Sustainable Value – An Integrated Value-Based Approach to Measure Sustainable Performance

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SUSTAINABLE MANAGEMENT IN ACTION SMIA05

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ADVANCE

Institute for Futures Studies and Technology Assessment IZT

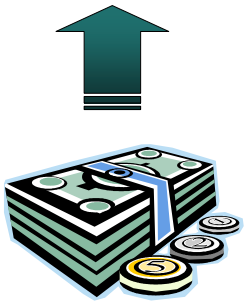
School of Earth & Environment – University of Leeds

What will we talk about?

- The problem of corporate sustainability assessment.
- Introduction of the Sustainable Value approach.
- The BP case.
- Some implications.
- Presentation of the ADVANCE-Project.

Companies, value creation and resource use.

- Companies create value



More preferred to less.

- Companies need resources

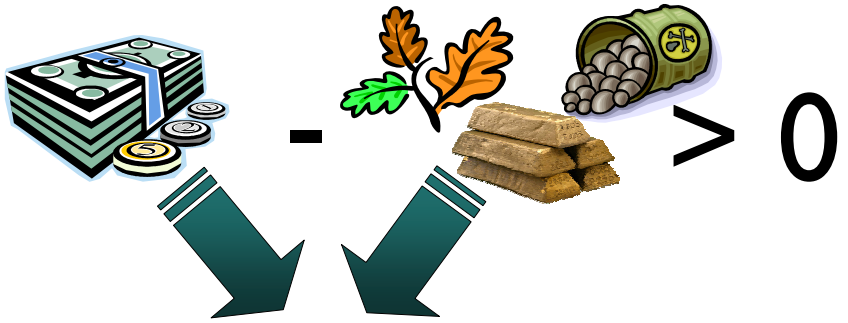
Less preferred to more.

BP's environmental performance – any clue?

	2002	2003
Environment[2]		
Direct carbon dioxide (CO_2) (million tonnes)[4]	76.7[5]	< **78.5**
Indirect carbon dioxide (CO_2) (million tonnes)[4]	11.4[5]	> **10.4**
Direct methane (CH_4) (million tonnes)[4]	0.27[5]	> **0.24**
Direct greenhouse gas (million tonnes CO_2 equivalent)[4]	82.4[5]	< **83.4**
Flaring (exploration and production) (thousand tonnes of hydrocarbons)	1,735	> **1,342**
Sulphur dioxide (SO_2) (thousand tonnes)	169.2	> **150.9**
Nitrogen oxides (NO_x) (thousand tonnes)	242.1	> **220.3**
Non-methane hydrocarbons (NMHC) (thousand tonnes)	322.1	> **268.8**
Number of spills (loss of primary containment)	761[5]	> **635**
Volume of product spilled (thousand litres)	3,524	< **3,837**
Volume of product unrecovered (thousand litres)	1,084	< **1,407**
Discharges to water (thousand tonnes)	125.9	> **57.1**
Hazardous waste (thousand tonnes)	302.0	> **238.6**
Environmental and safety fines and penalties ($ million)	27.5	> **7.0**

Source: BP Sustainability Report 2003

Easy in theory – difficult in practice



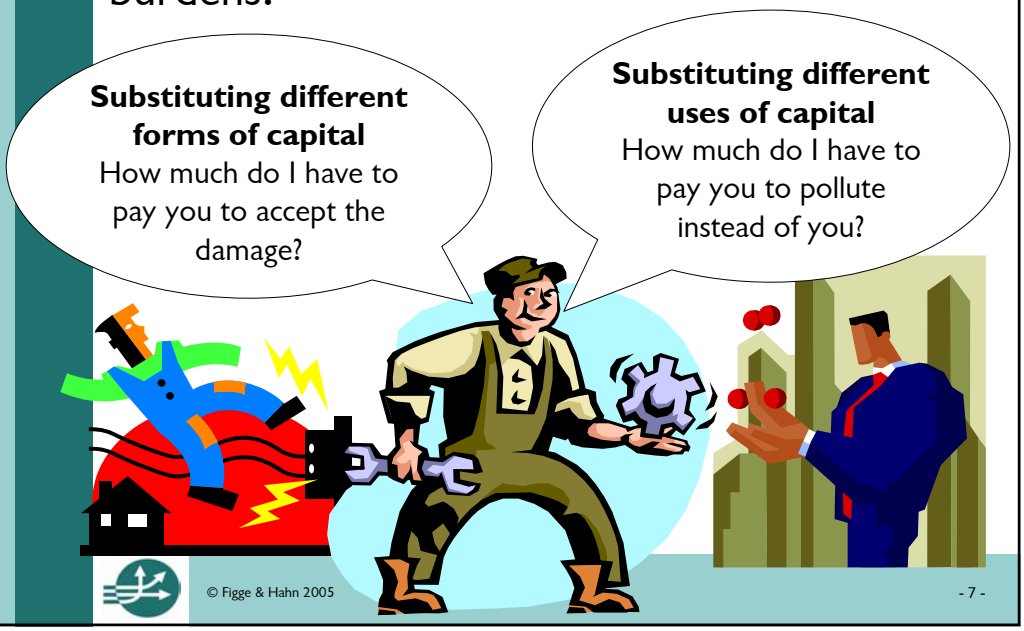
Challenge: We need to express this in the same unit!

Here's what David Green had to say...
...in 1894

But, when we once recognize the sacrifice of opportunity as an element in the cost of production, we find that the principle has a very wide application. Not only time and strength, but commodities, capital, and many of the free gifts of nature, such as mineral deposits and the use of fruitful land, must be economized if we are to act reasonably. Before devoting any one of these resources to a particular use, we must consider the other uses from which it will be withheld by our action; and the most advantageous opportunity which we deliberately forego constitutes a sacrifice for which we must expect at least an equivalent return.

(Green 1894)

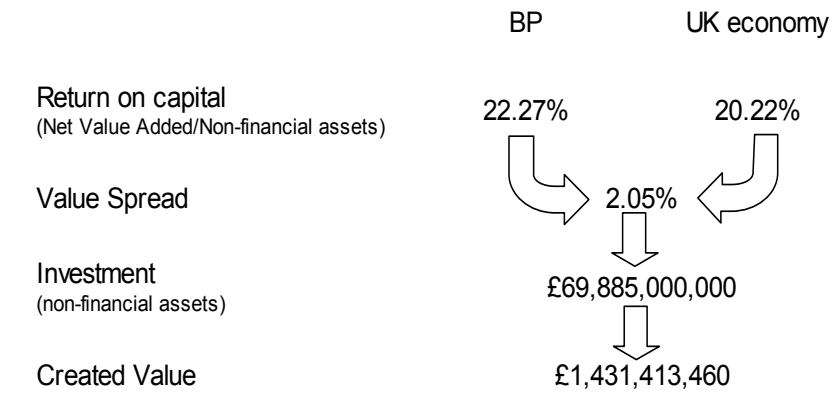
How can we deal with environmental & social burdens?



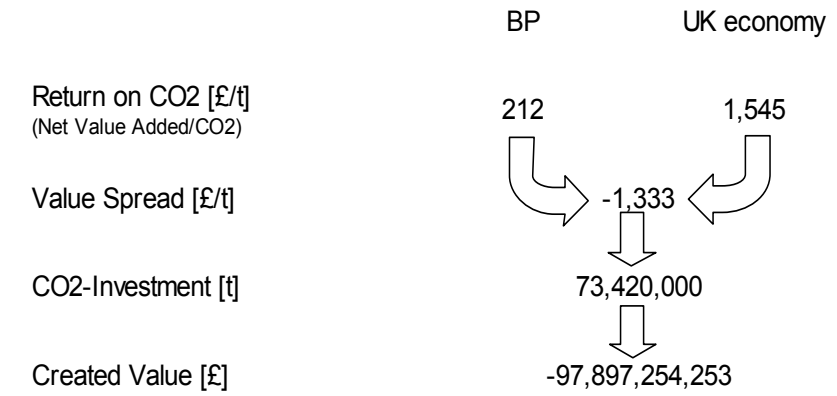
Fundamental differences between value-based and burden-based approaches.

- Burden-based approaches...
  - ... assess resource use according to the burden that is caused.
  - ... focus on the relative harmfulness of environmental impacts.
- Value-based approaches...
  - ... assess the use of resources according to the effect on value creation.
  - ... focus on opportunity cost of resource use.
- Both approaches are necessary for optimal resource use.

Let's look at it in economic terms: Creating economic value



... an analogous environmental perspective: Creating Sustainable Value



The 5 steps of calculating Sustainable Value

1. Calculate corporate efficiency for each resource.
2. Calculate the efficiency of resource use of the benchmark (opportunity cost).
3. Calculate the value spread (1-2).
4. Multiply with the amount of resources used in the company in order to get the value contribution.
5. Calculate the Sustainable Value by summing up the value contributions and dividing by the number of resources considered.

Calculating Sustainable Value of BP in 2001 in 5 steps

		Step 1 Return on capital [Mio £/unit]		**Step 2** Opportunity cost of capital [Mio £/unit]		**Step 3** Value spread [Mio £/unit]		**Step 4** Amount of capital used	Value created [Mio £]
Economic capital	(	0.2227	-	0.2022	) ⇨	0.0205	*	69.885 Mio £ =	1,431
CO_2	(	0.0002	-	0.0015	) ⇨	-0.0013	*	73.420.000 t =	-97,897
CH_4	(	0.0424	-	0.4030	) ⇨	-0.3606	*	367.201 t =	-132,425
SO_2	(	0.0693	-	0.7864	) ⇨	-0.7171	*	224.541 t =	-161,020
NO_X	(	0.0585	-	0.5266	) ⇨	-0.4681	*	266.133 t =	-124,587
CO	(	0.1249	-	0.2230	) ⇨	-0.0981	*	124.584 t =	-12,225
Work accidents	(	187.5060	-	6.6673	) ⇨	180.8388	*	83 =	15,010
PM_{10}	(	0.9338	-	4.9703	) ⇨	-4.0365	*	16.666 t =	-67,272
		Step 5				Sustainable Value			-72.373 Mio £

Source: Figge & Hahn 2005

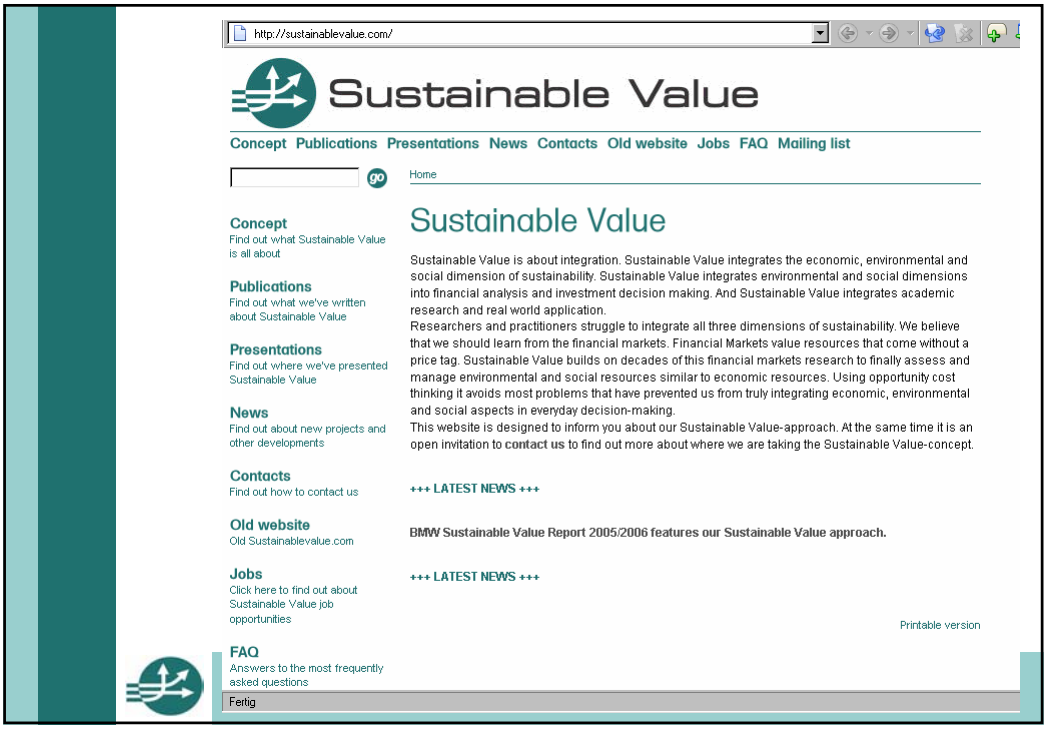
The ADVANCE - Project

- **ADVANCE** is an EU-funded project to assess the sustainable performance of European industry using the Sustainable Value-approach.
- We will assess more than 50 companies until the end of this year.
- Assessment results will be published in a survey and the methodology will be published in a handbook.
- We will present the findings of our project in conferences all over Europe.
- Visit our project website for more information:

  www.advance-project.org

The Sustainable Value Approach

- Sustainable Value allows to express sustainability performance in monetary terms, i.e. in €, £ or US-$.
- Sustainable Value allows to assess the sustainable performance of companies or other economic entities similar to financial performance.
- Sustainable Value is based on opportunity costs and compatible with managerial thinking.
- It allows an integrative triple bottom line performance assessment.
- It shows whether resources are used in companies in a value-creating way.
- The assessment is based on data which is publicly available.
- And it does not require external cost figures or similar.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Sustainable Value
Sustainable Value is about integration. Sustainable Value integrates the economic, environmental and social dimension of sustainability. Sustainable Value integrates environmental and social dimensions into financial analysis and investment decision making. And Sustainable Value integrates academic research and real world application.
Researchers and practitioners struggle to integrate all three dimensions of sustainability. We believe that we should learn from the financial markets. Financial Markets value resources that come without a price tag. Sustainable Value builds on decades of this financial markets research to finally assess and manage environmental and social resources similar to economic resources. Using opportunity cost thinking it avoids most problems that have prevented us from truly integrating economic, environmental and social aspects in everyday decision-making.
This website is designed to inform you about our Sustainable Value-approach. At the same time it is an open invitation to contact us to find out more about where we are taking the Sustainable Value-concept.
+++ LATEST NEWS +++
BMW Sustainable Value Report 2005/2006 features our Sustainable Value approach.
+++ LATEST NEWS +++
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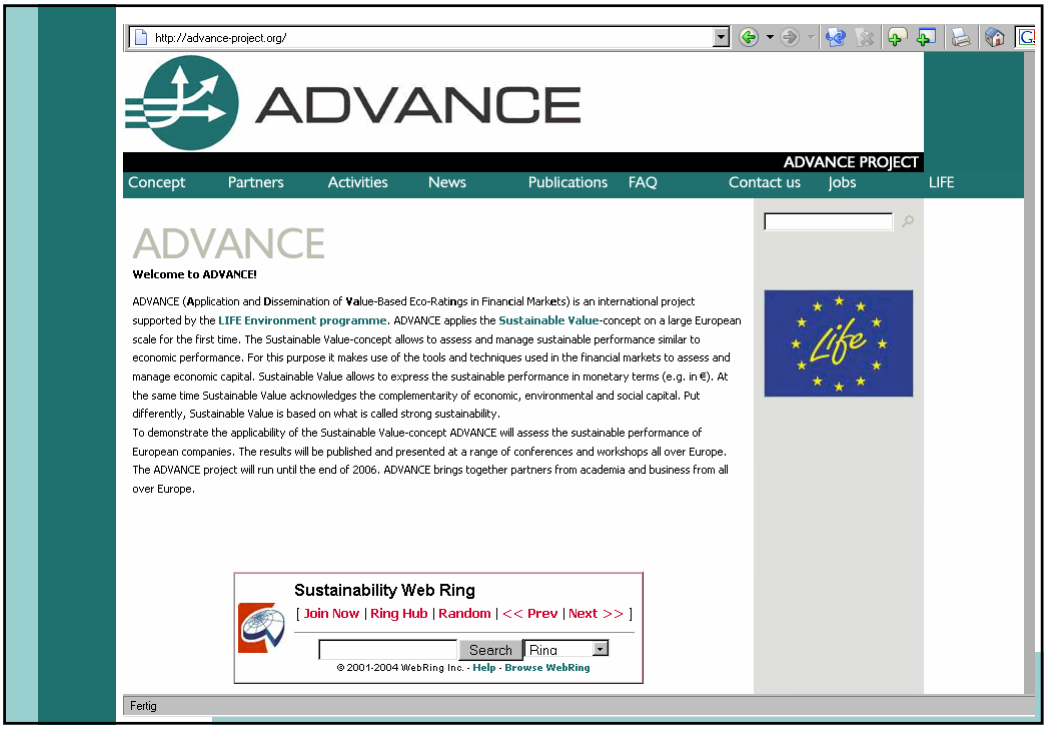
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Welcome to ADVANCE!
ADVANCE (Application and Dissemination of Value-Based Eco-Ratings in Financial Markets) is an international project supported by the LIFE Environment programme. ADVANCE applies the Sustainable Value-concept on a large European scale for the first time. The Sustainable Value-concept allows to assess and manage sustainable performance similar to economic performance. For this purpose it makes use of the tools and techniques used in the financial markets to assess and manage economic capital. Sustainable Value allows to express the sustainable performance in monetary terms (e.g. in €). At the same time Sustainable Value acknowledges the complementarity of economic, environmental and social capital. Put differently, Sustainable Value is based on what is called strong sustainability.
To demonstrate the applicability of the Sustainable Value-concept ADVANCE will assess the sustainable performance of European companies. The results will be published and presented at a range of conferences and workshops all over Europe. The ADVANCE project will run until the end of 2006. ADVANCE brings together partners from academia and business from all over Europe.
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Publications

- Figge, F. & Hahn, T. (forthcoming): "The Cost of Sustainability Capital and the Creation of Sustainable Value of Companies", Journal of Industrial Ecology.
- Figge, F. & Hahn, T, (forthcoming): "Sustainable Value - Ein wertorientierter Ansatz zur Ermittlung der Nachhaltigkeitseffizienz und der nachhaltigen Wertschöpfung von Unternehmen", in: Busch, T. & Liedke, C. (Hrsg.): Materialeffizienz: Potenziale bewerten, Innovationen fördern, Beschäftigung sichern. München: ökom.
- Figge, F. & Hahn, T. (2004): "Sustainable Value Added. Measuring Corporate Contributions to Sustainability Beyond Eco-Efficiency", Ecological Economics, 48(2), 173-187.
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