# Eco-efficiency approach of Akzo Nobel

Nor-LCA in Lund
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Sara Tollin
Sustainable Development
Akzo Nobel

AKZO NOBEL

Sustainable Development
T&E
Technology & Engineering

# Akzo Nobel

Creating sustainable solutions

- Based in **the Netherlands**
- Operates in **80 countries**
- **~61,500 employees**

## Chemicals

EXPANCEL® MICROSPHERES
eka
MCA MONOCHLOROACETIC ACID
Dissolvine® MASTER THE ELEMENTS
bolikel MICROGRANULES
AKUCELL®
Trigonox®
JOZO SALT
DEMEON® D
Kromasil®
BERMOCOLL

## Coatings

CROWN
Nordsjö
Casco LIMMAR FÄSTER FOGAR
VIVECHROM
FLEXA
levis
Interpon® Powder Coatings
Sadolin
sikkens
Astral
International

## Pharma

intervet
Organon
Mercilon®
NUVARING® (etonogestrel/ethinylestradiol)
Caninsulin®
Implanon® 68 mg etonogestrel
Scalibor® Deltamethrin
Livial® tibolone

# Akzo Nobel Eco-efficiency Center

Creating sustainable solutions

## Sustainable Development group (based in Sweden)

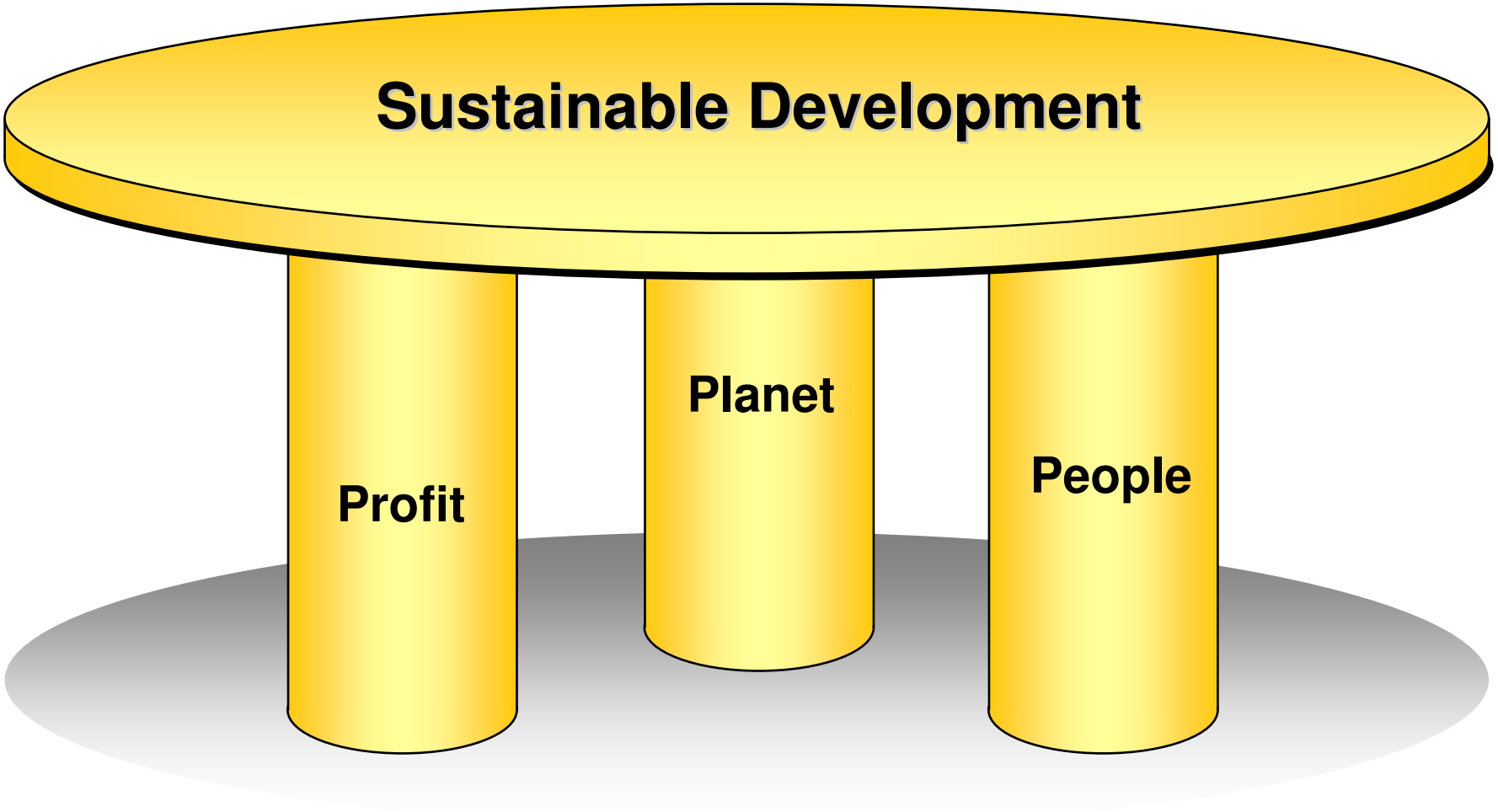
**- a part of Akzo Nobel Technology & Engineering (T&E)**

## Our services include:

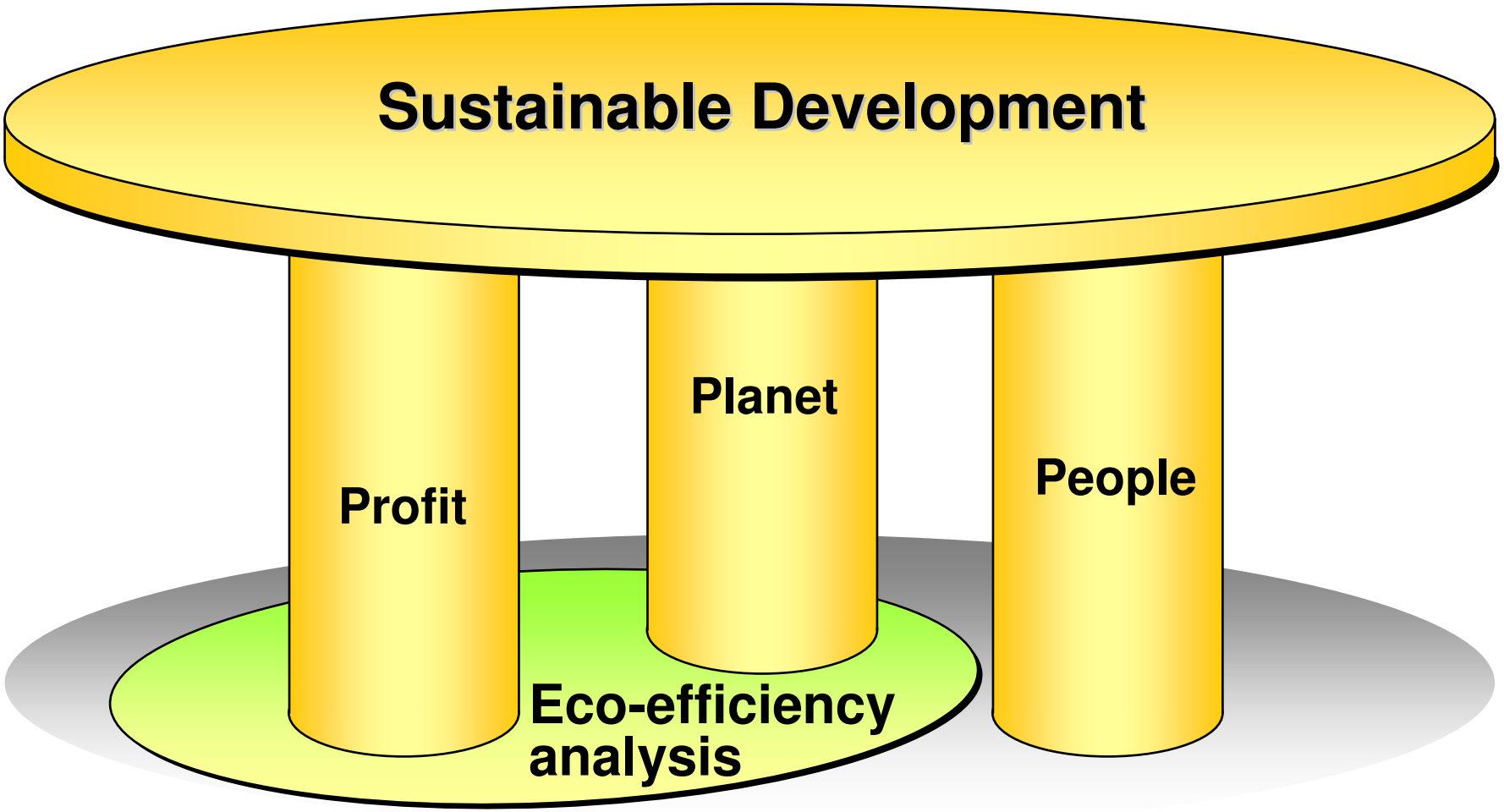
- Eco-efficiency assessment (EEA) and implementation
- Environmental Impact Assessment
- Environmental Risk Assessment
- Environmental communication

www.sd.akzonobel-te.com

# Sustainable Development & CSR



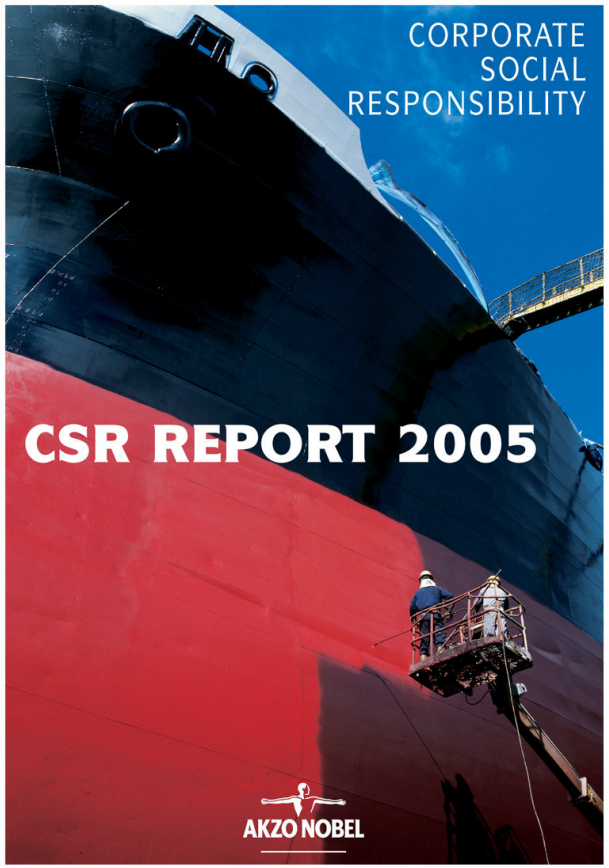
# EEA methodology



# CSR within Akzo Nobel

Creating sustainable solutions

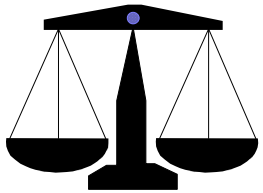
- CSR – Corporate Social Responsibility
- CSR is a company's way to work towards a Sustainable Development
- Eco-efficiency is one of the main corner stones of Akzo Nobel's work within CSR



# Eco-Efficiency in Akzo Nobel

Creating sustainable solutions

Eco-efficiency =
the balance between creation of economic value and ecological impact



- Quantifiable environmental impact data combined with quantifiable cost data
- A comparison between products, processes, activities, plants etc., which have the same customer benefit
- The whole life cycle chain is assessed

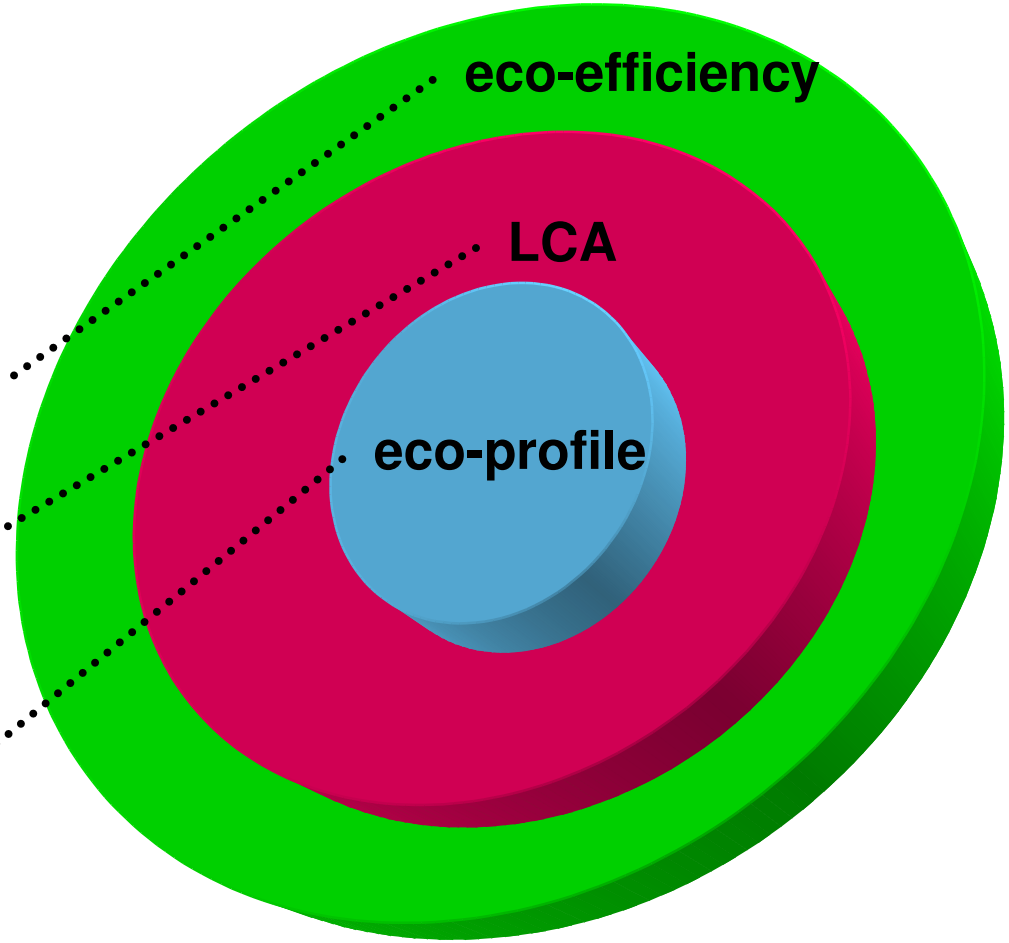
# Different types of analysis

Creating sustainable solutions

**„cradle-to-grave and costs“**
*... including all life cycle costs, toxicity and risks*

**„cradle to grave“**
*... including use and recycling*

**„cradle to gate“**
*...from natural resources to factory gate*



# Applicable Standards for Eco-efficiency

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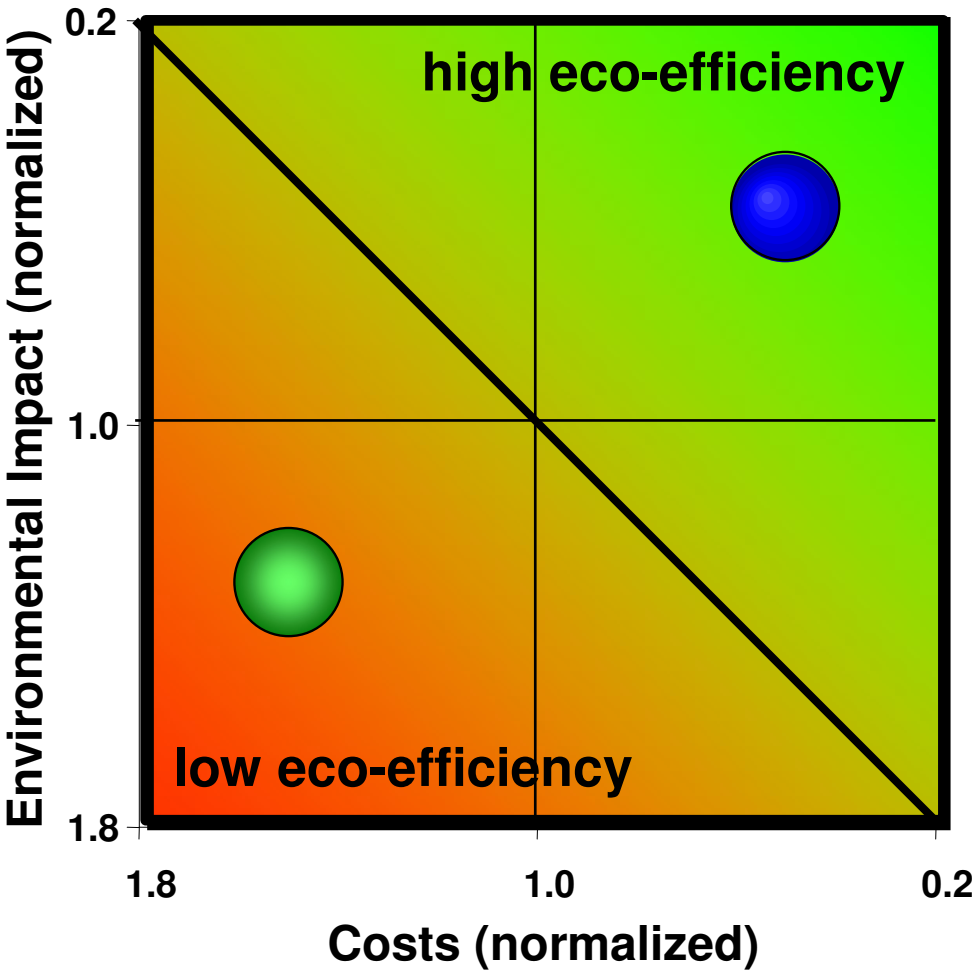
- BASF Eco-efficiency method
- The LCA part in the eco-efficiency analysis fulfills the requirements of ISO 14040-14043.
- It goes beyond the norms by including additional categories (e.g. toxicity, risk, costs) and by presenting an aggregated result in the form of the eco-efficiency portfolio.

# Eco-efficiency result diagram



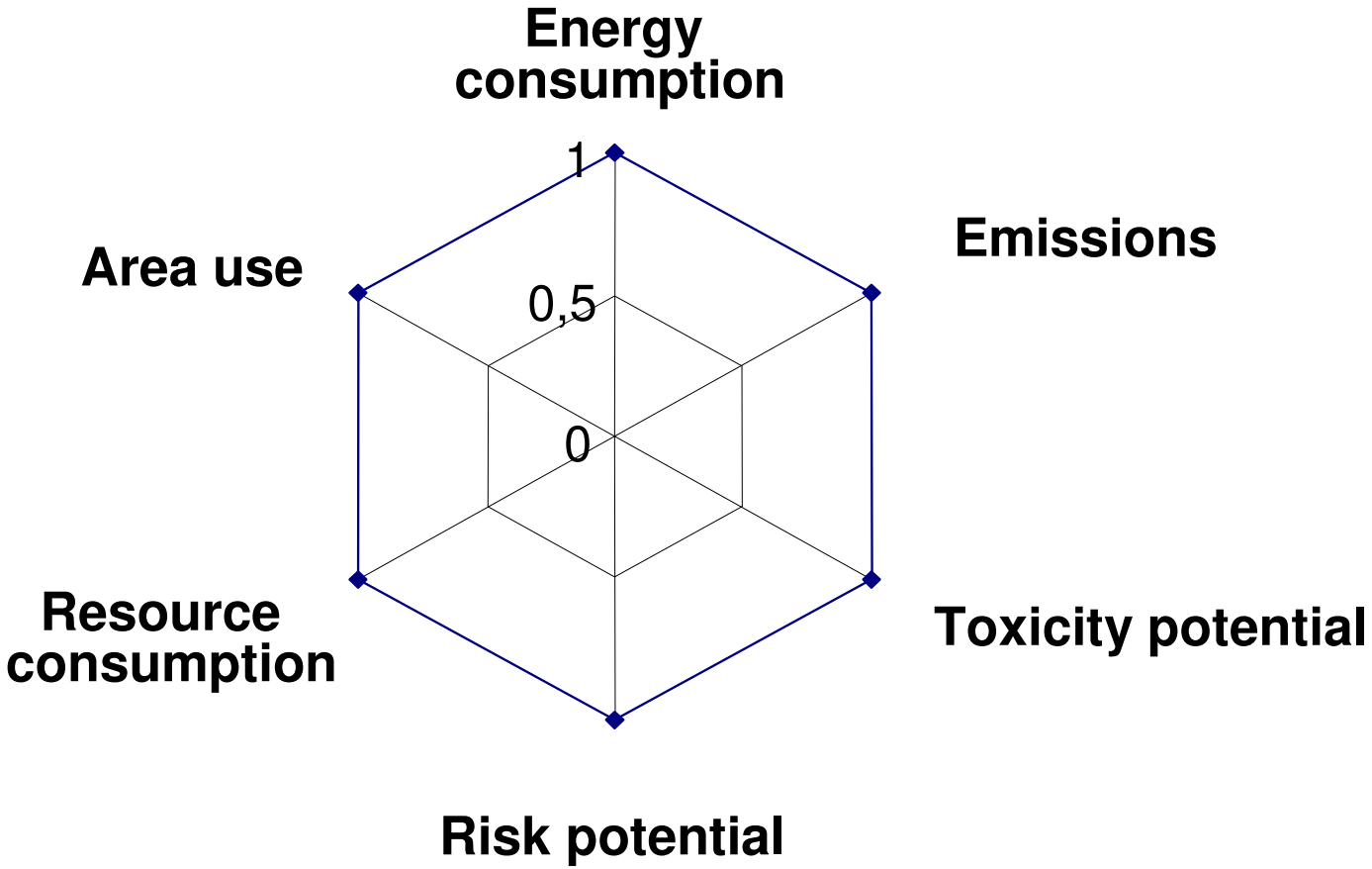

Highest eco-efficiency

Product / Activity A

Product / Activity B

- Always a **comparison**!

# The ecological fingerprint

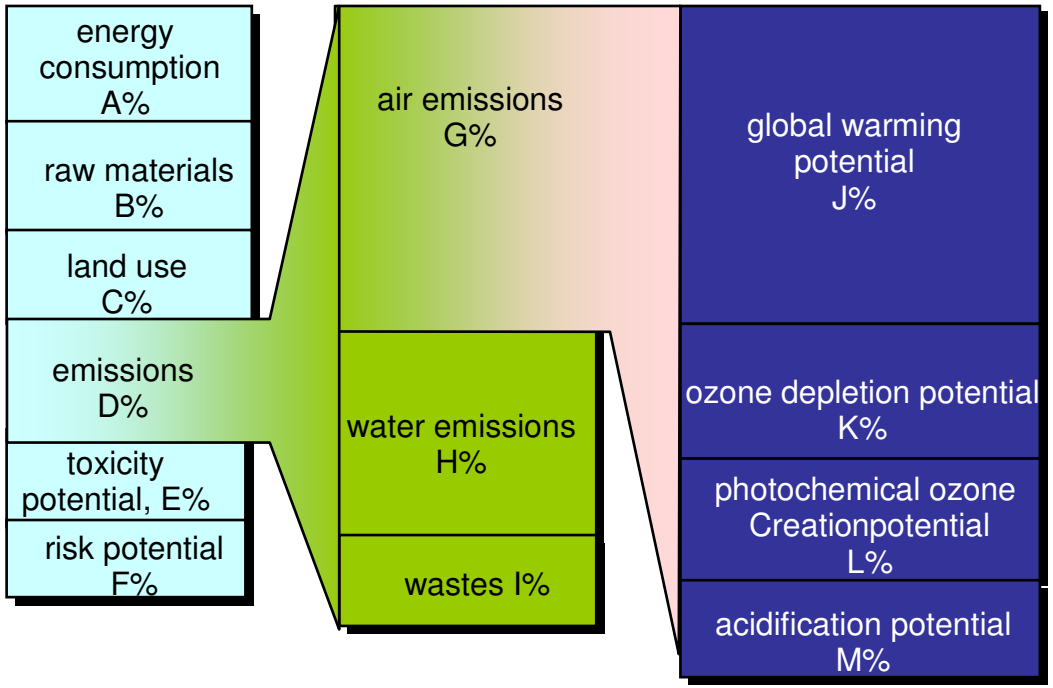


# EEA methodology

## Example of weighting factors for environmental impact

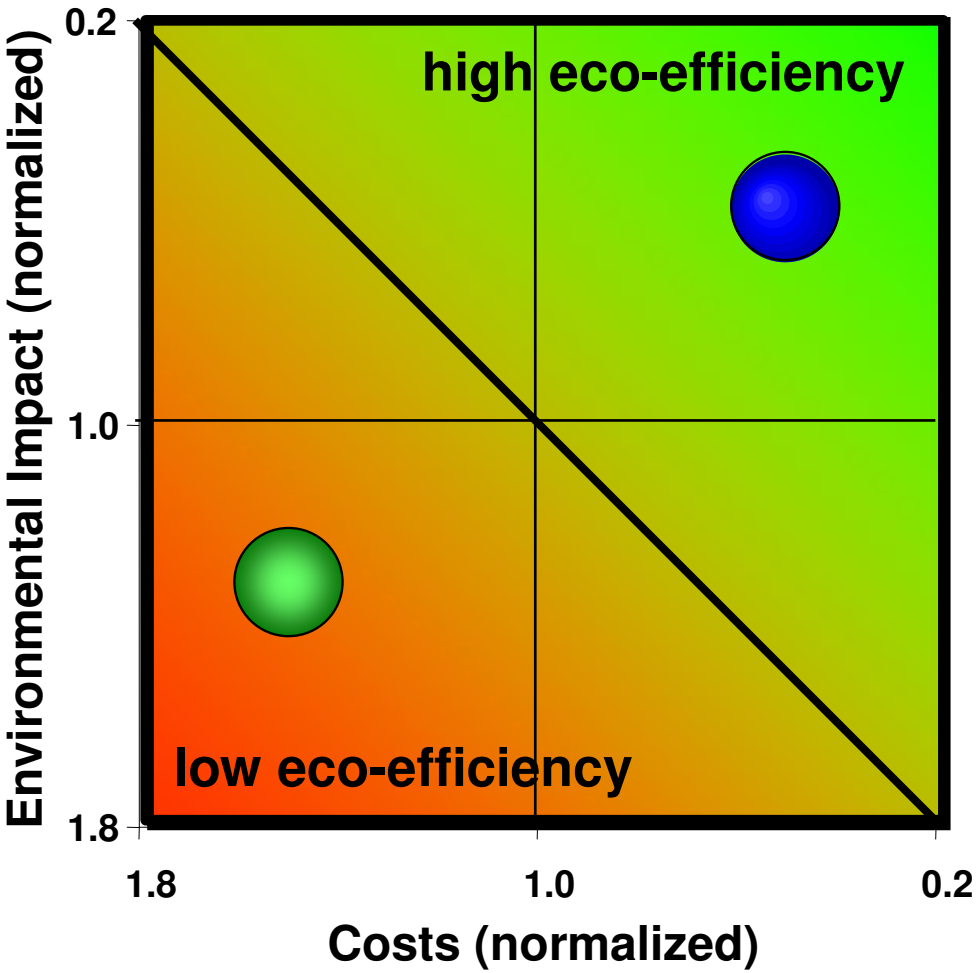
The weighting factors can be adjusted to the geographical region, where the study is performed.

In most cases (95%) the impact factors can be totally changed but the eco-efficiency result will be the same in a comparative situation!




**Note: The weighting factors are based on future costs with respect to resource depletion, effects from global warming, toxicity issues etc.**

# Eco-efficiency result diagram




Highest eco-efficiency

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# Case study Waste water treatment

Energy resources

$CO_2$ emissions etc.

Incineration

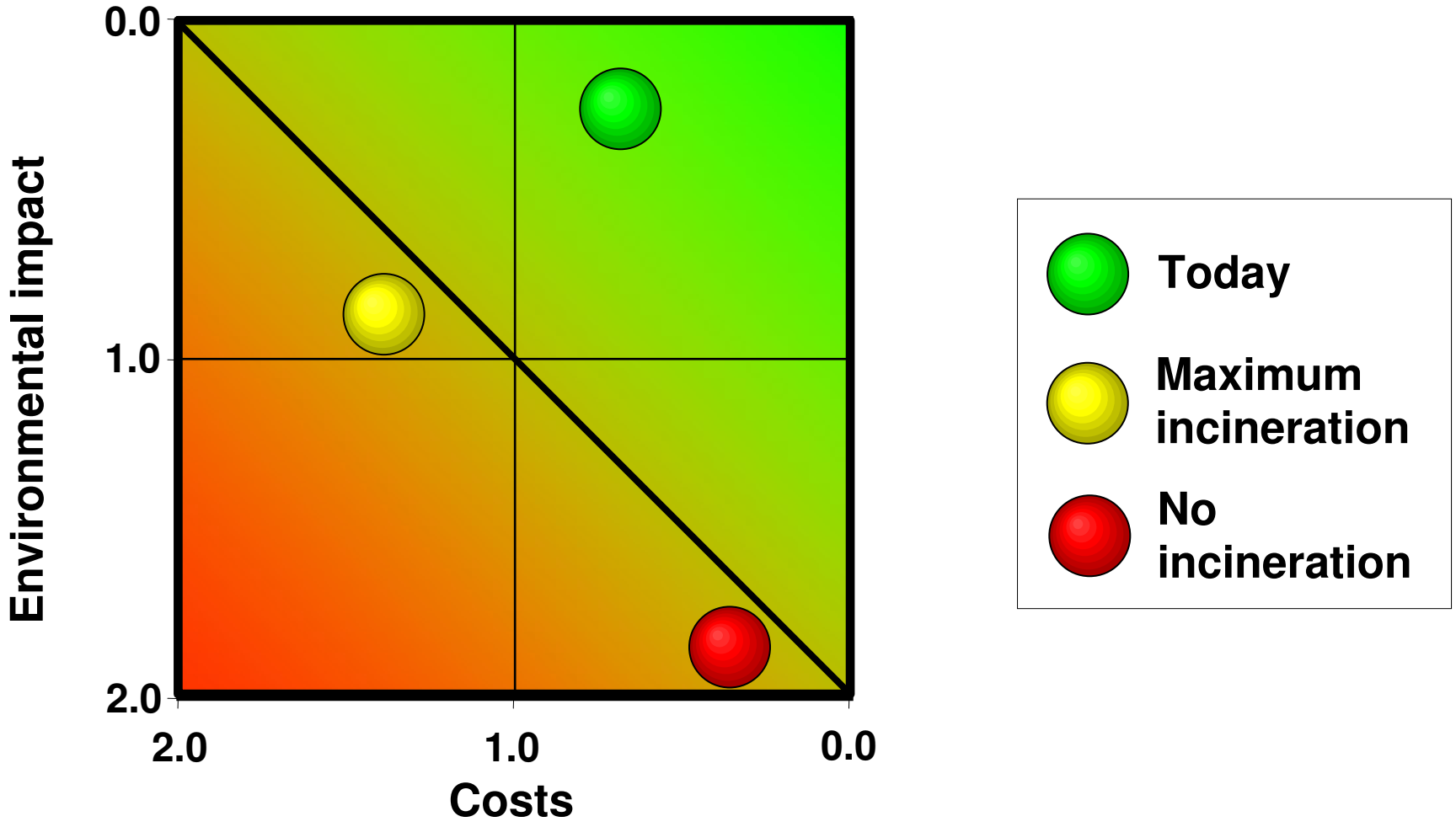
Lower water emissions

**Waste water**

No treatment

Higher water emissions

# Waste water treatment - results



# Why Eco-efficiency in Akzo Nobel?

Creating sustainable solutions

- Provides competitive advantage through
  - long-term perspectives: being better prepared for the future
  - a broader basis for decisions (environment and economy): help in making better decisions for the company
  - A systematic way to considered environmental issues in business decisions in a systematic way and in market activities
  - improve our name and trademarks e.g. through marketing and Dow Jones Sustainability Index
- Help avoid unsustainable short term solutions – techniques, processes, site locations, products.

# Decided use of EEA in Akzo Nobel

Creating sustainable solutions

- **Marketing**
  - At least one Eco-efficiency study during 2007 within each Business Unit.
- **R&D**
  - Eco-efficiency check lists embedded in the innovation and project management processes (like Gate models) during 2007.
- **Management / Strategical**
  - Evaluating major decisions during 2007 for possible implementation of Eco-efficiency in major Appropriation Requests (AR) and in major acquisition proposals from Jan 2008

# Summary



**To make the most sustainable investments**

Management

**To address customers who value sustainability issues**

Marketing

**To develop products for the future**

Research & Development

**To make the right process investments**

Production

Supply chain

**To evaluate different means of transportation**