

Die Naturkraft aus Schweizer Stein



FLUMROC AG  
CH-8890 Flums

02.12.2014  
Dominic Hofstetter

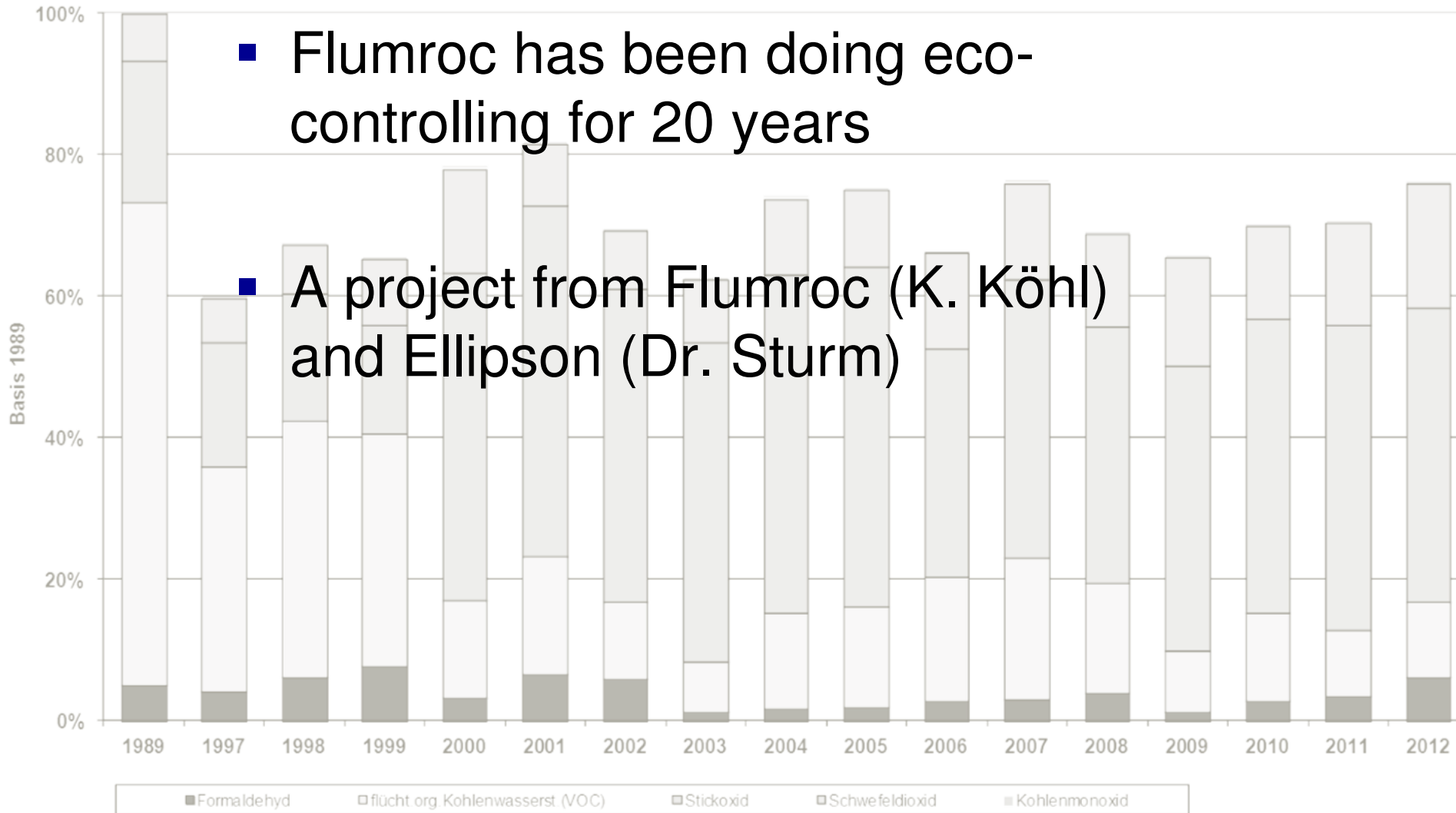


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- Flumroc has been doing eco-controlling for 20 years

- A project from Flumroc (K. Köhl) and Ellipson (Dr. Sturm)

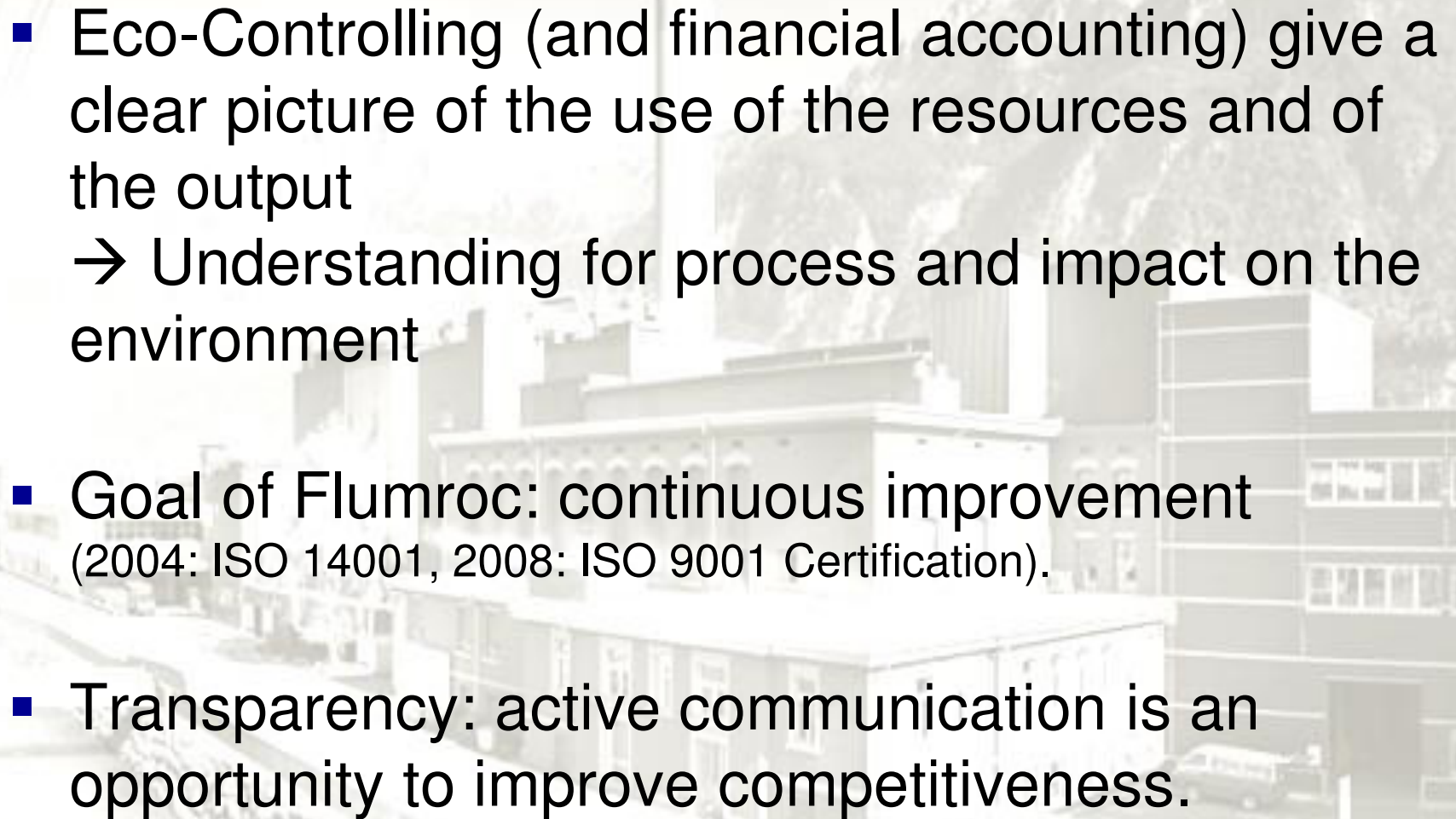




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# Motivation: Production Level



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- Eco-Controlling (and financial accounting) give a clear picture of the use of the resources and of the output  
→ Understanding for process and impact on the environment
  - Goal of Flumroc: continuous improvement (2004: ISO 14001, 2008: ISO 9001 Certification).
  - Transparency: active communication is an opportunity to improve competitiveness.



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# Motivation: Product Level



Insulation for the roof  
of the house, under the  
tiles or on the rafters.



Insulation for the exterior  
walls of the house, under  
the plaster or on the  
outside.



Insulation for the  
interior walls of the  
house.



Insulation for the  
basement walls of the  
house, under the  
plaster or on the  
outside.



Steinwolle  
Laine de pierre



FLUM ROC  
Steinwolle  
Laine de pierre



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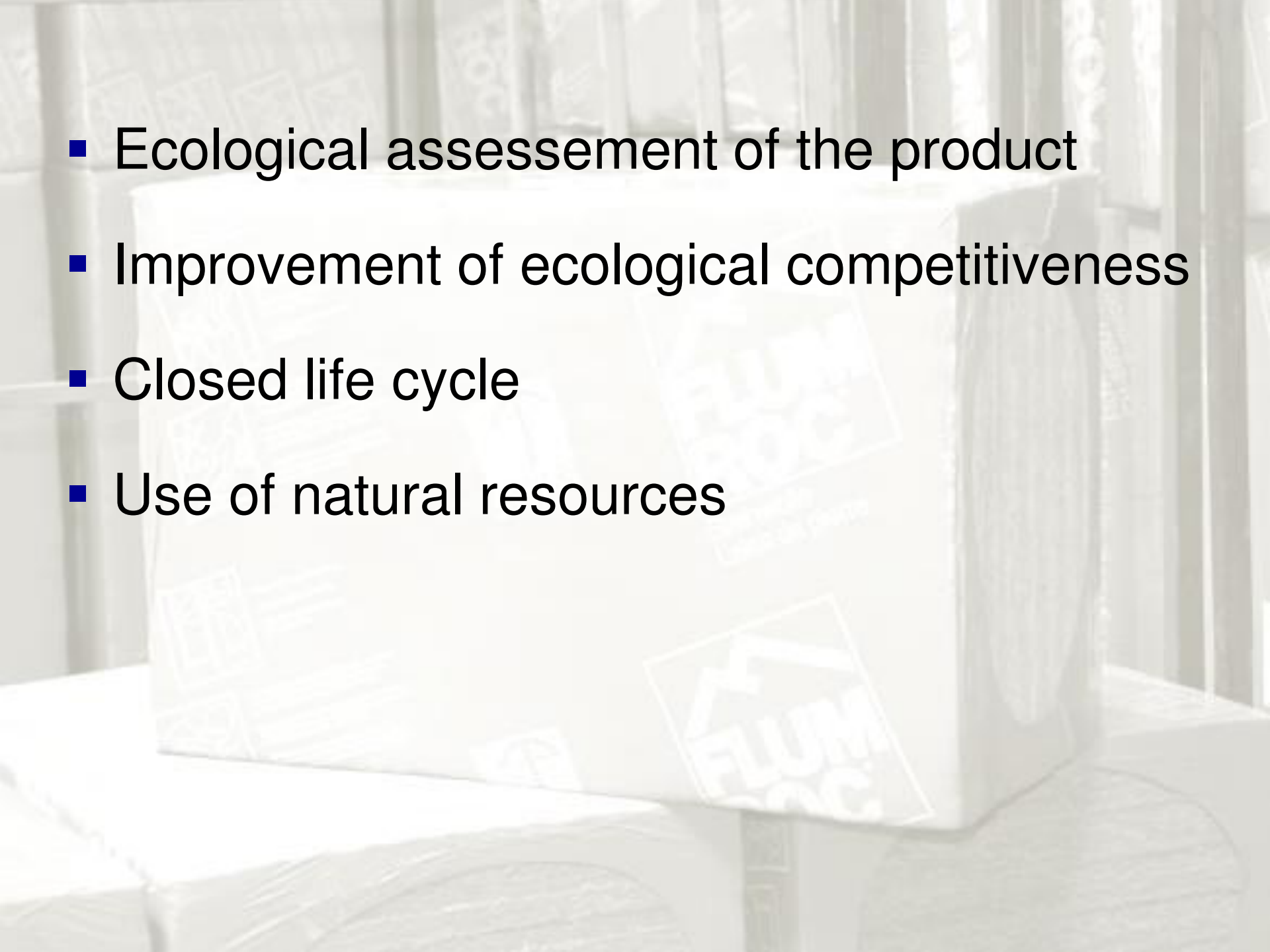
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- 
- Ecological assessment of the product
  - Improvement of ecological competitiveness
  - Closed life cycle
  - Use of natural resources





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# Tools & Results



# Flumroc-Eco-Controlling

(Excel-based)

- **Inventory Analysis**
- Material and energy flow
- Impact categories of the production process
- Environmental relevance of the categories



<b>Energetische Produktionsinputs</b>	<b>Bezeichnung</b>	<b>(kWh/Jahr)</b>
Fossile Energieträger	Koks	85'363'157
	Heizöl	0
	Dieselöl	678'982
	Propangas	0
	Erdgas	16'437'136
Regenerative Energietr.	Abfallholz	282'020
Energierückgewinnung	Fernwärmenetz extern	-2'526'068
Elektrische Energie	Elektrische Energie (UCPTE)	16'996'500

### **Stoffliche Produktionsoutputs**

<b>Gruppe</b>	<b>Bezeichnung</b>	<b>(kg/Jahr)</b>
Hauptprodukte	Mineralwolle (Platten/Matten)	55'838'291
	Mineralwolle (Feingranulat)	1'574'232
Nebenprodukte	Roheisen	1'911'000
Zwischenprodukte	Zwischenprodukte	
Abprodukte	Haushaltsmüll (KVA)	84'000
	Flüssige Chemikalien	0
	Lösungsmittelhaltige Abfälle	510
	Filtermaterialien	80
	Altöl und Emulsionen	1'180
	Altpapier	3'200
	Drucksachen an Kunden	93'985
	Re- und Downcycle	Alufolienrecycling
	PE-Folienrecycling	25'630



# Flumroc-Eco-Controlling

(Excel-based)

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# Wirkungskategorien

hoch

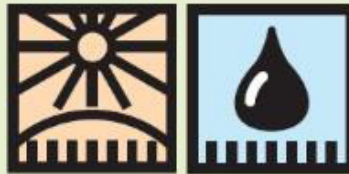
Betroffenheit von Flumroc

tief

tief

umweltpolitische Priorität

hoch



Energieverbrauch



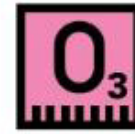
Treibhauseffekt



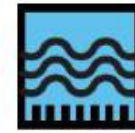
Überdüngung



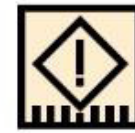
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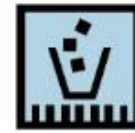
Sommersmog



Wasserverbrauch



Sonderabfall



Siedlungsabfall

# Wirkungskategorien

hoch

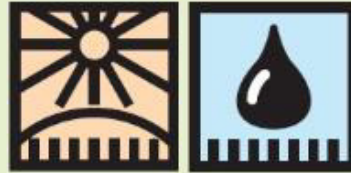
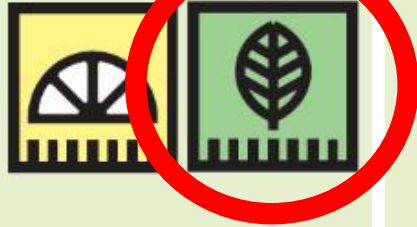
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Energieverbrauch



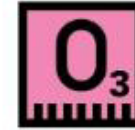
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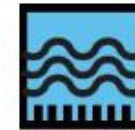
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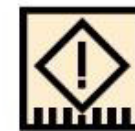
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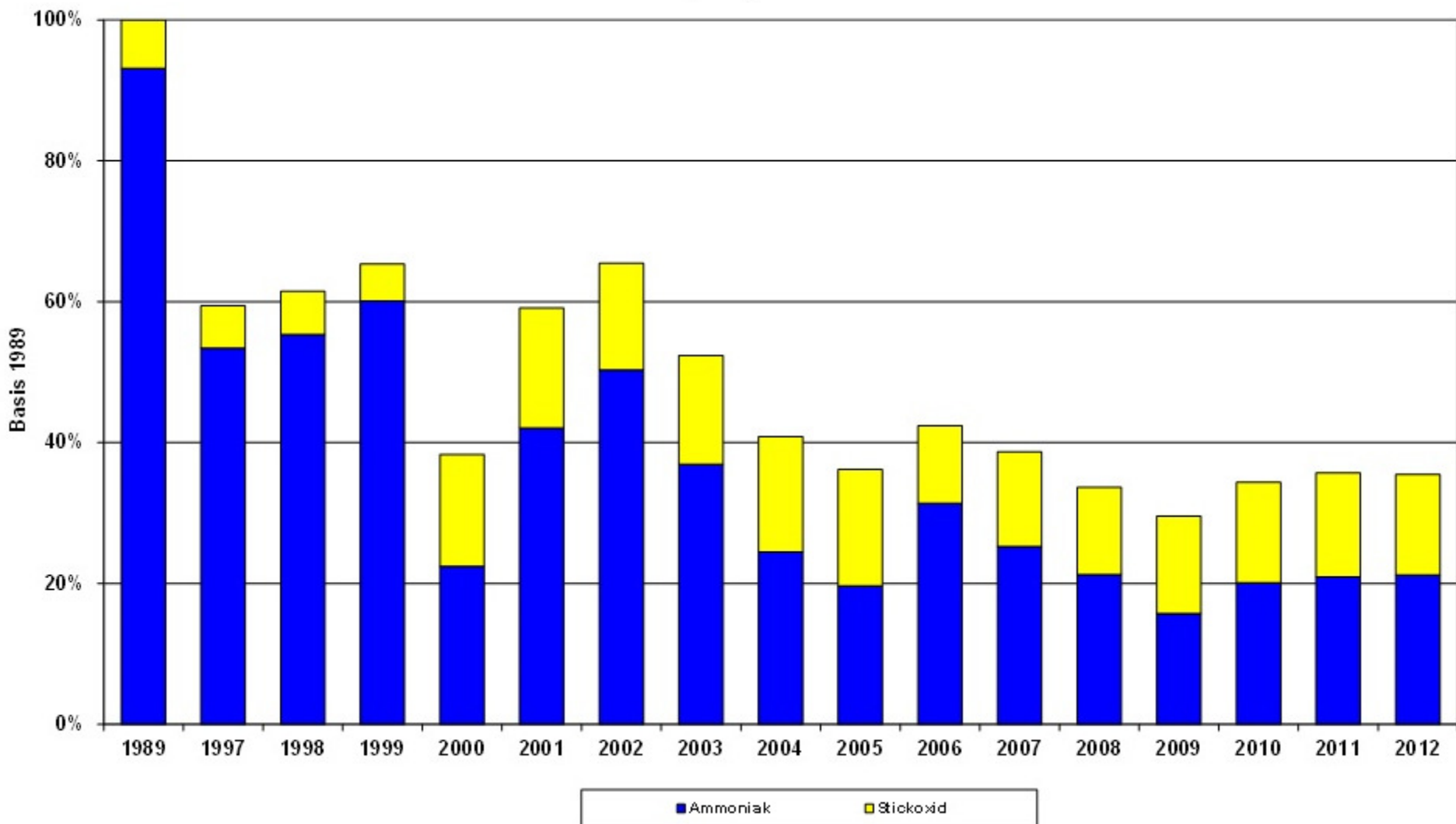
Sonderabfall



Siedlungsabfall



## Überdüngung pro t Schadschöpfungsindikatoren



- LCA
- Environmental Product Declaration
- Data for construction industrie:
  - Primary Energy
  - Global Warming Potential
  - Environmental impact

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# TEAM 5

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# Communication



- Flumroc-Homepage
- SIA 493 - Deklarationsraster
- KBOB
- Bauteilkatalog
- Eco-bau
- Several labels for construction  
(Minergie, LEED, DGNB, BREEAM, ....)





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# Prospects



- Trend for sustainable products  
(→ Labels,...)
- Demand for transparency
- Closed life cycle