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consultants architects engineers

Climate Change and Sustainability in European Union

Wim van Doorn

EU Policy Climate Change

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- to reduce emissions to 20% below 1990 levels by 2020, or
- to reduce to 30%
  in case of international agreement with other developed countries (comparable reductions), and appropriate contributions by economically more advanced developing countries based on their responsibilities and capabilities.
- 20% renewable energy

- However, even if the world succeeds in limiting and then reducing GHG emissions,
  our planet will take time to recover from the greenhouse gases already in the atmosphere (at least 50 years)
- Thus we need to take measures to adapt as well.

EU Policy on Climate Change

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- Adaption
- Mitigation

EU Adaptation

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- Developing the knowledge base
- Integrating adaptation into EU policies
- Increasing the resilience of health and social policies
- Increasing the resilience of agriculture and forests
- Increasing the resilience of biodiversity, ecosystems and water
- Increasing the resilience of coastal and marine areas
- Increasing the resilience of production systems and physical infrastructure

Example Adaptation The Netherlands

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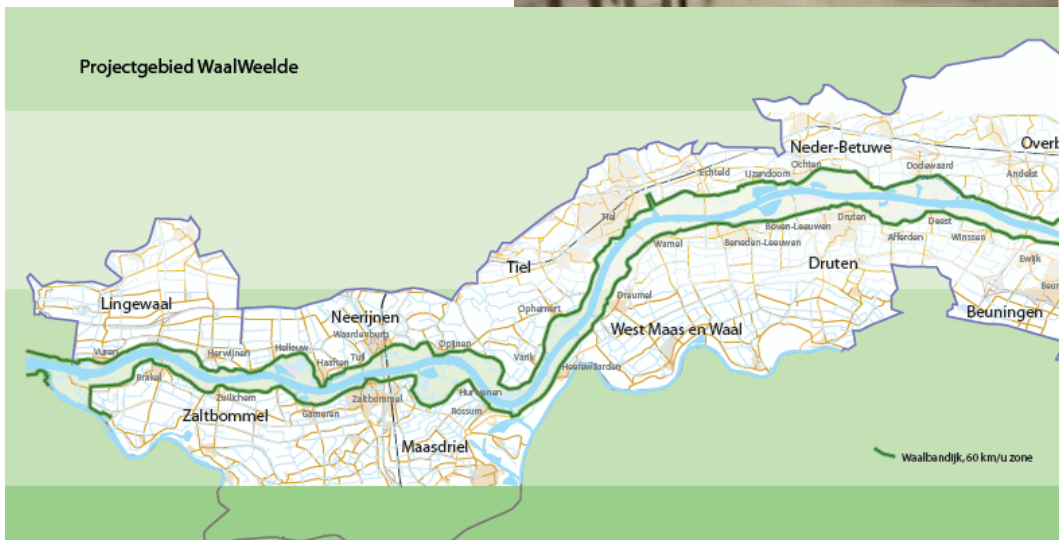
- Dikes (river and sea) enlarged
- More (natural) space for large rivers (innovation):
  -> larger water flow capacity -> less floodings
  -> reduces necessary enlargement dikes
  -> provides new nature (recreation)



Example Adaptation The Netherlands

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- Floating houses (innovation)

EU Policy on Climate Change - Mitigation

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As climate change is not a topic in itself,

but caused by

our present way of producing and consuming

= Economy,

solutions can only be found

by strong integration in other policies:

= Sustainable development!

EU analysis

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1. After 2 centuries of industrial revolution and strong population growth,
   we now notice that energy, water and (raw) materials
   are not “never-ending”
2. AND
   that “small amounts of pollutants”
   dispersed in the endless-large atmosphere, rivers/seas/oceans,
   can cause huge changes in the quality of environment, effecting human health and nature.
3. Globalisation - production shift towards low cost countries
4. Globalisation - economical crisis = system crisis

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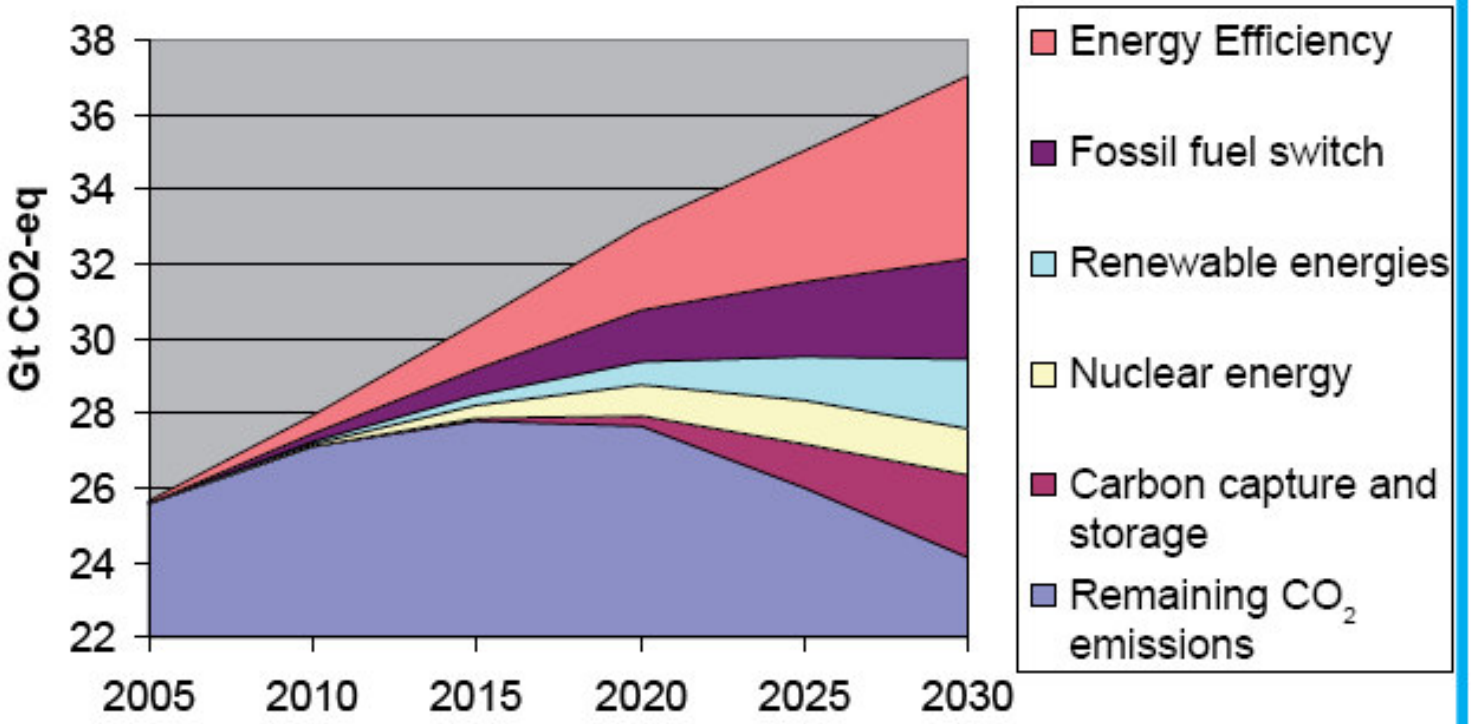
Technologies that could reduce global CO_2 emissions from energy combustion



EU view on Climate Change

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- Investment in a low-carbon economy,
  -> like promoting energy efficiency, green products
  -> one of the key objectives of the European Economic Recovery Plan,
- Development towards a creative, knowledge based economy,
- Facilitate structural changes through the modernisation of European infrastructure and enhance the competitiveness of our economy.

EU Policy Climate Change - Mitigation

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Traffic

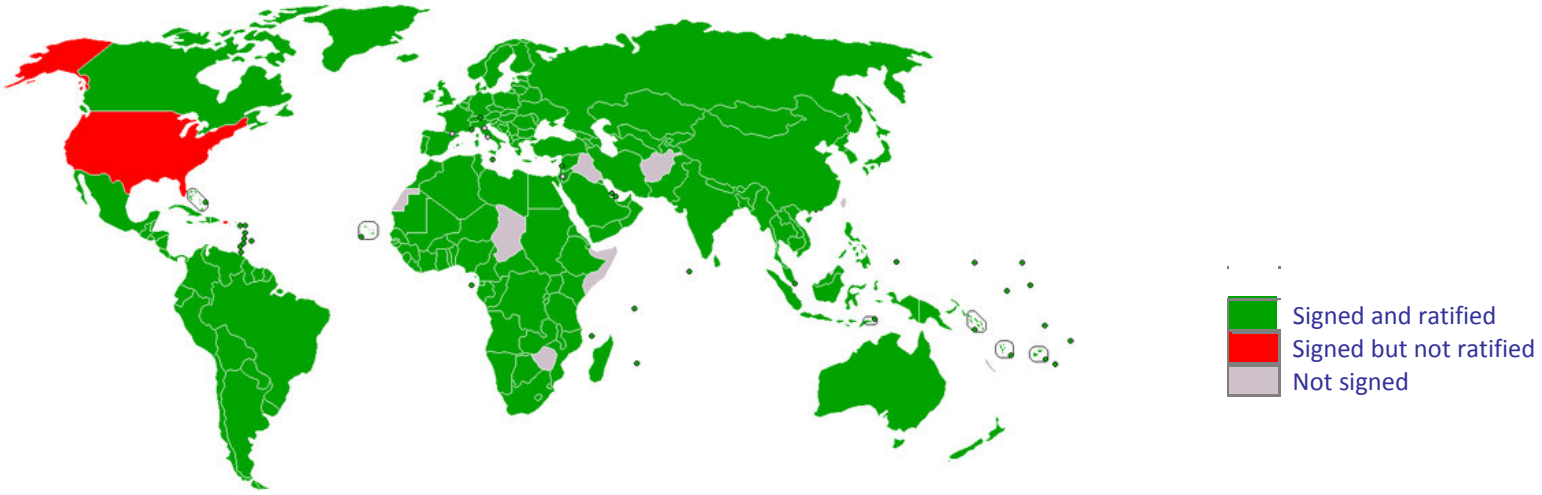
- Cleaner (more efficient) vehicles
- Eco-labeling cars
- Reduced car-taxes for cleaner cars
- Lower tax for biofuels

Energy production

- Emission trading
- Integrated Pollution Prevention and Control (IPPC)
- Renewable energy production
- Increased energy efficiency in production ánd consumption

CO_2 Emission Trade: Kyoto

Kyoto-protocol:



1. *EU ETS: European Emissions Trading Scheme*
2. *CDM (developing countries)*
3. *JI (industrialized countries)*

So far, due to the high level of caps, emission trade has not yet led to significant CO2-emisison reductions

EU Policy Climate Change - Mitigation

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Buildings

- Energy saving (insulation)(energy prestation)
- Green buildings

EU Policy Climate Change - Mitigation

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- Integrated product policy
- Thematic Strategy on the sustainable use of natural resources
- Thematic Strategy on Waste Prevention and Recycling
- Eco management and audit scheme (EMAS)
- Eco label scheme
- Environmental Technologies Action Plan (ETAP)
- Green Public Procurement
- Eco Design of energy related products Directive

Sustainability

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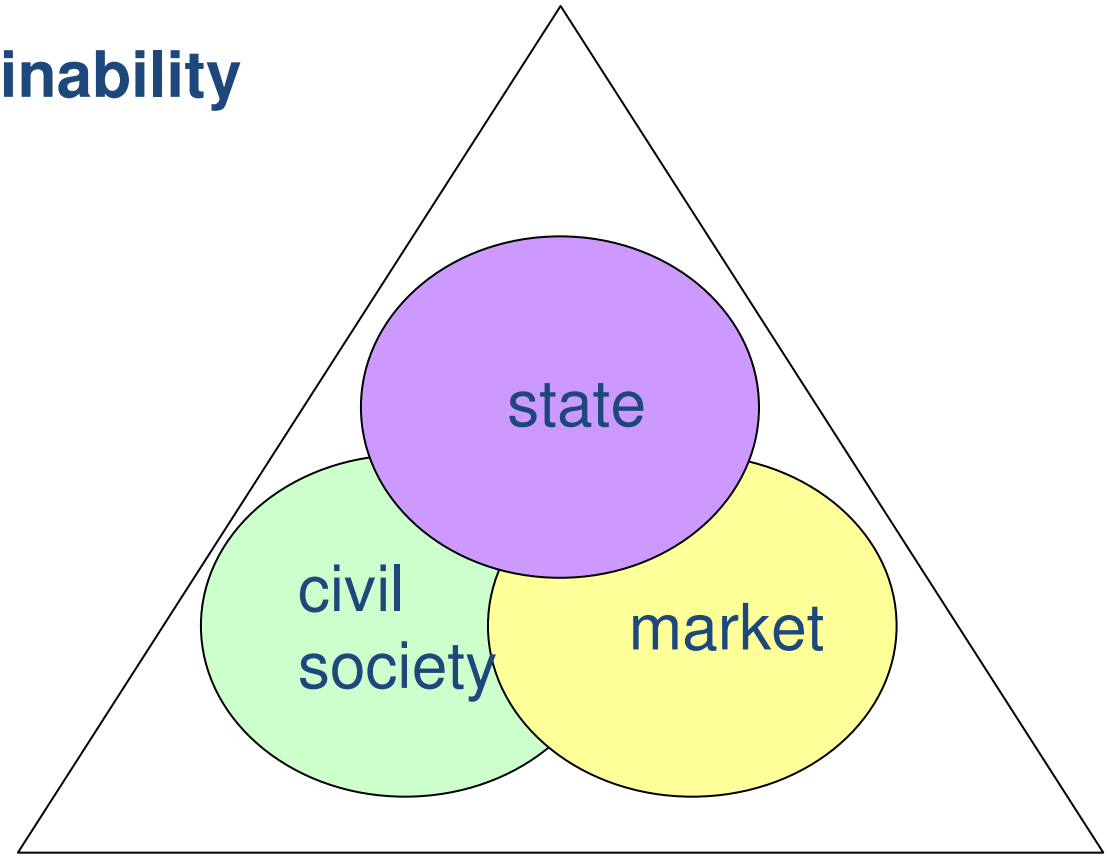
Sustainable Development:

- Meeting the needs of the present without compromising the ability of future generations to meet their own needs (Brundtlandrapport, 1987)

People Planet Profit:

- operationalisation of the concept sustainable development
- balance between social, environmental and economical aspects

Sustainability



"The United Nations once dealt with Governments. By now we know that sustainability cannot be achieved without partnerships involving (international) governments, the business community, and civil society"

(Kofi Annan)

Steps towards sustainability

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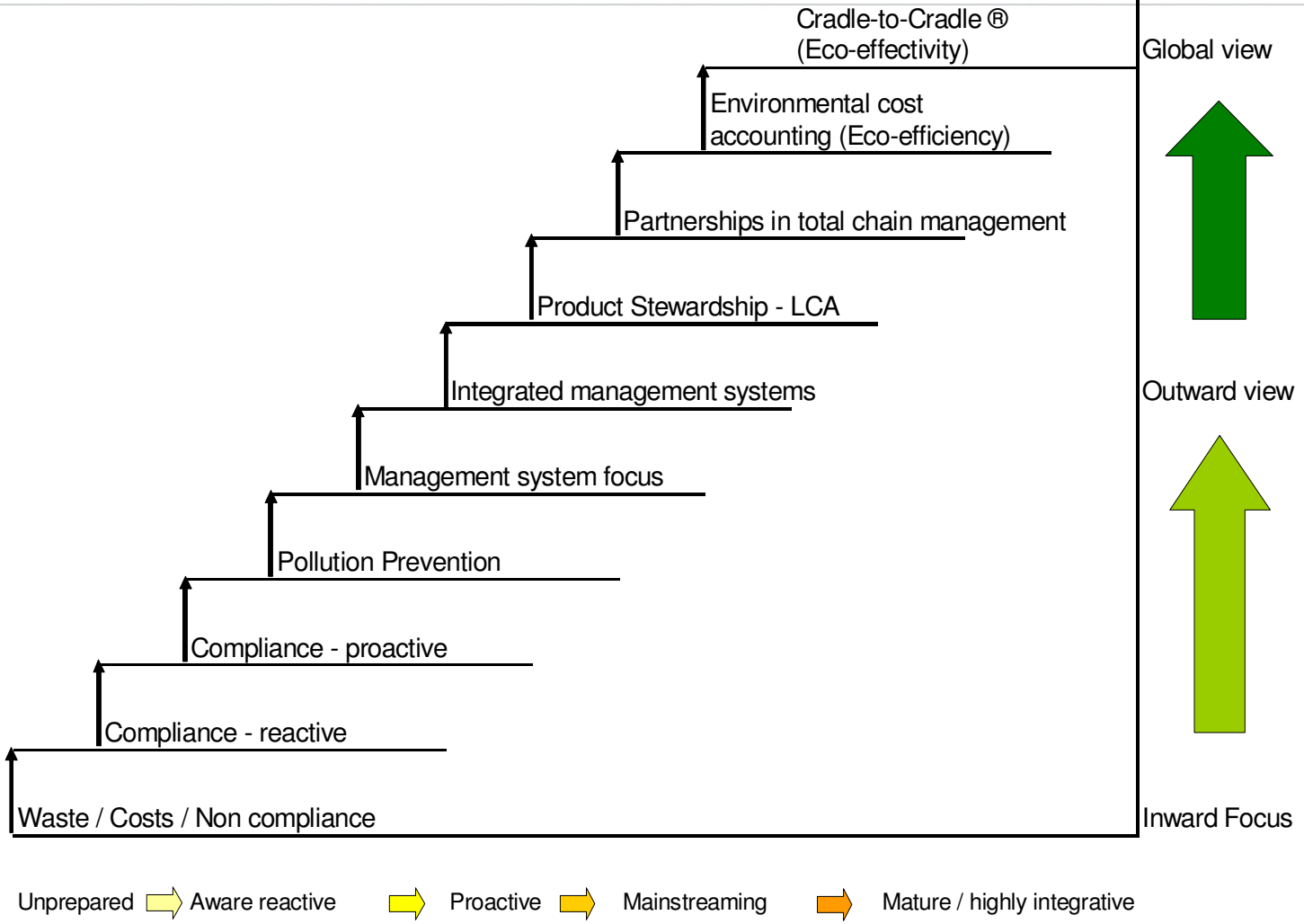

Time for new concepts: Cradle to Cradle®

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It is all about quality and innovation, based on 3 principles

- Waste = food
- Use current solar income
- Celebrate diversity

Biological and technical cycles

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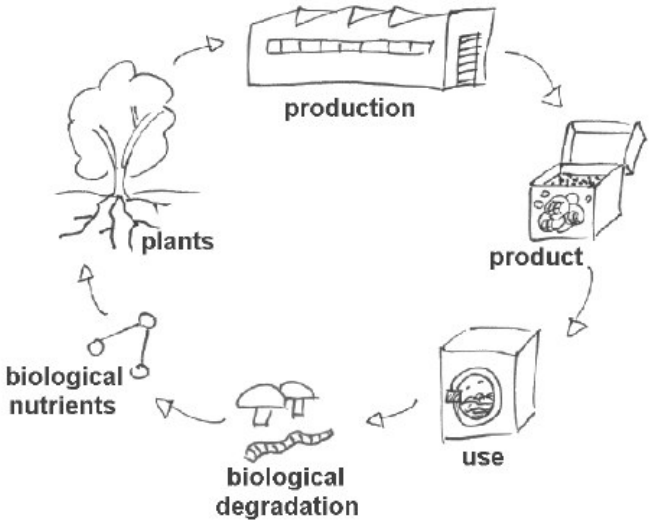
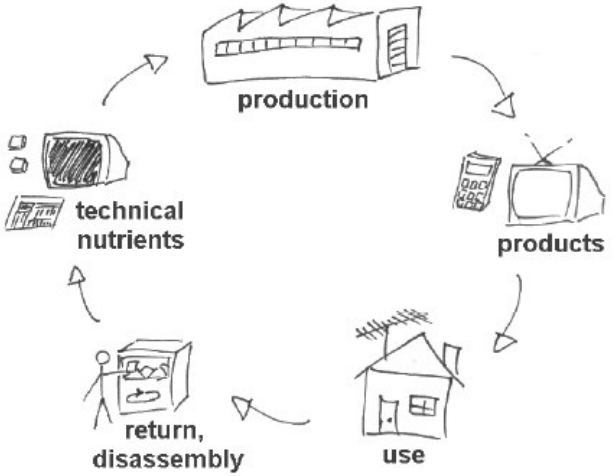


biological cycle

for Products for Consumption



technical cycle

for Products for Service

Introduction

Value (direct and indirect)

Positive footprint

Negative footprint

Maximising benefits

Increase your impact

More good → 'Glory management'

Effectiveness ambition

Transition

Efficiency ambition

time

Minimising risks

Lower your impact → zero impact

Less bad → 'Guilty management'

Business case where solution effectiveness > efficiënt

Large Potato Industry

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- Market leader in the Netherlands
- 1,2 million ton potatoes are yearly processed to fries
- Worldwide 16 production facilities
- Turnover of 600 million euro with 1600 employees

Business Case

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STRATEGY

Towards C2C

PROGRAM 1

Contribution to biodiversity

- **Project 1.1**
  - Potato cleaning in the field
- **Project 1.2**
  - Blue potato

PROGRAM 2

Material upcycling

- **Project 2.1**
  - Residue to Energy
  - Cleaning water with algae
- **Project 2.2**
  - Bioplastics
  - Nutrients from algae
- **Project 2.3**
  - Chemical leasing

PROGRAM 3

Energy effectiveness

- **Project 3.1**
  - Solar energy Biogas
- **Project 3.2**
  - District heat integration

C2C Business case for Potato industry (example)

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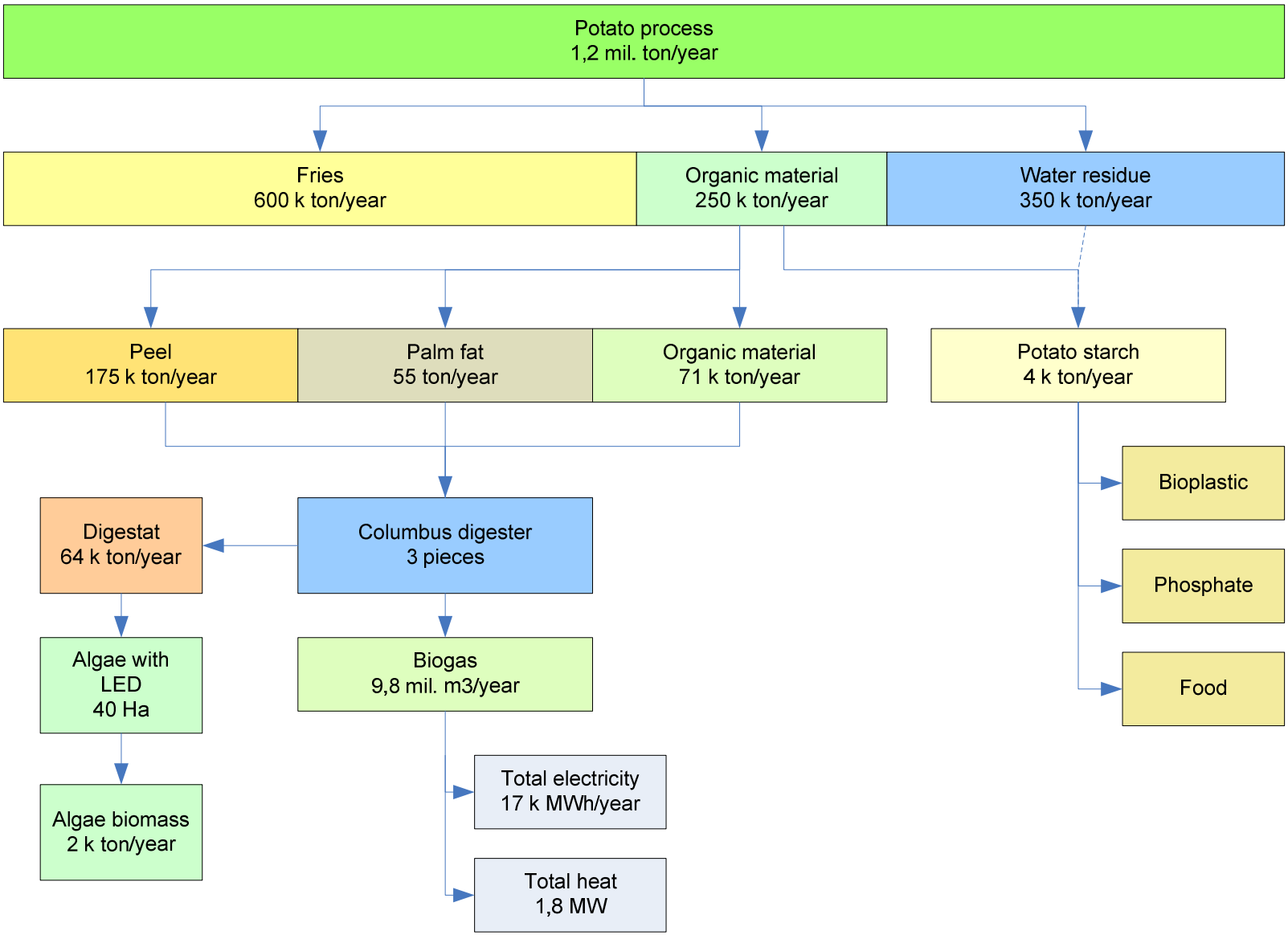

Financial aspects

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Payback time: < 8 years

Sustainability in practice: 1. National government

Dutch sustainable purchasing policy:

- In 2010:
- National Government: 100 % sustainable purchasing.
- Municipalities: 75%
- Provinces and water boards: 50%

- In 2015:
- Municipalities: 100%

- Hospitals, schools and other public organisations will follow (not yet obligatory)

- Sustainability requirements: knock out criteria
- Sustainability ‘wishes’: selection points

- Criteria set for 45 product groups

Sustainability in practice: 2. Municipalities

Climate change policy and action plan

- An Inconvenient Truth; Al Gore; 2006
- Dutch municipalities in concern about climate change since 2006
- Quite strong public awareness on problem
- City council Nijmegen publishes local policy on climate change 2007

Measures sustainable energy

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Housing

- Goal: 20% decrease of energy use 2020
- Improved insulation programs (green roofs)
- Campaign on behaviour of citizens
- Contract with social housing estates
- People are stimulated to use more solar power

Traffic

- Clean and less use of fossil fuels
- More public transport and bike use
- Avoid unneccesary transport

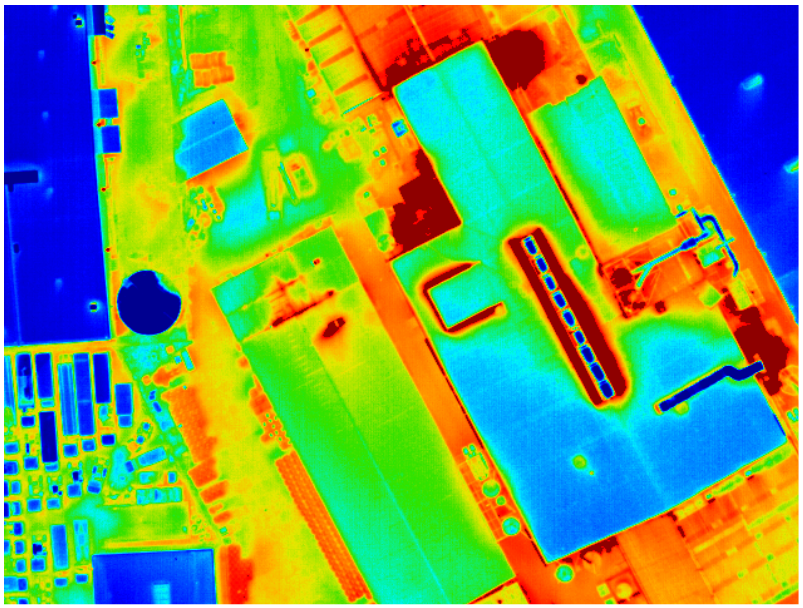
Measures sustainable energy

Companies

- Decrease 20% energy consumption in 2020
- 14 big companies agree upon 3% reduce energy use per year
- 7 companies work in a pilot together to reduce transport need and save energy

Buildings

- New buildings and houses energy efficient by 2011 and climate neutral by 2018



Residu heat from waste incineration to warm houses

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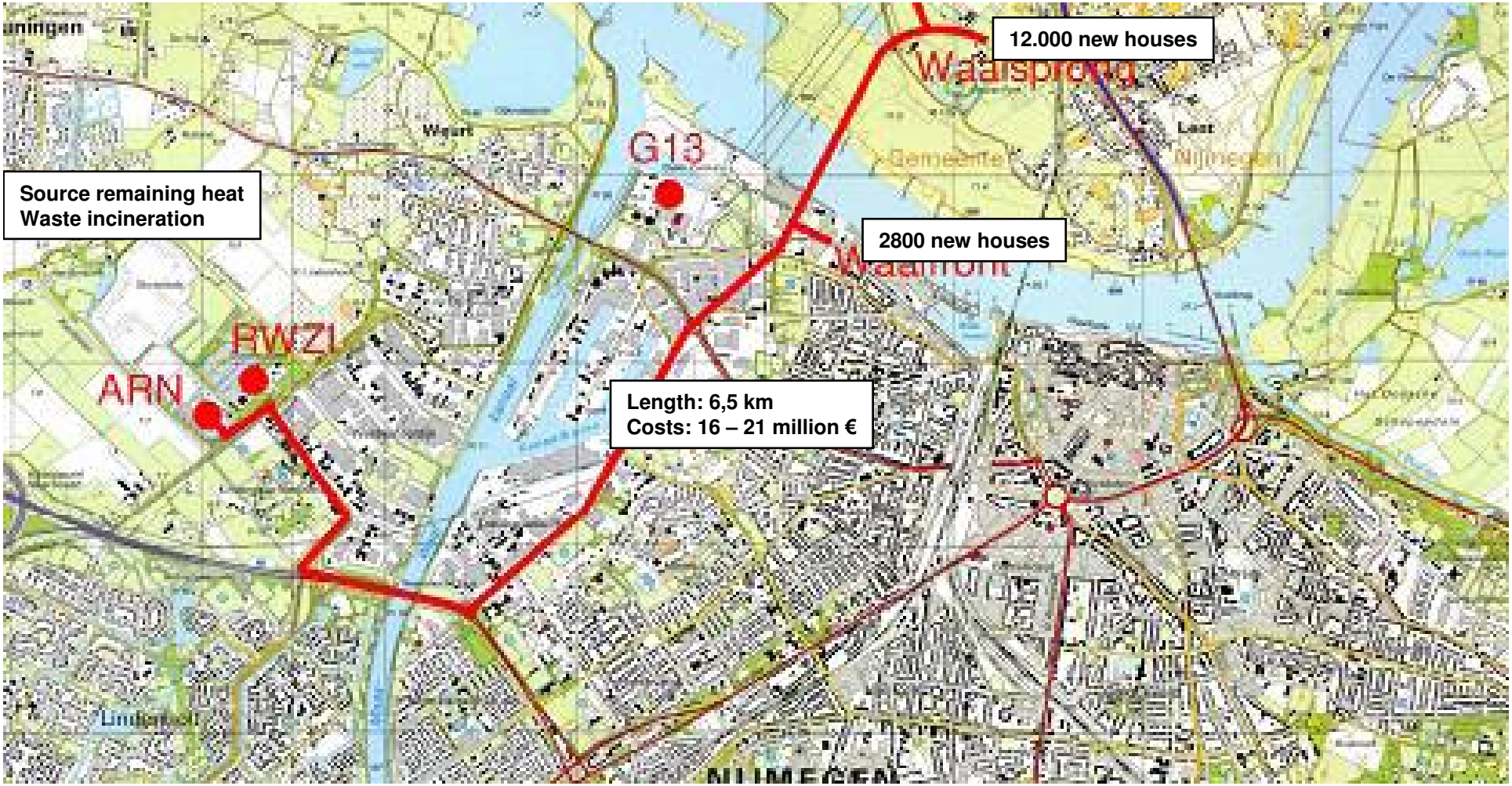

Sustainability in practice: 3. Chemical Industry AKZO

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Why sustainability?

- Social and environmental trends are reshaping the competitive arena:
  - growth in emerging markets
  - scarcity of natural resources
  - climate change

To achieve:

- Delivering profitable economic growth
- Serving customers & societal needs
- Lowering our ecological footprint
- Developing the talents of our people

How:

- Increasing turnover from eco-premiums paints
- Introducing Carbon reduction program
- Reducing VOC's in products
- 100% Sustainable water use
- Zero waste through operational efficiency
- Top 5 in safety performance
- Step change in people development

- Slogan:
  Creating even more value through sustainability

Sustainability in practice: 4. Railway Company

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- Prorail stimulates their suppliers to provide sustainable products and to have a sustainable management

- CO2 performance level is part of tenders

- Selection advantage by a fictive discount on tender price based on CO2 footprint:

  1% - 10% (depending on Carbon footprint level)

- Certification Carbon footprint calculation

Conclusions

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1. EU Policy on climate change is not a single issue policy, but
   part of increasingly integrated other policies,
   along lines of mitigation and adaptation.
2. Based on new economical concepts for Europe:
   * sustainable development
   * knowledge based economy
3. Sustainable development leads to innovation and new economical activities in a changed and changing global context
4. Major part of EU-policy is stimulating/organising and minor part is regulating

Contact

Royal Haskoning
Mr. Wim van Doorn
Wim.vandoorn@royalhaskoning.com

Or visit our website:
www.royalhaskoning.com