

POPRC9 HBCD Side Event

A European Perspective

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What hasn't changed since COP-6?

- HBCD supply chain in Europe (FR producers, EPS and XPS raw material producers) accept the May 9th resolution on listing of HBCD as a POP with the need for Exemptions.
- Concern over timing and implementation of no recycling for HBCD containing foams.
- Liaising with regulators to address any issues relating to HBCD legislation
- Working with the supply chain to ensure a smooth transition from HBCD to an alternative within the time-frame of Exemption
- No new long-term sustainable alternatives for HBCD, other than those already identified.

What has changed since COP-6?

- First commercial sales of PS foam products containing the polymeric FR (pFR) in place of HBCD.
- Downstream push back on additional costs of pFR products during a difficult economic climate in the building and construction industry.
- Market consideration as how to meet identification requirements
- Growing concern about impact on an existing EPS recycling industry.

HBCD Alternative Time Line

- pFR has been identified as a sustainable alternative to HBCD. This is the only viable alternative identified so far.
- 3 companies (Great Lakes, ICL Industrial Products, Albemarle) are known to have taken out licences from Dow Chemical to manufacture the pFR
- All 3 have announced new capacities by 2015 to give in total ca. 30kt globally. This is insufficient to meet all global current HBCD use in PS foams.
- Today, Chemtura has one plant of stated 10kt nameplate capacity active. ICL has a small plant in NL which is currently being used to prove their product and are building a new facility in Israel. Albemarle are at a pilot stage and have yet to start construction.
-but, large engineering projects are often late: Chemtura was ca. 15-18 months behind schedule from their initial announcement.

Supply is not the only bottleneck.

- Only once plants have steady-state and consistent product can downstream raw material producers finalise their production.
- For each supplier and each user there is an iterative process to optimise product/process between FR producer and PS raw material manufacturer:
 - Plants trials need to be accommodated with on-going business
 - If there are no issues, then final testing can take ca. 3-6 months.
 - If there are issues this can take considerably longer.

What else can cause delay?

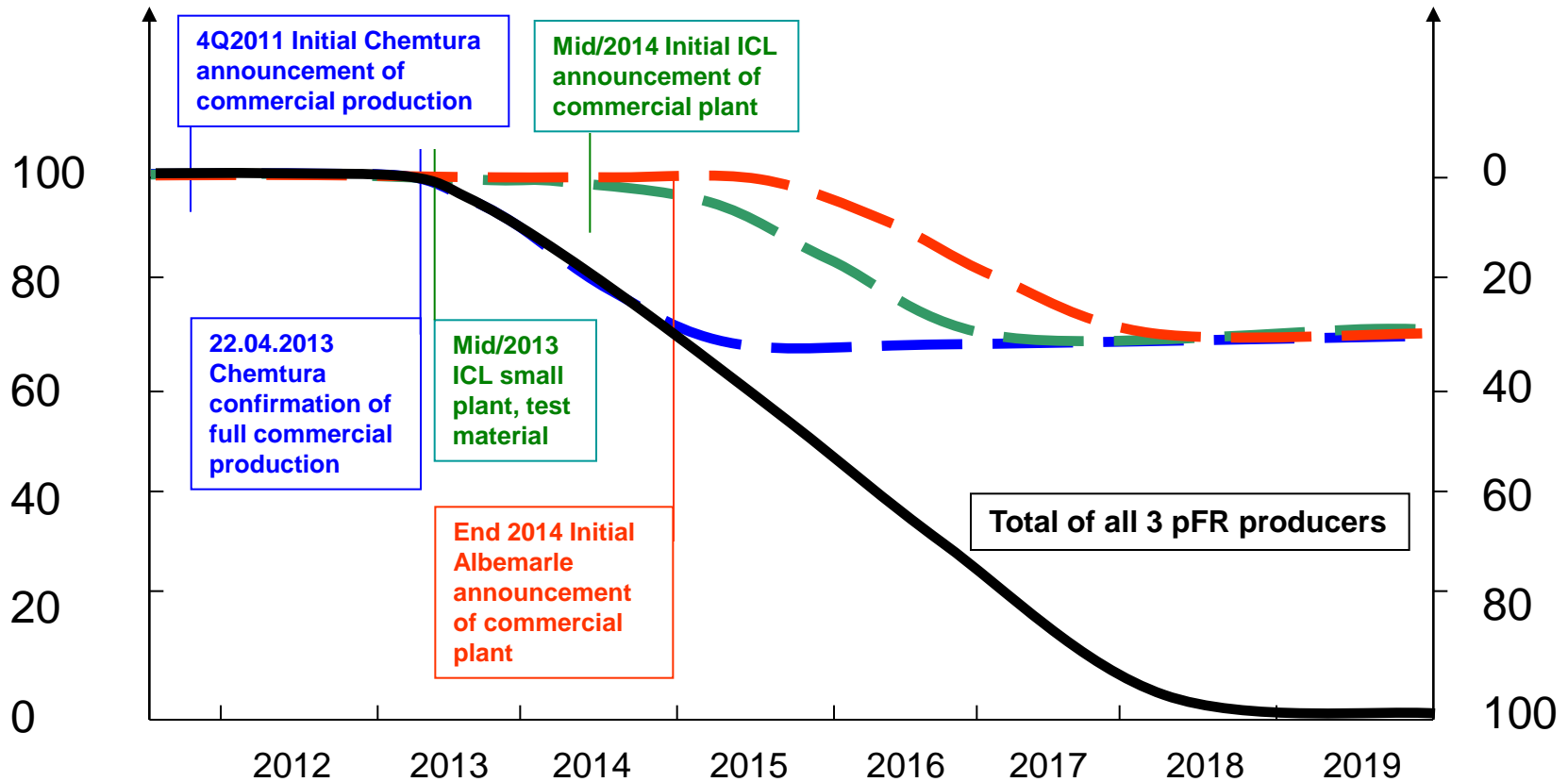
- Once the raw material producers have approved product then this can be finally approved by their customer, the converter. Again, this is needed for each supplier and each converter:
 - If there are no issues testing can take ca. 2 months
 - If there are issues this can take considerably longer (iterative process between raw material supplier and converter)
- Requirements for national/regional authorities:
 - German programme has taken 2 years.
 - Bottleneck on certified testing for fire performance (and other properties)
- The final foam product can only be used in the market when it meets certification requirements in each country.

The Ideal Introduction

(if everything goes smoothly)

Percentage HBCD

Percentage Alternative



What about other alternatives?

Substitution of a currently commercially available substance:

- Evaluate in-house for each grade (n x 3 months)
 - screening for technical performance
 - toxicity profile
 - business assessment on availabilities and costs
- Toxicity testing for REACH registration as needed (n x 12 months)
 - if testing and registration OK go to Commercialisation
 - if testing is not OK, repeat first step until a technically and HSE suitable alternative is found
- Commercialisation after certification in each country (3- 24 months)
 - e.g. 24 month programme for Germany

Total time ca. 18 months to more than 4 years

Summary

- European industry believes that we can convert away from HBCD given the 5 year Exemption period and product availability, but...
-if all the global PS foams industry depends upon pFR there will be insufficient FR to support a current and growing need for high quality insulation materials in buildings.
- We have not yet identified other long term, sustainable, alternatives for HBCD
- We need to agree the best method for identification of HBCD in PS foams
- Concern over the impact on the existing recycling industry