engineer and aids the technicians to target the most heavily fouled areas straight away- there’s no guess work.

2. Pre-programme the robot--Diagrams and information about the heat exchanger can be supplied by the maintenance engineer and pre-programmed into the robot. This creates a visual representation of the bundle which the technicians can then use to select the most appropriate cleaning method and programme this into the robot, before arriving on-site.

3. Smart digital sensors--The robot features a smart digital sensor system with distance control using high-end encoders. This ensures that cleaning is precise and thorough whilst protecting the materials within the heat exchanger.

4. Auto Adjustment--The smart digital sensor system enables the robot automatically adjust to warped tubes and bends. Cleaning pressure is regulated according to the design of the asset, meaning that damage to materials is avoided, and cleaning can be more targeted and precise.

5. Adjustable lance and track--This feature allows the robot to reach every row of tubes no matter the size of the asset to be cleaned. It also means that there is minimal vessel entry so fouling can be removed safely, without the use of harmful chemicals (8).

Cleaning Precautions:
- Tubes should not be cleaned by blowing steam through individual tubes. This overheats tubes and results in severe expansion strain, deformation and possible leaky tube joints.
- When mechanically cleaning a tube bundle, tubes should not be hammered on to remove hard scale. If scrappers are being used, make sure that the scrappers are not sharp enough to damage the tubes.
- Cleaning compounds must be compatible with the metallurgy of the heat exchanger.
- If scaling or other fouling is expected, provisions in the piping could be made to allow connections for flushing out or chemical circulation cleaning. In large plants, it may be profitable to have a tank of cleaning fluid available for periodic flushing of shells and/or tubes. Makers of commercial cleaning products would be able to advise in this respect.

MAINTENANCE OF HEAT EXCHANGERS:
Planned shutdown of the heat exchanger should be taken at regular intervals (intervals decided by experience or equipment manufacturer’s recommendation) and thorough inspection of the interior and the exterior of the units should be carried out. Neglect in keeping all tubes clean may result in complete stoppage of flow through some tubes, causing severe thermal strain, leaking tube joints, or structural damage to other components. When sacrificial anodes are provided, they should be inspected at regular intervals to determine whether they should be replaced for giving continued cathodic protection to the shell.

Exchangers subjected to fouling or scaling should be cleaned frequently. A light sludge or scale coating on tubes greatly reduces their efficiency. A marked increase in pressure drop and/or reduction in performance usually indicate that cleaning is necessary. The unit should first be checked for air or vapour binding to confirm that this is not the cause for reduction in performance. Intervals between cleaning should not be excessive as it increases the thickness of deposits on heat exchanger surfaces causing difficulty in cleaning process. The procedure involved in maintenance of heat exchangers is discussed below:

Work permit authorization:
To ensure safety of the employees and assets, a proper work permit has to be taken before commencing the maintenance work.

Scaffolding construction:
Wherever needed, scaffolding on head covers and piping work may be constructed for blind insertion etc.

Blinding of process piping:
Blinding of process piping should be done from both shell and tube side before disassembly. Both shell and tube side should be vented, drained and depressurized. Purging will be necessary for hazardous fluids before opening the flanges.

Disassembly for inspection and cleaning:
To inspect the inside of the tubes and also make them accessible for inspection, the following procedures and references should be followed:
1. Stationary head end:
A. Type A, C, D, and N—remove cover plate only.
B. Type B-------------------remove entire bonnet.

2. Rear head end:
A. Type L, N, and P--------remove cover plate only.
B. Type M------------------ remove entire bonnet.
C. Type S or T--------------remove shell cover and floating head cover.
D. Type W------------------remove channel cover plate or entire bonnet.

The designs of ‘Front end stationary head types (A,B,C,D,N)’, ‘Shell types (E,F,G,H,J,K)’, and ‘Rear end head types (L,M,N,P,S,T,U,W)’ are shown in Figure-4.

**Bundle removal and handling:**

When removing tube bundles from heat exchangers, care should be taken to assure that improper handling does not damage the parts of the exchanger. The tube bundle should never be supported on the tubes but should rest on the parts designed to carry it, e.g. the tube sheets, baffles, or tube supports. To avoid possible damage during removal from the shell, a pulling device should be attached to eyebolts screwed into the tube sheet. A suitable arrangement for removing the tube bundle from the exchanger is shown in Figure-5. If the tube sheet does not have tapped holes for the eyebolts, steel rods or cable may be inserted through tubes and attached to bearing plates for removing the tube bundle. The tube bundles should not be handled with hooks or other tools which might damage the tubes. They should be moved about on cradles, dollies, or skids.

Horizontal tube bundles should be lifted by means of a suitable sling. Baffles and support plates can be easily damaged by dragging a bundle over a rough surface. Tube bundle may be transported to the cleaning/washing area in two ways depending on the height where the exchanger is located. For large heights, transport may be carried out first by using cranes and later with straddle carrier cars, whereas for lower heights, it could be enough to use truck mounted or self propelled vehicle.

**Cleaning Tube Bundles:**

This is one of the most important activities in maintenance of heat exchangers and the details of this activity have been already explained above. Cleaning can be performed by the experienced maintenance technicians/engineers available in the plant and the method selected will be the responsibility of the plant engineers. However it may be beneficial to employ the use of a qualified organization that provides heat exchanger cleaning services. These organizations can check the nature of the deposits, furnish proper solvents and/or acid solutions containing proper inhibitors, and provide proper tools and crew for a complete cleaning service.

**Bundle installation:**

As discussed above, the bundle should be installed carefully with proper jigs and fixtures/tools etc., so that no damage is inflicted upon the bundle.

**Pressure Testing:**

Testing rings are required to be installed on both side of the tube sheet. Pressure testing is carried out from shell side to identify any leakage from tube or tube-to-tube sheet joints. Various fluids like air, nitrogen, water, etc., can be used according to the service on...
the shell side. Soap filled test can be performed on the tube sheet to identify leakage. After thorough hydro test/ pneumatic test of shell and tube sides, various ‘Non-Destructive Tests’ (NDT) like: ‘Eddy Current Testing’ (Remote Field Eddy Current Testing); ‘Ultrasonic Testing’(Internal Rotating Inspection System); and ‘Helium Leak Test’, etc. may be carried out for assessing and identifying all defects including tube leakage.

**Plugging of leaking/ damaged tubes & tube expanding (plug inserts/welding):**

Once the leaking tubes are identified, they are generally plugged. Mechanical plugs should be considered in situations where friction fit tapered plugs are not appropriate for the pressure and/or temperature of service or other environmental conditions. These are suitable for service in operating pressures up to 7000 p.s.i (483 bars) and are designed to be installed without welding or application of explosive. Hot welding or application of explosives for repairing heat exchangers should be avoided as far as possible to avoid damage of the exchanger, due to build up of heat stress. Tube stabilizers are designed for stabilizing fractured or severed heat exchanger tubes while tube sleeving is designed to effectively repair damaged tube ends. To tighten a loose tube-to-tube sheet joint, a suitable roller type expander may be used. The non leaking tubes should not be rolled, as it may necessarily thin the tube walls and may work harden the tube material making it brittle leading to failure. Care should be taken to ensure that the tubes are not over expanded. As the heat exchangers are usually over-designed by about 30%, 10-20% of the tubes per pass can safely be plugged without sacrificing on efficiency or performance. However, the original equipment manufacturer (OEM) can be consulted for the same.

Many plants use elastomeric/polymer plugs as a quick fix to leaking tubes. However, these plugs have been shown to deteriorate over time leading to lost and leaking tubes. Friction fit tapered plugs are also used by some industries. But these plugs can be expelled during shell side pressure testing or from tubes that have not been properly vented prior to plugging resulting in serious safety concerns for surrounding personnel and equipment. The disadvantages of friction fit tapered plugs are mentioned below:

- Do not conform to ASME PCC-2 recommended tube plugging repair methods in applications above 200 psig (14 barg)/400°F (205°C).
- Lack of pressure rating resulting in unknown safety factor.
- Can eject when system is pressurized and become a lethal projectile.
- Can over stress and/or damage tube joints and crack tube sheets due to uncontrolled installation force.
- Can damage expensive epoxy coated tube sheets resulting in costly repairs.
- May require welding in higher pressure services/applications.
- Welded installations may make re-tubing extremely difficult and expensive.

‘Pop-A-Plug’ Tube Plugging System offers a perfect solution to plants looking for a reliable economic solution. An example of plugging leaky condenser tubes using ‘Pop-A-Plug’ methodology is shown in Figure-6. The advantages of this technique are given below (9):

- The plugs are available in different materials such as: brass, carbon steel, 316 stainless steel, 304 stainless steel, 4142 alloy, 70/30 Cu- Ni, 90/10 Cu-Ni, monel, duplex 2205, chromoly grade 11, chromoly grade 22, and titanium, etc. Thus proper selection of the plug by matching it with the tube material can be done avoiding differential thermal expansion and contraction issues. Bi-metallic corrosion can also be prevented.
- Metal to metal seal will not leak or degrade like elastomeric plugs.
- It enables complete sealing of leaks (1×10⁻⁶ cc/s by helium leak test)
- It can be installed with controlled force protecting surrounding tubes and adjacent ligaments from damage.
- Enables achievement of lowest life cycle cost compared to alternative tube plugging methods.
- Hydraulic installation significantly reduces turnaround/downtime.
- Eliminates need for welding or application of explosives for repairing defectives tubes.
- It conforms to ASME PCC 2 recommended tube plugging methods.
- It is safe up to pressure rating up to 7000 psig (483 barg)
- Full material traceability is available—all plugs laser etched with lot number.

**Plugging procedure— the salient points involved in plugging are given below:**

1. The material used for plugging tubes should comply with the requirement of ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.
2. Proper plug material and equipment/tools should be used for the process.
3. Crew performing tube plugging should be certified technician using proper cementing procedure.
4. The point(s) of leakage should be verified, and the corresponding opening(s) should be marked/labelled on the tube sheet.

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**Fig-6: Sealing leaking condenser tubes by ‘Pop-A-Plug’ method**
5. A drill with a suitable bit or a reamer should be used to ream the inside diameter (ID) of the tube(s). As an alternative, a mandrel with an abrasive, such as sandpaper, may be used to ream the hole(s). Reaming may be done up to the depth so that the first plug can be inserted.

6. Cement has to be prepared as per the cement manufacturer’s instructions.

7. Graphite plugs that are slightly smaller in diameter than the ID of the tube opening(s) should be selected for plugging to allow for a sound cement joint.

8. A minimum of two graphite plugs, each with a minimum length of 1” should be used to plug each end of the tube(s) in question.

9. 100% of individual plugs, as well as the inside diameter of the tube opening(s) in question, shall be coated with cement. The plugs shall then be inserted one by one, snugly fit against each other, into each end of the tube(s) to be plugged.

10. In some instances, insertion depth can vary, however, the plug(s) shall not project outside of the face of the tube(s) being plugged.

11. Once plugging is completed, and before the cement cures, the end plugs may need to be held in place, as cemented plugs may exhibit a tendency to dislodge from the plugged tube(s) prior to final curing of the cement.

12. Curing time is considered complete when the cement is hardened to the point that it cannot be indented with pressure from a flat screw driver.

13. After cement is completely cured, the plugged, cemented area(s) on the tube sheet face may be dressed with sand paper or other suitable abrasive.

**Extending Tube Life by simple design change:**

Failure occurs in the inlet ends of tubing in condensers and similar ‘shell – and- tube heat-exchanges’. It is designated as inlet-tube corrosion. The attack is usually confined to the first few inches of the tubing at the inlet end. Turbulence exists in this area because the liquid is flowing essentially from large pipe (the exchanger head) into a smaller diameter pipe (the tubes). Tube entrance areas experience severe metal loss when high velocity fluid is divided into smaller streams upon entering the heat-exchanger. This results in excessive turbulence with very high localized velocities. High velocity and turbulence produce a horseshoe erosion pattern at the tube entrance as shown in Figure-8.

![Fig-8: Erosion-Corrosion at the entrance of the heat-exchanger tube](image)

Laminar flow develops after the liquid has progressed down the tube in a relatively short distance. Therefore, tubes may be designed to extend several inches beyond the tube sheet at the inlet end. In several cases, life of tubing was doubled by increasing the length by about 4 inches. The protruding tube ends were attacked, but operation was not affected. Ferrules, or short lengths of flared tubing, can also be inserted in the inlet ends. These could be made of the same material as the tubes or of material with better resistance. Bakelite or other plastic ferrules are readily available and widely used in condensers. The end of the ferrule should be ‘feathered’ to blend the flow. If this is not done, erosion corrosion occurs on the tube just beyond the end of the ferrule because of the step present. However, galvanic corrosion must be considered when using metallic inserts (1).

**In-situ repair of heat exchanger components:**

Cold application Coatings/products for the parts of the exchanger subjected to erosion corrosion are available in the market for carrying out in-situ repair of components giving sufficient erosion corrosion resistance. The products consist of two components-compound ‘X’ and reagent ‘XX’ which are mixed together and applied on the component at ambient temperature. On curing, the deposit attains properties to combat erosion corrosion. Some of the unique features of this application are: ‘bonds on almost all base metals’; ‘requires no welding machines/power’; ‘completely cold process and no heat input is necessary’; ‘can be used in all positions/in-situ’; ‘very easy to use-just mix and apply’; ‘low density of coating and negligible wastage’. One of the coating materials called MECATEC-2 (L&T Eutectic Castolin) has excellent corrosion resistance in liquid media, is light in color, tough and the deposit is machinable. This coating can be applied for repairing condenser tubes, pipe elbows, shell side damage, and tube sheet, etc (4). Application of this coating for repairing leaking, corroded condenser, failed by erosion corrosion is shown in Figure-7. The tube end shield is being repaired by applying ‘Mecatec-2’ (10).

![Fig-7: Tube (End Shield) Being Repaired By Anti-Corrosion MECATEC-2](image)

**Hydro Test:**

Re hydro test from shell side should be performed for ensuring the integrity of leakage rectification work.

**Boxing-up of the exchanger:**

Head covers of the heat exchanger have to be boxed-up, all gaskets have to be replaced properly, and all bolted joints should be tightened.
properly. Thereafter leak test should be performed from the head cover side.

Gaskets and gasket surfaces should be thoroughly cleaned and should be free from scratches and other defects. Gaskets should be accurately positioned before re-tightening bolts. It is better to replace old gaskets with new ones as attempting to reuse the old gaskets could damage the contact surfaces of the heat exchanger. Any leakage at the gasketed joint should be rectified to prevent crevice corrosion.

All bolts should be tightened uniformly and in a diametrically staggered manner. Bolts should be torque incrementally to 30%, 60%, and then 100% of the appropriate torque. For bolt sizes not listed, OEM’s guidance may be sought. The appropriate torque values for different nominal bolt sizes are given below in Table-1:

<table>
<thead>
<tr>
<th>Nominal Bolt Size, inches</th>
<th>Torque in ft/lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>40</td>
</tr>
<tr>
<td>5/8</td>
<td>75</td>
</tr>
<tr>
<td>3/4</td>
<td>125</td>
</tr>
<tr>
<td>7/8</td>
<td>200</td>
</tr>
<tr>
<td>1</td>
<td>310</td>
</tr>
<tr>
<td>1-1/8</td>
<td>450</td>
</tr>
<tr>
<td>1-1/4</td>
<td>650</td>
</tr>
<tr>
<td>1-3/8</td>
<td>850</td>
</tr>
<tr>
<td>1-1/2</td>
<td>1000</td>
</tr>
<tr>
<td>1-5/8</td>
<td>1400</td>
</tr>
<tr>
<td>1-3/4</td>
<td>1900</td>
</tr>
<tr>
<td>1-7/8</td>
<td>2500</td>
</tr>
<tr>
<td>2</td>
<td>2800</td>
</tr>
</tbody>
</table>

Table-1: Torque values for different bolt sizes

**De-blinding of process piping:**

All scaffoldings, if any, and other equipment/tools used for the maintenance work, should be removed from the site. All blinds used for process pipes should be removed and finally the exchanger is handed over to the production.

**Management of spares:**

It is worthwhile to plan spare parts properly so that the stock-out cost and at the same time the inventory carrying cost is minimum. Parts can generally be procured from the OEM by quoting the part no. and the serial no. of the heat exchanger, however, the lead time of procurement can be quite high leading to increased shutdown time/down time of the unit. Particularly some gaskets are made to order with a long lead-time. In very critical applications, a complete replacement set of tube bundle can be kept in the store for carrying out unit replacement avoiding costly downtime.

**CONCLUSION:**

Routine maintenance and cleaning of heat exchangers should be performed according to a planned preventive maintenance schedule. The cleaning schedule may be made based on the failure/fouling history of the exchanger in the plant and the plant operating conditioned. Opportunity of cleaning, inspection and maintenance may be sought whenever opportunity of plant shut down is available. Scheduling should preferably be made based on on-line condition monitoring of the heat exchanger incorporating thermography and radiotracer methods. It is advisable not to wait until pressure drop (ΔP) takes place or energy consumption increases or contamination of process fluid takes place. When shutdown maintenance is undertaken, Off-line NDT methods such as: eddy current, ultrasonic, dye-penetrant, etc., should be applied for pin-pointing the defect. This will help in carrying out cleaning and maintenance work properly minimizing shutdown time and maintenance cost. If the work is awarded to an outside contractor, the cleaning, inspection and maintenance job should be supervised by the experienced plat maintenance engineer.

**REFERENCES:**

Disposal of brine sludge in chlor-alkali industry is still a challenge. The reason being CPCB though clarified it through a letter that brine sludge in non-hazardous, amendment to Hazardous Waste Rules is yet to come. Industry and AMAI is pursuing with CPCB for issuing the amendment and directives to SPCBs. To dispose off brine sludge in nearby TSDF is a costly affair adding to financial burden on Chlor-Alkali industry.

Permission to recycle brine sludge can be obtained from CPCB under Rule -9 of the hazardous & other wastes (Management & transboundary movement) rules 2016.

**Generation of brine sludge:**

Pure brine (Salt solution) is required for Electrolysis in the manufacturing of Caustic soda and chlorine in a Chlor-alkali plants.

The brine sludge is generated during the process of brine purification. The raw salt (NaCl) has impurities like Ca, Mg, SO4, insolubles and traces of few metal elements. SO4 is precipitated as BaSO4 by the chemical reaction of BaCO3, Ca is precipitated as CaCO3 by reaction of Na2CO3, Mg is precipitated as Mg(OH)2 by reaction of NaOH. Sand, Silica in alkaline medium also settle down. These settled impurities of BaSO4, CaCO3, Mg(OH)2, Sand & Silica form the sludge which is called brine sludge. The Chlor-alkali plants are using BaCO3 or BaCl2 for the removal of SO4 and to keep desired level of Sulphate in brine to complete the reaction of BaCO3 or BaCl2 so that there should be no free BaCO3 or BaCl2 in brine and in sludge except BaSO4.

The brine sludge is washed 2~3 times with hot water to recover and reduce the sodium chloride from the sludge.

The sludge generation is 20 -25 kg/MT of Caustic Soda produced.

**Washing of brine sludge:**

Three tanks are engaged for brine sludge. First and second are used for brine sludge receiving and third tank for recovered brine from filter press. The brine sludge is passed through filter press to separate out sludge & water. After filtration fresh hot water is passed through filter press to remove NaCl from filter cake. After sufficient washing, NaCl in filtered sludge is reduced to 2% by weight.

**Utilization of Brine Sludge**

Brine sludge is utilized for the making of compressed bricks by mixing with fly ash, sand and lime in different ratios. The strength of these bricks is more than 80-95 kg/cm², while normal / conventional fly ash bricks having strength of 65-70 Kg/Cm².

Orient Paper Mills is manufacturing compressed bricks with brine sludge after mixing with fly ash, sand & lime regularly.

**List of Materials used for manufacturing bricks:-**

1. Fly Ash
2. Sand
3. Gypsum
4. Lime
5. Brine sludge

Above materials are used in different ratios to make compressed fly-ash bricks.

Leachability test of these bricks done & all results are well within prescribed limits given by CPCB.

Recently, Orient Paper Mills-CSU have received the permission from CPCB vide their letter dated 10th June 2020, to conduct trial runs of brick manufacturing using brine sludge, in presence of CPCB & SPCB.
NDMA(MHA) issues guideline on restarting manufacturing industries after the lockdown period; Field functionaries to ensure strict compliance of guidelines

Union Ministry of Home Affairs (MHA), has issued detailed guidelines under the Disaster Management Act, 2005, on restarting manufacturing industries after the lockdown period.

In early response to COVID-19, nationwide lockdown was ordered with effect from 25th March. As the lockdown is being gradually released in some zones, certain economic activities are being permitted as per NDMA orders No.1-29/2020-PP dated 1st May 2020 and MHA order No. 40-3/2020-DM-I(A) dated 1st May 2020.

Due to several weeks of lockdown and the closure of industrial units during the lockdown period, it is possible that some of the operators might not have followed the established SOP. As a result, some of the manufacturing facilities, pipelines, valves, etc. may have residual chemicals, which may pose risk. The same is true for the storage facilities with hazardous chemicals and flammable materials.

National Disaster Management Authority has issued –

2. Guidelines on Management of Chemical (Terrorism) Disasters, 2009 and
3. Strengthening of Safety and Security for Transportation of POL Tankers, 2010, which are relevant for chemical industries.

The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 under Environment Protection Act, 1986 provide the statutory requirements for these industries.

When Lockout/Tagout procedures are not in place, many energy sources can prove to be hazardous to operators/supervisors who are servicing or maintaining electrical, mechanical or chemical equipment. When heavy machinery and equipment are not maintained periodically, they can become dangerous for the operators/engineers.

Combustible liquids, contained gaseous substances, open wires, conveyor belts and automated vehicles make manufacturing facilities a high-risk environment. Improper enforcement of safety codes and improperly labelled chemicals can further pose serious health hazards.

When an unexpected event occurs, managing rapid response becomes challenging. In order to minimize the risk and to encourage a successful restart of the industrial units, the following guidelines are being issued.

State Governments shall also ensure that the off-site disaster management...
When Lockout/Tagout procedures are not in place, many energy sources can prove to be hazardous to operators/supervisors who are servicing or maintaining electrical, mechanical or chemical equipment. When heavy machinery and equipment are not maintained periodically, they can become dangerous for the operators/engineers.

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State Governments shall also ensure that the off-site disaster management plan of the respective Major Accidental Hazard (MAH) units are up to date and preparedness to implement them is high. It is also advised that all the responsible officers of the district shall ensure the Industrial On-Site Disaster Management Plans are also in place and cover Standard Operating Procedures for safe re-starting of the industries during & after COVID 19 lock down.

**Guidelines for restarting manufacturing industries after lockdown**

In early response to COVID-19, nationwide lockdown was ordered with effect from 25th March. As the lockdown is being gradually released in some zones, certain economic activities are being permitted as per NDMA orders No.1-29/2020-PP dated 1st May 2020 and MHA order No. 403/2020-DM-I(A) dated 1st May 2020.

Due to several weeks of lockdown and the closure of industrial units during the lockdown period, it is possible that some of the operators might have not have followed the established SOP. As a result, some of the manufacturing facilities, pipelines, valves, etc. may have residual chemicals, which may pose risk. The same is true for the storage facilities with hazardous chemicals and flammable materials.


When Lockout/Tagout procedures are not in place, many energy sources can prove to be hazardous to operators/supervisors who are servicing or maintaining electrical, mechanical or chemical equipment. When heavy machinery and equipment are not maintained periodically, they can become dangerous for the operators/engineers.

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**Generic guidelines:**

1. **While restarting the unit, consider the first week as the trial or test run period; ensure all safety protocols; and not try to achieve high production targets.**

2. To minimize the risk it is important that employees who work on specific equipment are sensitized and made aware of the need to identify abnormalities like strange sounds or smell, exposed wires, vibrations, leaks, smoke, abnormal wobbling, irregular grinding or other potentially hazardous signs which indicate the need for an immediate maintenance or if required shutdown.

3. Especially during the Covid-19 times, ensure all lockout and tagout procedures are in place on a daily basis (not applicable for units running 24hrs).

4. Inspection of all equipment as per the safety protocols during the restart phase

5. In case the industry has any difficulty in managing crucial backward linkages that may be critical for their safe functioning, they should approach the local district administration for specific assistance. District Magistrates may be instructed to ensure that in such instances, the industrial unit may be facilitated to run their end to end operations, in the overall interests of industrial security.

For specific industrial processes:

1. **Storage of raw material**
   a. Inspect the storage facilities for any signs of spills, wear and tear during the lockdown.
   b. Check for already opened storage vessels/containers/bags/silos for possible oxidation/chemical reaction/ rusting/ rotting etc.
   c. HAZMAT Chemicals in the storage need to be checked for chemical stability before using for any processes
   d. Ensure ventilation and proper lighting before entering the storage areas
   e. Sense for abnormalities like strange sounds or smell, exposed wires, leaks and smoke
   f. Check supply pipelines/valves/conveyor belts for any signs of damage/wear & tear g. Check the storage building for any signs of distress and damage to the roof.

2. **Manufacturing Processes**
   a. Carry out a complete Safety And it of the entire unit before taking up starting activities
   b. Cleaning of pipelines, equipment and discharge lines: Mechanical cleaning followed by air /water
flushing and chemical cleaning based on the type of the process equipment

c. Run-in of rotatory equipment under supervision

d. Boilers/ furnaces/ heat exchangers to be checked for lining and signs of wear and tear

e. Check supply pipelines/valves/ conveyor belts for any residual material and signs of wear and tear. Also check all the pipelines / valves for obstructions/ pressure levels.

f. Ensure all pressure, temperature gauges are functional

g. Tightness test: Many process units handle combustibles or toxic substances (or both), the leakage of which could result in disaster, damage, or economic loss. To prevent the occurrence of such incidents, it is necessary to confirm that the plant complies with the required tightness before start-up.

h. Service test need to be performed for all water, compressed air, and steam piping and equipment with normal operating fluids. The system is first pressurized with operating fluids and then checked for leakage. For air lines, leaks can be found using soap solution. For water and condensate lines, the leakage can be observed visually. Leakage points found during the test are retightened. The test is deemed successful if no foam is observed from soap solution, or if no water or condensate is observed visually.

i. Vacuum hold test: All vacuum systems must be leak tested. Air inside the system is first evacuated to attain the required vacuum. The best way is to start at one end of the section and work through to the other end, checking flanges, valves, fittings, instruments, and other equipment. Each leak is tagged, making it easy for the maintenance team and personnel of the next shift to continue with the work.

j. Trial testing be carried out before the full-fledged production is initiated with full human resources

k. Ensure the arrangement for round-the-clock emergency crews/ professional technical teams provided with MAH and cluster of MAH should have an extended coverage of 200 km to reach transport accident spots for help

3. Storage of products
a. Check the storage facilities / silos for any damage or wear and tear

4. Guidelines for the workers
1. Ensure 24 -hour sanitisation of the factory premises.
   a. Factories need to maintain a sanitisation routine every two-three hours especially in the common areas that include lunch rooms and common tables which will have to be wiped clean with disinfectants after every single use.
   b. For accommodation, sanitisation needs to be performed regularly to ensure worker safety and reduce spread of contamination.

2. Entrance health checks
   a. Temperature checks of all employees to be done twice a day.
   b. Workers showing symptoms should not report to work.

3. Provisions of hand sanitisers and mask to all employers.
   a. Providing gloves, masks and hand sanitisers to be done at all factories and manufacturing units.

4. COVID 19 health and prevention staff education
   a. Education on safety steps to take from entry to exit in the factory
   b. Measures to take precautions at personal level

5. Quarantine measures for supply and storage of goods
   a. Sterilise boxes and wrapping brought into factory premises
   b. Isolate and sanitise finished goods as appropriate
   c. Delivery of goods in shifts

6. Physical distancing measures
   a. Create physical barriers to ensure the physical distance within the work floor and dining facilities
   b. Provide face protection shields along with masks and PPEs.

7. Working in shifts
   a. Factories that work 24 hours at full production capacity should consider one hour gap between shifts, except factories/plants requiring continuous operations.
   b. Managerial and administrative staff should work one shift at 33 per cent capacity as per MHA guidelines; but while deciding which particular person to be included in 33% at any given point of time, overriding priority should be given to personnel dealing with safety.
   c. Ensure no sharing of tools or workstations to the extent possible. Provide additional sets of tools if needed.

8. Scenario plan on discovering a positive case
   a. Factories have to prepare accommodation to isolate workers, if needed.
   b. HR has to help manage the whole process for individual, all travelling employees also to undergo a mandatory 14-day quarantine

9. Presence of skilled workers
Workers involved in dealing with hazardous material must be skilled and experienced in the field. No compromise on deployment of such workers should be permitted when an industrial unit is opened up.
Since its Outbreak in Wuhan, China, Covid-19 has spread to 211 countries, forcing imposition of lockdowns which have created much socio-economic disruption. Global losses are pegged at $9 trillion, and India is losing Rs 35,000 crore every day.

Amid the ongoing slowdown, Covid-19 has pushed the world towards negative growth. IMF projects the global economy to contract by 3%.

This will adversely impact the entire metal industry, especially the world’s second most important metal, aluminium.

Even pre-Covid-19, the London Metal Exchange selling price of the metal was stressed ($1,750/tonne); this has now fallen to a low of $1,440/tonne, making 90% of the world’s smelters unviable. Without any support from the government, aluminium producers will have to shut shop.

With a gloomy global forecast and Chinese smelters continuing operations, there will be an inventory glut. End-users are cancelling contracts for primary aluminium in Europe and North America, contracting demand by 5 mn tonnes.

India’s GDP forecast falling to 2% (from 6%) will impact aluminium demand in the construction, transport, and electrical sectors. Aluminium demand will decelerate by 40-50% unless enough stimulus is given—an SOS call of the aluminium industry.

Global recession, dumping from China, shrinking markets in the western hemisphere, and semi-finished products through FTA countries like Malaysia and Thailand spell trouble for Indian aluminium exports.

India’s own aluminium consumption will recover slowly post FY22, to reach ~6-7 mn tonnes by 2025.

**Revival plan for Indian aluminium industry:**

The aluminium industry has a high multiplier for job creation. Every job in primary production creates two more in the downstream and upstream industries. The industry provides livelihood to over 8 lakh people and every 1 mn tonne addition

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**T.K. Chand**

Ex-CMD, Nalco

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**COVID-19 Pandemic: Reviving the Aluminium Industry to Challenge China**

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**T.K. Chand**

Ex-CMD, Nalco

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creates an additional 2 lakh livelihood opportunities. Aluminium is the most apt industry for creating livelihoods to achieve the coveted V-shaped recovery from ~2% to ~7% by next year.

**Tariff support recommendations for aluminium MSMEs:**

Immediately impose minimum import price and/or quantitative restriction on imports. Safeguard our MSMEs from cheap imports by increasing import duty in the series 7603 to 76016 to 10-15% (existing duties ~7.5-10%).

To be globally competitive, enhance the MEIS scheme from 2% to 5% for all aluminium products under Chapter 76, and implement the RoDTEP (remission of duties or taxes on export products) scheme expeditiously.

**Financial measures:**

Extend RBI’s moratorium to non-convertible debentures and other commercial papers, for both principal and interest. Waive/moratorium on all statutory payments (electricity duty, royalty on coal and minerals, coal cess, and on renewable purchase obligation) for next two years, to support highly power-intensive industries like aluminium.

**There are also some non-tariff issues that require attention:**

Liquidate the stockpile of 70 million tonnes of coal with Coal India by meeting the entire requirement of the aluminium industry at the notified prices through current and new FSAs. Fix the average selling price of bauxite as per Indian Bureau of Mines (IBM) return as is done for other bulk minerals, or on a cost plus basis price to be fixed by the state government. Prioritise rake allocation with discounted freight tariffs of 25%. This will benefit the volumes and revenue of the Railways.

Deemed approvals and public hearing exemptions for mine expansion proposals.

Include the aluminium industry within the core industry group, and introduce national polices on aluminium and aluminium scrap.

Industry, along with the government stimulus, should promote MSMEs and downstream industries. Aluminium parks developed by Nalco and Vedanta will increase value addition, mentor MSMEs, lending brand names to market end products. Other industries can also introduce cashless model for MSMEs to give input material and buy back end-use products. This will be mutually beneficial—spreading industrialisation, creating employment, and developing MSMEs.

With all ingredients of competitive raw material availability (bauxite and coal), best-in-class manpower, and value addition through MSMEs, India has the potential to be self-sufficient and become a global manufacturing hub of aluminium, and can be a strong substitute to China.

**The author is Ex-Chairman & Managing Director, Nalco. Views are personal**

(Reproduced with permission from Financial Express 1st May 2020)
Artificial Intelligence should be used in disaster management for saving lives

Major General M.K. Bindal
Executive Director NIDM

New Delhi: Major General M.K. Bindal, Executive Director, NIDM, yesterday said, “There is a need for some concrete measures for industrial safety by creating a connectivity between onsite & offsite plans. Automation should be the norm of the day. The country needs more mock drills so that best practices may be followed to avoid the loss of human lives.”

Speaking at a webinar on ‘Industrial Safety – Coping with The New Normal’, organized by FICCI, jointly with National Disaster Management Authority (NDMA), Economic Advisory Council to the Prime Minister (EAC-PM), National Institute of Disaster Management (NIDM), Department for Promotion of Industry and Internal Trade (DPIIT), Gujarat Institute of Disaster Management (GIDM) and Asian Disaster Preparedness Centre (ADPC), under the aegis of FICCI’s flagship initiative Chemical & Industrial Disaster Management (CIDM), Major General Bindal said, “Artificial Intelligence can be used to save lives in the process of disaster management efforts.”

Lt Gen (Dr) J R Bhardwaj, Chairman, Chemical & Industrial Disaster Management Board (CIDM) highlighted on the measures needed to create a culture of safety post COVID-19.

Dr R K Elangovan, Director General, DGFASLI, GoI said “robust onsite & offsite emergency planning shall be made available in the factories. The emergency team leaders, team members, equipment & facilities should also be available in the factory as per the approved emergency plan.”

Dr Rajan Sharma, Vice President and Head HSE, Glenmark pharmaceuticals said, “The workforce dynamics has also changed dramatically in the world.”

Mr Mahesh Chandak, Head of HSE – South Asia & HSE, Business Partner for Crop Science, Bayer said, “It’s a good idea to encourage employees to work from home through the lockdown phase.”

Mr Dilip Chenoy, Secretary General, FICCI said, “Proper safety precautions will be the new normal. Online sharing of experience is extremely valuable for the Safety of Chemical Industries.”

The webinar attended by over 500 industries, academia, central & state government officials from across the country.

(Reproduced with permission from India Education Diary Bureau Admin May 24, 2020)
The chemical industry has been in the news in the last few weeks mostly for the wrong reasons. A series of accidents – varying in scale, cause and impact – have cast doubts on the industry’s track record on safety, and raised doubts whether it has learnt lessons from past accidents and near-misses. This is a pity. The industry is a vital one – as amply evident by all it has to offer to tackling the covid-19 crises – but that cannot and should not be an excuse for laxity in safety.

**Four accidents in a month**

Over the last month, at least four significant accidents have been reported, with some leading to mortalities.

1. The first one at the Vizag unit of Hindustan Petroleum Corporation Ltd. (HPCL) on April 4, in the Continuous Catalytic Reformer unit making motor spirit, resulted in minor injuries to three workers.

2. The second one was at the agrochemical plant of Tagros Chemicals India Pvt. Ltd. at Dahej (Gujarat) on April 7. Though the entire plant was gutted – leading to concerns over supplies of some important agrochemicals – there were again no casualties.

3. The third accident, at the Tarapur plant of Galaxy Surfactants Ltd., a company with an otherwise exemplary record of safe operations, was more serious, with three deaths. Significantly, it occurred when the plant was being started up after a brief shutdown.

4. The last and most serious – also at Vizag – was on the early hours of May 7, at the LG Polymers Ltd. plant making polystyrene (PS), and resulted in the release of styrene monomer (SM) vapours from a leaking storage vessel. Twelve people – living in villages around the plant – were killed, and many more treated for breathing difficulties.

The types of plants involved cannot be more different. While the Galaxy and the Tagros plants were producing fine/speciality chemicals, and likely operating in batch mode, the HPCL accident was in a medium-sized refinery, with capacity to continuously process 8.3-mtpa of crude oil. The accident at LG Polymers’ did not happen in the core process plant, but in the storage tank where SM had been stored since the first phase of the national lockdown about 40 days before.

**Unanswered questions**

The cause of the accident in the LG Polymers case has been widely speculated; understandably so considering its seriousness. While the formal enquiry by regulators is ongoing, and an internal one by the South Korean company will undoubtedly take place as well, the broad understanding is that spontaneous polymerisation of some of the SM in the storage tanks led to exotherm (heat release) that led to vapourisation of the SM in it, and its eventual uncontrolled release. SM is well known to self-polymerise, and this is prevented by addition of an inhibitor – usually tertiary butyl catechol (TBC) – in the storage tank.

Several questions about this accident remain unanswered: Did the TBC concentration in the tanks come to be depleted? If yes, why did this happen and why was it not detected? Why didn’t the refrigeration system in the storage tanks control the temperature rise? Was the lockdown initiated suddenly, under pressure from authorities, leaving no opportunity for the management to run-down the SM inventory by converting it to inert PS? What were the maintenance checks on the plant during the lockdown?

**Shutting and starting plants - challenges**

At least two, possibly even three, of the accidents, happened during start-up, and there are lessons here for the industry and for regulators. Start-ups – even when planned – are an intricate exercise, and most companies have well-documented Standard Operating Procedures (SOPs) for taking a plant offline and bringing it back online. The larger the plant, the more intricate this exercise. Refineries, for example, can take weeks to shut down and even longer to start-up, to ensure integrity of equipment, quality of products, and, most importantly, plant safety.

This is the case in ordinary times, but these are not such times. All sorts of chemical companies are slowly restarting production after sudden closure that dragged on for several weeks. They could be doing so with constraints of capital, trained manpower, spare parts, chemical inputs etc. In the enthusiasm to get going there could be a tendency to cut corners and circumvent well thought out processes. The consequences can be terrible. In several companies there is a tendency to outsource shut-down and start-up operations to contractors, and given the labour crunch, this is one more variable that needs to be reckoned with.
Investigate and share findings

There is no reason as yet to believe short-cuts were taken in any of the accidents referred, but it is important that the reasons for the incidents are spelt out unambiguously, and eventually put out in the public domain. This must be done for no reason other than the fact that there are lessons to be learnt from every accident or near-miss. Learning from mistakes others have made is the cheapest learning!

In several countries professional investigators are called upon to look into accidents, and ensure learnings are passed on to the relevant audience for their benefit. In the US, for instance, the Chemical Safety Board is charged with such a responsibility (its staffing has been seriously cut in the current administration). The American Institute of Chemical Engineers runs the Centre for Chemical Process Safety, and has operations in India. But with just 35 members or so it has yet to gain significant traction, especially amongst local companies.

Clear zoning needed

While the industry must do all that is practically and technologically possible to minimise accidents, the fact remains that the chemical industry will be a hazardous one. The risks associated with it will stem both from its inherent nature and exposure to an incident, especially amongst people in and around plants. This is why zoning of the industry is paramount.

While the chemical industry first came up distant from population clusters, in several parts of India, and especially in the states of Maharashtra and Gujarat that account for a large chunk of national chemical output, small population clusters soon sprang up alongside, quickly grew in size and hemmed the industry into an uncomfortable and dangerous situation. This has seriously amplified risks, as abundantly evident in the Bhopal accident of 1984, which killed thousands, and in the recent one at LG Polymers, thankfully much less severe.

Given the essential nature of the chemical industry, it is important that India’s policy makers find suitable homes for it, preferably in coastal areas for logistical, operational and safety reasons. It is just as important for agencies, such as state industrial development corporations and municipal bodies, to ensure sanctity of this reserved space. Industry too must remain vigilant and flag any encroachments. There have been cases – admittedly few – wherein companies have held the authorities to their commitment to maintain buffer zones around chemical plants, including by obtaining judicial intervention in their favour. Even the much touted petrochemical park at Dahej – arguably one of India’s best locations to site a chemical unit – is not free of this problem, and this should be a cause for worry.

Disciplined approach needed

India’s chemical industry is unique – with the possible exception of China’s – in the sheer numbers of SMEs that operate. Their challenges, in terms of access to capital, technology and skilled manpower, are a matter of concern, and must be overcome through appropriate policy interventions, fiscal support to aid modernisation, and hand-holding, especially by larger units that have much to share by way of knowhow. Penalties and shut-downs should be reserved for those who show no inclination for change to safer operations.

In the months ahead, the challenges facing the Indian chemical industry will amplify. New rules of operation in the covid world, with lesser staff and diversion of safety personnel to the onerous task of preventing infection among workers, could spread resources thin. This can be a dangerous situation that only a disciplined approach to safety can avoid. The National Disaster Management Authority has taken cognisance of the challenges as the industry resumes operations, and urged managers to ensure strict compliance with SOPs. This is timely advise that the industry will do well to take very, very seriously!

(Reproduced with permission from Chemical Weekly, 19th May 2020)
Permitted work – a special cause

On November 9, 2010, in upstate New York, USA, a contractor was welding new support brackets on a tank for water-based polymer slurry. The area outside the tank had been monitored for flammables and approved for hot work, but the inside of the tank was not tested. An explosion occurred; one person was killed and another one received first-degree burns and other minor injuries.

Several factors including residues of flammables in the slurry, an overlooked connection to the slurry tank, and a piping leak inside the tank allowed flammable vapors to accumulate; these were ignited by sparks from the hot work (Reference: Chemical Safety Board Investigation Report #2011-01-I-NY). Activities that are not performed on a regular basis may require a work permit. Permits are usually a checklist that require someone to insert information, and another person to review and approve. Examples of permitted work often include: Confined Space Entry (CSE), Hot Work, Lock-Out Tag-Out (LOTO), Line breaking/Equipment opening. Some companies use permits for other non-standard activities such as moving and setting cranes, vacuum truck use, and disabling safety systems. Serious incidents in the chemical industry often involve these or other permitted activities.

Permits provide a checklist to verify the unique hazards are properly understood and managed before, during, and after the activities.

**Before** – All requirements on the permit must be reviewed and approved BEFORE the work starts.

**During** – Activities in the area must be monitored to ensure things do not change (e.g. CSE atmosphere or flammable levels) as work progresses.

**After** – Equipment and process or physical conditions that were changed during the permitted work must be verified to be in the proper condition before operations are resumed.

**Did you know?**

- Some non-standard activities require safeguards to be removed or disabled during the work. This means the usual alarms may not be active, or a safety system may not be available.
- During special work, valves may be placed in different positions due to changed process conditions. This should be noted on the permit.
- Contractors may be performing work as part of the permit and may not understand your systems.

**What can you do?**

- Recognize when activities require a permit and follow the permit procedures.
- Do not take any shortcuts with preparation activities or completing the permit. If contractors are performing the permitted work, make sure they are aware of conditions and perform their part of the permitted work properly.
- After activities are completed, visit the worksite to verify it is ready to be returned to service and that all safety systems are functional.
- If you are assigned a role in a permitted activity, take it seriously. Your life and that of others may depend on it.

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PM bats for ‘self-reliant’ India, curbs on imports

Times News Network | May 2020

Reiterating the importance of “self-reliant India”, Prime Minister Narendra Modi advocated curbs on imports, as he cited several examples of individual initiatives of ‘Make in India’ and ‘vocal for local’.

“There are many products that find their way into the country from outside, resulting in wasteful expenditure on part of honest taxpayers. Their substitutes can easily be manufactured in India,” he said in his ‘Mann Ki Baat’ address.

Niti Aayog suggests slew of steps to make India’s exports competitive

Financial Express | 30 May 2020

The NITI Aayog has proposed 17 measures to improve competitiveness of India’s external trade. The measures include establishment of a national trade network (NTN), improving information flow and making customs processes and IT systems more efficient.

The government think-tank said time has come to set up an NTN on the lines of the GSTN (for goods and services tax), integrating all departmental data flows into one integrated system to enable all export-import related compliance online.

NTN will allow exporters to file all information and documents online at one place. There will be no need to separately deal with customs, directorate general of foreign trade, shipping companies, sea and air ports and banks, NITI said.

To improve the information flow, it suggested use of simple language and ensure transparency in issuance of notifications, make past tribunal decisions available online and use of standard codes for the Duty Drawback Scheme.

In order to make customs processes more efficient, the think-tank has suggested modifying the risk management system (RMS) to record/ reflect actions of field officers as the time taken for removal of goods from factory to final exports has not compressed over the years.

These reforms could further improve India’s ranking on ‘trading across borders’ parameter in the World Bank’s Ease of Doing Business, at 68 now (from 146 in 2018). Every year, merchandise (export and import) of more than $780 billion or about 27% of the GDP passes through Indian Customs before it could be exported or imported.

‘Include plastic units under continuous process industries’

The Times of India | 29 May 2020

Gujarat State Plastic Manufacturers Association (GSPMA) has urged the state government that plastic extrusion and reprocessing should be included into continuous process industries category and such units be allowed to operate 24 hours a day.

Extrusion and reprocessing units need to heat machines before starting production. The process takes around 2 to 3 hours. At the same time, amount of plastic wastage as well as electricity consumption increases every time the machine is heated.

If plastic units, especially those in extrusion and reprocessing, are brought under continuous process industries, they will not only operate round the clock but also be able to reduce wastage and electricity cost. Gujarat is a top state in plastic products manufacturing and houses 12,000 of the 55,000 plastic products making units across the country. Majority of these units are small and medium enterprises (SMEs).

FDI in India jumps 13% to record $ 49.98 bn in 2019-20

The Hindu | 29 May 2020

Foreign direct investment (FDI) in India grew by 13% to a record of $ 49.97 billion in the 2019-20 financial year, according to official data. The country had received FDI of $ 44.36 billion during April-March 2018-19.

Sectors which attracted maximum foreign inflows during 2019-20 include services ($ 7.85 billion), computer software and hardware ($ 7.67 billion), telecommunications ($ 4.44 billion), trading ($ 4.57 billion), automobile ($ 2.82 billion), construction ($ 2 billion), and chemicals ($ one billion), the Department for Promotion of Industry and Internal Trade (DPIIT) data showed.

Singapore emerged as the largest source of FDI in India during the last fiscal with $ 14.67 billion investments. It was followed by Mauritius ($ 8.24 billion), the Netherlands ($ 6.5 billion), the US ($ 4.22 billion), Caymen Islands ($ 3.7 billion), Japan ($ 3.22 billion), and France ($ 1.89 billion).

Covid crisis: May turns out a shade better as factories restart

The Economic Times | 29 May 2020

Business activity improved slightly in May from a near stall in April after the government eased restrictions, showed a ground survey of factories
and data on movement of goods. The 17.3 million e-way bills generated so far this month are about twice the 8.6 million filed in April. The e-way bill is a document that’s required under the goods and services tax (GST) regime to transport goods. However, the e-way bill number for May is at about a fourth of the pre-Covid monthly average. The trend is backed by the findings of a Confederation of Indian Industry (CII) survey, which said factories are now operational in large parts of the country, based on feedback from its members. “Most activities have been thrown open,” said a senior government official. “This will set the cycle moving.” The rise in consumption of power and fuel also pointed to an improvement in economic activity. The government expects the situation to improve in the July-September period as more curbs are likely to be eased after May 31, when the fourth phase of the lockdown ends. “Second quarter could be better as activity picks up,” said a second official. In the week to May 25, more than 5.6 million e-way bills were generated, taking the daily average to 0.77 million.

In comparison, 56.9 million e-way bills were generated in January, with a daily average of 1.83 million. ‘Revival of Supply Chains’

The CII survey showed that easing of the lockdown has allowed industry to resume activity. Constraints include local administrations, manpower shortages, lack of demand and high fixed costs along with transportation and supply chain disruptions. Moreover, workforce restrictions due to social distancing norms further curtailed operational capacity, with most businesses functioning at 30-70% of capacity with not more than 50% of the workforce.

**GDP growth slows to a 11-year low of 4.2%, Q4 slumps to 3.1%**

*The Hindu | 29 May 2020*

Economic growth slowed to an 11-year low of 4.2% in 2019-20, according to data released by the National Statistical Office.

In the final quarter of the year, that is, January-March, the growth rate of Gross Domestic Product (GDP) fell to 3.1%, reflecting the impact of the first week of the COVID-19 lockdown which began on March 25.

Although this is the lowest growth rate in the last 44 quarters, it is still higher than the 2.2% growth predicted by most economists and ratings analysts.

Although the budget estimate for GDP growth in 2019-2020 had been pegged at 8.5%, the NSO’s previous estimates had pushed the projection down to 5%. On Friday, the NSO also revised downward its estimates for the first three quarters of the year, and pegged its provisional growth estimate for the whole year at 4.2%. The Indian economy grew at 6.1% in 2018-19.

**India invites bid for One Sun One World One Grid to take on China’s Belt and Road Initiative**

*Live Mint | 28 May 2020*

India has moved ahead with threading-the-needle for an ambitious global electricity grid, with the National Democratic Alliance (NDA) government calling for bids to roll-out the “One Sun One World One Grid” (OSOWOG) plan.

The pre-bid meeting called on 5 June by ministry of new and renewable energy (MNRE), comes at a time of the coronavirus pandemic giving India the opportunity to be seen as taking a lead in evolving global strategies.

According to the Request for Proposal (RFP) reviewed by Mint for inviting consultants for developing OSOWOG’ long-term vision, implementation plan, road map and institutional framework; comprises a technical and financial proposal.

Anand Kumar former MNRE secretary, who had worked on the concept and RFP of the global grid, and currently posted as secretary in the ministry of culture, said, “This would be the key to future renewable based energy systems globally. Creation of regional and international interconnected green grids can enable sharing of renewable energy across international borders and also balancing. Such grids should work in tandem with the existing grids and will not require parallel grid infrastructure, thus requiring only incremental investment.”

India invites bid for One Sun One World One Grid to take on China’s Belt and Road Initiative
This also comes in the backdrop of the US withdrawal from the Paris climate deal and China’s attempts to co-opt countries into its ambitious One Belt One Road (OBOR) initiative, a programme to invest billions of dollars in infrastructure projects, including railways, ports and power grids, across Asia, Africa and Europe.

The vision behind the OSOWOG mantra is “The Sun Never Sets” and is a constant at some geographical location, globally, at any given point of time,” the RFP said.

The global grid plan may also leverage the International Solar Alliance (ISA) co-founded by India that has 67 countries as members. It has become India’s calling card on climate change and is increasingly being viewed as a foreign policy tool.

“With India at the fulcrum, the solar spectrum can easily be divided into two broad zones viz. far East which would include countries like Myanmar, Vietnam, Thailand, Laos, Cambodia etc. and far West which would cover the Middle East and the Africa Region,” the RFP added.

The ambitious task unveiled on 26 May has been taken up under the technical assistance program of the World Bank with the last date of proposal submission being 6 July.

The plan has been spread across three phases. The first phase deals with the Middle East—South Asia—South East Asia (MESASEA) interconnection for sharing green energy sources such as solar for meeting electricity needs including peak demand.

The initial plans also involve setting up an under-sea link to connect with Oman in the West.

While the second phase deals with the MESASEA grid getting interconnected with the African power pools; the third and final phase is about global interconnection.

India’s economy likely to shrink 5% in FY21: S&P

Hans India | 28 May 2020

S&P Global Ratings forecast Indian economy to contract 5 per cent in the current fiscal as the lockdown imposed to contain Covid-19 pandemic has curtailed economic activity severely. “We have lowered our growth forecast for fiscal year ending March 2021 to 5 per cent contraction. We currently assume that the outbreak peaks by the third quarter,” S&P said in a statement.

Earlier this week rating agencies Fitch and Crisil too had projected a 5 per cent contraction for the Indian economy. “The Covid-19 outbreak in India and two months of lockdown - longer in some areas - have led to a sudden stop in the economy. That means growth will contract sharply this fiscal year. Economic activity will face ongoing disruption over the next year as the country transitions to a post-Covid-19 world,” S&P said in a statement.

The rating agency said India has limited room to maneuver on policy support. The Reserve Bank of India cut policy rates by 40 basis points in May, meaning the repo rate is 115 basis points lower since February. “Despite the cuts, India banks have been unwilling to extend credit. Small and mid-size enterprises continue to face restricted access to credit markets despite some policy measures aimed at easing financing for the sector,” S&P added. It said the government’s stimulus package, with a headline amount of 10 per cent of GDP has about 1.2 per cent of direct stimulus measures, which is low relative to countries with similar economic impacts from the pandemic. The remaining 8.8 per cent of the package includes liquidity support measures and credit guarantees that will not directly support growth. S&P said the big hit to growth will mean a large, permanent economic loss and a deterioration in balance sheets throughout the economy.

Piyush Goyal expects better exports performance in May, June

The Times of India | 28 May 2020

The performance of the country’s exports is expected to be better in May and June as compared to the steep fall recorded in April, when the shipments contracted to an all-time high of 60.28 per cent, commerce and industry minister Piyush Goyal said. In June, he said, exports will either be at par with June 2019 or at most 10 per cent down.

Going forward, the three factors that would drive the economy would be the revival of manufacturing, diversification of export basket and focussing on newer and “more accepting” markets, Goyal said. Further, he said Indian industries, entrepreneurs and start-ups should see what new markets have opened up domestically for them and work on those. He said building upon the domestic demands, with surplus going to export, will push India to newer heights. The ministry is working on identifying several sectors that holds potential for the domestic industry.

Spraying Covid-19 disinfectants

Aamir Ishaq Shah | Rising Kashmir | 27 May 2020

Coronavirus (COVID-19) has emerged as a challenge to the humankind. The governing agencies have been trying using different chemicals for disinfecting various commercial spaces, streets, roads, etc. to prevent the spread of the disease. There is a little information available on the impacts these disinfectant sprays would have on humans and the environment.

During rains, the disinfectants would be washed away and thereby contaminating our water bodies, soil, and air. Hence the same disinfectants could turn pollutants at a certain stage.
So, there is a need to discuss the negative effects of these disinfectants on humans and the surroundings.

Several experts have alarmed environmental pollution concerns given the extensive and irresponsible spray of disinfectants amid the coronavirus outbreak. In India, the disinfectants have been extensively sprayed on buildings, streets, and roads which stirred widespread concerns of soil and water pollution.

The commonly used disinfectants in India are either alcohol-based or poisonous chlorine-based disinfectants. Alcohol-based disinfectants are safe to use on the human body; however, they should be used with safety due to their volatile and flammable nature. Sodium hypochlorite is the most commonly used disinfectant sprayed commonly in the public places.

Sodium hypochlorite has been historically used as a bleaching agent, but given its special properties, it has found widespread application in agriculture, food industries, waste disposal, and pharma industries. Disinfectants like sodium hypochlorite are now being extensively used in preventing the coronavirus disease spread.

Sodium hypochlorite has a negligible influence on the environment when used in low concentrations. However, spraying high concentrations and large quantities of disinfectants can be detrimental to human health and the environment. The uncontrolled and widespread spray of disinfectants can have an adverse impact on the environment. Human beings can experience several health effects due to sodium hypochlorite exposure.

Exposed people can experience severe coughing and sore throat due to sodium hypochlorite inhalation. The aerosols generated from the spray of the sodium hypochlorite can cause irritations in the respiratory tracks of living beings including humans.

Sodium hypochlorite in contact with skin can cause skin and eyes redness. Sodium hypochlorite is also harmful to aquatic living organisms. Chlorine based disinfectants produce a whole new complex of contaminants that are very poorly studied.

Scientists have expressed concerns over the possible formation of the secondary products as a result of a reaction between sodium hypochlorite and other naturally occurring substances. When in contact with ammonium salts, it becomes toxic and mutagenic. The bi-products of these reactions can be carcinogenic.

More than 600 disinfection byproducts have been identified by scientists, although the Environmental Protection Agency (EPA) regulates just eleven (Richardson, 2003). The regulated compounds include five haloacetic acids and four trihalomethanes which together are linked to a variety of adverse health effects such as birth defects (Porter 2005), cancer (Villanueva, 2007), and an increased incidence of miscarriage (Waller 1998).

Given the scale of COVID outbreak, the use of these disinfectants may be justified to a certain extent, however, the disinfectants need to be used carefully while considering their long-term implications on the humans and their environment. The extensive use of disinfectants on humans also need to be regulated. The Union Health Ministry on 18 April 2020 issued an advisory against the spraying of disinfectant on people for COVID-19 management, stating that it was physically and psychologically harmful.

Spraying chemical disinfectants on the human body does not kill the virus even if a person is potentially exposed to the COVID-19 virus as stated by the ministry. It also added that there is no scientific evidence to suggest that they are effective even in disinfecting the outer clothing/body effectively. Spray tunnels are being widely used for spraying disinfectants on humans. Some researchers have indicated major drawbacks of disinfection spray tunnels.

Researchers have indicated their lack of efficiency on soft surfaces, such as clothing. This is unlikely to be significantly effective against virus traces on the person’s skin or clothing. They can also lead to health and safety risks.

Sodium hypochlorite is a corrosive substance and thus proper equipment and accessories need to be provided to workers for eyes, skin, and respiratory protection. Powered-spray devices create small droplets (<20 microns), spraying of which brings significant risk from inhalation, besides contact with the eyes and skin. This can cause inhalation into the deep lung tissue, resulting in a negative health outcome. No disinfectant has been assessed for exposure to the general public through such applications.

Although limited information is available on the environmental impacts of these chemicals, care should be taken while spraying them for disinfection purposes.

The government agencies should also have a check on the excessive spray of these chemicals for disinfecting surfaces. They should also consider other safe and biodegradable disinfectants for use in densely populated areas.

Extensive research is also needed to evaluate the potential impacts of excessive use of disinfectants on living organisms and their surrounding environment.

(The author is an ICAR Senior Research Fellow pursuing Ph.D. in Soil and Water Engineering at the Department of Soil and Water Engineering, Punjab Agricultural University, Ludhiana, Punjab.)
India facing worst recession in current FY’

Telangana Today | 27 May 2020

India’s fourth recession since independence, the first since liberalisation and perhaps the worst to date, is here, Crisil said as it predicted the economy to shrink by 5 per cent in the current fiscal because of coronavirus lockdown.

“The first quarter (April to June 2020) will suffer a staggering 25 per cent contraction,” it said in its assessment of India’s GDP. “About 10 per cent of gross domestic product (GDP) in real terms could be permanently lost. So going back to the growth rates seen before the pandemic is unlikely in the next three fiscals.”

In the past 69 years, India has seen a recession only thrice – as per available data – in fiscals 1958, 1966 and 1980. The reason was the same each time – a monsoon shock that hit agriculture, then a sizeable part of the economy. Crisil said the recession in the current fiscal (April 2020 to March 2021) is different as agriculture could soften the blow this time by growing near its trend rate, assuming a normal monsoon. The coronavirus lockdown, first imposed on March 25 and extended thrice till May 31, has curtailed economic activity severely.

“The first quarter of this fiscal will be the worst affected,” it said. “Not only will the first quarter be a washout for the non-agricultural economy, services such as education, and travel and tourism among others could continue to see a big hit in the quarters to come. Jobs and incomes will see extended losses as these sectors are large employers.”

Coronavirus threatens to undo gains in war against single-use plastics

The Korea Herald | 26 May 2020

From the masks, gloves and gowns used on the front lines of the war against COVID-19 to food delivered in disposable plastic containers and coffee served in takeaway cups, single-use products are finding their way back into daily life in South Korea.

In the face of an unprecedented health crisis, it may be understandable that the impact of disposables on the Earth becomes an afterthought. But eco-minded citizens and activists are worried that people may settle into new life patterns and undo hard-won gains toward a greener economy.

For An Seong-hyun, alarm bells ring whenever he takes out the trash. The 26-year-old college student, just like many Koreans, has stayed indoors as much as possible since the coronavirus outbreak started, heavily relying on delivery services for food and groceries.

“Every item that I ordered came in plastic containers, and I was taking out the trash at least twice as much as usual before the outbreak,” said An, a final-year student at Hanyang University in Seoul.

He added that he ordered food almost every day from nearby restaurants, many of which have started delivering food in plastic containers.

An is one of an increasing number of customers opting to order in.

Woowa Brothers, operator of Korea’s No. 1 food delivery app Baemin, saw the number of orders on the platform surge 66 percent on-year in February and 67 percent in March -- higher than expected, as a result of the nationwide social distancing campaign.

The company said it doesn’t have control over how its 140,000 partner businesses throughout the country package their food and beverages. Restaurants and cafes are increasingly choosing to pack items in disposable plastic boxes because customers worry about catching the virus from dishes someone else has used.

Those restaurants and cafes are backed by the government, which temporary relaxed a ban on disposable packaging. Korea in February opened up regulatory legroom for restaurants and cafes to reintroduce plastic and paper cups for in-store customers until the virus outbreak is brought under control.

In May last year, the country introduced a rule banning the use of plastic cups for in-store customers at all cafes in response to the massive plastic waste crisis that ensued after China halted imports of plastic waste early in 2019.

The overall amount of waste collected in recent months has not changed drastically compared with the same period a year earlier, according to preliminary data from the Ministry of Environment.

India’s GDP growth may rebound to 5 pc in FY22, says Duvvuri Subbarao

The Economic Times | 28 May 2020

The country’s economy, which is likely to contract by 5 per cent in the current fiscal, may expand by around 5 per cent in the next financial year, former RBI governor Duvvuri Subbarao said. Rating agency Crisil on Tuesday had said the Indian economy may shrink by 5 per cent in fiscal 2021, adding this recession could be the country’s fourth since Independence and perhaps the worst to date. “I do believe that getting up to 5 per cent next year (FY22) is quite probable. The reason I say that is because this (COVID-19) is not a natural disaster. Our factories are still standing, our infrastructure and transport systems are still there,” Subbarao said. He was speaking at a webinar on ‘Indian Economy - Navigating through a Crisis’, organised by the Centre for Financial Studies (CFS) at Bhavan’s SPJMR business school. “Once the lockdown is lifted and the economy is given a green signal to restart, I am sure that we can ramp up pretty soon and reach at least 5 per cent (growth
rate),” he said. Speaking at the same webinar, former deputy chairman of the erstwhile Planning Commission, Montek Singh Ahluwalia, also said there is a possibility of 5-6 per cent growth in fiscal 2021-22. “But it would be mistake to treat that as recovery because if you are down 5 per cent this year (FY21) and you are up 6 per cent from that level then what it means is that during FY21-22 you will be at the same level as you were in 2019-20,” Ahluwalia pointed out.

According to him, the country is going to face its worst recession in the current fiscal. Subbarao further said a sharp decline in growth would mean a disruptive adjustment even for a rich country. “For a poor country like us, it would mean enormous pain and hardship for millions of low income persons, firms and enterprises, especially in the informal sector, going bankrupt and it could mean our financial stability becoming vulnerable,” he added. Amid this grim situation, the former RBI governor said he sees two silver linings -- relative stability of the external sector and bumper agricultural crop production, which would support the economy. Commenting on the over Rs 20 lakh crore fiscal stimulus package announced by the government, Subbarao said, “Within the fiscal constraints of the government, they have done a good job.”

ILO expresses ‘deep concern’ over labour law changes, appeals to PM Narendra Modi

The International Labour Organization (ILO) has expressed “deep concern” over the labour law amendments and exemptions initiated by several Indian states, and has appealed to Prime Minister Narendra Modi to intervene and give a clear message to states on international commitments.

On 14 May, 10 central trade unions wrote to the Geneva-based ILO highlighting the plight of workers and the violation of ILO convention No 144. They sought its intervention. India is a signatory of ILO convention 144, which calls for tripartite consultations among government, employers and workers.

The development assumes significance with states such as Uttar Pradesh, Madhya Pradesh and Gujarat announcing sweeping amendments or exemptions to laws for three years, while others, including Haryana, Himachal Pradesh, Rajasthan, Assam and Odisha increasing working hours to 12 hours per day for three months. Rajasthan has now withdrawn the order on extended working hours, limiting it to eight hours a day.

This is the initial stage of ILO’s response, but if the matter escalates further, it may hamper Indian trade in the global market because of violation of the rights of workers. Trade unions said they will escalate the matter and are readying to send another letter to ILO on the issue.

The central unions had written to the ILO that the “government of India supports the blanket exemptions to all establishments from the employers’ obligation under all substantive labour laws for a period of three years by the state governments through amendments by executive order or ordinance…empowering the employers to hire and fire workers at their convenience, freezing collective bargaining rights… during the said period.”

Indian industries, however, have maintained that the amendments to the laws are required to facilitate the ease of doing business and will promote more investments.

Centre likely to fast-track changes for uniform flexi labour laws

The Economic Times | 25 May 2020

The Centre could tweak labour law changes and fast-track their implementation to supersede ordinances issued by three BJP-rulled states to ensure uniform regulations that offer flexibility to new and existing businesses across the country. Top policymakers have begun discussions on a framework that will attract investors looking to shift manufacturing to India, a senior government official told ET. “This is needed as multinational companies looking at relocating from China to India would prefer flexible central laws over state laws for uniformity of operations across different locations,” the official said. BJP-ruled Uttar Pradesh, Madhya Pradesh and Gujarat have passed executive orders exempting new establishments from most labour rules. While all of them had allowed businesses to extend shift hours to 12 from eight hours as part of the reforms, UP rescinded the decision after strong protests by RSS-affiliated labour union Bharatiya Mazdoor Sangh. Existing businesses in these states are upset as they don’t get the benefit of the easier regulations.
They have now sought similar flexibility. The labour ministry initiated consultations with stakeholders soon after announcing the 20 lakh crore Covid-19 relief package to understand what more was needed to attract investments, underscoring the importance of the initiative for the government.

Three other codes — on industrial relations, on occupational safety, health and working conditions, and on social security — are at different stages in Parliament. The four labour codes, formed by subsuming as many as 44 labour laws, have given powers to the appropriate state and central authorities to make changes to suit industry requirements through simple notifications. Fast-tracking these codes will also ensure the expeditious rollout of universal social security for all workers, particularly those in the informal sector.

India may register recession in Q3, says report

Telangana Today | 25 May 2020

The Indian economy is likely to slip into recession in the third quarter of this fiscal as loss in income and jobs and cautiousness among consumers will delay recovery in consumer demand even after the pandemic, says a report.

According to Dun & Bradstreet’s latest Economic Observer, the country’s economic recovery will depend on the efficacy and duration of implementation of the government’s stimulus package. “The multiplier effect of the stimulus measures on the economy will depend on three key aspects i.e. the time taken for effecting the withdrawal of the lockdown, the efficacy of implementation and duration of execution of the measures announced,” Dun & Bradstreet India chief economist Arun Singh said. The report noted that the government’s larger-than-expected stimulus package is likely to re-start economic activities.

Govt pushes PSU banks to provide cheaper loans to small businesses

The Times of India | 24 May 2020

The government is pushing public sector banks to provide additional working capital to small businesses at 7.5% interest under the loan guarantee scheme that proposes to provide up to Rs 3 lakh crore, while also asking them to ensure that senior citizens earn higher returns on their fixed deposits. Currently, small businesses are borrowing at 11-12% from state-run lenders.

Last week, the government had cleared an emergency facility for business enterprises with a turnover of up to Rs 100 crore and outstanding loans of up to Rs 25 crore.

Such businesses will get additional 20% working capital through a government guarantee with interest rate capped at 9.25%. Finance Minister Nirmala Sitharaman has asked bankers to go all out to ensure that all eligible borrowers benefit from it.

NGT directs CPCB to submit report on improvement of water quality in Ganga, Yamuna

The Indian Express | 23 May 2020

Taking note of reports that water quality in Ganga and Yamuna has improved during the coronavirus lockdown, the National Green Tribunal has directed the Central Pollution Control Board (CPCB) to study and analyse the extent of reduction of industrial and sewage pollution load on the environment, including on rivers and other water bodies.

Asking for a detailed report on the issue, the green panel directed that once industrial and other activities resume, it should be ensured that all the environment laws are complied with.

The NGT also directed all the states and union territories (UTs) to ensure 100 per cent treatment of sewage entering water bodies and ensure action against violators.

According to reports, the water quality of Ganga and Yamuna has improved significantly in the areas with reduced industrial activities. There has been an increase in dissolved oxygen content and reduction in nitrate concentration in Ganga during the lockdown, they said.

The green panel asked all the states and UTs to ensure the formulation and execution of plans for sewage treatment and utilisation of treated sewage effluent through their departments. The bench said the plans for sewage treatment and utilization should strictly adhere to a timeline.

It also asked the Central Pollution Control Board (CPCB) to continue its efforts on the compilation of River Basin-wise data. “Action plans be firmed up with Budgets/Financial tie-up. Such plans be overseen by Chief Secretary and forwarded to CPCB before June 30.”

“CPCB may consolidate all action plans and file a report accordingly. Ministry of Jal Shakti and Ministry of Housing and Urban Affairs may facilitate States/UTs for ensuring that water quality of rivers, lakes, water bodies and groundwater is maintained”, the bench said.

It directed all the states, which have not addressed all the action points with regard to the utilisation of sewage treated water, to do the exercise before June 30.

The CPCB may furnish its report by September 15 giving the status of furnishing of action plans and their
The tribunal was hearing a plea filed by Paryavaran Suraksha Samiti and others relating to the establishment and functioning of sewage treatment plants and to take action against local bodies for failing to install STPs and discharging sewage without treatment.

**RBI measures will provide more liquidity to exporters, says FIEO**

*Business Line | 23 May 2020*

Cash-strapped exporters are relieved with the RBI’s decision to meet some of their long-pending demands such as extending the time limit for pre- and post-shipment export credit and increasing the loan moratorium period. But many feel more sops are needed to help them survive the Covid-19 disruptions.

“The RBI measures have come as a much-needed respite as this will allow more liquidity in the hands of the exporters and help them in fulfilling their overall export obligation during such difficult and testing times. We are ushering in an era of very competitive credit rates to help manufacturing and the overall economy,” said Sharad Kumar Saraf, President, Federation of Indian Export Organisations (FIEO).

The RBI extended both the loan moratorium period for another three months, till August 31, 2020, and the pre- and post-shipment credit for the exports sector to 15 months from the existing 12 months. It also reduced the repo and reverse repo rate by 40 basis points, which is expected to translate into lower interest rates charged by banks.

The decision to extend the ₹15,000-crore line of credit to Exim Bank for the dollar swap facility will help leverage long term and project exports as a ‘marketing tool’, as buyers would be more willing to purchase products from the seller, Saraf added.

FIEO has urged the government to immediately announce a package covering all export sectors and implement the economic measures announced at the ground level for businesses to take off quickly, Saraf said.

India’s exports in April 2020 fell 60.28 per cent to ₹10.36 billion (year-on-year), the steepest fall in over two-and-a-half decades, with almost all major sectors such as gems and jewellery, garments and textiles, carpets, leather, engineering goods and petroleum products, posting sharp falls.

**RBI breather for trade: Higher export credit, more time to pay import bills**

*Business Standard | 22 May 2020*

The Reserve Bank of India (RBI) unleashed a series of relaxations for exporters and importers, including higher export credit, more time to pay for import orders and increased flexibility in repaying loans. The measures are expected to give the sector more time and liquidity to tackle the ongoing coronavirus crisis. But while exporters have lauded the measures as timely, their call for more government support and a detailed package continues.

The rare intervention in foreign trade norms by the RBI came after the central bank took note of the deepening contraction in global activity and trade, and agreed that the impact on India’s foreign trade is substantial. India’s exports contracted by a record 60.28 per cent in April, following a fall of 34.5 per cent in March as the Covid-19-induced lockdown took its toll on trade with other countries. The latest drop in outbound trade was the most since at least April 1, 1995.

In a major move, the RBI boosted the coffers of the Export-Import Bank of India by extending a line of credit worth ₹15,000 crore for a period of 90 days (with a rollover of up to one year) so as to enable it to avail a dollar-swap facility. This is expected to help in leveraging long term and project exports as a “marketing tool” as buyers would be more willing to buy products from the seller, according to the Federation of Indian Export Organisations (FIEO).

For exporters, the maximum permissible period of pre and post-shipment export credit sanctioned by banks has also been raised. As opposed to the current 12 months, this will now be 15 months, for disbursements made up to July 31 this year.

**RBI’s easier terms for trade**

- Exim Bank to get new line of credit worth 15,000 Cr
- Pre, post shipment export credit to now be available for 15 months
- Export proceed can be repatriated within 15 months
- Importers will be able to complete outward remittance within 12 months
- Ongoing loan moratorium extended by 3 months

**Covid crisis: Govt hopeful about growth revival by year-end**

*Financial Express | 21 May 2020*

The government is “cautiously optimistic” about the revival of growth later in this fiscal, despite the pandemic-induced lockdown, and the country’s current account may witness a small surplus in the June quarter, the finance ministry has said in its monthly report on the macro economy.

Although some agencies have forecast zero to negative growth for FY21 following the lockdown, chief economic advisor Krishnamurthy V Subramanian has pegged it at 1.5-2%. As for the country’s current account, the deficit declined to just 0.2% of
the GDP in the December quarter of FY20, compared with 2.7% a year earlier and 0.9% in the September quarter.

**DPIIT to market Brand India via 10 mega clusters**

*The New Indian Express | 21 May 2020*

Stepping up its game to attract investments from foreign companies, the Department of Promotion Of Industry and Internal Trade (DPIIT) has drawn up a list of 13 mega clusters, where individual investment pitches could be made. These include the industry belts of Noida-Greater Noida, the Mumbai-Aurangabad cluster, Amritsar-Jalandhar-Ludhiana, NH 48 (Manesar-Neemrana), Lucknow-Kanpur, Haldia-Tajpur, Kandla-Mundra, Durg-Bhilai, Vadodara-Bharuch, Surat-Hazira-Vapi, Chennai-Sri City, Coimbatore-Salem-Tirupur and Kochi-Trivandrum.

“Textiles, electronics & consumer appliances, capital goods, pharmaceuticals, medical devices, automobiles and components, footwear & leather products, chemicals & petrochemicals, food-processing, plastic products and telecom equipment are some of the sectors we are looking at. We will hand-hold the firms across their entire investment lifecycle if they set up factories in India,” said Invest India MD & CEO Deepak Bagla.

Invest India — an investment facilitation joint under DPIIT — along with professional services firm JLL, has come up with a guide detailing the unique proposition of each of these industrial hotspots. The handbook, which also elaborates on the two-tier tax incentive structure from the state and Central governments, will benefit the potential investors for grounding investments in India, Bagla added.

Titled Great Places for Manufacturing in India, the guidebook illustrates India’s distinct advantages such as incentives for industries, young and growing workforce, host to global in-house centres (GICs) and global centre of excellence (GCoEs) for several manufacturing companies that provide for more robust R&D and nearly 22 million square feet of ready-built industrial space ready to be occupied in 6-8 weeks. About 1,000 global firms have been shortlisted by Invest India for investment pitches across the United States, Japan, Germany, Taiwan, France and Middle East. That apart, companies based in China, with a strong focus on exports, will be approached.

**Coronavirus collateral: Single-use plastic is back**

*The Economic Times | 20 May 2020*

The global spread of the coronavirus has had innumerable side effects, one of which has been the resurgence of single use plastics.

Single use plastics are returning thanks to the ease they provide; donation drives and food distribution are made infinitely easier and cheaper thanks to these plastics.

Plastic manufacturers in the country have seen an uptick in demand for single use plastics since the lockdown began, with officials also resorting to plastics to save money.

At a time when a virus is terrorising the entire world and people are unsure of how long the coronavirus stays on objects, single use plastics seem like the best case scenario, right now.

The resurgence comes just two years after state governments across India banned thin, single use plastics (popularly called carry bags), jeopardizing all the effort of the past couple of years.

**Environmental Enforcement Cell for STPs**

*Telangana Today | 20 May 2020*

The State government has set up an Environmental Enforcement Cell (EEC) to ensure all the apartments, complexes, gated communities and others with more than 100 units or 10,000 square metres area and above install, operate and maintain a Sewerage Treatment Plant (STP) in their premises and audit the functioning of these structures.

This move comes after Municipal Administration and Urban Development Minister KT Rama Rao stressed on the need to audit all private STPs to ensure proper disposal of sewage. Accordingly, the MAUD Principal Secretary Arvind Kumar issued orders of setting up the EEC on Monday.

The EEC will focus on auditing of STPs and ensure proper maintenance. Additional subjects will be assigned and taken up by the cell in consultation with the MAUD Principal Secretary. The HMDA CIO B Harinatha Reddy is appointed as the Special Officer of EEC and the project team will have staff drawn on deputation from HMDA, GHMC, HMWSSB or any other department on deputation or on contract basis.

The EEC will take up audit of all private STPs that were part of the Occupancy Certificate or Consent for Operation issued by relevant authorities. The Special Officer has been directed to submit a report to the government on the road map for online or real time monitoring, modalities for better STP maintenance, incentives or penalties or punishments proposed on STPs based on their performance and other aspects.

**Coronavirus - Health Ministry issues new guidelines for workplaces**

*The Hindu | 20 May 2020*

The Union Health Ministry announced fresh workplace guidelines. With the easing of the lockdown measures and with more offices/workplaces starting operations, the Ministry directed that anyone diagnosed as a suspected/
confirmed case of covid-19 should immediately inform the office authorities and isolate themselves.

While there was no need to close the entire office building/halt work if one or two cases were detected, a large outbreak would require that the building be shut down for 48 hours and disinfected, it stated.

The guidelines make it mandatory to maintain a physical distance of at least one metre to be followed at all times along with use of face covers/masks.

Govt to further revise criteria for MSME definition, says Nitin Gadkari

Business Standard | 20 May 2020

Days after changing the definition of MSMEs, the government has decided to further revise the criteria for medium units by enhancing the investment and turnover limits to up to Rs 50 crore and Rs 200 crore respectively, Union Minister Nitin Gadkari said.

Unveiling the contours of the Rs 20-trillion stimulus package, Finance Minister Nirmala Sitharaman had last week announced a change in the definition of micro, small and medium enterprises (MSMEs).

According to the revised definition, any firm with investment up to Rs 1 crore and turnover under Rs 5 crore will be classified as “micro”. A company with investment up to Rs 10 crore and turnover up to Rs 50 crore will be classified as “small” and a firm with investment up to Rs 20 crore and turnover under Rs 100 crore will be classified as “medium”.

The previous criteria for classifying enterprises in the “medium” category was investment up to Rs 10 crore and turnover up to Rs 5 crore. “We have taken a decision to raise the up to Rs 20 crore investment (criteria) to up to 50 crore and turnover (limit) to up to Rs 200 crore. So we will issue an order for that,” Gadkari said.

The minister for MSME and road transport and highways, Gadkari said he feels the criteria should be based on investment “or” turnover instead of investment and turnover both as announced, adding that the government “will rectify the same”.

The minister said he was also open to considering suggestions regarding enhancing the turnover limit to up to Rs 250 crore for medium enterprises, and will take up the matter with the MSME secretary.

Gadkari said the government plans to raise MSMEs contribution to India’s exports to 60 per cent from 48 per cent at present and also boost the sector’s contribution to the country’s GDP from 29 per cent currently to 50 per cent.

“We are planning to create 50 million new jobs. Until now, we have created 11 crore jobs,” said the minister, adding that he was keen on developing Indian MSMEs of international standards.

Interacting with representatives from an exporters’ body, he urged exporters to take advantage of the “blessing in disguise” posed by the global “hatred against China” through cost reduction and encouraging import substitution.

Besides, Gadkari said the government wants to make bus ports and is also planning to build logistics parks.

Cabinet approves ₹3 lakh crore funding for MSMEs

The Hindu | 20 May 2020

The Union Cabinet on Monday approved additional funding of up to ₹3 lakh crore to micro, small and medium enterprises (MSME) that was announced by Finance Minister Nirmala Sitharaman as part of the ₹20 lakh crore economic package.

Under the scheme, 100% guarantee coverage will be provided by National Credit Guarantee Trustee Company Limited (NCGTC) to eligible MSMEs and interested borrowers of the MUDRA scheme, in the form of a Guaranteed Emergency Credit Line (GECL) facility, the government said.

The tenure of loan under this scheme will be four years with a moratorium period of one year on the principal amount. No guarantee fee will be charged by NCGTC. Interest rates on loans extended by banks and financial institutions will be capped at 9.25%, and 14% for those extended by non-banking financial companies (NBFCs). The scheme would be applicable to all loans sanctioned under GECL till October 31, or till an amount of ₹3 lakh crore is sanctioned, whichever is earlier.

“For this purpose, a corpus of ₹41,600 crore shall be provided by the Government of India, spread over the current and the next three financial years,” the government said.

MSMEs seek more sops, want interest waivers, subvention and tax cuts for survival

The Hindu | 18 May 2020

Micro, small and medium enterprises (MSMEs) have said that Finance Minister Nirmala Sitharaman’s stimulus measures would serve as a lifeline, but more measures in terms of interest waiver and tax cuts will only help the sector sustain and survive.

The Centre’s initial stimulus measures such as ₹3-lakh crore collateral-free automatic loans, ₹20,000-crore subordinated debt, and revised definitions etc have been welcomed. But MSMEs are disappointed that the relief measures expected by way of interest waiver for the lockdown period, cut in GST slab and subsidy support were not included.
MSMEs are looking for immediate relief by way of subsidy amount to restart business and manage the immediate-term cash flow challenges.

Plastic pollution to worsen due to COVID-19 masks

*The Week* | 18 May 2020

While environmentalists are appreciating the reduction in pollution due to lockdowns enforced across the world by many nations, another threat is on the horizon. All over the world, people have been enjoying cleaner air as a result of factories being shut. COVID-19 outbreak and the resultant lockdowns enforced by nations worldwide have drastically reduced pollution. Even the ozone layer hole over the Arctic closed in March. But while all this is good news, another threat is on the rise. But this time, it is one of the safety methods being used in the fight against COVID-19 – personal protective equipment (PPE).

According to a WWF report, incorrect disposal of even 1% of the masks pose a huge threat. “If even only 1% of the masks were disposed of incorrectly and perhaps dispersed in nature this would result in 10 million masks per month dispersed in the environment. Considering that the weight of each mask is about 4 grams this would lead to the dispersion of over 40 thousand kilograms of plastic in nature: a dangerous scenario that must be defused” the report said. “Increasing quantities of masks and gloves are sighted in the sea where they risk becoming lethal for turtles and fish that mistake them for prey to feed on. An estimate by the Polytechnic of Turin says that for Phase 2, in which production and social activities will be gradually restarted, 1 billion masks and half a billion gloves per month will be needed. These are very high quantities that require those who use these protective devices to assume responsibility: each of us must make an effort to ensure that we proceed with correct disposal and with the least possible impact on nature.”

While the use of PPEs are essential to the current pandemic scenario that we live in, proper ways to dispose the masks too is critical. There is still no scientific evidence to prove that single-use plastic is better than reusable ones. With thousands of masks being discarded on the streets, this could lead to another environmental threat.

Indian economy to contract 5% in FY21: Goldman Sachs

*Live Mint* | 18 May 2020

American brokerage Goldman Sachs expects the Indian economy to contract by 5 per cent in FY21, making it the worst performance by the country ever.

The brokerage said the GDP will contract by a mind-boggling 45 per cent in the June quarter as compared to the January-March period on an annualised basis, because of the continuing lockdown which is chilling economic activity, before recovering later.

A slew of watchers are expecting a contraction in the Indian economy in FY21, some even after the ₹20 lakh crore stimulus announced by the government. Goldman was earlier expecting a 0.4 per cent contraction before revising it down to a level it shares with Japanese brokerage Nomura.

“The -5 per cent growth we forecast for FY21 would be deeper compared to all ‘recessions’ India has ever experienced,” its analysts wrote in the note.

The virus continues to spread in India, resulting in the pushing of the nationwide lockdown with gradual relaxation of restrictions, while concerns among consumers and businesses continue, it said.

The rebound from a quarterly perspective will be very strong in the September quarter, it said, expecting a 20 per cent growth in GDP over the level of June-end, but added that the same will be gradual from then on.

Joining its peers, the brokerage also said that the reform measures announced by the government will help growth only over the medium term and are not expected to have any benefit in the near-term.

Statsguru: Importance of MSMEs in times of Covid-19, economic slowdown

*Business Standards* | 18 May 2020

Finance Minister Nirmala Sitharaman announced several measures for the micro, small, and medium enterprises (MSMEs), on the first day of her series of package announcements after Prime Minister Narendra Modi talked about Rs 20-trillion support to the economy. The need to support MSMEs is evident if one looks at their contribution to the gross domestic product (chart 1).

The sector’s importance could be gauged from the fact that its share in GDP was still over 28 per cent in 2016-17, even after dropping in recent times. The share will increase further, merely through a change in definition of MSME, incorporating both investment and turnover criteria, announced as part of the package.

Similarly, its share in exports was well above 48 per cent, meaning that almost half of the exports came from the sector. The share in exports, though, has been sliding at a time when total exports have not been rising significantly (chart 2).

The support is also required due to the lackluster growth in bank credit to the sector (chart 3). The credit guarantee support of Rs 3 trillion, though will not impact the government kitty at least immediately, is expected to address this problem. The sector is dominated by micro enterprises or entities where investment in plant and machinery...
is just Rs 5 lakh in manufacturing sector and Rs 10 lakh in equipment in services sector (chart 4).

The assurance given by the finance minister that benefits given to MSMEs will not be withdrawn if they grow in size may solve this problem to an extent. Almost one-third of MSMEs are in two laggard states of Uttar Pradesh and Bihar, shows the data based on online filing system, which started in September, 2015 (chart 5). If the plight of MSMEs improves, these states will also benefit.

**FinMin notifies retrospective amendment in CGST Law**

*Business Line | 17 May 2020*

The Finance Ministry has notified retrospective amendment in the Central Goods and Services Act (CGST Act 2017). With this amendment the Centre has bought itself to disburse the pending input tax credit.

With this amendment in Section 140 of the Central Goods and Services Tax Act relating to transitional arrangements for input tax credit has formally been made effective, so as to prescribe the time limit and the manner for availing input tax credit against certain unavailed credit under the existing law. This amendment shall take effect retroactively from July 1, 2017.

This amendment is expected to pose problems to everyone except the petitioner of that ruling for claiming all pending transitional credit (technically known as input tax credit or ITC) till June 30. The Notification for the amendment says: May 18, 2020 is the date on which the provisions of section 128 of the said Act (Finance Act 2020), shall come into force.

The fine print of this amendment makes it clear that the power to prescribe a timeline now emanates from a law enacted by Parliament and not from the sub-ordinate legislation (read law). Since the Delhi High Court order focusses on rule, that is why notification will impact the claim settlement for number of businesses except the petitioners in the matter decided on May 5.

Rajat Mohan, Partner with AMRG, said that Delhi High Court’s landmark decision on Transitional Credits in favour of taxpayers would lose its grip in light of the defect occurring due to retrospective amendments brought in by the Finance Act, 2020. The Court had reasonably declared that the time limit of 3 years under the Limitation Act was relevant for transitional credit benefit, enabling all taxpayers to claim legitimate CENVAT credit till June 30, 2020. Transitional credit refers to use of tax credit accumulated up to June 30, 2017, that is, last day of the erstwhile central excise and service tax regime.

After the introduction of Goods & Services Tax (GST), a special provision was made for credit accumulated under VAT, excise duty or service tax to be transited to GST. However, there were some conditions set. The credit will be available only if returns for the last six months — from January 2017 to June 2017 — were filed in the previous regime (that is if VAT, excise and service tax returns had been filed). And Form TRAN I (to be filed by registered persons under GST, may be registered or unregistered under the old regime) has to be filed by December 27, 2017, to carry forward the input tax credit which further March 31, 2019.

Later Commissioners were authorised to extend the date for submitting the declaration electronically in Form GST TRAN-1 but not beyond December 31, 2019.

The Court had ruled that the time limit for transitional credit was only ‘directory’ and not ‘mandatory’ and not only the petitioner but all assessee can claim all pending transitional credit (technically known as input tax credit or ITC) till June 30. A ‘mandatory’ rule means it must be strictly complied while ‘directory’, means it would be sufficient for it to be substantially complied.

**India’s exports contract 60% in April**

*Deccan Herald | 16 May 2020*

Contracting for the second straight month, India’s exports shrunk by a record 60.28% in April to $10.36 billion, mainly on account of the coronavirus lockdown, according to official data.

This is the lowest trade deficit since May 2016, when it had stood at $6.27 billion. The country’s exports had declined by 34.57% in March 2020. "The decline in exports has been mainly due to the ongoing global slowdown, which got aggravated due to the current Covid-19 crisis. The latter resulted in large scale disruptions in supply chains and demand resulting in cancellation of orders," the ministry said in a statement. Barring iron ore and pharmaceuticals, all the remaining 28 key sectors registered negative growth in the month under review.

**FM Sitharaman announces big-bang package for MSMEs to revive economy**

*Business Standard |14 May 2020*

Union Finance Minister Nirmala Sitharaman announced a set of stimulus measures of nearly Rs 5.94 trillion to provide relief to various constituents of the Indian economy. They are micro, small, and medium enterprises (MSMEs); taxpayers; non-banking financial companies (NBFCs); power distribution companies; the real estate sector; organised sector employees; and contractors working with the government.

These measures are part of the Rs 20-trillion “Atmanirbhar Bharat” package, announced by Prime Minister Narendra Modi.
The immediate fiscal impact of Wednesday’s announcements could be less than Rs 20,000 crore, even though analysts differ on that. The key measures were aimed at MSMEs, with a Rs 3-trillion credit guarantee fund for collateral-free automatic loans, a Rs 20,000-crore subordinate fund for stressed MSMEs, and a Rs 50,000-crore equity infusion “fund of funds”.

Additionally, the finance minister said the definition of MSMEs would be altered, a plan that has been in the works for a while, and that the government would disallow global participation in its procurement tenders for up to Rs 200 crore.

Indian firms getting downgraded like never before; credit markets at risk

Business Standard | 14 May 2020

Indian companies are getting downgraded at the worst pace ever, adding to challenges for policymakers trying to keep credit markets from seizing up amid the coronavirus disease-induced lockdowns.

For every upgrade of rupee debt of Indian companies since April 1 there have been about 11 downgrades, leaving this quarter set to be the worst on record if sustained, according to a review of moves by the country’s four main credit assessors — CARE Ratings, Crisil, ICRA and India Ratings & Research.

Ratings have been cut for 847 domestic firms in the period.

That’s pushing up refinancing costs, with spreads on top-rated three-year rupee company notes over similar-maturity Indian sovereign bonds rising to the highest since 2013.

The timing couldn’t be worse, as corporate finances have been stretched amid the world’s biggest lockdown to prevent the spread of the coronavirus. Companies also face a record amount of maturities in 2021, with Rs 6.3 trillion ($83 billion) of bonds and loans in local currency coming due.

FIEO demands comprehensive package for exports

Shillong Times | 13 May 2020

Exporter’s body FIEO has urged the government to announce measures such as interest-free working capital and subsidy on credit from banks, with a view to support the sector to deal with the COVID-19 pandemic.

In a letter to Prime Minister Narendra Modi, the Federation of Indian Export Organisations (FIEO) said the country’s exports will take unprecedented hit in such challenging times. The exports sector is facing over 50 per cent cancellation and the worst hit segments are leather, carpets, silk, handicrafts, and apparels that are having over 80 per cent cancellations and this will also put pressure on current account deficit, FIEO President Sharad Saraf said.

Fiscal deficit to balloon to 7.9% in FY21: Report

Millennium Post | 13 May 2020

With the government’s Rs 20 lakh crore stimulus package, the country’s fiscal deficit is likely to be more than double to 7.9 per cent in the current financial year, according to an SBI research report. The report had earlier estimated the fiscal deficit to be 3.5 per cent of GDP this fiscal. The government has announced a cumulative package of Rs 20 lakh crore, which is nearly 10 per cent of GDP to provide relief to various segments of the coronavirus-hit economy.

“After taking into account cash outflow of these measures as well as the previous and the recent excise duty hike and DA freeze (amounting to around 0.8 per cent of GDP), we now revise our baseline fiscal deficit (excluding extra budgetary resources (EBR)) to 7.9 per cent of the revised GDP in FY21 from 3.5 per cent earlier, owing to lower revenues and higher expenditure against the backdrop of COVID-19 pandemic,” the SBI’s research report Ecowrap said.

Baseline fiscal deficit based on CSO’s earlier estimates of GDP is around 7.1 per cent of GDP, it added.

“We estimate a 4.5 per cent direct impact on fiscal deficit purely because of revenue shortfall / automatic fiscal stabilizer and a 0.9 per cent indirect effect because of GDP change,” the report said.

Covid lockdown stifles manufacturing; cash crunch, labour woes bite

Financial Express | 11 May 2020

With over 60% of units still shut and most others operating at just 10-15% capacity, the “graded” easing of the lock-down curbs has barely revived manufacturing in export hubs. Exporters tell FE that units that contributed about 70% to the country’s exports of $314 billion in FY21 are located in the so-called red zones. While many states have now given them approval to start manufacturing even in such hot spots (barring the ‘containment’ areas within them), thus enabling more units to open, key cities — such as Mumbai and Ahmedabad — are still completely shut. Even manufacturing in some other industrial belts — such as Pune, Hyderabad, Bhopal, Indore, Kanpur and Agra — hasn’t really started.

Bhuvnesh Seth, vice-chairman of the Export Promotion Council for EOUs and SEZs, said fresh orders in special economic zones since the lockdown had crashed to just about 5% of the usual flow. SEZs and other designated
export-oriented units account for about 34% of the country’s exports.

Facilities making up for roughly 75% of the country’s engineering goods exports worth $79 billion (in FY20) are in the red zones. Ravi Sehgal, chairman of the engineering goods exporters’ body EEPC India, said cash flow has been a huge issue.

As such, export credit as of March 27 grew just 3.5% year-on-year even on a hugely favourable base (it had contracted 45% y-o-y a year earlier), while overall priority-sector loans grew 5.8%.

Over a half of export orders have been cancelled, with key markets—the US and the EU—bearing the brunt of the pandemic, and many buyers have held up payment for supplies already made.

Some exporters warn of a 60% slide year-on-year in exports in the first half of FY21 (merchandise exports stood at almost $160 billion in the April-September period last fiscal), with a more precipitous fall in the June quarter. It’s not until July that manufacturing will get back to some semblance of normalcy, that, too, if the migrant workers are back on time and the government steps in quickly (which seems unlikely at the moment) and the government steps in quickly with substantial relief, exporters say.

Merchandise exports, which had already contracted by 1.5% y-o-y up to February, ended the last fiscal with a 4.8% fall to $314.3 billion, thanks to an almost 35% crash in March.

CPCB asks industrial units across India to go for safety and hazard audit before resuming operations

The Times of India | 09 May 2020

In the backdrop of two gas leak incidents this week, the Central Pollution Control Board (CPCB) has asked industrial units across the country to go for a “proper safety and hazard audit” of plants before resuming operations during lockdown 3.0 or post-lockdown period and instructed state pollution control boards for “immediate compliance” of its six-point directives.

Many industrial units resumed their operations post-lockdown 2.0, beginning May 4. While first gas leak accident took place in a paper mill in Raigarh district of Chhattisgarh on May 6, the second accident occurred the next day in a Vizag-based factory that saw death of 11 people after inhaling poisonous gas.

Referring these cases of chemical leakage and industrial mishaps, the CPCB in its directives asked the state pollution control boards/committees (SPCBs/PCCs) to ensure that all safety equipment in industrial units and, effluent treatment plants and machineries be kept in “good operable conditions before resuming operations in present Covid-19 situation”.

Under the directives, sent by the CPCB chairman Ravi Shanker Prasad to heads of all states/UTs pollution control boards/committees, it would be the responsibility of the states/UTs pollution watchdogs to closely monitor the situation and ensure that the “environmental norms are not violated by any unit”.

The CPCB also said the states/UTs boards would direct all industrial units that manufacture, store or import hazardous chemicals to “resume their operations after Covid-19 lockdown, only after they have taken adequate and necessary steps to prevent the occurrence of any chemical leakage/accident”.

Preliminary findings on the Vizag gas leak incident noted that the accident appeared to have taken place due to the company management’s haste to re-start the plant by allegedly ignoring protocol of doing maintenance before resuming operations.

The gas leak in Shakti pulp and papers mill in Chhattisgarh’s Raigarh district, on the other hand, took place when an open recycling chamber was being cleaned before resuming operations. Seven workers had fallen ill after inhaling gas at the paper mill.

The SPCBs/PCCs shall ensure that all the units shall take utmost care in handling hazardous chemical by using trained manpower,” said the CPCB in its directive, adding that these boards or committees will also direct all such units to ensure “safety of workers and residents in the vicinity”.

Under the central directives, the SPCBs/PCCs will ensure that any unit involved in the manufacture, storage and Import of hazardous chemicals would comply with the stipulated provisions of the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996 “without fail”.

Commerce Ministry working on package to bail out exporters

Business Line | 08 May 2020

Exporters struggling to survive the disruptions caused by the Covid-19 pandemic may soon get some relief if an incentive package being worked out by the Commerce Ministry gets final approval.

The Prime Minister’s Office has asked all Ministries and Departments to suggest measures to support their respective sectors in the current economic downturn.

Exports witnessed a sharp dip of 34.57 per cent to $21.41 billion in March as orders started declining due to the global pandemic. The overall goods exports declined 4.78 per cent to $314 billion in 2019-20.

In April-May, exporters fear the situation is likely to further deteriorate
following the nation-wide lockdown and a large-scale cancellation of global orders.

While the Commerce Ministry has said that the popular Merchandise Export Incentive Scheme (MEIS) will continue at least till December and may get extended beyond, the exporters’ package could include higher incentive rates under the scheme.

The government has a plan for phasing out the MEIS scheme as it is not compliant with WTO norms but it is holding on to it temporarily during the on-going crisis and a proposal to increase the incentive rates is being seriously looked at, the official said.

Apart from examining the need to extend the interest subsidy scheme for exporters, called the ‘interest equalisation’ scheme, beyond March 31 and enhancing the rates, the Commerce Ministry is also considering an amnesty scheme for non-fulfilment of export obligation.

Cash flows for companies dry up due to lockdown

*The Times of India* | 04 May 2020

Cash flows, the lifeline of businesses, are drying up fast. An extended lockdown has left companies — micro, small & medium enterprises (MSMEs) in particular — staring at a bleak future. Some companies are struggling to pay salaries to employees, while some are looking at winding up operations rather than continue with an unprofitable enterprise.

Companies use working capital for their day-to-day expenses. When finished products are sold, they get income. While the fixed expenses — such as salaries to employees — have remained constant even during the lockdown, there’s been no income or cash that has come for a non-essential manufacturer or service provider.

In large companies, there’s greater debt, but they also have more assets to pledge/sell and seek extra funds. Those with stronger balance sheets have sufficient cash to sustain their operations for a longer period. Reliance Industries, the country’s most valued company, had a debt of Rs 3.36 lakh crore as of March 2020, while its cash and cash equivalents stood at Rs 1.61 lakh crore.

*India offers land twice Luxembourg’s size to firms leaving China*

*The Economic Times* | 05 May 2020

India is developing a land pool nearly double the size of Luxembourg to lure businesses moving out of China, according to people with the knowledge of the matter. A total area of 461,589 hectares has been identified across the country for the purpose, the people said, asking not to be identified because they aren’t authorized to speak to the media. That includes 115,131 hectares of existing industrial land in states such as Gujarat, Maharashtra, Tamil Nadu and Andhra Pradesh, they said. Luxembourg is spread across 243,000 hectares, according to the World Bank. Land has been one of the biggest impediments for companies looking to invest in India, with the plans of Saudi Aramco to Posco frustrated by delays in acquisition. Prime Minister Narendra Modi’s administration is working with state governments to change that as investors seek to reduce reliance on China as a manufacturing base in the aftermath of the Covid-19 outbreak and the resultant supply disruption. At present, investors keen on setting up a factory in India need to acquire land on their own. The process, in some cases, delays the project as it involves negotiating with small plot owners to part with their holding.

Providing land with power, water and road access may help attract new investments to an economy that was slowing even before the virus hit, and is now staring at a rare contraction as a nationwide lockdown hit consumption. The government has hand-picked 10 sectors -- electrical, pharmaceuticals, medical devices, electronics, heavy engineering, solar equipment, food processing, chemicals and textiles -- as focus areas for promoting manufacturing. It has asked embassies abroad to identify companies scouting for options. Invest India, the government’s investment agency, has received inquiries mainly from Japan, the U.S., South Korea and China, expressing interest in relocating to the Asia’s third-largest economy, the people said. The four countries are among India’s top 12 trading partners, accounting for total bilateral trade of $179.27 billion. The foreign
direct investments by the four nations between April 2000 and December 2019 stands at over $68 billion, government data shows.

Making unused land available in special economic zones, which already have robust infrastructure in place, is also being examined. A detailed scheme for attracting foreign investments is expected to be finalized by end of the month, the people said. States have been separately urged to evolve their own programs for bringing in foreign investments.

**Export sops likely to continue till March 2021**

*The Economic Times | 05 May 2020*

India is likely to continue export incentives worth Rs 40,000 crore till next year as the government looks to cushion the impact of Covid-19 on the country’s outward shipments. The commerce and industry ministry is considering a plan to extend the Merchandise Exports from India Scheme (MEIS) till March 31, 2021. The proposal was mentioned in a letter to development commissioners of special economic zones from the Department of Commerce. India’s exports shrank almost 35% to $21.41 billion in March from a year earlier. They declined 4.8% to $314.31 billion in FY20 from $330.08 billion in FY19. “MEIS extension will bring predictability to exports pricing and on the policy front. Exporters’ confidence will get a boost,” said Ajay Sahai, director general of the Federation of Indian Export Organisations. The scheme was extended to December 31, 2020, the government said last month when it announced the extension of the extant foreign trade policy by a full financial year till March 31, 2021.

Under MEIS, the government provides duty benefits, depending on the product and the destination country. Rewards under the scheme are payable as a percentage of the realised free-on-board value (of 2%, 3% and 5%) and the MEIS duty credit scrips can be transferred or used to pay duties including basic customs duty.

Exporters are estimated to have received benefits worth Rs 35,000-40,000 crore under MEIS in FY19.

**Govt working to identify key sectors for making India a manufacturing hub**

*Business Today | 03 May 2020*

The commerce and industry ministry is working to identify certain key sectors -- like capital goods, leather and chemicals -- to establish India as manufacturing hub, according to sources.

Several meetings have taken place with stakeholders, including industry chambers, to identify those sectors which have the potential to become global winners and make India a strong manufacturing hub, the sources said.

“There are 12 champion sectors which can be looked upon. These include modular furniture, toys, food processing like ready-to-eat food, agro-chemicals, textiles like man-made fibres, air conditioners, capital goods, pharma and auto components,” one of the sources said.

Groups and sub-groups have been constituted on the matter by engaging representatives from industry chambers like CII and Assocham.

The core group would identify specific implementable policy based on issues like technological capability, employment potential, and global as well as domestic demand, they added.

Commerce and Industry Minister Piyush Goyal has recently stated that in the post-COVID era, there is going to be a perceivable change in the global supply-chains, and Indian industrialists and exporters should be looking to capture significant share in the world trade.

Promoting manufacturing will help in creating more jobs and pushing India’s dwindling exports. The manufacturing sector contributes about 15 per cent in the country’s exports and the government is aiming to increase it significantly.

**Govt may extend interest equalisation scheme for export sector**

*The Economic Times | 02 May 2020*

The government may soon extend the interest equalisation scheme, which lapsed on March 31, to shore up the export sector impacted by the COVID-19 pandemic, an official said. Under the scheme, exporters get 3-5 per cent subsidy on loans for specified items. It was announced in April 2015 for five years. Addressing a Webinar organised by FICCI, Director General of Foreign Trade Amit Yadav said, “In the weeks ahead, you would be hearing a good news with regard to the extension of interest equalisation scheme.” “We are ensuring that exports come back on the track. The export data for March is an indicator; the impact of the present crisis could be seen from the export data of March and that for April would also be similar,” a FICCI statement quoted Yadav as saying.

**India weighing RCEP’s fresh proposal to re-join talks**

*Business Line | 02 May 2020*

India is considering a fresh proposal sent by the Regional Comprehensive Economic Partnership (RCEP) members, that include the ASEAN, China, South Korea and Japan, asking it to re-join the negotiations and also indicating that some of the terms laid down by the country when it quit the talks last year may be met, an official has said.

The letter, proposing that India should get back on the negotiating table,
Prime Minister Narendra Modi urged his top ministers to accelerate reform measures and remove hurdles in a time-bound manner to boost investment and fuel growth, even as the country prepares to power up its economic engines at the end of a 40-day nationwide lockdown.

A high-level meeting chaired by Modi discussed strategies to attract more foreign investments and encourage local investments to revive the economy, a statement from the Prime Minister’s Office said. The meeting, which comes against the backdrop of an economy ravaged by the covid-19 pandemic, was attended by finance minister Nirmala Sitharaman, home minister Amit Shah, commerce and industry minister Piyush Goyal and minister of state for finance Anurag Thakur, besides top ministry officials.

Though India’s rank vaulted 14 rungs to 63rd among 190 countries in the World Bank ease of doing business ranking last year, it remains a laggard on parameters such as enforcing contracts (163rd) and registering property (154th).

**Crisil: Loss at 4% of GDP; S&P Cuts Growth to 1.8%**

*The Economic Times | 01 May 2020*

India will see a permanent loss of 4% of gross domestic product (GDP) or Rs 9 lakh crore because of the disruptions triggered by the Covid-19 pandemic, said rating agency Crisil. The country would have to grow at an extraordinary 8.5% for each of the coming three financial years in order to recover the loss, said DK Joshi, chief economist at Crisil.

“We do not see India catching up with its normal trend line of growth even if the economy grows at 7% from FY22 onward for the next three years. That’s because the hit is very large and the ability to support the economy is also limited,” Joshi said. Only exceptional circumstances and policy action could enable India to recover the loss, said Joshi. *“In order to catch up India would need an extraordinary and never seen before growth of 8.5% per annum between FY22 and FY24, that will ensure the lost GDP is recovered. But we require exceptional policy action and circumstances for that,” he said.*

S&P Global Ratings further cut India’s expected growth to 1.8% for 2020-21 from 3.5% it had forecast in March, with a recovery to 7.5% in the next fiscal.

**CIPET renamed as Central Institute of Petrochemicals Engineering & Technology**

*Indian Chemical News | 29 May 2020*

Central Institute of Plastics Engineering & Technology (CIPET) has been renamed as Central Institute of Petrochemicals Engineering & Technology (CIPET), a premier national institution under the Ministry of Chemicals and Fertilizers, Govt. of India.

The changed name has been registered under the Tamil Nadu Societies Registration Act 1975 (Tamil Nadu Act 27 of 1975)

Union Minister for Chemicals and Fertilizers DV Sadananda Gowda said that now CIPET will be in a position to fully devote itself for the growth of entire petrochemical sector with a focus on Academics, Skilling, Technology Support and Research.

The primary objective of CIPET has been contributing towards the growth of the plastics industry through a combined program of education and research. The Institute has evolved through the years, creating closer ties with industries with the intent to create innovative plastic based solutions which are resource efficient and marketable.

**Petrochem, Chemical imports likely to face 15% Covid tax**

*The Economic Times | 20 May 2020*

India is considering a proposal to levy 15% Covid-19 tax on all chemical
and petrochemical imports from May 1, 2020 to March 31, 2021 to protect domestic industry. As per the proposal, the provisional duty would also be applicable on all preferential imports under India’s various free trade agreements (FTA), and would cover organic chemicals, inorganic chemicals, plastics, rubber, man-made filaments and man-made staple fibres. “The proposal has been made by a certain section of industry to the department of chemicals and petrochemicals, and the department is still doing stakeholder consultations,” said an official in the know of the details. The 15% tax would be in addition to the lowest tariff called applied most favoured nation (MFN) duty in trade parlance. India imported $86.82 billion of these products between April 2019 and January 2020 with almost 14% of the inward shipments coming from China alone. The commerce department is yet to take a stance on the issue and is awaiting a formal proposal by the department of chemicals and petrochemicals.

“Several industries, which are dependent on chemicals, raw materials or intermediate goods in these sectors, have opposed the proposal,” the official added.

Various industries such as chemicals and plastics have vetoed the proposal, citing similar action by other countries that would harm Indian exports.

“Any further burden of additional duty would be a huge burden on industries and will be difficult to sustain. If our country imposes Covid tax on chemicals imported from other countries and if the said countries also start to levy additional duty on exports from our country, it will be disastrous for our chemical exports industry,” said a representative from the chemical industry. India’s chemical exports fell almost 42% on year in April to $1.2 billion while those of plastics declined 25% to $478.47 million last month. The commerce and industry ministry is already working on a plan to substitute imports under the Atmanirbhar Bharat Abhiyan and is looking to correct duty structures, including any duty discrepancies with countries that India has FTAs with. Incentives to promote local production and export competitiveness such as export incentives parity with China and duty-free import of plant and machinery could also be offered for the chemical and petrochemicals sector.

ICRA sees positive impact of COVID-19 for chemicals; margin pressure on petrochemicals

The impact of the COVID-19 crisis on petrochemicals and chemicals sector will differ across value chains, with segments like packaging witnessing an uplift, a report from rating agency ICRA said.

In the chemicals sector, the crisis has resulted in several Indian companies getting order inflows from global chemical players to meet the short-term supply disruptions from China, which is a credit positive for these players, ICRA said. The report further said the lockdowns have adversely affected the demand for chemicals and petrochemicals, owing to decline in consumption and shutting down of manufacturing plants, supply chains and distribution networks. Packaging, especially food packaging, sanitary and medical applications, are seeing an uplift mainly due to stockpiling, an increase in delivery services and the high healthcare-focused activities, it added.

Why caution will be key when restarting chemical industries

The styrene gas leak on May 7 from a Visakhapatnam factory that led to the death of 12 people was a rude shock, especially at a time when industries are trying to gradually resume activities after the lockdown due to Covid-19. The incident highlights the need to focus on processes before starting operations to check for the hidden as well as obvious hazards after such a prolonged period of shutdown.

Deviations from established standards, procedures and practices often result in disasters that are preventable. Safety experts have noticed that accidents are often not as unexpected as they seem to the lay observer. Such scenarios build up over time after considerable lapses and lead to near-miss incidents. “History repeats itself” is applicable here and for industrial accidents, it repeats often with greater impact.

Tamil Nadu has nearly 165 factories under the category of major accident
hazard units including LPG, fertilizer, petrochemical, distilleries and breweries, iron and steel, military ammunition and industrial explosive units. So it is important that protocols are followed as machines start again.

Unsteady state conditions prevailing at different stages of the life cycle of industrial plants such as commissioning, startup, maintenance/emergency shutdown and decommissioning are potentially dangerous operations, which need to be evaluated using appropriate hazard identification techniques such as process hazard analysis, pre-startup safety review, hazard and operability study, failure mode effect and safety audit.

During startup and shutdown of operations in process industries, different parameters need to be monitored simultaneously, which can appear to be too complex, especially in the absence of trained supervisors. Major disasters such as the explosion and fire at BP Texas Refinery, USA, highlighted the possibilities for multiple failures due to factors such as poor layout, human error, operational deviations, lack of proper supervision, lapses in regulatory policies and decisions.

As one safety expert remarked: “If you respect the properties of a chemical, it will respect you,” one should be sufficiently informed about the hazards to handle them efficiently. It is not just oversight or poor maintenance that can lead to accidents but operations being carried out under steady state or normal conditions can also pose hidden hazards due to the incomplete understanding of process chemistry and unseen transient conditions such as accumulation of solids or gases in storage vessels or pipelines, buildup of static electricity, slow decomposition or polymerization reactions, inadvertent entry of reagents and explosive dust deposition.

Although some of the process parameters and conditions are measured and controlled using instrumentation systems, there are many variables, which need to be indirectly monitored and here advanced technology such as data science and artificial intelligence as in Artificial Intelligence of Things (AIoT) can play a major role. Using artificial intelligence (AI) a system can complete a set of tasks or learn from data. When AI is added to the internet of things it means those devices can analyse data and make decisions and act without involvement by humans who are prone to commit mistakes. For instance, the Flixborough Disaster (UK, 1974) resulted from a hasty design modification, which should have been subjected to a management of change review.

Continued safe operation involving hazardous materials needs operational discipline of everyone involved in the processes. “What we do not manage will leak” and therein lies the fundamental challenge that renowned safety expert Trevor Kletz emphasised.

Emergency response (onsite and offsite) and disaster management planning (DMP) plays yet another important role in guiding plant personnel, public, regulatory authorities, security personnel, response teams, medical professionals and media. State governments should ensure that the offsite disaster management plan of the respective MAH units is updated. The industrial on-site DMP should be in place and cover standard operating procedures for safe restarting of the industries during and after Covid-19 lockdown. The National Disaster Management Authority has recently come out with guidelines for storage of raw material, manufacturing processes and guidelines for workers, which should be followed to minimise risks.

Chemical factories can also engage research and consulting agencies such as the Cell for Industrial Safety and Risk Analysis at Central Leather Research Institute, Chennai, which was established after the Bhopal gas tragedy in 1984 to offer guidance in preventing and mitigating industrial accidents through safe practices in chemical and allied industries.

No scientific studies report styrene gas causing deaths

The Hindu | 07 May 2020

The gas leak from LG Polymers, which led to the death of at least seven people in Visakhapatnam, is suspected to have been caused by styrene gas.

The most common health problems when exposed to styrene involve the nervous system — both the central and the peripheral nervous systems.

According to the Atlanta-based Centers for Disease Control and Prevention (CDC), the health effects due to inhalation of styrene gas include tiredness, feeling drunk, slowed reaction time, concentration problems, balance problems and changes in colour vision.

The styrene concentrations that cause these effects are more than 1,000 times higher than the levels normally found in the environment.

According to the U.S.-based Environmental Protection Agency (EPA), short-term exposure to styrene can lead to respiratory effects, such as mucous membrane irritation, eye irritation, and gastrointestinal effects. Chronic exposure can cause effects in the central nervous system with symptoms such as headache, fatigue, weakness. It can also cause central nervous system dysfunction including memory, visuomotor speed, hearing loss and peripheral neuropathy.

Clinical studies of volunteers and workers exposed to styrene have demonstrated both the central and the peripheral nervous systems toxicity.

The number of studies of styrene clinical neurotoxicity is rather small. Acute exposure to styrene via inhalation at 376 ppm for 25
minutes had resulted in nausea, a sense of inebriation and headache. But no studies have been carried out to understand the harmful effects from exposure at extremely high concentrations lasting a couple of hours.

Currently, no studies have reported deaths from short-term exposure to styrene gas. Hence, it is not clear if the deaths were caused by styrene gas or some other chemical or a combination.

**New chemical accident rules soon to prevent Vizag like accidents**

*The Times of India* | 07 May 2020

With several industrial accidents in recent past highlighting gaps, the government is in the last leg of finalising the amendment to chemical accident rules to minimise disasters such as the one that happened at Visakhapatnam polymer factory on Thursday, killing at least 11 and hospitalising hundreds.

Following the 1984 Bhopal gas disaster, the ministry of environment and forest (MoEF) notified two sets of rules - Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 and Chemical Accidents (Emergency Planning, Preparedness, and Response), (CAEPPR) Rules, 1996 - to regulate the manufacturing, use, and handling of hazardous chemicals.

The objective of MSIHC Rules is to prevent major chemical accidents arising from industrial activities and limit the effects of chemical (industrial) accidents. The CAEPPR Rules provide the statutory back-up for Crisis Management.

In 2016, MoEF proposed to upgrade the rules to keep pace with the time. A draft amendment to rules that sought effective enforcement of regulations in the chemical industry, was floated for stakeholder consultation.

But the rules could not be finalised, officials with direct knowledge of the development said.

The amendment was referred to a committee that took a “lot of time” in finalising its recommendations, an official said.

In the meanwhile, the department of chemicals and petrochemicals (DCPC) wanted some kind of power to regulate the usage of all chemicals incorporating best practices around the globe. DCPC was keen on pre-use registration and inventory management, they said adding it is a kind of licensing.

MoEF, on the other hand, continued to be a nodal authority on the handling of hazardous chemicals.

The difference was resolved by allowing DCPC to frame regulations for chemicals, and hazardous chemicals would be one sub-set for which MoEF will assist in framing regulations.

A draft Cabinet note has been circulated and regulation would be in place after inter-ministerial discussion, they said.

“The rules should be out in a short time,” an official said.

Gas leaked from a chemical plant owned by a subsidiary of South Korea’s LG Chem in Visakhapatnam in the early hours of Thursday and quickly spread to villages in a five-kilometer radius, killing at least 11 people and impacting about 1,000, many collapsing to the ground as they tried to escape the toxic vapours.

The main objectives of the MSIHC Rules are to prevent major chemical accidents arising from industrial activities and limit the effects of chemical (industrial) accidents.

Similarly, the CAEPPR Rules, 1996 provide the statutory backup for crisis management set-up and prescribe criteria for identification of Major Accident Hazard (MAH) installations.

All districts with such installations are required to establish crisis management groups, it said.

In addition, as prescribed by the MSIHC Rules, 1989, the occupiers of the MAH units are responsible for the preparation of on-site Emergency Plans while the Chief Inspector of Factories (CIFs) in consultation with district authorities are required to prepare off-site emergency plans as well.

India witnessed its worst industrial accident due to an accidental leakage of nearly 42 tonnes of toxic gas, Methyl Iso Cyanate (MIC), in the intervening night of December 2-3, 1984 in Bhopal.

Official estimates put the toll at 5,000, though activists who have long been fighting for both justice and compensation for the victims put the figure at 25,000.

Besides the deaths, the accident led to physical disabilities in people of the area, and thousands of children born to parents, who had been exposed to the gas, in subsequent years suffered from birth defects.

**Plastic Pipes Sector Set to Boom, Finolex Analysts’ Top Pick**

*The Economic Times* | 31 May 2020

With a strong balance sheet, compelling valuations, comfortable liquidity position and leadership in agri-pipe segment, Finolex Industries is analysts’ top pick among plastic pipe stocks. The sector is likely to boom in the coming months due to surging
rural demand, paced by a healthy output of wintersown crops and increased state assistance to farmers.

**Chemical major GHCL to defer all capital projects, except those in advanced stage**

*The Economic Times | 28 May 2020*

Chemicals and textiles major GHCL said it has decided to defer all major capital projects, except those in advanced stage, due to the ongoing coronavirus pandemic. The company, which had no material production in April, said currently its plants are operating at 50-60 per cent utilisation levels based on demand outlook and labour availability, and it doesn’t see any liquidity challenge in the near term, with around Rs 397 crore of unutilised fund based limits as on April 30 ensuring adequate liquidity. In a regulatory filing regarding material impact of COVID-19 pandemic, GHCL said, “The company has decided to defer all major capital projects except those in advance stages which will be completed.”

It, however, did not elaborate on the major capital projects. On commencement of operations, the company said its manufacturing operations have gradually restarted with due approvals from the respective government authorities. Soda ash plant in Sutraparda (Gujarat) restarted from April 30, while spinning units in Tamil Nadu restarted from May 1 and home textile plant in Vapi (Gujarat) resumed from May 5, while ensuring necessary operating protocols. “In the month of April 2020, no material production has been achieved and currently the plants are operating at 50-60 per cent utilisation levels based on the demand outlook and labour availability,” the filing said, adding that sales orders have continued to be dispatched during this period for soda ash, as it is a major raw material for detergent, which is an essential commodity. Regarding liquidity position, GHCL said it has “around Rs 397 crore of unutilised fund based limits as at April 30, 2020 which ensures adequate liquidity. The low financial leverage and reasonable cash flow estimates from operations ensure sufficient liquidity to the company and we don’t see any liquidity challenge in the near term”. The company also said it has adequate supply chain available for finished products at plants and depots to meet customers’ demand. Sufficient inventory of raw material at plants is ensured for smooth manufacturing operations. “The COVID-19 outbreak and lockdowns imposed worldwide have created an unprecedented situation which is both dynamic and may undergo a change impacting the businesses and operations which are beyond the control of the company,” GHCL said.

**Finolex Industries bolsters dealers and staff morale during COVID-19 crisis**

*The Navhind Times | 28 May 2020*

Known for philanthropic activities, Finolex Industries Ltd (FIL) displayed exemplary consideration to employees, dealers and associates during the ongoing lockdown. In a reassuring gesture the company increased the turnover discount scheme (TOD) across its dealer network which is in addition to the TOD that the company pays to incentivise its dealer network. The welfare initiative was after week-long deliberations held by the company with dealers and employees. FIL’s marketing network comprises over 18,000 retailers, dealers and sub-dealers. The additional TOD is being paid to the dealers who have achieved their target and for those who could not, will be paid a token amount as a gratitude to cushion the impact of the challenging business environment.

To reassure employees the company took a progressive step of not deducting staff salaries. This gesture was widely appreciated by employees across the rank and file of the organization.

Speaking on the initiatives, Prakash P Chhabria, chairman, said, “The success of Finolex is the result of the hard work and excellence of our partners, viz. dealers and retailers and our skilled workforce who have delivered the finest products in the industry. As a company we will stand shoulder-to-shoulder with them and have reassured them of our commitment.”

During the lockdown FIL, with Mukul Madhav Foundation, the CSR partner rose to the occasion and handed over PPE suits, ventilators, disinfectants, grocery kits and other essential commodities to hospitals and organizations. The lockdown disrupted the lives of the most vulnerable sections of the society namely the migrants and the daily-wage workers and the foundation extended all possible support to them in Pune.

Chhabria added, “This was our way of extending support to the needy who had no other hope in such difficult times.” To its shareholders the company was similarly considerate by paying dividend in the month of March in the midst of the pandemic.

Headquartered in Pune, Finolex is India’s largest manufacturer of PVC Pipes & Fittings. The company considers skilled workforce as its major strength. “We recognize and attribute our operating excellence and success to our employees. Our core values of quality, trust and integrity help us to build an unbreakable bond with both customers and stakeholders,” said Chhabria.

**Tata Chemicals supplying hand sanitisers to Gujarat and Maharashtra governments**

*Chemical Weekly | 19 May 2020*

Tata Chemicals, one of the largest chemical companies in the country,
has been contributing to nation’s fight against COVID-19 pandemic through Tata Chemicals Society of Rural Development (TCSRD) by supplying disinfectants, making masks, ensuring food security and augmenting medical facilities for the local communities.

Tata Chemicals said it has manufactured and supplied more than 1.1 million litres of disinfectant to Gujarat and 480,000 litres to BMC, Maharashtra so far to keep the public places and disease prone localities safe from the virus.

To meet the increased requirement of hand sanitiser, Tata Chemicals’ subsidiary Rallis India has transformed its chemical units at Akola and Ankleshwar and has produced and supplied 75,300 litres of hand sanitiser across Maharashtra, Gujarat, Telangana and Karnataka.

Through Self Help Groups (SHGs) and artisans associated with the Company’s Okhai initiative, Tata Chemicals has produced about 73,000 masks in Mithapur and Cuddalore, which are being distributed to police, local community, driver, security etc. Through Okhai, the company has also connected SHGs making masks across India and made available 87,000 masks for the open market suppliers. Besides supplying the life-saving masks, this effort has also supported the livelihood of more than 275 women in these times, when there are low economic activities due to the restrictions of people movement. In Mithapur (Devbhoomi Dwarka district of Gujarat), where the company’s main manufacturing plant is located, Tata Chemicals has augmented the capacity of Mithapur Hospital by setting up temporary additional facilities for COVID-19 patients. In its efforts to make the public spaces safer, Tata Chemicals also sprayed disinfectant in Mithapur and 43 nearby villages.

**Saudi Aramco would be better served with RIL stake than SABIC JV:**

**HSBC**

Chemical Weekly | May 2020

HSBC Securities and Capital Markets (India) Pvt. Ltd. has a piece of advice for the world’s biggest oil producer, Saudi Aramco, which is in a dilemma as to whether to invest $15-bn in the oil-to-chemical business (OTC) of Reliance Industries Ltd. (RIL) for a 20% stake or go for a joint venture with its own chemical manufacturing unit SABIC for a home-grown OTC project worth over $20-bn. RIL had last August announced plan to sell 20% stake in its refining and petrochemicals business for $15-bn to Saudi Aramco, as part of a plan to deleverage its balance sheet. “RIL might be a better fit for Aramco than Saudi OTC,” it said in a May 13 research note. “The basic problem is that without a cost advantage or a local market, spending $20-bn seems to be a sure-fire way to generate mediocre returns. Aramco doesn’t need to do the same thing again to recognise that it doesn’t work,” said HSBC Securities, as speculation swirls that Aramco could walk away from the deal due to falling oil prices and plunging demand following the COVID-19 pandemic. Mounting losses Aramco has struggled to execute on world-scale organic petrochemicals projects. Its last two large domestic chemical projects, Sadara and PetroRabigh have had $40-bn in combined capex between them, but have both struggled for profitability, let alone an acceptable commercial rate of return, HSBC stated. This is particularly relevant as Aramco is close to reaching a decision for its planned OTC joint venture with SABIC. A decision, if taken, is expected to be taken over the next month. “There is basically no history of a chemical plant in Saudi Arabia being built at a cost of over $10-bn that has generated a return. Besides the PetroRabigh and Sadara projects, there is also the example of the project by Saudi Kayan Petrochemical. These projects have had over $50-bn in cumulative capex spent on them and, since starting up, have racked up aggregate losses of $3-bn,” it said. Promising future with RIL HSBC said there were “enough reasons and significant advantages” for Aramco to acquire stake in RIL. With a stake in RIL, Aramco would not just have a stake in one of the world’s best refineries and largest integrated petrochemical complex but also access to one of the fastest-growing markets – a ready-made market for 500-kbpd of its Arabian crude and offering a potentially bigger downstream role in future, it said. If the current oil price environment does result in a rationalisation of capex for Saudi Aramco, then we think it would be the OTC project that gets pulled rather than the RIL investment, HSBC noted.
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Mob: 0086 13574290222 (Mr. Frank Ding)  0086 18773335922 (Mr. Zhang)
Email: frankding@kori.cn, tsy@kori.cn
Website: www.kori.cn

1. Notification No. S.O. 1424 (E) dated 01/05/2020 issued by Ministry of Environment, Forest and Climate Change regarding Reconstitution of National Coastal Zone Management Authority

2. Notification No. S.O. 1561 (E) dated 21/05/2020 issued by Ministry of Environment, Forest and Climate Change regarding Environment (Protection) Amendment Rules, 2020 - withdrawing cap on ash content in coal used for thermal power plants
   http://egazette.nic.in/WriteReadData/2020/219495.pdf

3. Notification No. G.S.R. 343 (E) dated 21/05/2020 issued by Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade - Central Boiler Board) - inviting comments on Draft Indian Boiler (Second Amendment) Regulations 2020 to amend the Indian Boiler Regulations 1950
   https://dipp.gov.in/sites/default/files/The_Indian_Boiler_Second_Amendment_Regulations_2020.pdf
Created for those in search of perfection...!
### Key Indicators April 2020

#### 1 Alkali Imports (MT)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Caustic Soda</td>
<td>49,913</td>
<td>37,498</td>
<td>33.1%</td>
<td>12,525</td>
<td>-13.5%</td>
<td>95,933</td>
<td>-45.5%</td>
<td>298.5%</td>
<td>374,976</td>
</tr>
<tr>
<td>Soda Ash</td>
<td>52,305</td>
<td>60,462</td>
<td>-13.5%</td>
<td>95,933</td>
<td>-45.5%</td>
<td>95,933</td>
<td>-45.5%</td>
<td>946,031</td>
<td></td>
</tr>
</tbody>
</table>

Average Price in Apr 2020: Caustic Soda - 284 USD/MT (lye); Soda Ash - 223 USD/MT

#### 2 Foreign Trade - Merchandise (US$ billion)

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Apr 2019</th>
<th>% Difference</th>
<th>FY 2020-21 (upto Apr)</th>
<th>FY 2019-20 (upto Apr)</th>
<th>% Difference</th>
<th>Total Imports 2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imports</td>
<td>17.1</td>
<td>41.4</td>
<td>-58.6%</td>
<td>17.1</td>
<td>41.4</td>
<td>-58.6%</td>
<td>467.2</td>
</tr>
<tr>
<td>Exports</td>
<td>10.4</td>
<td>26.1</td>
<td>-60.3%</td>
<td>10.4</td>
<td>26.1</td>
<td>-60.3%</td>
<td>314.3</td>
</tr>
<tr>
<td>Surplus/Deficit</td>
<td>-6.8</td>
<td>-15.3</td>
<td></td>
<td>-6.8</td>
<td>-15.3</td>
<td></td>
<td>-152.9</td>
</tr>
</tbody>
</table>

#### 3 Exchange Rate (Rs./USD)

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Mar 2020</th>
<th>Feb 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>76.24</td>
<td>74.35</td>
<td>71.49</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Apr 2019</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>56.3</td>
<td>126.5</td>
<td>#</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>80.9</td>
<td>130.7</td>
<td>-38.1%</td>
</tr>
<tr>
<td>Electricity</td>
<td>126.1</td>
<td>162.9</td>
<td>#</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Apr 2019</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>78.3</td>
<td>107.8</td>
<td>#</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>45.1</td>
<td>126.2</td>
<td>#</td>
</tr>
<tr>
<td>Electricity</td>
<td>126.1</td>
<td>162.9</td>
<td>#</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Apr 2019</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>78.3</td>
<td>107.8</td>
<td>#</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>45.1</td>
<td>126.2</td>
<td>#</td>
</tr>
<tr>
<td>Electricity</td>
<td>126.1</td>
<td>162.9</td>
<td>#</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Apr 2019</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical &amp; Chemical Products</td>
<td>50.8</td>
<td>116.1</td>
<td>#</td>
</tr>
<tr>
<td>Textiles</td>
<td>5.3</td>
<td>119.8</td>
<td>#</td>
</tr>
<tr>
<td>Paper &amp; Paper Products</td>
<td>24.7</td>
<td>93.8</td>
<td>#</td>
</tr>
<tr>
<td>Basic Metals</td>
<td>40.3</td>
<td>137.5</td>
<td>#</td>
</tr>
</tbody>
</table>

# In view of the present circumstances (Covid-19), the indices should not be compared with those of earlier months.

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

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Apr 2019</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Russia</td>
<td>117.3</td>
<td>125.4</td>
<td>-6.5%</td>
</tr>
<tr>
<td>Brazil</td>
<td>NA</td>
<td>95.8</td>
<td>NA</td>
</tr>
<tr>
<td>European Union (27)</td>
<td>77.4</td>
<td>106.2</td>
<td>-27.1%</td>
</tr>
<tr>
<td>USA</td>
<td>87.7</td>
<td>104.7</td>
<td>-16.2%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Apr 2019</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Price Inflation - Industrial Workers (Base: 2001=100)</td>
<td>329</td>
<td>312</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

*In view of the present circumstances (Covid-19), GoI has not released the data.

#### 10 Foreign Investment Inflows (US$ Million)

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Mar 2020</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Foreign Direct Investment</td>
<td>1,366</td>
<td>2,477</td>
<td>-44.9%</td>
</tr>
<tr>
<td>Net Portfolio Investment</td>
<td>-1,114</td>
<td>-16,165</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>-13,688</td>
<td>-</td>
</tr>
</tbody>
</table>

#### 11 Foreign Investment Promotion Board (FIPB) Approvals (US$ Million)

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Mar 2020</th>
<th>Feb 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>188</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

#### 12 Foreign Exchange Reserves (US$ billion)

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020 (as on 24 Apr 2020)</th>
<th>Mar 2020 (as on 27 Mar 2020)</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>479</td>
<td>476</td>
<td>0.8%</td>
<td></td>
</tr>
</tbody>
</table>

#### 13 Fiscal Deficit (Apr 2020-Apr 2020)

<table>
<thead>
<tr>
<th></th>
<th>% of Actuals to Budget Estimates FY 2020-21</th>
<th>% of Actuals to Budget Estimates FY 2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.1%</td>
<td>22.3%</td>
<td></td>
</tr>
</tbody>
</table>

#### 14 Purchasing Managers Index (PMI)

<table>
<thead>
<tr>
<th></th>
<th>Apr 2020</th>
<th>Mar 2020</th>
<th>Feb 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.4</td>
<td>51.8</td>
<td>54.5</td>
<td></td>
</tr>
</tbody>
</table>

*Index over 50 shows expansion, while below 50 means contraction.

Data Source: GOI, OECD, IHS & AMAI Research
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- NUCLEAR AND DEFENCE

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