



Building a long term vision on Sustainability for the Vinyl Industry

Introduction

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Sustainability : What's that ?

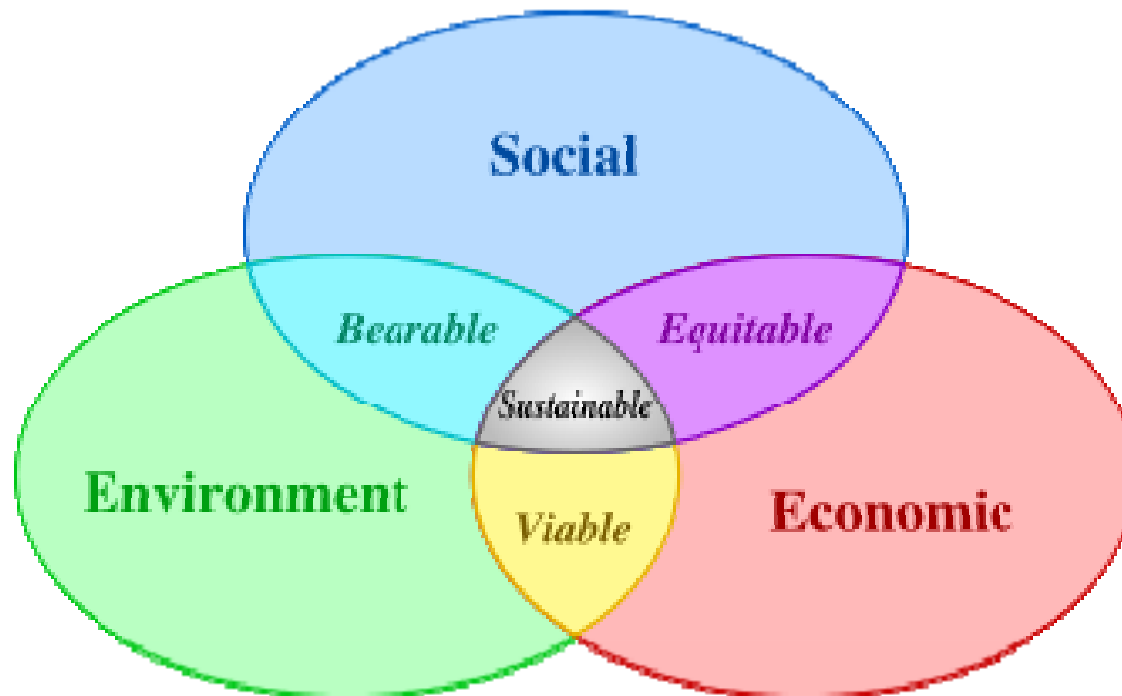
- In 1987, the World Commission on Environment and Development (the Brundtland Commission), agreed a definition of sustainable development that is now generally recognised as the standard: «Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.»
- **The Brundtland definition does not help a lot to answer the question !!!**

A lot of confusion between :

- **Implementation of best available technologies /techniques/practices (BAT/BAP)**
- **Step by step progress**
- **Continuous progress**
- **Responsible Care**
- **Productstewardship**
- **Voluntary Commitments /Agreements**
- **Substitution**
- **Ecolabels**

- **AND SUSTAINABILITY**

The key question : how to achieve this ?



The key questions for the PVC Industry

- **Climate change / CO2 emissions/Energy consumption**
- **Oil availability / Resources /Raw materials**
- **Emissions at production plant level**
- **Additives**
- **Waste management**
- **Producer responsibility (CSR) / Social responsibility (workers / consumers)**

Forecast 2050

- Do we have at global level a common understanding of what " sustainability " means / will mean for the PVC industry in 2050 ?
- Will the PVC industry be able to achieve " sustainability " in 2050 ?
- How ?

Climate change / Energy consumption / CO2 emission

- **Global warming: a threat or an opportunity for PVC ?**
- **Impact of PVC on climate, compared to alternatives (Ecoprofile issue)**
- **Energy sources (renewable ?)**
- **Durability of PVC products seen both as a strength (saving resources) and a threat (persistence in the environment)**

Oil availability / Resources /Raw materials

- 43% oil / 57 % chlorine, but energy consumption for chlorine production
- Carbon based raw material: coal, ethane, syngas, recycled material , renewables (e.g. corn, sugar cane, sugar beet, others...)
- Could there be a move of the industry to countries producing the agricultural raw materials?
- Chlorine from incineration?
- Connected environmental and energy balance compared to the current situation?
- Impact on climate and costs?

Emissions at production plant level

- **Ethylene versus acetylene process**
- **Potential for making acetylene process cleaner?**
- **Lowest emission levels achieved and achievable**
- **Toxicity of emissions, greenhouse gases emissions**
- **What is the longer term achievable reduction in energy and raw materials usage, compared to the theoretical minimum resulting from thermodynamics?**

Additives

- **Will tin additives face the same attacks as lead now?**
- **Which plasticisers in the future ?**
- **Should additives be determined with recycling in mind?**
- **Development of risk perception / acceptance, cost / benefit thinking?**

Waste management

- **Will PVC waste be a significant resource in the future ?**
- **What will be the impact of recycling on demand for virgin resin ?**
- **Can we imagine retrievable storage of PVC waste which cannot be recovered today?**
- **Should we design products specially for recycling?**
- **Will composites be hampered by the difficulty of recycling, or will technical progress allow recycling composites without major problems?**

Producer responsibility (CSR) / Social responsibility (workers / consumers)

- **PVC industry taking the lead and showing the way**
- **How to ensure jobs for our workers ?**
- **How to ensure customers needs and satisfaction ?**
- **Need for low cost technically good products (affordability).**

Future structure of the PVC industry

- **Less players ?**
- **Higher average production capacity ?**
- **Localisation ?**

Conclusion

- **Move to sustainability = a must and an opportunity to ensure the future of the business**
- **Need for a global understanding and a global approach, in order to avoid unbalanced development**
- **Global voluntary commitment to be envisaged**



Thank you for your attention