



Lynas Corp. - Mt. Weld Mine

# Risiko-Management im Einkauf der BASF anhand des Beispiels der Seltenen Erden

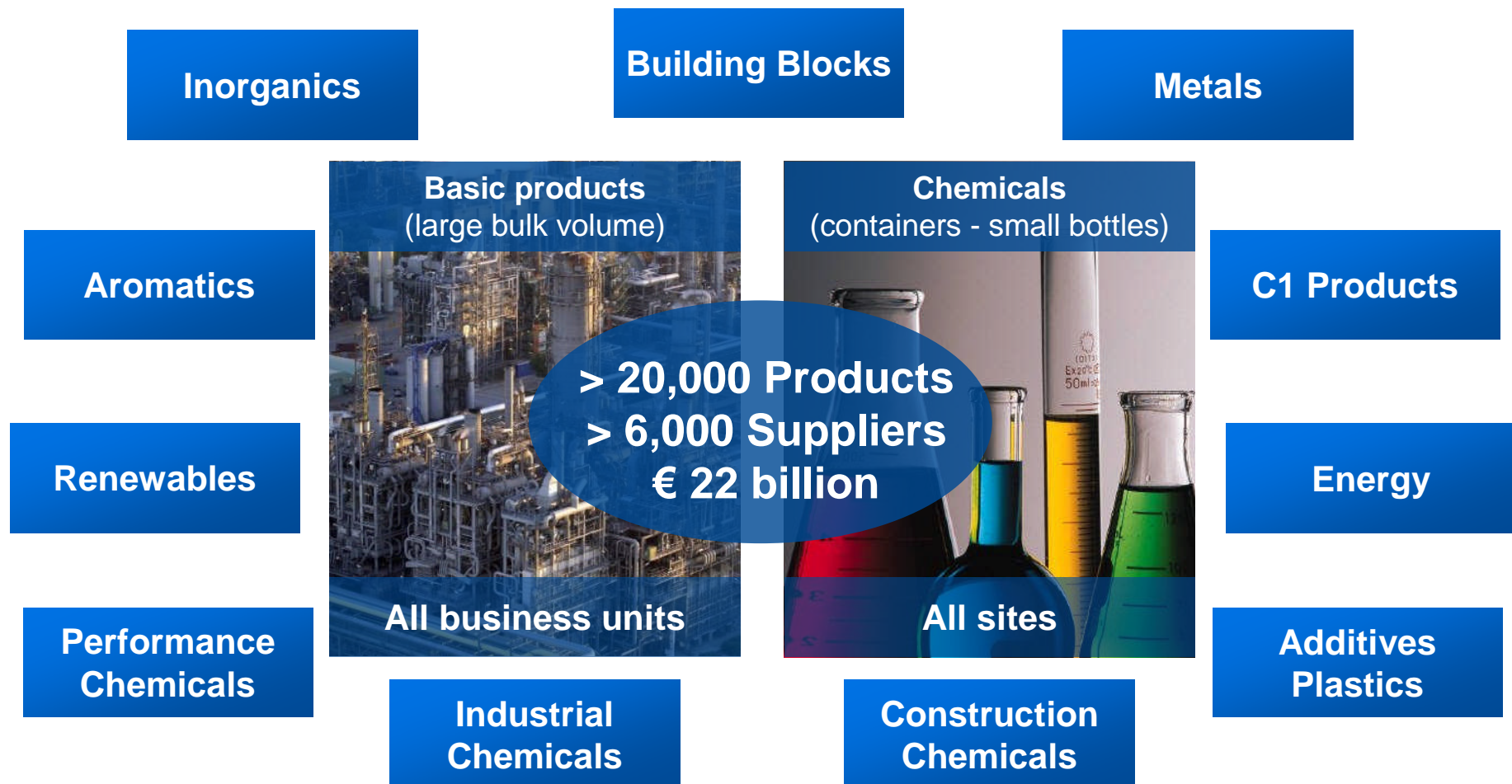
**Filipe Fünfgeld**

Head of Global Procurement Inorganics

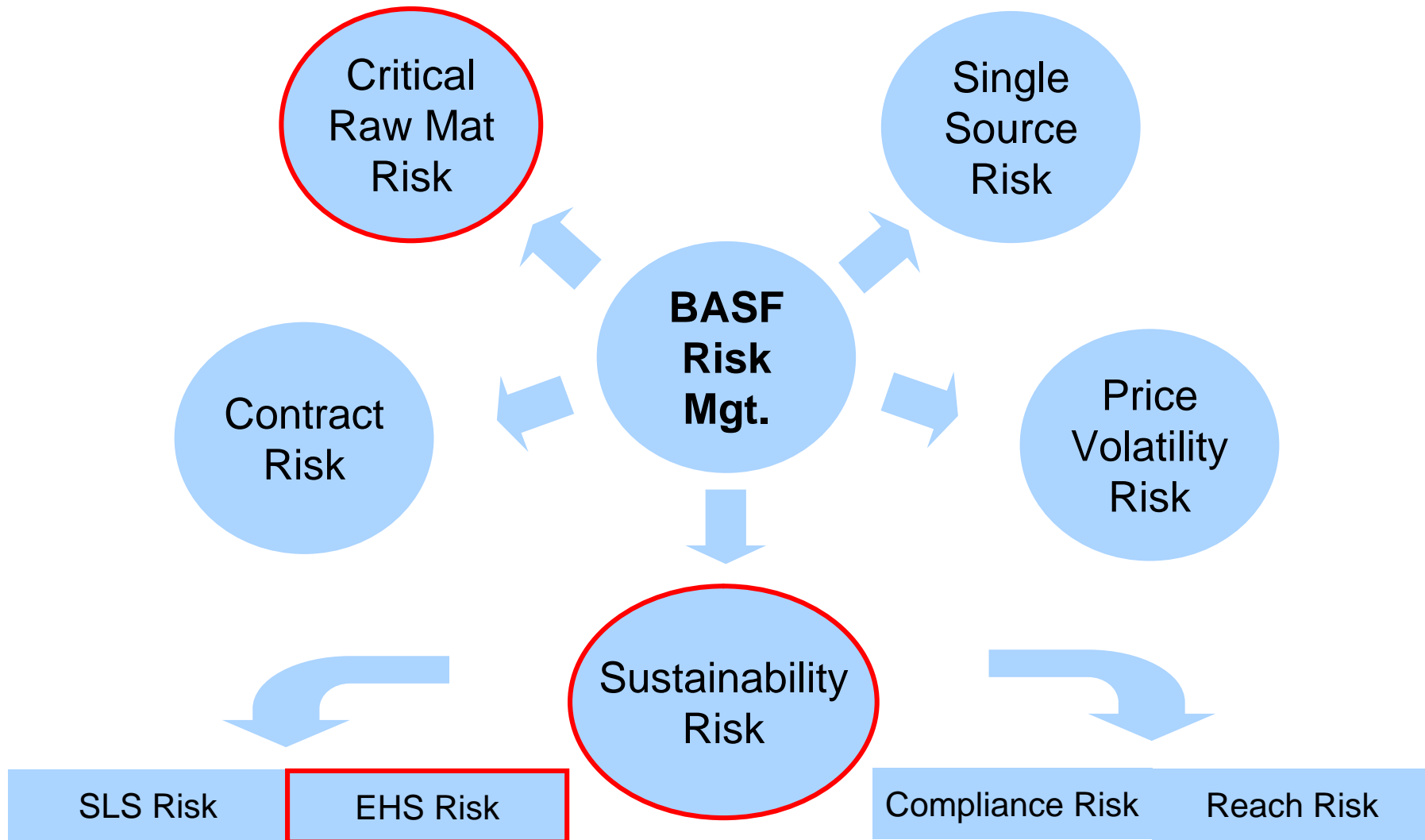
Oktober 2011

# BASF's Global Procurement Raw Materials

## What are we buying?



# BASF Risk Management in Procurement



# Critical Raw Materials – Early Warning Rare Earths

## Quantitative criteria

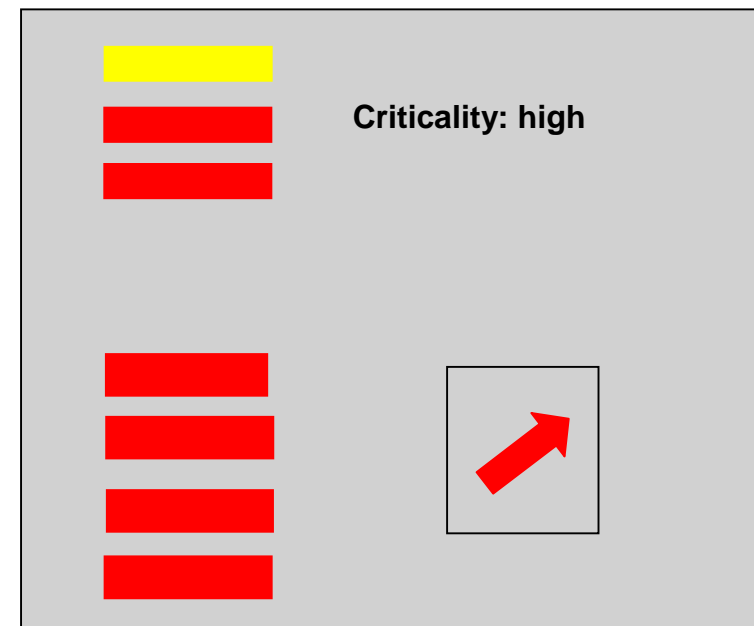
- |   |                       |   |
|---|-----------------------|---|
| 1 | Country risk          | → |
| 2 | Country concentration | → |
| 3 | Company concentration | → |

## Qualitative criteria

- |   |                                   |   |
|---|-----------------------------------|---|
| 4 | Supply / Demand (current & trend) | → |
| 5 | Non - Substitutability            | → |
| 6 | Protectionism                     | → |
| 7 | Future technologies               | → |

 high / problematic       middle / moderate       low / relaxed

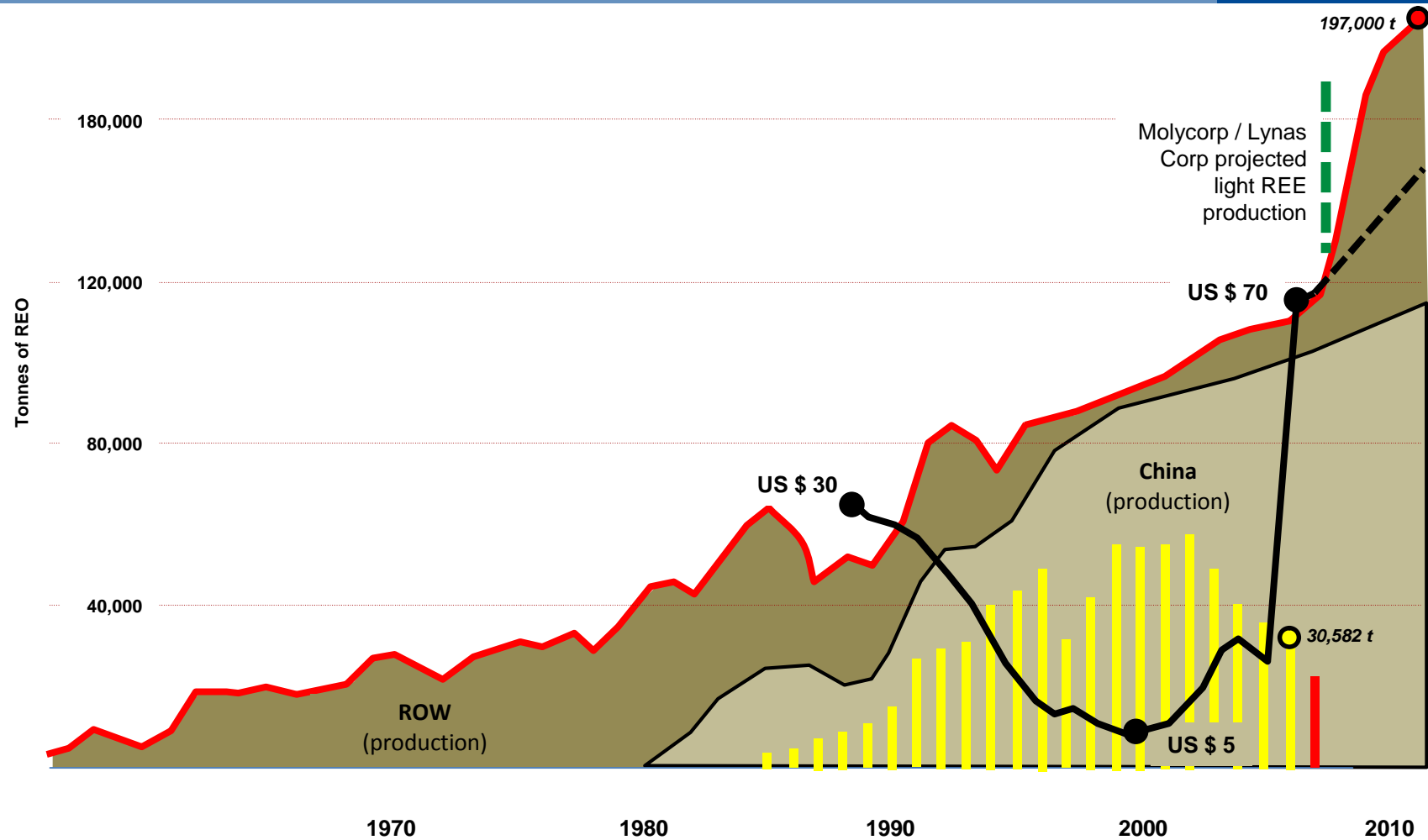
## Supply Risk - Index for Raw Materials (max score 9) – Example Rare Earths



- Action required: RETF was set up in September 2010
- Due date: Solution until June 2011

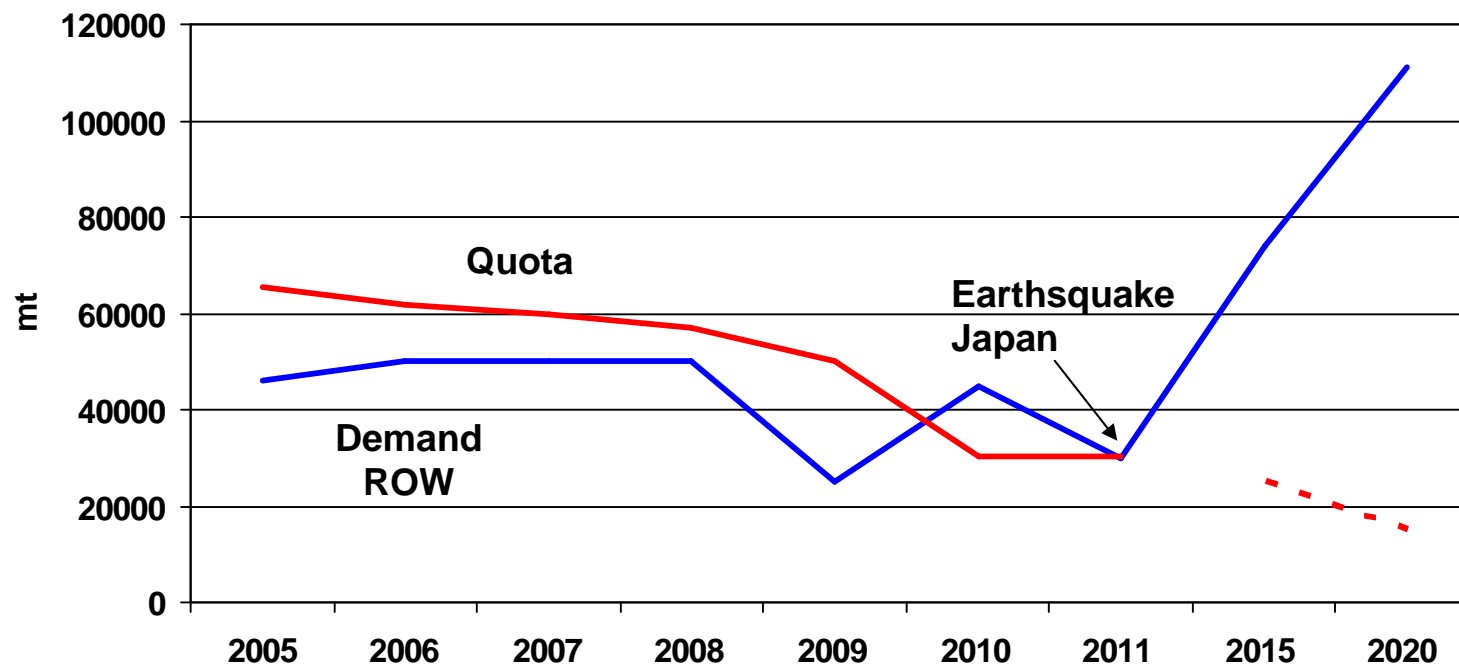
# Rare Earths Supply

## Did the development alert us?



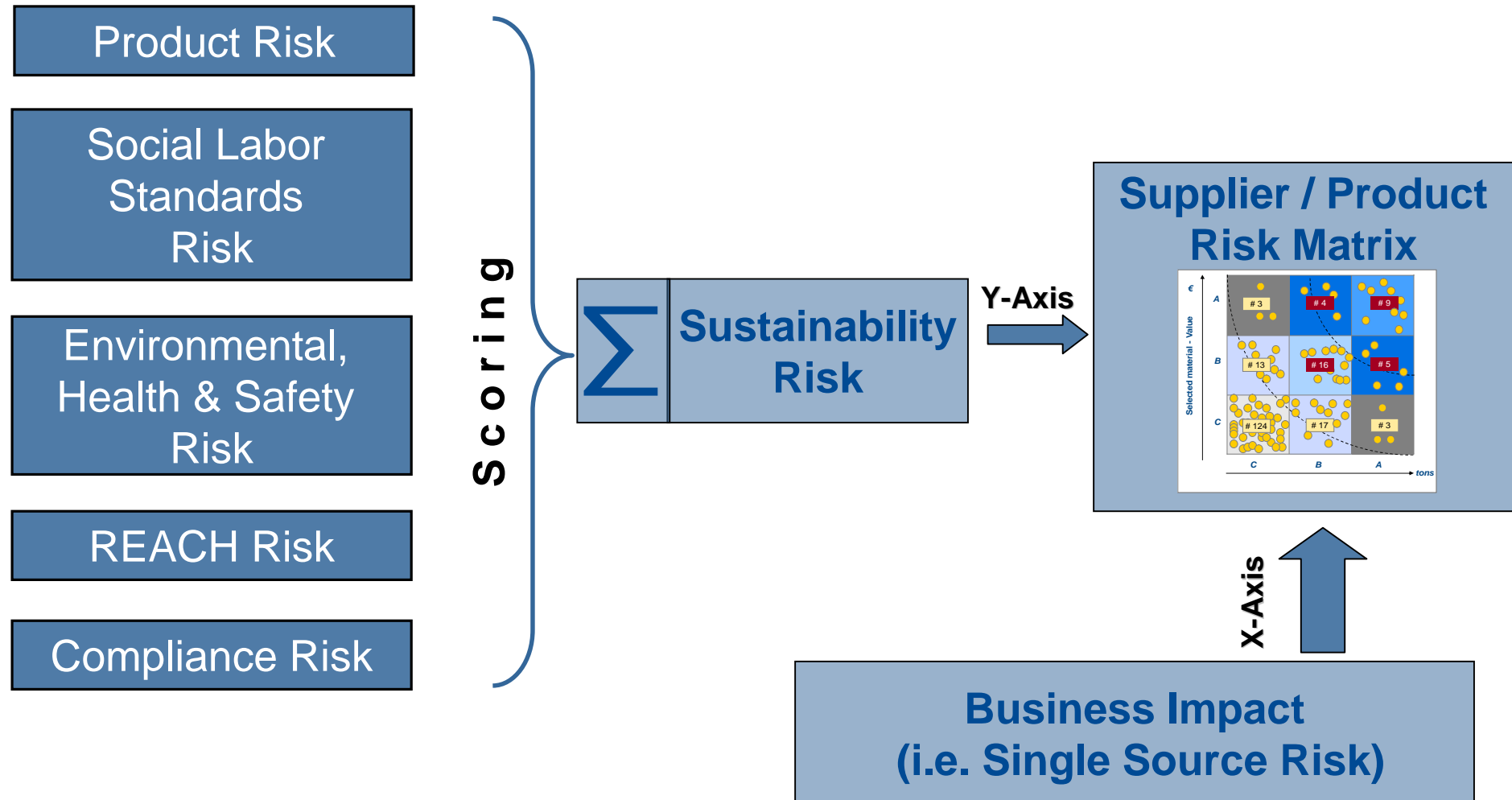
# Rare Earths Supply

## A amply quota over years reduced our attentiveness!



- China has more than 95% market share
- Chinese government cut export quota by mid 2010 resulting in shortage
- Prices sky-rocketed

# Sustainability Risks



# Sustainability Risks

## EHS – The burden of progress





## Environment, Health & Safety (EHS)

- Risk assessment based on product risk by hazard (to humans & environment) and country risk
- Supplier audits on-site, performed and tracked by local EHS experts
  - Advice on measures to be taken, time-line agreed for improvement
  - Follow-up and re-audit after 6 months
  - Pass or...



Disqualification of  
suppliers

Our suppliers comply with our **quality management requirements** and act in accordance with the **Principles of the Global Responsible Care®** initiative.

## **Risk Management**

### **Good reasons to thoroughly analyze risks**

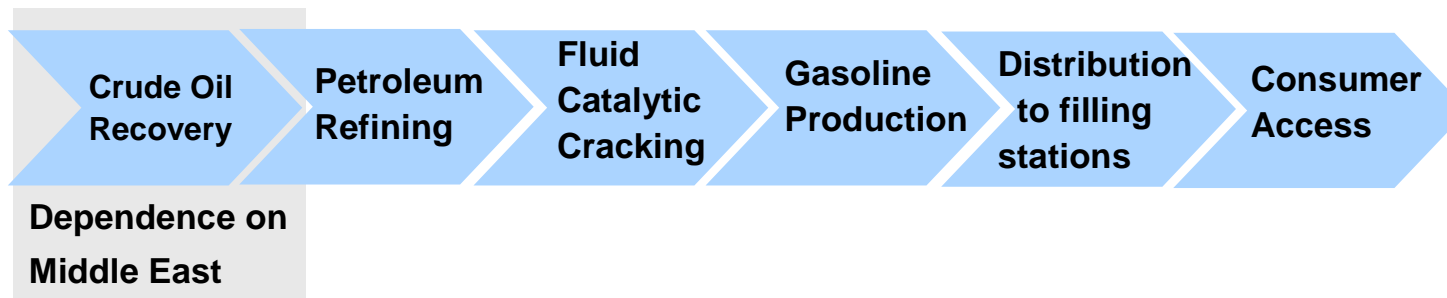


- 1. BASF has a high risk exposure because we directly spend ~1/3 of our turnover for raw materials.**
- 2. A capable Risk Management helped us to make profit even during the financial crisis.**
- 3. BASF Raw Materials Procurement implemented a comprehensive Risk Management system to be prepared for such uncertainties.**
- 4. Risk Management is an integral part of our procurement strategies which helps us to reduce unacceptable risks.**

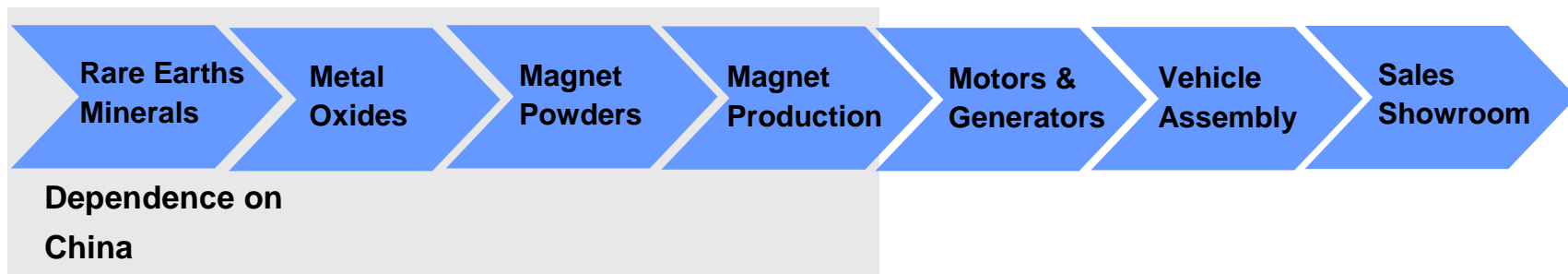
# Risk Management

## Limits of Risk Management

### Crude Oil Value Chain



### Rare Earths Value Chain

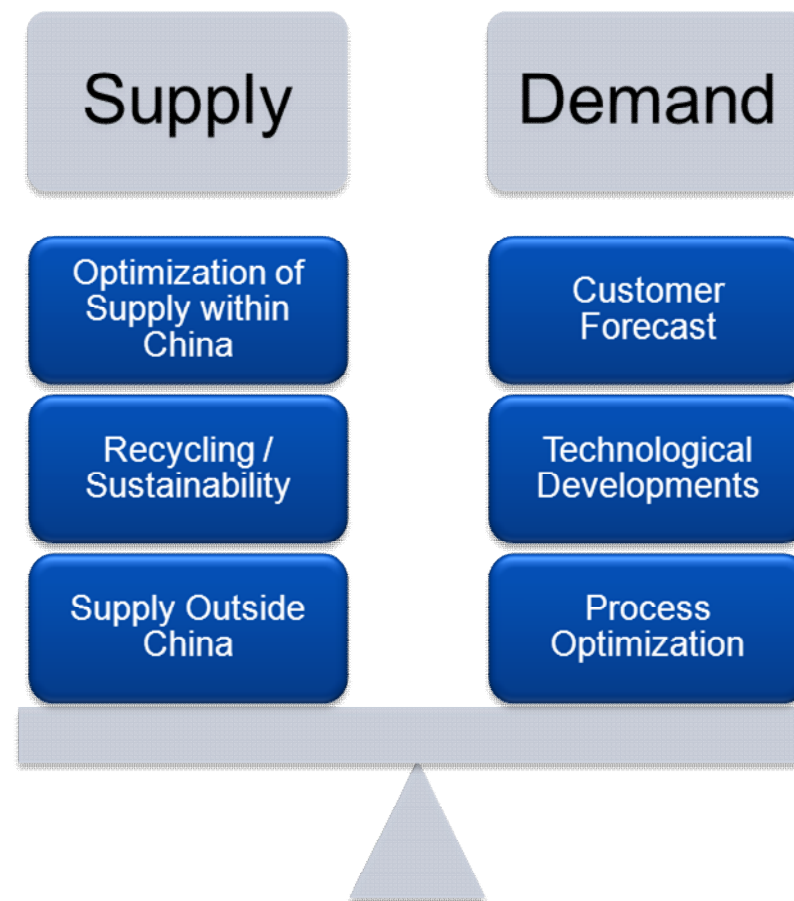


## Developing a sourcing strategy for Rare Earths Supply/demand balance 2020

	Global Balance	Chinese Balance	RoW Balance
Lanthanum			
Cerium			
Praesodymium			
Neodymium			
Samarium			
Europium			
Gadolinium			
Terbium			
Dysprosium			
Erbium			
Yttrium			

- There will be a battle for Dysprosium and Europium
- The Chinese will start buying some elements from outside China
- A relocation of production to China might not help to solve the problem

# Developing a sourcing strategy for Rare Earths



*A task force from all affected businesses analyzed short- and long-term options.*

# Rare Earths Sourcing Strategy





The Chemical Company