White Paper On Glass Industry

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1. INTRODUCTION

The Indian Glass Industry estimated around Rs. 225 billion in 2012 is mostly organized and is dominated by large players. The share of organized sector in the glass industry is dominant at about 55% whereas the unorganized sector accounts for about 45%. The organized sector is dominated by large players like ASAHI Glass India Ltd, Hindustan National Glass & Industries Ltd, Piramal Glass, Saint-Gobain India, HSIL, Owens Corning, Triveni Glass, Borosil, Gujarat Borosil, Gujarat Guardian Ltd, Gold Plus Glass Industries, etc. The highest share in the organized glass industry belongs to Hindustan National Glass Industries with approximately covering 50% of the market whereas the ASAHI India acquires 20% of the market and the rest of the market is being served by all other players.

The unorganized sector accounting for about 45% of the total glass industry is mainly in small cities and towns and consists of small and medium scale industries. About 70% of the total glass production in the unorganized sector in India is contributed by Firozabad glass industry, which is India's biggest glass industry cluster with approx 0.5 lakh people employed directly or indirectly. The cluster holds a unique position consisting of Micro, Small and Medium units located at one place and being capable of producing a variety of glass products ranging from art ware, chandeliers to multicolored bangles.

The organized sector of the glass industry provides approx. 10 lakh direct and indirect employment. In total, it is estimated that the glass industry employs around 15 lakh people.

The Indian Glass Industry has been categorized into 4 categories of glass producing industries which could be categorized as below:

Container Glass Industry:

The container glass industry in India is buoyant with downstream demands from food & beverages, pharmaceuticals and cosmetics industries. The industry is experiencing a huge surge in demand owing to the growing awareness about health and hygiene among the consumers. Continuous efforts by manufacturing companies to highlight the benefits of glass are also working wonders for the promotion of glass industry in India. The Indian container glass industry estimated

at Rs.150 billion in 2012. Besides the large producers, Indian glass packaging industry also includes manufacturers from the semi-unorganized sector.

Flat Glass Industry:

Flat glass segment comprises of float glass and rolled glass, which are mostly used in architectural and automotive applications. The Indian Float Glass Industry is relatively a new industry. The first Float glass Plant started in India in the year 1992. Since then the Industry has grown at a fast pace – both in the upstream and the downstream segments. The Industry caters to Construction, Automotive, Solar and Specialty segments.

While the distance travelled in the past two decades by the Industry is significant, today the Industry is at the crossroads. The Challenges it faces are truly daunting. Unless these Challenges are overcome, the future prospects of the Indian Float glass Industry are dim. The share of flat glass industry in the total glass industry is mere 9%.

Fiber Glass Industry:

The fiber glass industry in India is relatively small but it is expected to grow steadily in the years to come. The demand for fiberglass has continued its growth momentum in the recent years. Fiberglass is mainly used in the plastics industry. Fiberglass products are used by decorator for decorative purpose. Fiberglass can be modeled easily into complex shapes which make it ideal for the use of decorative purpose. Fiberglass is also used for insulation products.

Specialty Glass Industry:

Specialty glass is mainly used, in technical applications such as electronics and engineering, for technical applications such as optics, lighting, engineering, ophthalmic lenses, etc. Borosilicate glasses are also included in this category. The specialty glass industry estimated worth was Rs. 40 billion in 2012.

2. GROWTH DRIVERS OF THE GLASS INDUSTRY

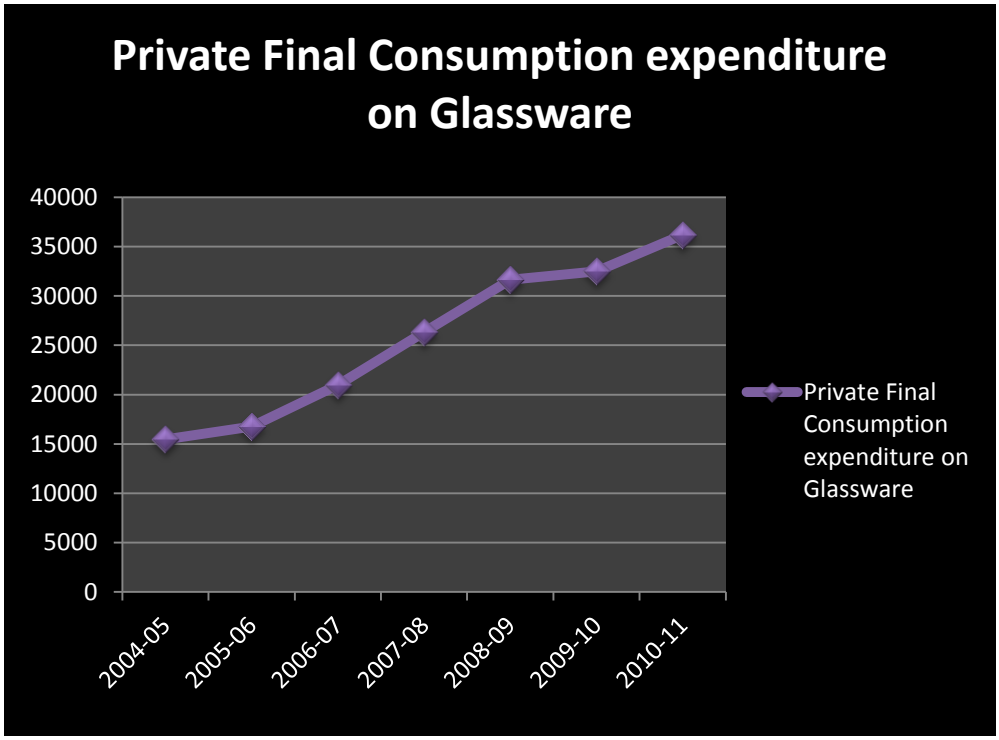
- **Increasing population and per capita expenditure:**

As the population is increasing and the disposable incomes of the people are increasing along, the expenditure of the people on various needs is also rising. People's demand of glass for safety and hygiene has triggered the demand in the glass industry. The private final consumption expenditure on glassware has grown at a CAGR of 15.2% in the period 2004-05 to 2010-11. The expenditure has shown an upward trend in the whole period.

Private Final Consumption Expenditure in Domestic Market

Item	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Glassware	15462	16751	20958	26331	31630	32490	36199

Source: MOSPI



- **Green Building Concept:**

Global concerns about energy conservation have led to increased acceptance of Green Building Concept. The glass industry is highly energy intensive and energy consumption is a major cost diver. Every ton of glass recycled saves 322 KwH of energy, 246 kg of CO_2 and 1.2 tonnes of virgin raw material. Glass reduces the quantity of waste to be treated or dumped. Glass is 100% recyclable. Glass helps in making green and sustainable architecture. The Industry has been working to improve energy efficiency, eliminate waste, reduce carbon footprint etc., through a number of progressive, effective steps.

- **Real Estate Sector:**

One of the major drivers of the demand in the glass industry is the real estate sector. The rapid growth of the real estate sector has triggered the demand in the glass industry.

Glass is becoming more and more popular as a building material. Not just in India but across the world. Due to several advantages which make it a versatile product, its adoption in newer usages has seen a huge growth in the past few years. The growth in the sector will drive the demand of the glass industry.

- **Automotives Industry:**

With the increasing disposable incomes of the people, reduction of duty on the compact cars and increasing trend for replacement of aging four wheelers. New international companies have also started manufacturing automotives in India.

- **Solar energy glass demand:**

Demand for glass used in solar energy glass applications is rising, and therefore demand for glass processing machines serving the solar energy segment, is expected to offer significant growth potential for Glass industry in the future. Greater use of solar energy is being supported by growing environmental awareness, the effort to reduce dependence on non-renewable energy sources, and by cost factors. This is expected to trigger the demand of the glass industry.

- **Packaging Industry:**

Growing use of glass in the packaging industry is driving the container glass industry in India. As glass is reusable and 100% recyclable, people are becoming more and more conscious about safety and hygiene and increasingly making use of glass as containers.

3. TRADE IN THE GLASS INDUSTRY

The trade balance of the glass industry has been constantly negative in the last 5-6 years indicating higher imports than exports. The Indian glass industry is facing stiff competition in the international market due to uncompetitive prices. Although modern technology and operations are replacing traditional methodologies in glass composites. Such upgradation is driven by healthy demand for glass products, particularly due to growth in petrochemical sector and allied products. Some segments have been adversely affected by stiff competition in the international market.

The exports of the industry grew at a CAGR of 16.1% in the period 2007-08 to 2012-13 whereas the growth rate of imports have been higher in the same period. The imports of the industry grew at 19.8%.

Exports and Imports:

Year	Exports (Rs. Lacs)	Y-o-Y Growth (in %)	Imports (Rs. Lacs)	Y-o-Y Growth (in %)	Trade Balance (Rs. Lacs)
2007-08	151,996.31	9.2	168,102.39	11.7	-16,106.08
2008-09	186,413.71	22.6	201,732.94	20	-15,319.23
2009-10	167,536.98	-10.1	213,777.27	6	-46,240.29
2010-11	185,128.32	10.5	277,164.27	29.7	-92,035.95
2011-12	255,592.34	38.1	338,177.80	22	-82,585.46
2012-13	320,073.94	25.2	415,652.42	22.9	-95,578.48

Source: Ministry of Commerce, Government of India Unit

Looking at the current scenario, the exports growth have fairly increased along with the growth rate of imports and in 2012-13, both imports and exports have grown at more than 20%.

The major export destinations of the glass industry are USA, China, Brazil, Germany etc. The exports of the glass industry have been the highest to US followed by China and Brazil in 2012.

The exports to US grew at an average of 19.6% in the period 2007 to 2012. The table below represents the exports to the glass industry to its top 5 export destinations in the world.

Glass Exports to Various Countries

Importers	2007	2012	CAGR (in %)
United States of America	42252	103510	19.6
China	28277	62322	17.1
Brazil	9071	31166	28.0
Germany	6922	25913	30.2
United Arab Emirates	30185	24202	-4.3

Source: ITC, Geneva Unit: USD thousands

The countries from which the glass industry mainly imports are China followed by USA and Germany. The highest imports for the glass industry are made from China and US in 2012. Imports from China account for 48.3% of the total imports of the glass industry. The table below represents the exports to the glass industry to its top 5 export destinations in the world.

Glass Imports from Various Countries

Exporters	2007	2012	CAGR (in s%)
China	137591	278271	15.1
United States of America	30666	77294	20.3
Germany	30120	41150	6.4
Indonesia	13727	38909	23.2
Republic of Korea	10238	28328	22.6
France	18927	27976	8.1

Source: ITC, Geneva Unit: USD thousands

4. GLOBAL PERSPECTIVE

The world glass industry generates yearly revenue of $75 billion, with leading exporters being the US, France, Japan, China, India and Germany. The most common products manufactured in the global glass industry are flat glass, glass containers, fiberglass and specialty products such as lenses, optic fibers, mirrors, glassware and TV tubes. The specialty products segment represents around 60% of revenue generated in the global glass industry.

Gains in the dominant building construction market will be driven by a significant acceleration in building construction activity. Demand for glass is expected to improve significantly, based on global building construction and motor vehicle markets.

Fabricated flat glass demand will benefit from rapid growth in sales of energy efficient products such as solar control, insulation, and low-E glass. The solar energy market, which was hurt by recent global economic weaknesses, will take off briskly once again.

End-use sectors such as the container, bottling, automotive and construction industries account for the greatest demand. Larger outfits benefit from efficiencies of scale, accounting for the industry's high concentration. Smaller outfits compete through the production of specialty products and by concentrating their efforts on local markets.

The world glass manufacturing market will record strong growth in coming years, fuelled by technological innovation that should lead to a higher number of flat glass applications. Rising levels of activity in the global automobile industry will also fuel demand for flat glass.

5. CHALLENGES FACED BY THE GLASS INDUSTRY

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1. Cost:

The Indian Glass Manufacturers are facing the challenge of increasing prices of the raw materials in the process of glass manufacturing. The increase in the prices of raw materials is affecting the bottom-line of the glass manufacturing companies. Increased import duty has caused a rise in the prices of soda ash, borax and furnace oil which are the main input components. In the recent years, it has a caused a drastic reduction in the profit margins of the glass industry. Increase in input prices due to inflation and exchange rate is high mainly energy which is linked to international market and directly affected by exchange rate. Also, unclear mining policies influence prices of mineral allowing miners to earn huge margins.

The industry has gone through huge cost increases over a long period of time. Fuels used by the Industry (HFO and NG), soda ash, packing material, freight, manpower, electricity costs etc. have taken a huge toll on margins.

Recent Rupee depreciation has added on its own debilitating impact. Focus on energy efficiency, alternate packing, reducing the freight impact is some of the areas where the Industry has been successful in countering the impact of the inflation spiral. But the central issue is that the margin squeeze is threatening investment in further progressive measures by the Industry.

The Industry is not able to pass on cost increases in the form of higher prices as capacity has been ahead of demand at all time.

2. Capex:

In glass industry, capacity comes in large chunks with huge capex involved. So anytime a new capacity comes in the excess of supplies over demand means pricing power is never in the hands of the suppliers. There is considerable risk

associated with the huge capex. If the costs spiral up during the period of excess supply then the manufacturers experience margin squeeze before stabilizing operations. Further if the capex is largely debt funded, high interest costs (dictated by domestic inflation or Rupee depreciation) have a huge negative impact on cash flow. All this means investments by the industry in anticipation of growth, can and do turn out to be high risk affairs when growth slows down or costs don't behave the way they were anticipated.

3. Competition:

The Industry is highly competitive – in terms of marketing, distribution, service, tapping far off markets – on all counts both in the domestic market as well as in exports.

However the Industry suffers from unfair competition from overseas players in the form of imports at predatory prices at the commodity end. There is no level playing field – some of these imports come from countries which don't allow Indian glass to be exported into those countries, some come from locations where the costs are heavily subsidized and still others come from economies which are not market economies.

Also, due to low manufacturing cost structure, Chinese products are much cheaper than domestic products and in absence of inadequate import barriers industry is always under pressure to link prices to input cost increase. Glass industry is facing stiff competition from Chinese Products: As China is dumping its products in India; it is becoming difficult for domestic industries to survive. Increased imports of Chinese glass which is available at cheap rate and also offers a wide range of glass has caused difficulties for the glass industry.

4. Low demand of Indian glass in World Market:

India exhibits low glass container consumption in comparison to other countries: The per capita glass consumption in India is 1.8 kg, compared with 8-9 kg in developed countries and 27 kg in the US. In comparison to other countries, India's glass consumption is low and therefore needs to be promoted for glass industry to foster growth. The promotion of glass through various campaigns which

signifies the purity and its environment friendly nature for the society is one of the ways to combat challenges faced by the glass industry.

5. Growing alternatives of glass in India:

Growing alternatives of glass has adversely affected the glass packaging industry. A number of alternatives of glass are now available in the market at a lower cost, so people mostly prefer those which adversely affect the glass industry. But with the key properties such as inertness, transparency, recyclability etc. glass will overcome the issues of fragility and bulkiness which will enable the consumer to satisfy their changing needs.

6. Awareness of Glass as eco-friendly building material or packaging solution:

Recyclability of product and sustainable energy are two benefits of glass for which the awareness among people needs to be created. Glass is one such construction material which is 100% recyclable compared to brick or concrete which is one of the biggest advantage to conserve natural resources. It contributes significantly to sustainable energy by using the right thin film coated glass products in façade or on windows. Lack of awareness among the people is another big challenge for the industry.

7. Packing and logistics:

Packing and logistics is one of the major challenges ahead for industry. Mostly flat glass is packed in wood due to its fragile nature or supplied loose. Packaging depends on logistic infrastructure and resources at the user end. Due to bad roads and traditional quality of vehicles used for transportation, delivering loose glass without breakage is difficult. Since wood depletes our forest reserves, highly detrimental for environmental and ecological balance, use of it in packaging defeats the advantage of product itself is being eco-friendly. So logistic infrastructure development to transport glass loose is to be looked in to deeply.

8. Unfavorable Duty Structure:

Imports allowed without payment of CVD but there is an excise duty on domestic production of solar glass is another challenge. The basic import duty exemption given on imports long back is continued despite commencement of domestic production. Thus domestic manufacturers are subjected to unhealthy competition from imports.

6. SUGGESTIONS BY ASSOCHAM

1. Anti- Dumping Duty:

ASSOCHAM suggests that the government should increase the import duty on glass products and also take measure to keep a check on the glass products dumped by China in India. It is critical to protect industry from import from countries that have dominant advantage in input cost in energy, raw material and tax structure.

There is a limited amount of import of solar glass. However the domestic prices always remain under pressure due to threat of imports. A basic duty of at least 7.50% must be imposed on the imports of Solar glass to provide level playing field to domestic industry. Besides above there is huge amount of import of Photovoltaic modules taking place due to which the demand for components is exported. In order to curb such import of PV modules appropriate policy decisions on import duty/ADD must be taken and domestic content in the local manufacturing should be made compulsory. It needs to be imposed on UAE, Pakistan, Saudi Arabia. 100USD/Ton should be imposed on float glass imported from Middle East, Pakistan, Iran.

China exports via Middle East, Pakistan and Arabian Float, therefore the Anti-dumping duty on Chinese exports via:

a) Import duty rationalization for the input materials of exported item:-

i) Lowest slab of import duty for such input material. Reference can be taken from SION list.

ii) If the domestic sources are not able to provide the supplies for such material than in such cases, Anti-dumping / Safeguard duties should never be imposed.

b) Imposition of Anti-Dumping Duty on imported Clear Float Glass ITC (HS) code 70051090 of 2mm-12mm thickness, mainly imported from Saudi Arabia, Pakistan & UAE.

c) Removal of Anti-Dumping Duty on Soda Ash, which was imposed in July 2012.

2. Awareness about the benefits of glass:

As every ton of glass recycled saves 322KwH of energy, 246 kg of CO2 and 1.2 tonnes of virgin raw material, it helps in savings on waste transport and disposal costs, product packaged in glass denotes premiumness in terms of quality and care of the packaging of the product, and Glass reduces the quantity of waste to be treated or dumped. ASSOCHAM recommends that the people should be made aware about the benefits of using glass for various purposes by awareness campaigns etc.

Since, there is no programme for consumer awareness about various advantage of using glass. A joint effort by the Industry and Ministry for Energy Conservation is required to promote this eco-friendly product. Standardization of glass use in buildings should be promoted and awareness should be created about negative Environmental& Human Health Effects of Plastics.

3. Raw Materials: Soda Ash, Gas, etc:

Main components of glass manufacturing are high grade silica sand, soda ash, dolomite and energy. Most of them are coming from natural resource which should be controlled by clear policies from Ministry. CCI should have a close watch on cartelization to avoid price rise without transparency and reason.

Gas is like a basic raw material for glass industry. The small producers in glass industry have been categorized as priority sector along with power and fertilizers for pricing under Administered Price Mechanism (APM) mechanism. The proposed doubling of APM gas price will marginalize many of these plants and push them to closure causing huge losses to exchequer and unemployment. Therefore, ASSOCHAM suggests that the existing pricing to small consumers should continue.

4. Export Policy:

ASSOCHAM suggests that the incentives should be enhanced for competing with global pricing for viable export. The government should provide adequate incentive for exporters.

5. SUPPORT SOUGHT FROM:

I. ***Ministry of Commerce & Industry***

a) Imposition of basic import duty on solar tempered glass (coated or uncoated) to provide basic protection and level playing field with imports
b) Exempting domestic production of Solar Annealed and Tempered glass from basic excise duty since there is no excise on end product i.e. Solar PV Modules.
c) Imposition of ADD on import of Solar PV Modules.
d) Making domestic content necessary in local production of Solar PV Modules.
e) Removal of Anti-dumping duty on Soda Ash imports from all countries.
f) Imposition of anti-dumping duty on flat glass.

II. ***DIPP***

a) Control on Fuel Prices

III. ***Health Ministry***

a) Excessive use of plastic be controlled through legislation, Research and mass communication
b) Strict directives need to be issued to ban use of PET Bottles to arrest health hazards
c) The Public should be made conscious of the harmful effects of the contents packed in PET bottles

IV. ***Environment Ministry-***

a) Excessive use of plastic be controlled through legislation, Research and mass communication
b) Directives should be issued to protect ecosystem which is getting all habitats clogged with excess usage of synthetic waste used for packaging etc.

c) Policy corrections in solar glass investments that will save considerable foreign exchange outflow

6. Concession on Natural gas:

Glass is eco-friendly product and is highly energy intensive.

ASSOCHAM suggests that the Government should supply Natural Gas at concessional rate to boost its growth and need to be exempted from proposed gas price revision proposed by MOPNG. Besides this, Govt should continue to supply gas to all glass industry at APM price as all supplies from Isolated Fields of ONGC etc. and also to discontinue the pricing of gas in Dollar terms as APM Gas being supplied from domestic isolated fields.

About- ASSOCHAM

THE KNOWLEDGE CHAMBER

Evolution of Value Creator ASSOCHAM initiated its endeavor of value creation for Indian industry in 1920. It has witnessed upswings as well as upheaval of Indian Economy and contributed significantly by playing a catalytic role in shaping up the Trade, Commerce and Industrial environment of the country. The Chamber has 300 Chambers as members and represent over 4, 00,000 large, medium and small scale industrial units.

ASSOCHAM derives its strength from the following Promoter Chambers: Bombay Chamber of Commerce and Industry, Mumbai; Cochin Chamber of Commerce and Industry, Cochin; Indian Merchant's Chamber, Mumbai; The Madras Chamber of Commerce and Industry, Chennai; PHD Chamber of Commerce and Industry, New Delhi.

VISION

Empower Indian enterprise by inculcating knowledge that will be the catalyst of growth in the barrier less technology driven global market and help them upscale, align and emerge as formidable player in respective business segment.

MISSION

As representative organ of Corporate India, ASSOCHAM articulates the genuine, legitimate needs and interests of its members. Its mission is to impact the policy and legislative environment so as to foster balanced economic industrial and social development. We believe education, health, agriculture and environment to be the critical success factors.

GOALS

To ensure that the voice and concerns of ASSOCHAM are taken note of by policy makers and legislators. To be proactive on policy initiatives those are in consonance with our mission. To strengthen the network of relationships of national and internationallevels/forums. To develop learning organization, sensitive to the development needs and concerns of its members. To broad-base membership. Knowledge sets the pace for growth by exceeding the expectation, and blends the wisdom of the old with the needs of the present.

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