

**ECRN Chemicals and materials**  
**THE BIOBASED ECONOMY**  
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(Representing 50.000.000.000 Euro  
Turnover in The Netherlands)

# Vision 2030 // 2050

VNCl organized workshops with participants of all important stakeholders to come to a clear vision on what the (near) future will be or become for the chemical industry.

A full report , a summary and a scale-gas update is available through VNCl (website)

In the Netherlands there are a number of important regio's where chemical industry is clustered, apart from many individual companies located all over the country

# Limburg or “Mid-Europe”

- Regional chemical concentrations often find their origin in history ... like today you are present in a part of The Netherlands where – not even so long ago – the coal-mining industry had a strong base.... DSM
- Other Dutch regions are of course
  - - the area around Rotterdam (refining)
  - - the area in the Northern provinces where salt was a base ... AKZO
- Etc

# Limburg CLUSTER

- DSM has 100 year old roots ... mining : many different sometimes State-owned (De Staats Mijnen) , sometimes private owned CLUSTERED TO FORM DSM
- DSM: coal, gas, Syngas, ammonia, urea, caprolactam etc and now concentrating on life science (a transition which as business group director also starting venturing and the innovation centre, I was involved in ... REMAINS / LEFTOVERS / A SITE ... CHEMELOT

# BASE OF A CLUSTER

- feedstock
- location
- permits
- a site
- workforce
- know how
- market
- big player(s)
- supportive environment
- money (Nedinvest)etc

# VNCl and BBE

- The VNCl-members already in 2009 agreed to a realistic ambition of using in 2030, BIOMASS as 30% of their feedstock ...
- Molecules being the same in “Old Fossil” and “New (future) Fossil” , the chemical industry will be able to use existing “routes” and even existing installations to reach that ambition

# THE FEEDSTOCK AND ENERGY SHORTAGE ??????

- EVERY YEAR THE SUN “THROWS” 5.000.000 E-JOULES AS ENERGY ONTO THE EARTH
- EVERY YEAR HUMANITY USES 500 EJOULES
- EVERY YEAR IN THEORY THERE IS A GIGANTIC SURPLUS OF ENERGY
- EVERY YEAR HUMANITY HARDLY USES THE FREE AVAILABLE E – JOULES BUT CONTINUES TO USE FOR ENERGY AND FEEDSTOCK THE “OLD FOSSILS”

# THE CHEMICAL INDUSTRY AS IDEAL TRANSFORMER

- Being a big consumer of “old fossils” both in its need for energy but certainly in its need in feedstock, the chemical industry has a leading role in the feedstock and energy-transition process
- Transition is never “smooth” it is REVOLUTION
- THE DUTCH CHEMICAL INDUSTRY – NR 2 IN EUROPE - HAS REALIZED THAT IT SHOULD BE ONE OF THE STARTERS OF THAT REVOLUTION