Cleantech production and consumption

Lars Rydén
Baltic University Programme
Uppsala Center for Sustainable Development
Uppsala University

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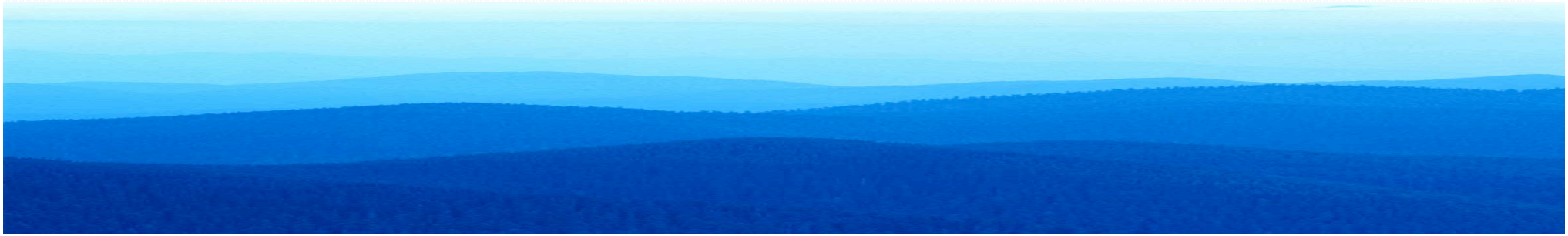
Production and consumption is part of the resource flow in our society.

Cleantech usually refers to improving the entire chain:

1. Resources are extracted
2. The production impacts the environment
3. The product is used
4. End-of-life (often just waste)

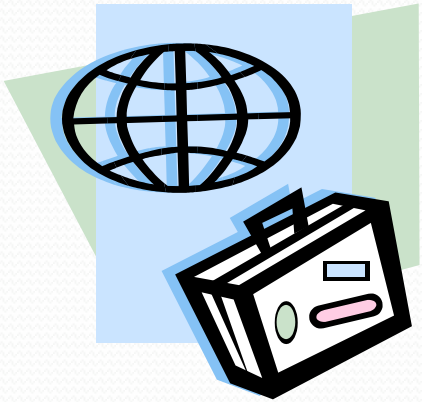


Let us start with resources!

Resource extraction:
Lignite mining in Germany

Lignite mining
Germany

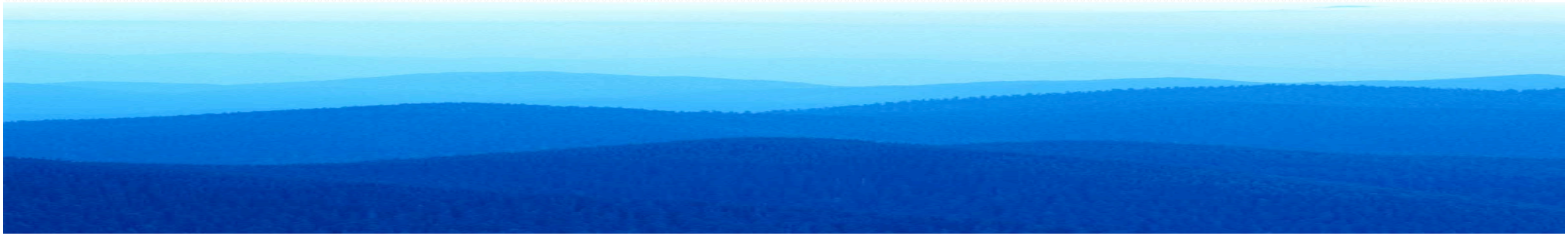
All the resources which go into a product constitutes the *ecological rucksack* of that product.



- The laptop may weigh 1 tonne
- A golden ring weighs 5 tonnes

Internet Resources:
Wuppertal Institute – Material Intensity factors are listed. They include the materials and energy sources and let you calculate the rucksack

http://www.wupperinst.org/Projekte/mipsonline/download/MIT_v2.pdf



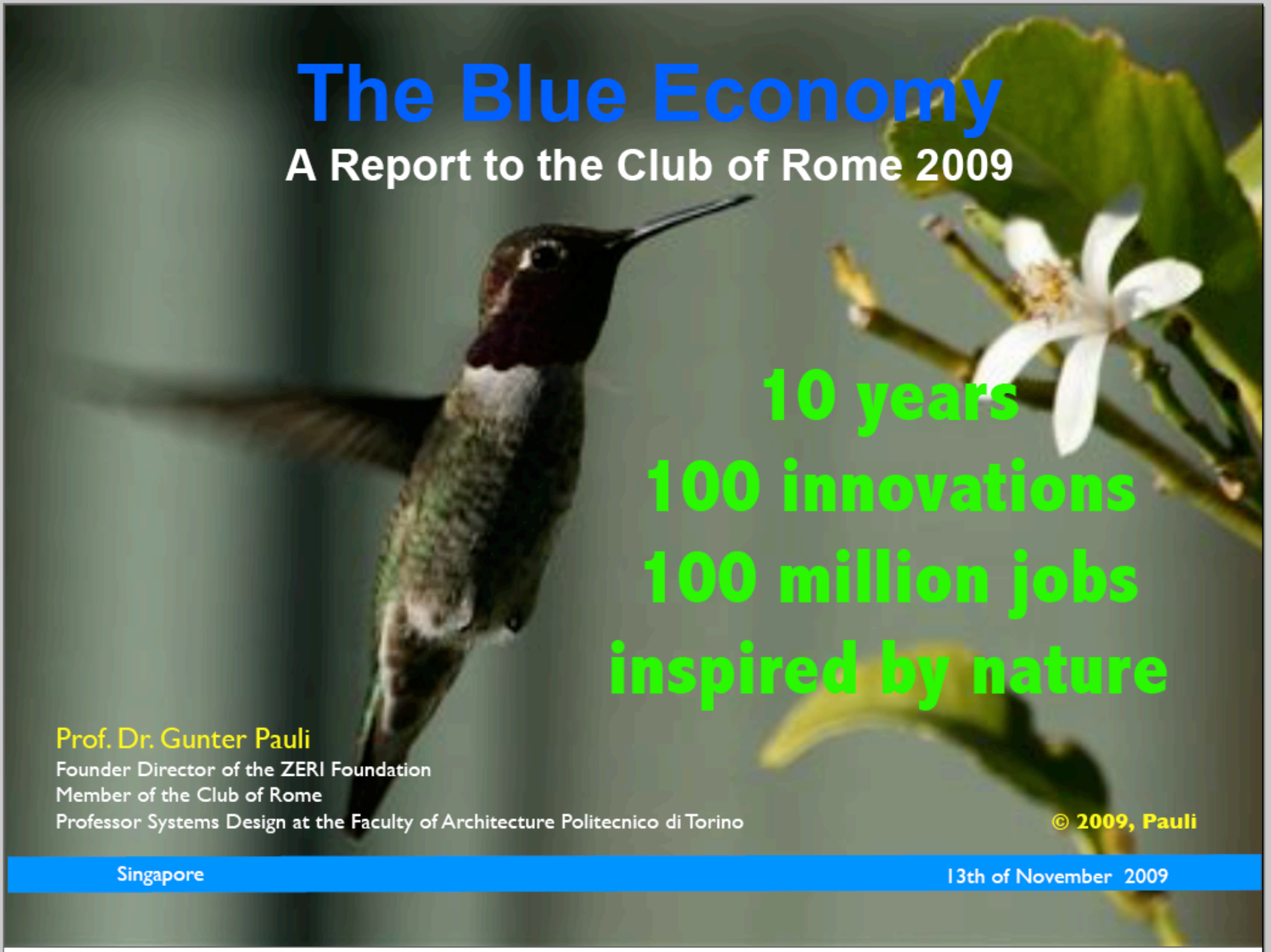
How can we improve things?

There are many ways to resource efficiencies

The Blue Economy

is a Club of Rome project
led by Gunter Pauli;
It describes all kinds of
innovations to use
resources extremely
efficiently

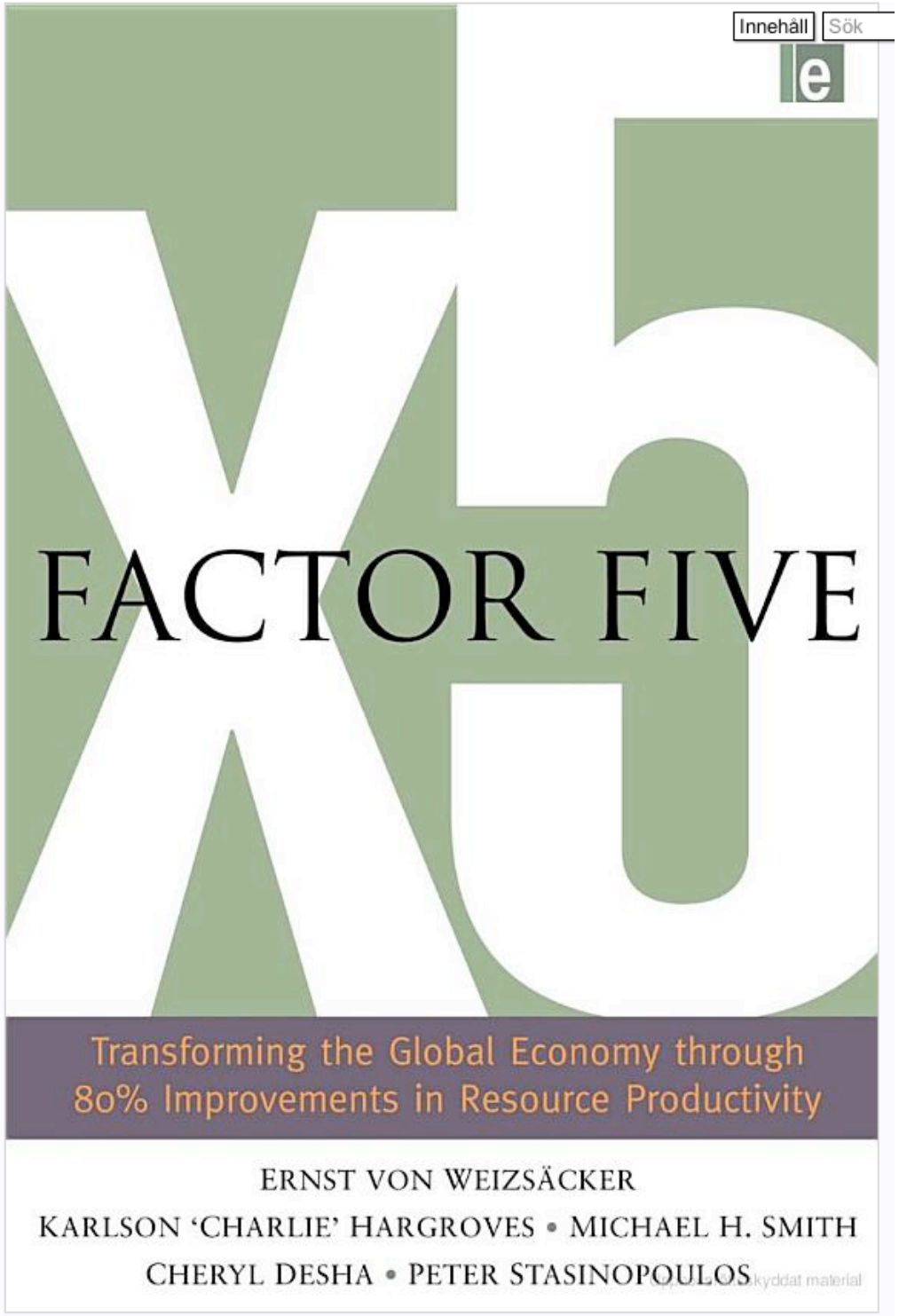
http://www.blueeconomy.de/


The Blue Economy
A Report to the Club of Rome 2009
10 years
100 innovations
100 million jobs
inspired by nature
Prof. Dr. Gunter Pauli
Founder Director of the ZERI Foundation
Member of the Club of Rome
Professor Systems Design at the Faculty of Architecture Politecnico di Torino
© 2009, Pauli
Singapore
13th of November 2009

Factor 5 – X5

Is a Natural Edge project
which demsontrates how to
reduce resource use
five times
by developing technologies
in a number of areas –
building, transport,
industrial production, etc

Just being smarter!



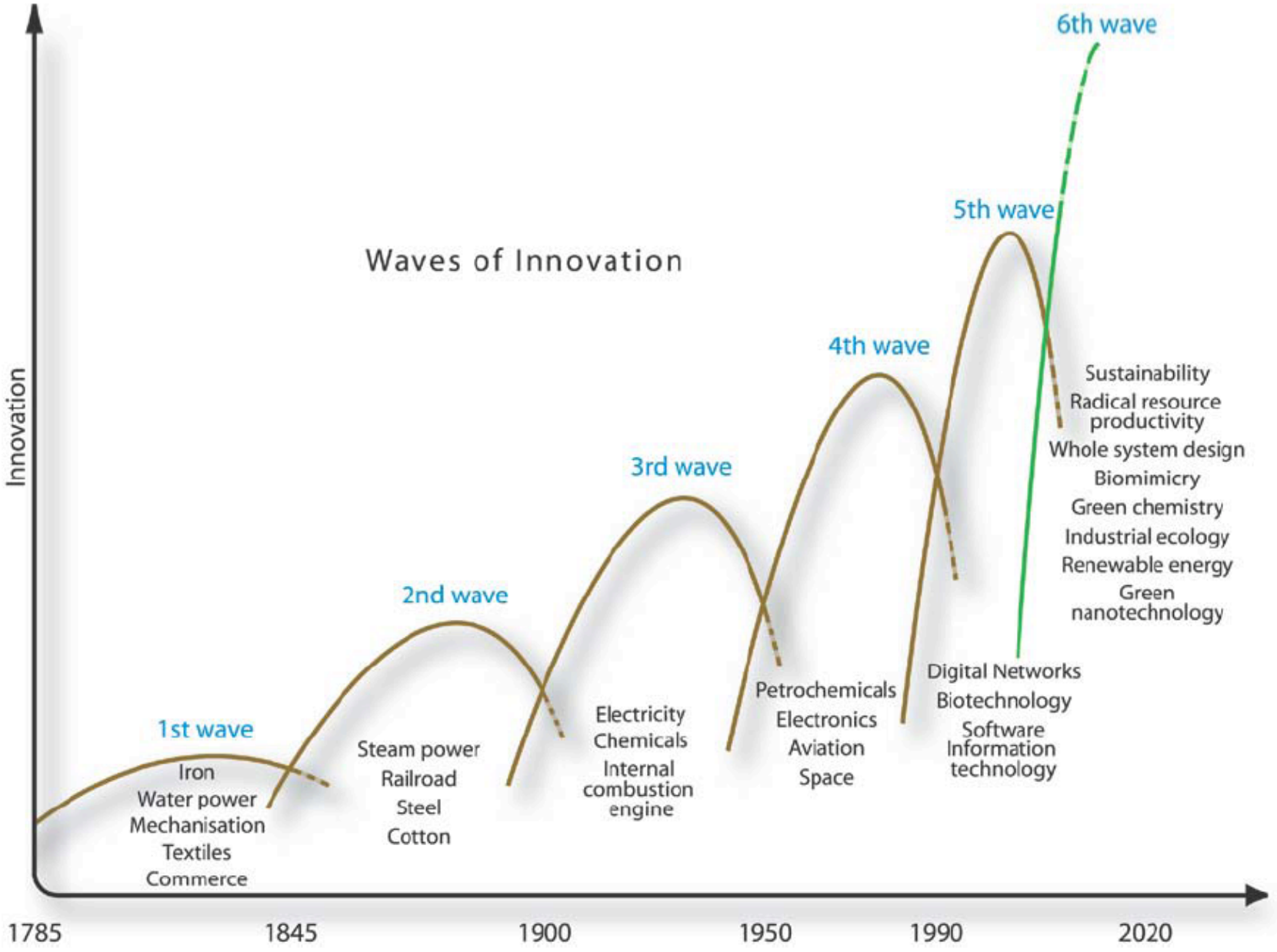


Figure 4 *Waves of Innovation*

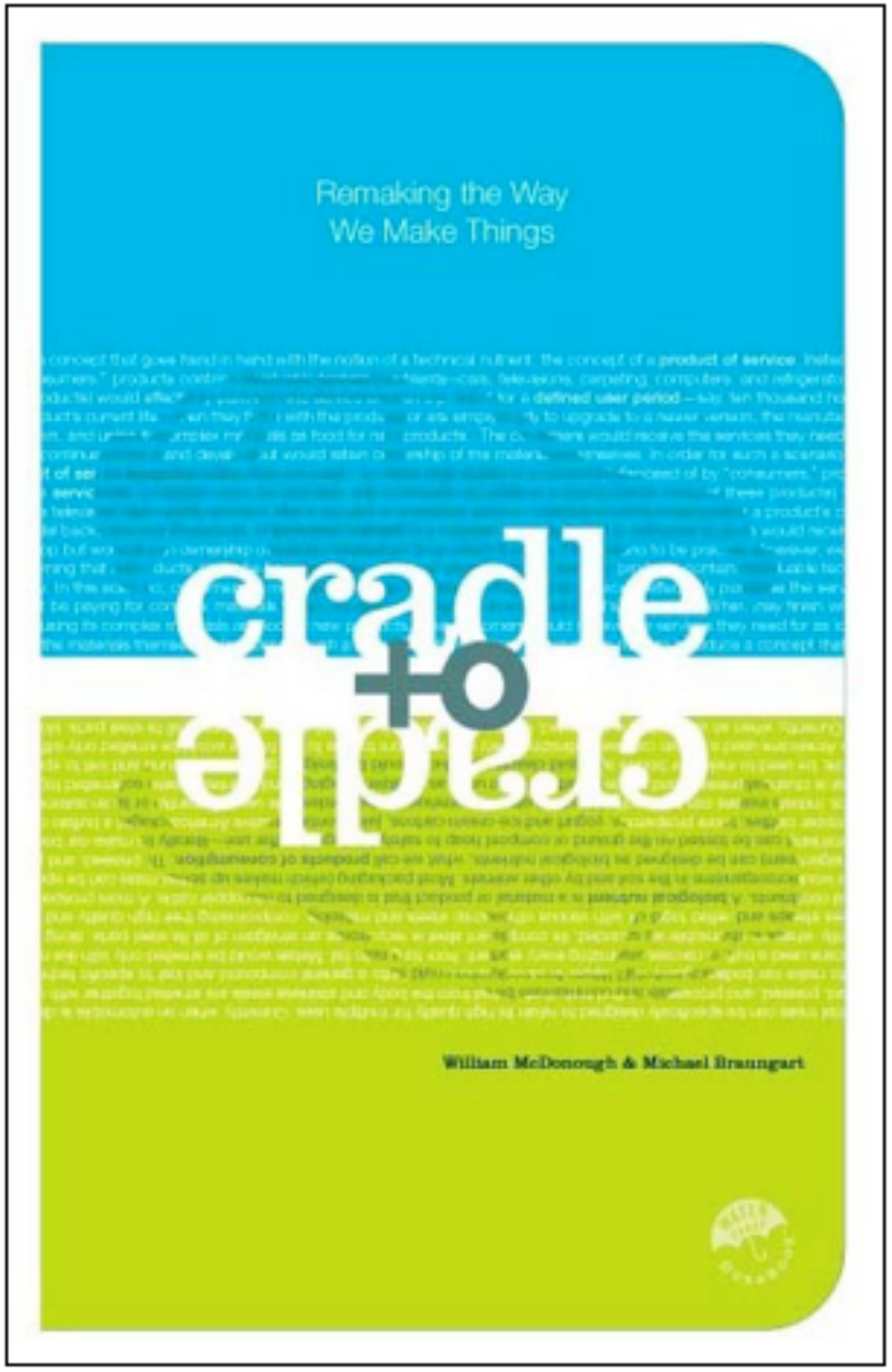
Source: Courtesy of The Natural Edge Project[19]

C2C
Cradle to Cradle

Is a new development in which all resources used in a product can be recycled to be used for new products.

Nothing is lost!

http://www.mcdonough.com/cradle_to_cradle.htm



Tate Gallery
London 2011

http://www.mbdc.com/

MBDC

cradle to cradle

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LATEST NEWS

06/07/2011: MBDC clients Replenish and Nestle Waters are speakers at Sustainable Brands Conference
MBDC supporters can get a 20% discount on registration.

05/05/2011: Job opening at MBDC for Environmental Chemist III
Submission Deadline is June 15, 2011.

04/22/2011: At Replenish, Opting for New Designs Over Improving Old Ones
A blog on GreenBiz.com by MBDC

04/22/2011: Cradle to Cradle inspired products featured on CBS channel's The Early Show on Earth Day
Products shown include method laundry detergent and Replenish bottle system

04/01/2011: InStyle Magazine's April issue features a C2C Certified Shaw Industries area rug
The article features Actress Emmanuel Chiqrui's eco-chic home

03/03/2011: Boral Bricks Announces Cradle to Cradle Certification
For Bricks Produced in Salisbury, N.C. Plant

02/17/2011: Video of William McDonough at State of Green Business Forum

MBDC cradletocradle

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Certification Overview

- Certification Overview
- Certification Criteria
- Certification Process
- C2C Certified Products
- Certification Resources
- Value of Certification

Hundreds of companies have made the C2C concept real!

Overview

Cradle to Cradle® Certification is a multi-attribute eco-label that assesses a product's safety to humans and the environment and design for future life cycles. The program provides guidelines to help businesses implement the Cradle to Cradle framework, which focuses on using safe materials that can be disassembled and recycled as technical nutrients or composted as biological nutrients. Unlike single-attribute eco-labels, MBDC's certification program takes a comprehensive approach to evaluating the design of a product and the practices employed in manufacturing the product. The materials and manufacturing practices of each product are assessed in five categories: Material Health, Material Reutilization, Renewable Energy Use, Water Stewardship, and Social Responsibility. Click here for complete description of **Certification Criteria** .

Eligibility

Products or materials from any industry that are sold to consumers or other businesses are eligible for certification. Certification criteria are the same for all product

The four phases of the EcoCampus scheme

In the Ecocampus project also universities may be much greener!

Bronze

Aston University
Durham University
Institute of Cancer Research
Kings College London
Newcastle University
Newman University College
Loughborough University

Silver

Bournemouth University
University of Bradford
Nottingham Trent University
University of Hertfordshire
Glasgow Caledonian
London School of Economics
University of Sussex
Birmingham City University

Gold

Bath Spa University

Platinum

Aberdeen College
Oxford Brookes University
University of Worcester

The platinum universities are ISO 14001 certified

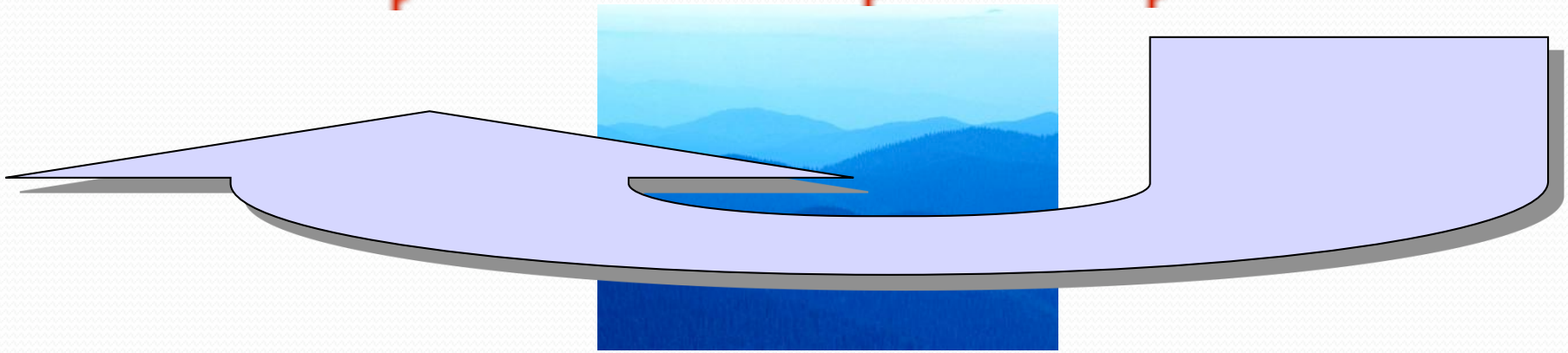
Information correct as of 25th May 2010

http://www.eauc.org.uk/ecocampus

CLOSE ✕

Recycle! Cradle to Cradle C2C

Resource → Production → Use → End-of-life

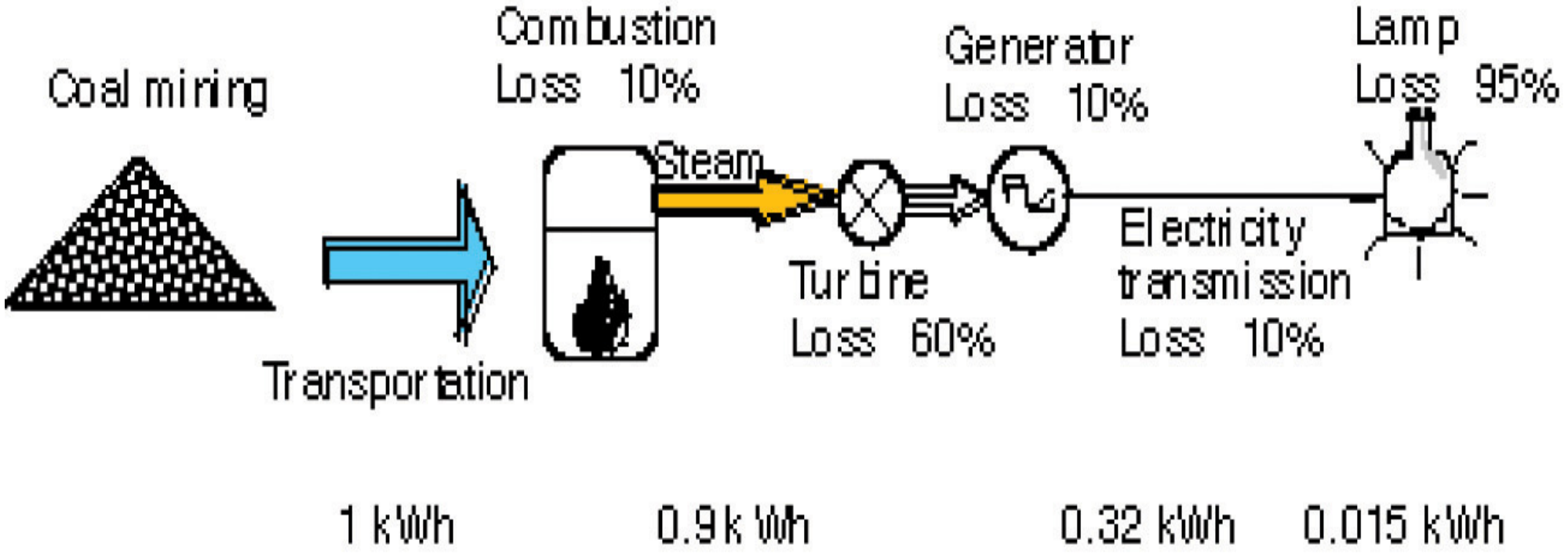


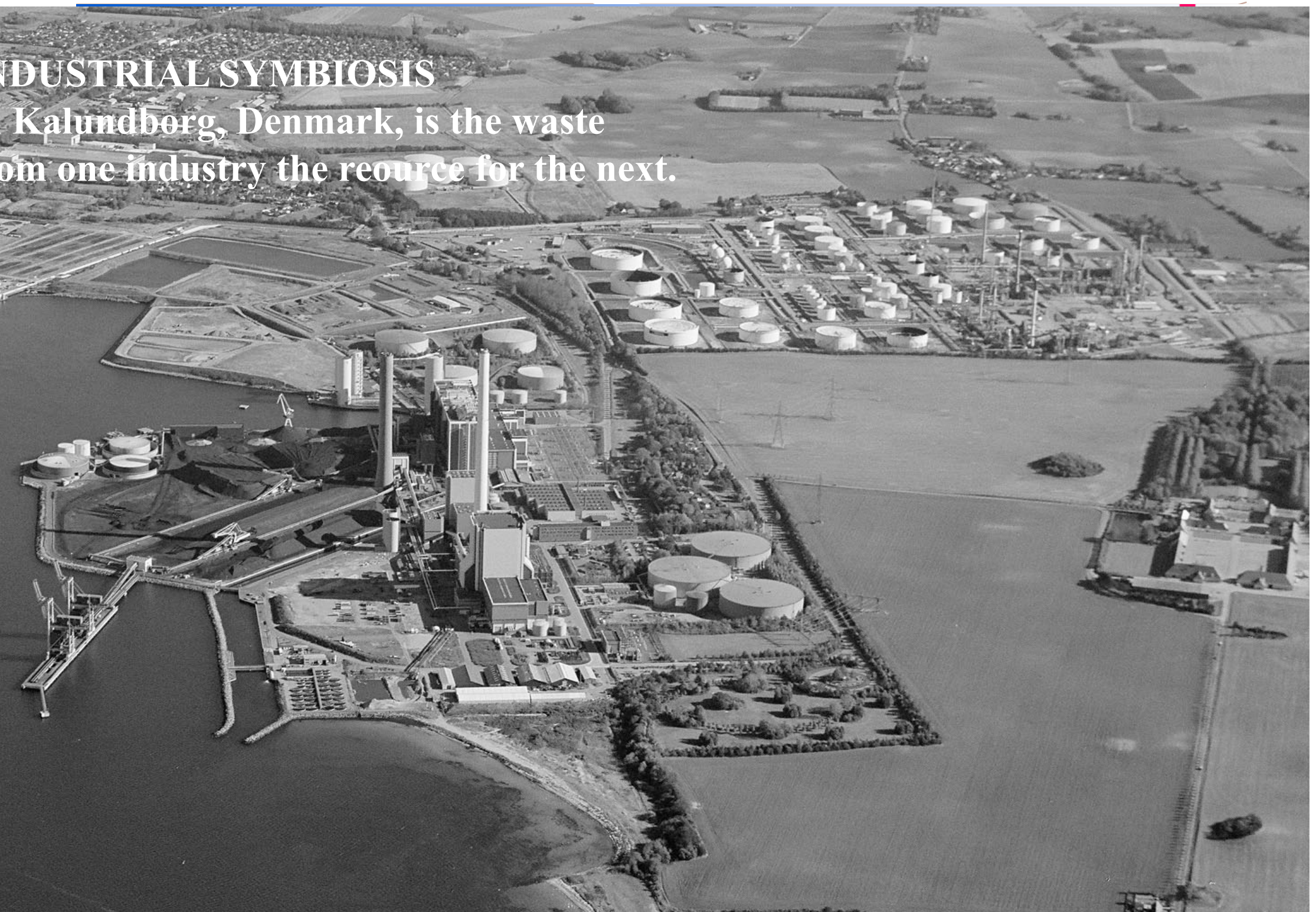
Different systems approaches to Cleantech

1. Looking at demand management rather than supply management.
2. Developing – exchanging – the products.
3. External recycling, e.g. paper recycling
4. Industrial symbiosis – use the waste streams, e.g. steam and hot water – for some purpose such as district heating.

Demand management is better than increased production.

It is smarter to make the lamp twice as good than to make the pile of coal twice bigger!




NDUSTRIAL SYMBIOSIS
Kalundborg, Denmark, is the waste
om one industry the reource for the next.

The production itself is a very important part – it may be improved tremendously by Cleaner Production, CP!

Cleaner Production

Cleaner Production

- The goal is to improve the eco-efficiency in companies by implementation of technical or organisational actions
- By reducing the negative effects to the environment operating costs are reduced
- Cleaner Production works with process integrated – preventive - methods instead of End-of-Pipe solutions

Cleaner Production is good not only for the environment but also for the economy!

Of course!

You make products efficiently, not pollutants - inefficiently

Thank you

Paris 2010