



INDIAN FOAM SECTOR HCFC PHASE OUT

**“Launching of Roadmap”
6th October 2009**

**Presented By: Mukesh Bhuta
Vice Chairman – IPUA**

HCFC Phase Out: Background

- ❖ At the time of CFCs phase out all SMEs and many large scale enterprises adopted HCFC 141b technology as it was well proven and easily adoptable though it was a transitory blowing agent.
- ❖ Now foam industry is again faced with a challenge to phase out HCFC blowing agents which is more difficult to do so as compared to 1st phase out of CFCs. General perception of foam industry however is to switch over to long term blowing agents where industry will not have to go to 3rd phase out process.
- ❖ This is possible only by adopting technologies using long term blowing agents, which has zero ODP and very low or no GWP. Though few alternative blowing agents are available which can meet the above criteria they need to be looked at very carefully before adopting the same as either they pose safety and fire hazards or they are too expensive. Also in some cases technologies in India still needs to be demonstrated successfully.

Alternative Blowing Agents: Environmental Characteristics

Blowing Agents	ODP	GWP	VOC
HCFC 141b	0.1	630	NO
HCFC 22	0.05	1700	NO
HCFC 124	0.02	480	NO
HCFC 142b	0.06	2000	NO
HFC 134a	0	1300	NO
HFC 245fa	0	1040	NO
HFC 365mfc	0	794	Not Reported
Hydro Carbons	0	11	YES
Methyl Formate	0	0	NO

From this table you can see many HFCs are good blowing agent with zero ODP however has high GWP.

Sub Sector Wise HCFCs Phase Out Scenario:

<u>Sub Sector</u>	<u>Enterprise Size</u>	<u>No. of Units using HCFCs</u>	<u>ODS Consumption</u>		<u>Alternative Blowing Agents</u>		<u>Technology under demonstration</u>		<u>Technology under development</u>
			<u>2009</u>	<u>2010</u>	<u>Proceed No or Low GWP</u>	<u>Proceed High GWP</u>	<u>No or Low GWP</u>	<u>High GWP</u>	
Integral Skin Foam		20-25	175	200	nPentane Methyl Formate Water	-	-	-	
Domestic Refrigeration	Large Scale	7	1250	1375	Cyclopentane	-	-	-	
Continuous Panel		2-3	300	400	nPentane	-	-	-	
Commercial Refrigeration	Large to Medium Scale	15-20	1325	1500	Hydro Carbons	134a	Methyl Formate	245fa 365mfc	
Discontinuous Panel									
Commercial Refrigeration	SMEs	100-125	1350	1450	Water	134a	Methyl Formate	245fa 365mfc	
Discontinuous Panel									
Thermoware	SMEs	140-150	500	550	Water Hydro Carbons	134a	Methyl Formate	245fa 365mfc	
General Insulation / Spray									

Sub Sector Wise HCFCs Phase Out Scenario Summary:

- ❖ **Promote 100% HCFCs phase out from Integral skin foam to begin from 2012 or early as technology is well established and not very critical.**

Total HCFC phase out volume: 200

- ❖ **Advocate atleast 50 - 100% HCFCs phase out from Domestic Refrigeration and 100% phase out from Continuous Panel industry.**

Total HCFC phase out volume: 1050 to 1775

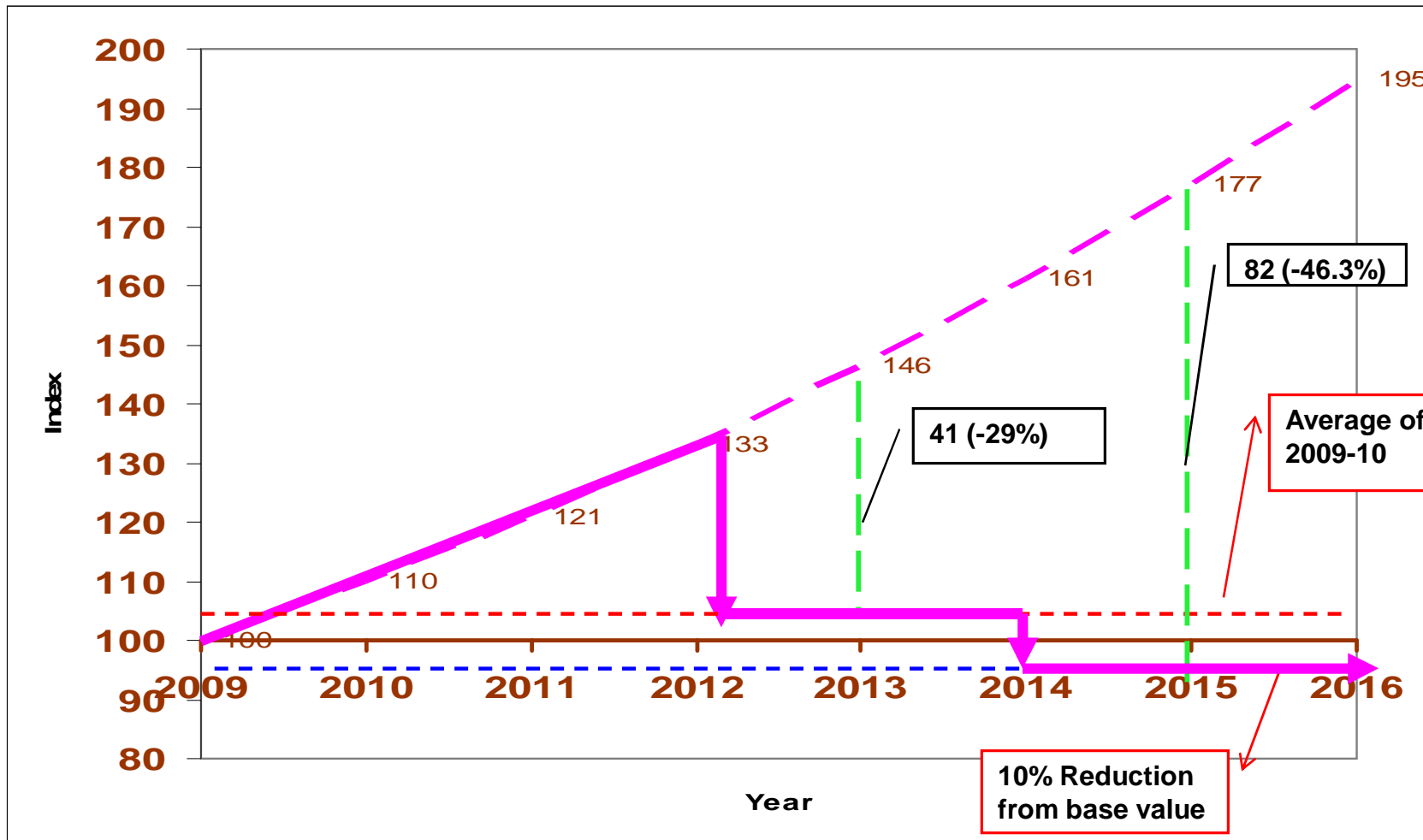
- ❖ **Encourage 50% HCFCs phase out from large scale Commercial Refrigeration and Discontinuous Panel industry.**

Total HCFC phase out volume: 750

- ❖ **Above phase out may be possibly accomplished between 2012 – 2014 and has potential to phase out atleast 2000 MT within this period.**

- ❖ **For SMEs actual phase out can begin only from 2015 or may be little later which can allow to adopt technologies under development (if any) without having much pressure on SMEs.**

HCFCs Consumption & Phase Out (2009-2016):



HCFCs Phase Out Approach:

The right approach for phase out of HCFCs from Indian foam sector can be as under:-

- ❖ Complete change over, for large enterprises, to long term blowing agents where technologies are already proven.
- ❖ Partial production can be changed to alternative blowing agent where HCFC 141b can be phased out stepwise over a period of time. This can be applicable to large to medium size companies.
- ❖ Use reduced HCFCs systems where mixture of HCFC 141b with other alternative blowing agent may be used which can allow cut down of HCFC 141b phase wise. This solution can be adopted for SMEs.
- ❖ Initiate demonstration projects at system houses for the use of long term blowing agents whose technologies needs to be established in context of Indian foam processors.
- ❖ The phase out programme must be dynamic and robust where any new generation blowing agents with zero ODP and very low GWP, which are under demonstration in developed countries can easily be adopted.

Need for Initial Awareness Programme:

Initial awareness programme for stakeholders is highly desired to inform them what is involved in HCFCs phase out from foams: -

- ❖ All the stakeholders must be given the detailed understanding of the advance dates of HCFCs phase out
- ❖ Provide brief information on building up of roadmap for HPMP
- ❖ Technical alternatives which are available presently or can be available in near future
- ❖ Funding from multilateral fund
- ❖ Role of implementing agencies
- ❖ Present government policies on ODS phase out

This can be done thru direct mailing, print media and 5-6 workshops. IPUA can play supporting role. From IPUA we have already started awareness thru IPUA quarterly magazine "Polyurethanes Today".

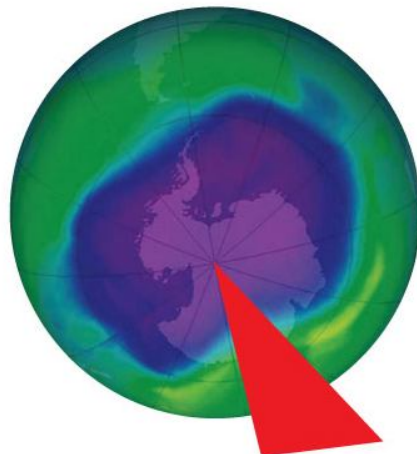
June – Sept' 09 Issue of IPUA Magazine:

VOLUME THREE • NUMBER TEN • SEPTEMBER 2009

Polyurethanes TODAY

AN INDIA MAGAZINE

HCFC Phase out Date Advanced: To Begin in 2015



Antarctica Ozone Hole

INSIDE
HCFC replacement
options from
Honeywell, Ecomate
and Huntsman

DOMESTIC NEWS
Union Budget 2009
- PU Industry Voice



Sector Expectations from ODS Policies:

- ❖ **Presently HCFCs is a controlled substance. Similarly polyol containing HCFCs should be brought under controlled substance category**
- ❖ **Explore possibility to simplify the advance license procedure for export of polyols containing HCFCs**
- ❖ **Policy to encourage setting up of new production units which can easily adopt alternative technologies using long term blowing agents though for a short term they can still use HCFCs.**
- ❖ **Policy to discourage setting up of new production units which are only based only on HCFCs technologies.**
- ❖ **Discourage import of polyols containing HCFCs by levying higher rate of duties on such products.**

A decorative graphic on the right side of the slide. It features a blue-tinted globe showing the Americas, overlaid with various data visualization elements like bar charts, a line graph, and a pie chart. The text 'Thank You For Your Attention' is centered over this graphic.

**Thank
You
For
Your
Attention**