FICCI Representation on behalf of FMCG & Food Processing Industry

To BUREAU OF INDIAN STANDARDS (BIS)

On the Issue of Ban on Plastic Packaging

Reference to the recent notification in Hindustan Times dated 31st March 2015 and order by National Green Tribunal dated 3rd March 2015 regarding restricting the usage of plastic bottles and multi-layered plastic packages/ pet bottles by imposing a ban on use of such material for packaging of carbonated soft drink and for phasing out of the use of plastic polyethylene for all other non-essential items. FICCI believes that a larger stakeholder's consultation is required to understand the impact of imposing a restriction / ban on Plastic packaging. We desire to voice the concerns of the industry, consumer, environmentalist and other stakeholders' through this representation.

Background:

The FMCG sector is the fourth largest sector in the Indian Economy. Food Products is the leading category followed by Personal Care and these products are for mass consumption and serve to fulfil many daily necessities of people and are marketed and sold throughout the country including in rural areas. Packaging plays a crucial role in maintaining the original condition of the product and also safe and hygienic delivery of the products from the point of origin to consumers at affordable prices. Plastic is used worldwide as the optimal packaging material to achieve this purpose for a wide variety of products, especially food and personal care products.

The right selection of packaging materials and technologies is crucial in delivering quality products to consumers at affordable prices. Glass containers are inert and provide absolute barrier properties and metal containers are totally impervious to light, moisture, and air. However, such rigid containers made of glass or metal are unviable since they add significant costs, especially at lower price points and are also not suitable for all climatic conditions or for adaptation to diverse types of packaging as required for various fast moving consumer goods or for safe handling under various circumstances. Equally, paper and metal foil based standalone packaging is not an option since it does not provide the required chemical, biological & physical protection to the products they contain. While different types of plastics offer a wide range of barrier properties, the permeability of paper and metal foil, etc. is less optimal and does not afford adequate protection against micro-organisms, moisture etc. and cannot assure hygiene. The only way, therefore, to balance multiple types of barrier requirements with cost and pack sealability considerations is to combine thin layers or films of different packaging materials such as different plastics, metal foil and paper through processes such as co-extrusion or lamination to create multi-layered flexible packaging containing plastic layers. This is the best way to combine and leverage the functional properties of several materials simultaneously while keeping costs affordable.

Multi-layered flexible packaging is the most widely used material for food packaging, not only in India but globally, including Europe, the USA and Japan; and no country has banned their usage. A ban is not a solution as it would negatively impact the society at large and the industry.

FICCI submits that the real issue relates to the collection, handling and management of waste and this core issue would persist irrespective of the nature of the packaging material of products, be that glass, metal, paper or plastic, unless the regulations relating to waste management are enforced effectively through a collective effort of the municipal bodies and the industry.

It is further submitted in the context of plastic usage, that the proper implementation of the Plastics Waste (Management and Handling Rules), 2011 under the Environment Protection Act, 1986 regulating the use of plastics and disposal of plastic waste would resolve the situation relating to plastic waste management to a great extent. Various developed nations such as USA, Germany, UK, Australia, New Zealand have developed efficient systems to manage plastic waste in line with the European Union of Waste Framework Directive which emphasises on the segregation of different types of waste, recovery and recycling of waste and specifically for plastic, currently sets a minimum plastic waste collection target of 50% for household waste and 70% for building and construction waste.

Arguments in favour of Plastic Packaging:

1. It is found that no Expert Committee has ever recommended the ban on usage of plastic for packaging. The last report of the expert committee set up by the Ministry of Environment to examine the comments on the draft of the Plastic (Manufacture, Usage and Waste Management) Rules 2009, which was issued in October 2010, does not recommend ban on multi-layered plastic pouches and sachets. The report captures the deliberation and consideration of all aspects, i.e. safety concerns, environmental impact, collection, recycling. Also **The Khwaja Committee Report** has not recommended any ban on plastic packaging but only identified plastic waste disposal, recycling and management as an area of improvement.

2. Further, Plastic by itself is a chemically inert substance which does not pose health risk. In fact, the Food Safety and Standards (Licensing and Registration of Food Business) Regulations, 2011 under the Food Safety and Standards Act, 2006 specifically require food grade packaging material to be used for primary packaging i.e. where the food comes in direct contact with packaging material and specifies plastics of particular standards for this purpose. The Food Safety and Standards (Packaging and Labelling) Regulations, 2011 provides for mandatory standards for plastic material to be used in packing or storing of food articles including various standards issued by the Bureau of Indian Standards ("BIS"). For example, IS 10171: 1999 (reaffirmed 2010) viz. the Guide on Suitability of Plastics for Food Packaging issued by BIS specifies each particular type of plastic that can be used for packaging each food product including biscuits, fruit juices, carbonated beverages, chocolates, sweets, etc. All plastic complying with the listed IS standards issued by the BIS are considered safe for packaging of food and therefore also of cosmetic or personal care products.

3. In fact, amongst the available packaging options like paper, glass, wood etc., plastics is the one option with least carbon footprint and involves least usage of energy and raw materials in manufacturing. Plastic is a convenient mode of packaging which is cost effective and is easy to handle. It has a higher ratio of strength: weight and the manufacturing process of plastic as well as transportation saves significant amount of energy and produces lesser rate of greenhouse gas emissions as established by various scientific studies.

4. As there is no better alternative to address the issue of plastic wastes, an overarching ban over plastic packaging, PET, multilayer packaging laminates, etc. without the availability of a better alternative would be unreasonable and unjustified resulting in commercial impossibility of implementation.

5. In today's time, it is not feasible to completely replace the use of plastic in packaging as there is no techno-commercial alternative to ensure consumer safety and quality expectations in the product shelf life or to ensure distribution to consumers in various parts of the country under a wide variety of climatic conditions at optimal prices.

6. Plastic packaging, including multi layered packaging, multilayer packaging laminates, PET, etc. has played a very important role in enhancing the quality of life of the people using such products.

7. The benefits of plastic packaging are being reaped by industry as well consumers and such generalization of the impact of different plastic packaging and any restriction / prohibition will affect the public at large as most of the items used daily by the consumers are packed in plastic.

8. Use of plastic in packaging, apart from the environmental benefits, also allows cost effectiveness and flexibility, resulting in huge societal advantages reaped by the consumers and public at large. The relative advantages and practicality of smaller pack sizes of product is possible only

due to plastics packaging which is convenient not only to consumers but also to traders/retailers/shopkeepers.

9. Presently in India the availability, reliability & approachability of glass bottles manufacturers is also a concern along with the breakability losses associated with it in plant & logistics.

FICCI Recommendations:

1. The need of the hour is the management of the solid waste, including Plastic Waste in an efficient manner - The presence of plastic in the environment should not be an indictment on plastic itself. It is rather the poor waste management process in this country which needs to be addressed instead of banning use of plastics. It is essentially using improper processes for burning of waste containing plastic that is the cause for release of harmful "air pollutants" and not the plastic itself.

2. There is a need to minimize the environmental impact caused by discarded packaging materials through improved waste management & disposal strategies leading to waste segregation and recycling. If the required discipline & infrastructure are created, plastics can be easily recycled at the municipal level itself. This will require all the stakeholders – government, civil society, consumers, manufacturers, plastic processors and waste disposal contractors to play their part.

3. In addition, further scientific studies are required to comprehensively understand the environmental impact of various materials from production to disposal, incorporating issues such as material use, energy consumption, waste generation and sustainability. This will help develop guidelines on packaging materials that satisfy industry requirements and consumer needs while maintaining food safety and minimizing environmental impact.

The Indian FMCG and Food Processing Industry will actualize their potential as a key sector driving growth of the Indian economy, if they continue to rapidly build efficiency and scale in linking manufacturers with consumers, assisted by millions of people employed in production, logistics and retail. The ability to leverage the advantages of multi-layered flexible packaging materials will be crucial in this endeavour. Equally, there is a need to minimize the impact of packaging waste on the environment by creating guidelines on prudent selection of materials and improved waste management through joint efforts by industry, government, and consumers

Annexure I:

Some Case Studies to support FICCI Representation

Case Study I: Plastic Pouch vis-à-vis Glass Bottle for 'Milk' Packaging

The study discloses that for production plastics pouches for packaging of one lakh liters of milk, the plastics raw material required is only 0.40 MT (Table I). But for Packaging same quantity of milk with glass bottles, the raw material required is 45.4 MT of glass.

The emission of CO2 for both the material has approximately the same profile. However, the analysis of inputs effect indicat\s remarkably high CH4 emission in case of production of glass. The comparative study on emission during transportation also shows significantly excess generation of CO, CO2 and NOX as compared to that in case of plastic pouches (Table II (a) and II (b)

Table I: Life Cycle Analysis for Packaging One Lakh Liters of "Milk"

	Glass		**Plastic Pouch**	
Material Required (Mt)	45.4		0.4	
	Energy*	**water***	**Energy***	**water***
Phase I : Production of Raw Material	671.92	1608	32.22	25.6
Phase II : Production of Bottles/ Pouches	530.27		4.56	
Total	1202.19	1608	36.78	25.6

	Glass		**Plastic pouch**	
Phase III: filling and Distribution	**Fuel***	**Energy***	**Fuel***	**Energy Single (Return)***
	2049	114.75 [213.43]	1120	62.73 [106.64]

Phase IV: Waste Management	**Glass**	**Plastic Pouch**
Recycling percentage	**Energy Consumption***	**Energy Consumption***
100%	501.67	4.56
80%	401.34	3.65
60%	301	2.74
50%	250.83	2.28

Reuse (Including Transportation)	Energy* Consumption	Water* Consumption	Energy *Consumption	Water* Consumption
95%	277.8	509.1	143.3 (New Plastic Pouches)	25.6 (New Plastic Pouches)
80%	457.5	675.4		
60%	697	897.2		
Incineration	Energy Recovered*		Energy Recovered*	
100%	Not Applicable		20.73	
80%			16.58	

Units Energy (GJ), water (thousand Liters), Fuel (Liters)

Case Study II: Plastic Bag vis-à-vis Jute Bag for 'Atta' Packaging

The study discloses that for producing packaging with plastic film bags for one lakh of "atta", the raw material required for packaging is only 680 MT (Table III). But for the same quantity of packaging with jute bags require 1960 MT of packaging material.

Jute cultivation (Phase I) of jute involves absorption of CO2 from the atmosphere but jute bag production (phase II) involves emission of CO2 as shown in table IV (a). The benefit of phase I is lost during the transportation phase, where excess weight leads to consumption of excess fuel resulting in severe atmospheric pollution. The emission of CO2 for plastics film bags are higher in phase I but leads to overall less CO2 emission because its light weight during transportation Phase (Table IV b). The analysis of input effects indicates remarkably high emission of CH4 emission in case of production of jute. The comparative study on emission during transportation also shows significantly excess generation of CO, CO2 and NOX in case of jute bags as compared to that in case of plastic film bags.

Table III: Life Cycle Analysis for Packaging One Lakh ton of "Atta"

	Jute Bags		**Plastic Film Bags**	
Material Required (Mt)	1960		680	
	Energy* (thousand GJ)	**Water* (thousand GJ)**	**Energy* (thousand GJ)**	**Water* (thousand GJ)**
Phase I : Production of Raw Material	21.5	1677	38.36	264
Phase II : Production of Bags and Liners	47.19	1506	24.22	296
Total	68.69	3183	62.58	560

	Jute Bag		Plastic Film Bags	
Phase III: Distribution	**fuel (Tons)**	**Energy (GJ)**	**Fuel**	**Energy**
	4663	261.29	Taken as basis	

Phase IV: Waste Management	**Jute Bags**	**Plastic Film Bags**
Recycling percentage	Energy Saving	Energy Saving (thousand GJ/680 ton)
100%	Not Applicable	17.2
80%		13.76
Incineration	Energy Recovered	Energy Recovered (thousand GJ/680 ton)
100%	Not Applicable	35.24
80%		28.12

Phase IV: Waste Management	**Tin**	**HDPE Film Bags**
Recycling percentage	Energy Saving (Thousand GJ/86207 ton)	Energy Saving (thousand GJ/63218 ton)
100%	1602.58	1620.28
80%	1282.06	1296.29
Incineration	**Energy Recovered**	**Energy Recovered (thousand GJ/680 ton)**
100%	Not Applicable	3276.61
80%		2621.29

Case Study III: Plastic can vis-à-vis Tin Can for 'Lube oil' Packaging

The study discloses that for producing packaging with plastic cans for one million tons of 'Lube Oil', the raw material required for packaging is 63,218 MT (Table V). But for the same quantity of packaging with tin cans require 86,207 MT of packaging material.

During the transportation phase excess weight of the tin cans leads to consumption of excess fuel resulting in server atmospheric pollution. The emission of CO2 for plastics cans is higher in phase I (table VI (a) but leads to overall less CO2 emission because of its light weight during the transportation phase. The analysis of input effects indicates remarkably high emission of CH4 in case of production of tin. The comparative study on emission during transportation shows significantly excess generation of CO, CO2 and NOX in case of tin cans as compared to that in case of plastic can (table VI (b)).

Table V: Cycle data for different Materials used for packaging one million ton of “Lube Oil”

	Tin cans	**HDPE cans**
Material Required (Mt)	86207	63218
	Energy* (Thousand GJ)	**Energy* (Thousand GJ)**
Phase I : Production of Raw Material	3846.02	5052.87
Phase II : Production of Cans and liners	3638.54	1472.99
Total	7484.55	6525.86

	Tin cans		**HDPE film Bags**	
Phase III: Distribution	**fuel (Tons)**	**Energy (GJ)**	**Fuel**	**Energy**
	83770.49	4691.1	Taken as basis	

Phase IV: Waste Management	**Tin**	**HDPE Film Bags**
Recycling percentage	Energy Saving (Thousand GJ/86207 ton)	Energy Saving (thousand GJ/63218 ton)
100%	1602.58	1620.28
80%	1282.06	1296.29
Incineration	**Energy Recovered**	**Energy Recovered (thousand GJ/680 ton)**
100%	Not Applicable	3276.61
80%		2621.29