Siemens Sustainability

Wie man mit Nachhaltigkeit (sogar noch) erfolgreich(er) sein kann

Markus Strangmüller, Bamberg, Mai 2013

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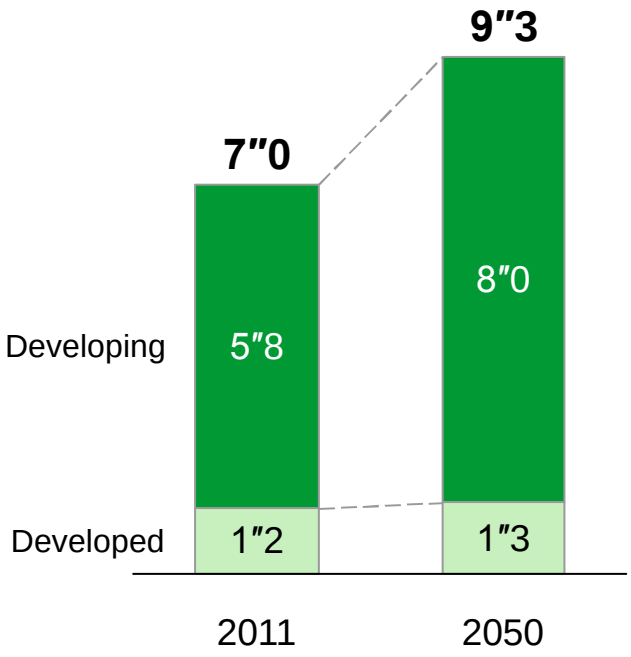
Our world is on a non sustainable route

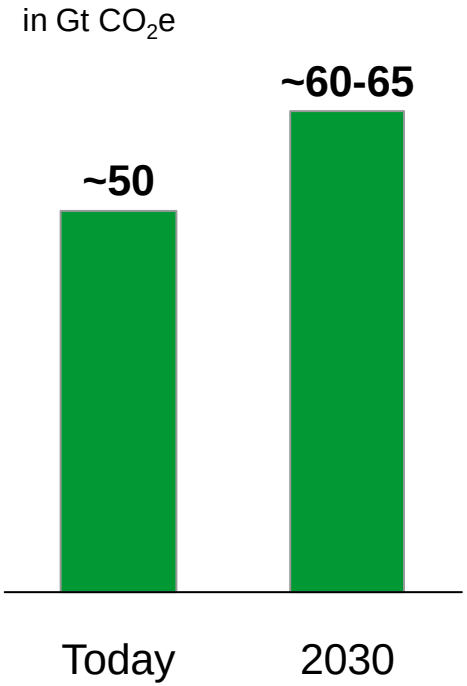
World Population



Ressource consumption

1,5 Planets

Development of CO_2 (BAU)



If we continue as today we would need 3 planets by 2050

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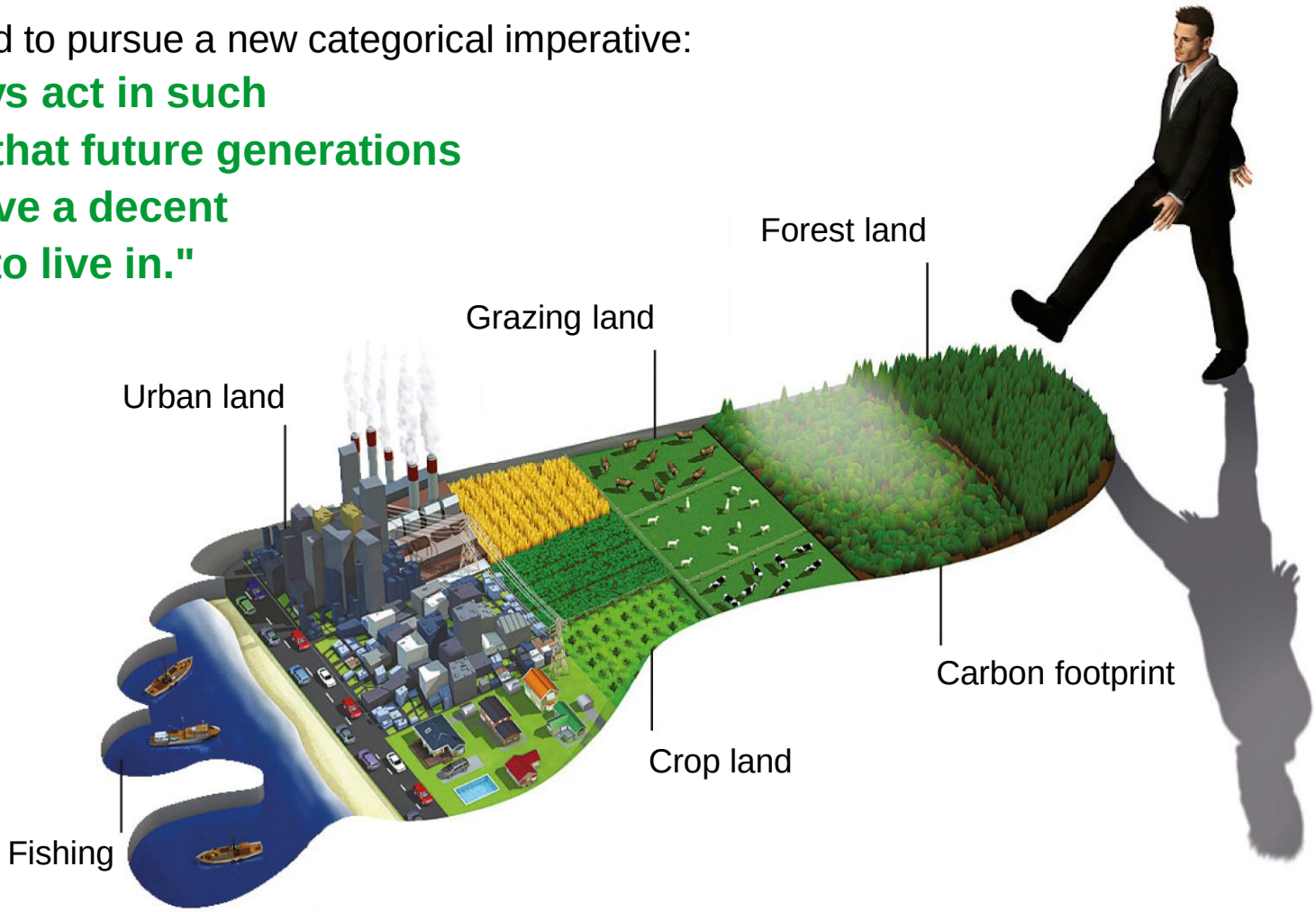
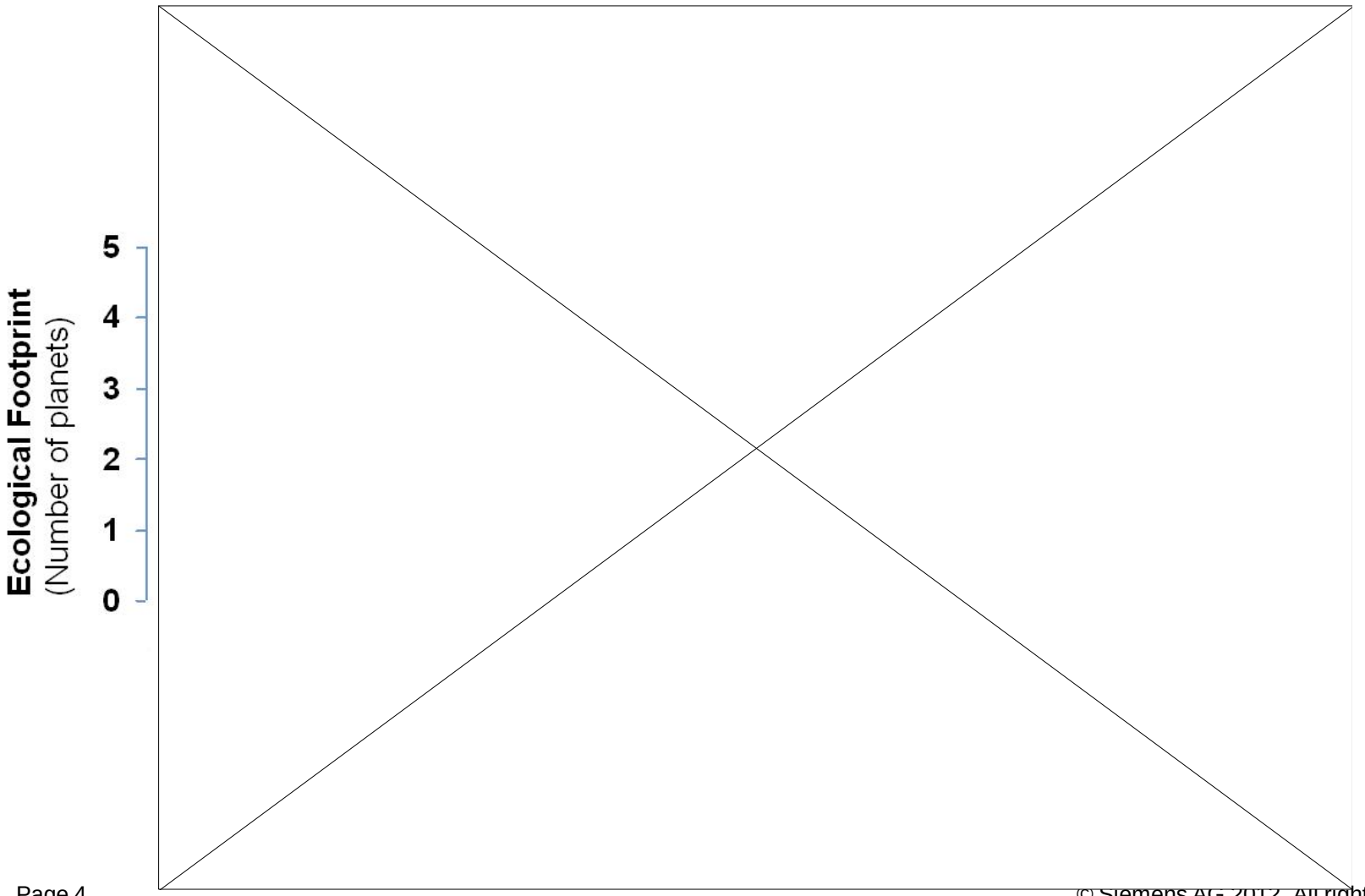
We need to pursue a new categorical imperative:

"Always act in such a way that future generations will have a decent world to live in."

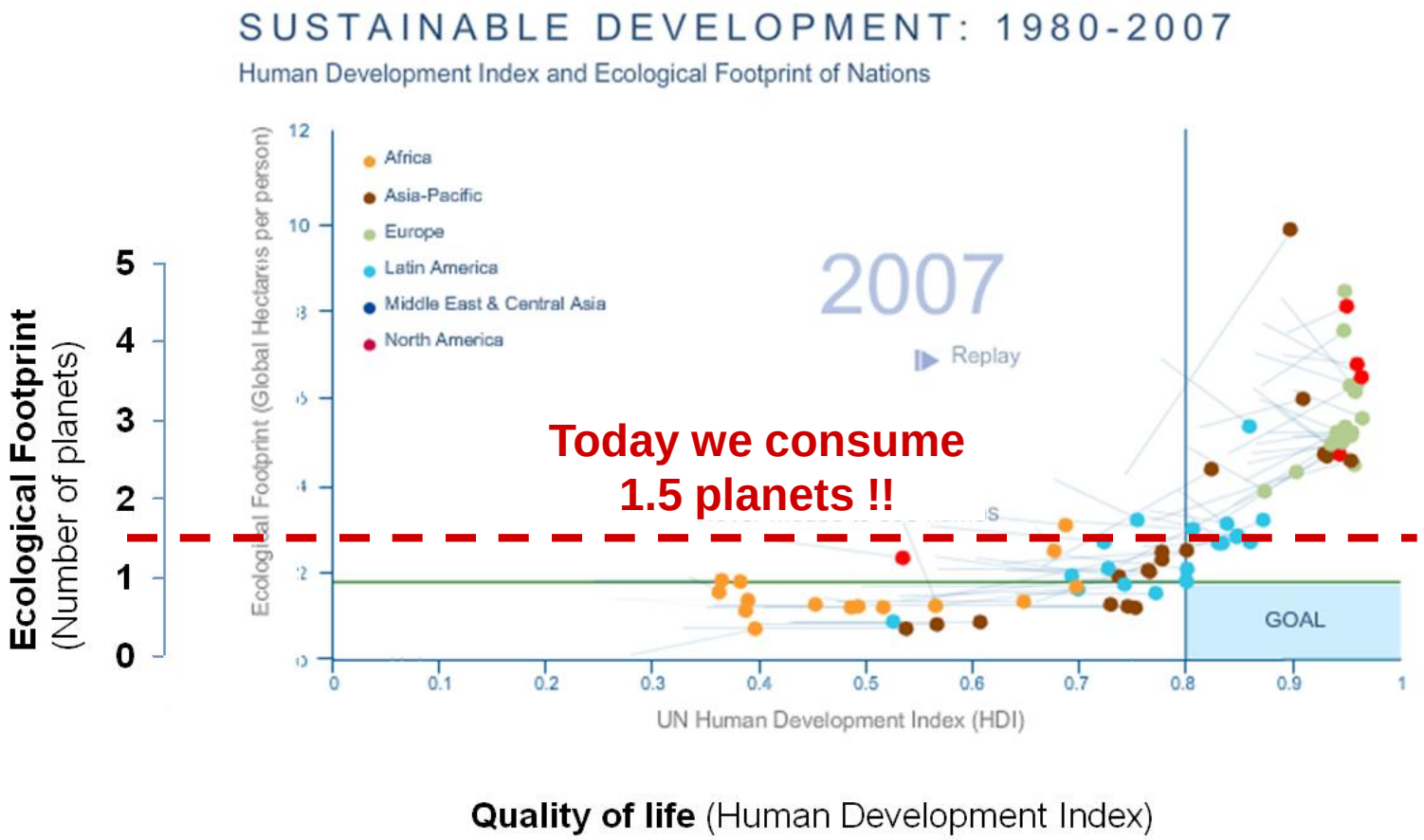


Ecological Footprint according to Mathis Wackernagel, Global Footprint Network
Source: Ministry of Environment, New Zealand

“Efficient” use of resources?



“Efficient” use of resources?



Source: The Global Footprint Network

The sustainability challenge is to maintain or increase quality of life while staying within the earth's limits

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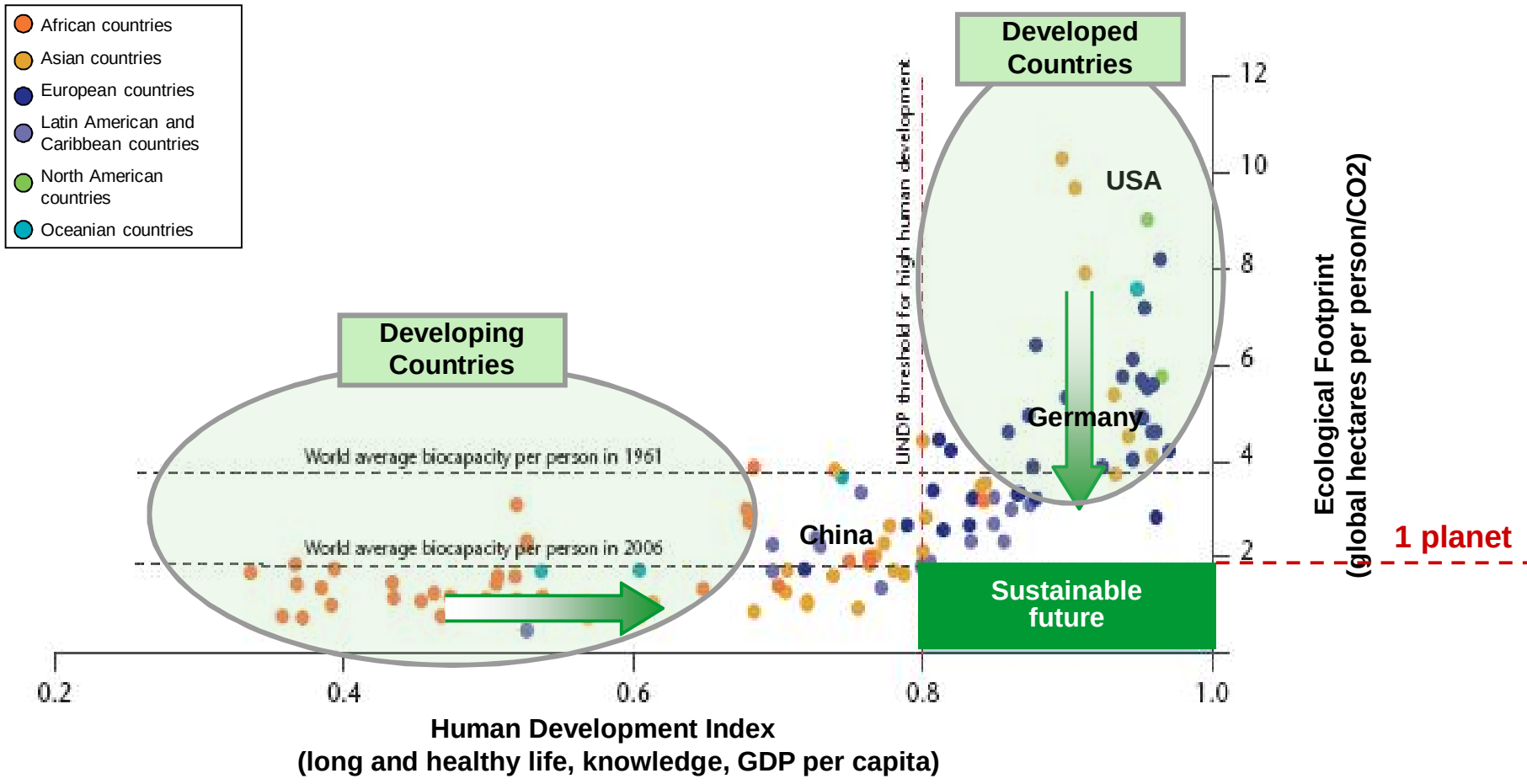

Source: UN, WBCSD Vision 2050, Sustainability Office

Megatrends are significantly shaping the future of our planet

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Efficient use of resources

Urbanization

Demographic change

Climate change

Globalization

Our sustainability program: Initiatives, “walk the talk” and alliances

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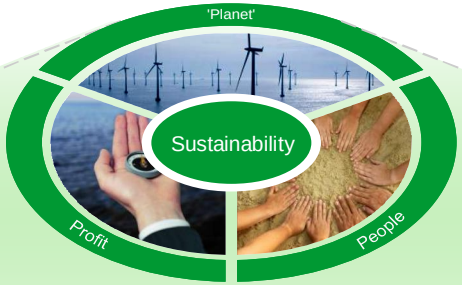

Initiatives	Walk the talk	Alliances
We turn our approach to sustainability into concrete business opportunities	We are committed to embedding sustain-ability throughout our organization and operations	To achieve our sustainability targets, we work with all relevant stakeholders

Sustainability – our guiding principle

Siemens values: excellent – innovative - responsible

„Grüne“ Technologien: Bedeutender Markt mit großem Wachstumspotenzial

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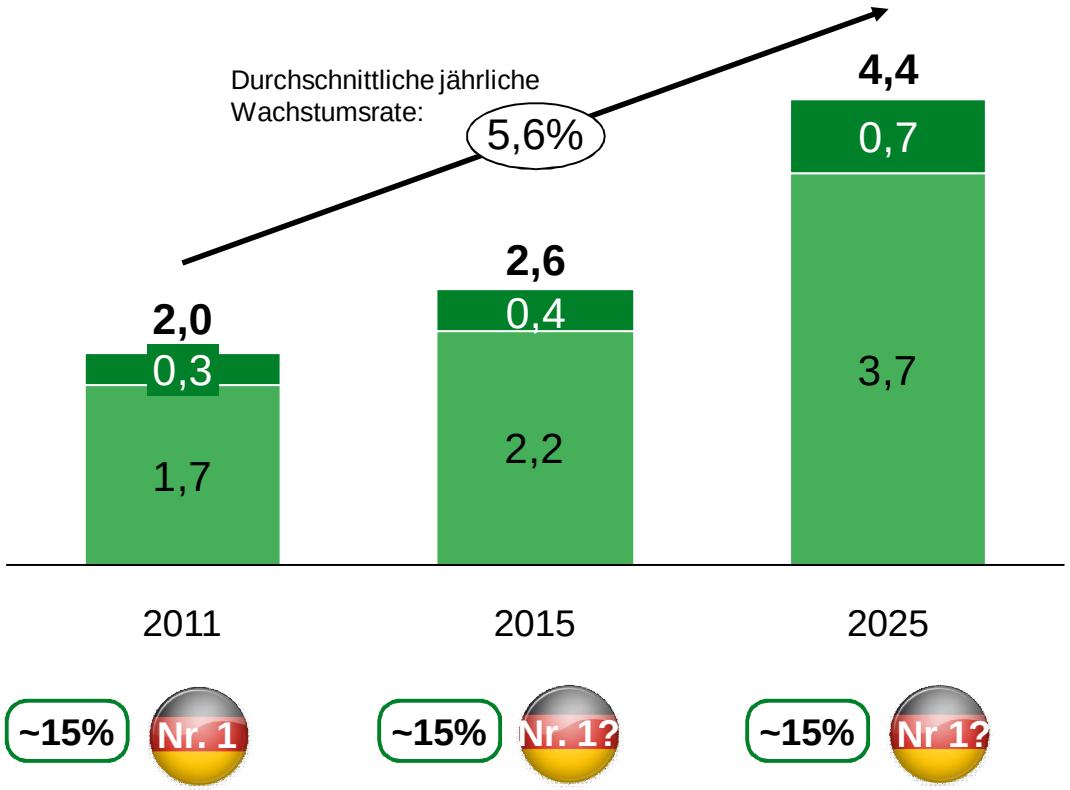
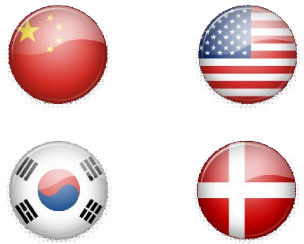
Marktgröße für umwelt- und ressourcen-schonende Technologien (in Billionen EUR)



Größte Wettbewerber



- Deutschland
- Global (exkl. DE)
- Marktanteil Deutschland

Quelle: BMU/ BDI „Memorandum für eine Green Economy“, Juni 2012

Siemens' Environmental Portfolio covers ~32% of the total greenhouse gas abatement potential in 2030

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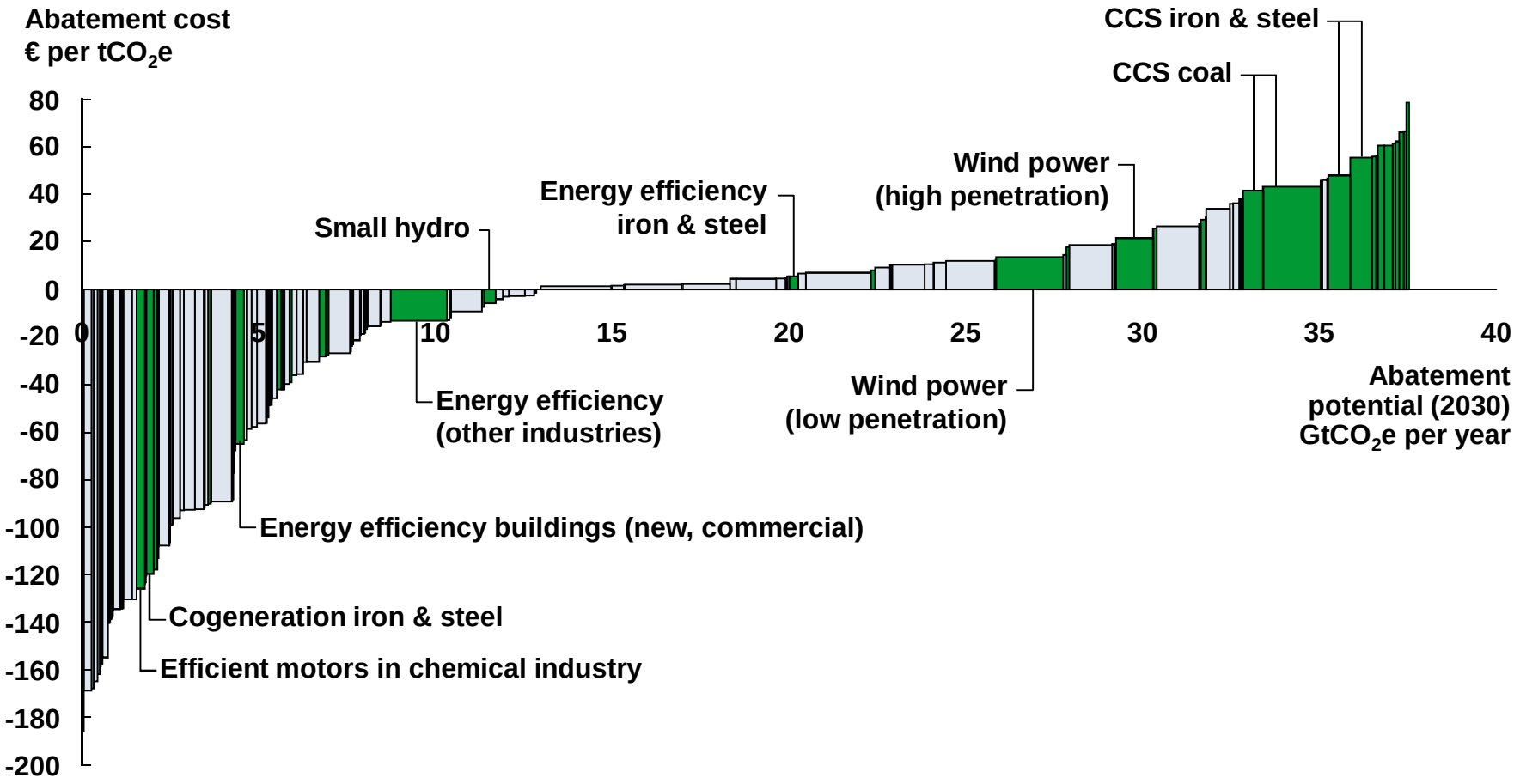
Marginal greenhouse gas abatement cost curve, 2030



Source: McKinsey; Sustainability Office

Initiatives:
The Environmental Portfolio of Siemens

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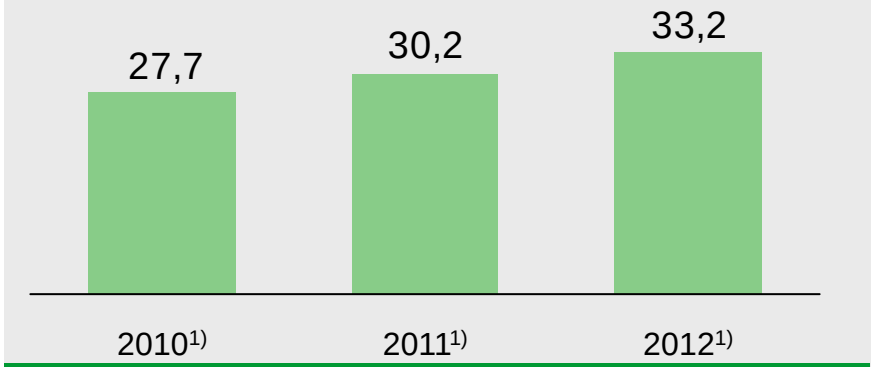
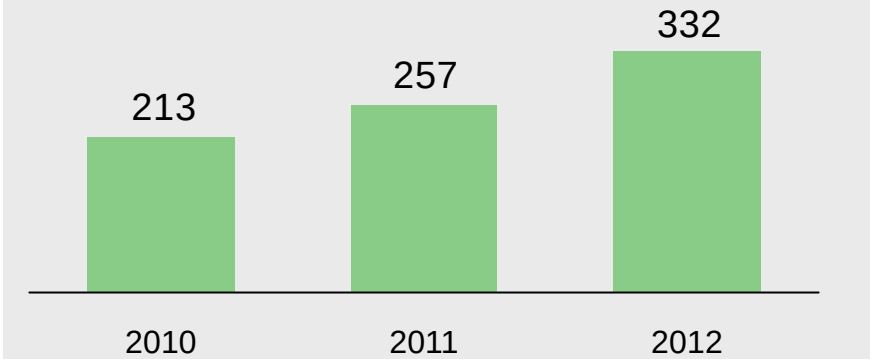
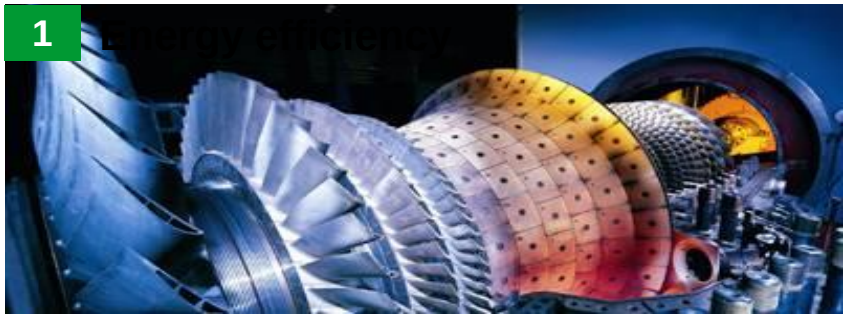
as of November 2012

Environmental Portfolio revenue
(in € billions)



Environmental Portfolio CO_2 abatement
(in million metric tons)





1) Without OSRAM, on a comparable basis

Our Environmental Portfolio helps our customers to improve their efficiency and performance

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Customer benefits along the energy conversion chain (examples)

Power generation

- Highly-efficient combined cycle power plants with an efficiency rating of over 60%
- Offshore wind farms for the optimal wind yields on the open sea

Power transmission and distribution

- High-voltage Direct Current (HVDC) transmission to convey electricity over long distances at low loss
- Grid connection for offshore wind farms
- Gas-insulated transformer stations for urban centers

Industrial applications

- Environmentally friendly steelmaking processes
- Efficient high-speed trains
- Traffic management systems
- Water and wastewater treatment in the paper industry

End use

- Building modernization
- Energy-saving, cost-effective magnetic resonance systems

Power consumption

Beispiele aus dem Siemens Nachhaltigkeitsbericht 2012

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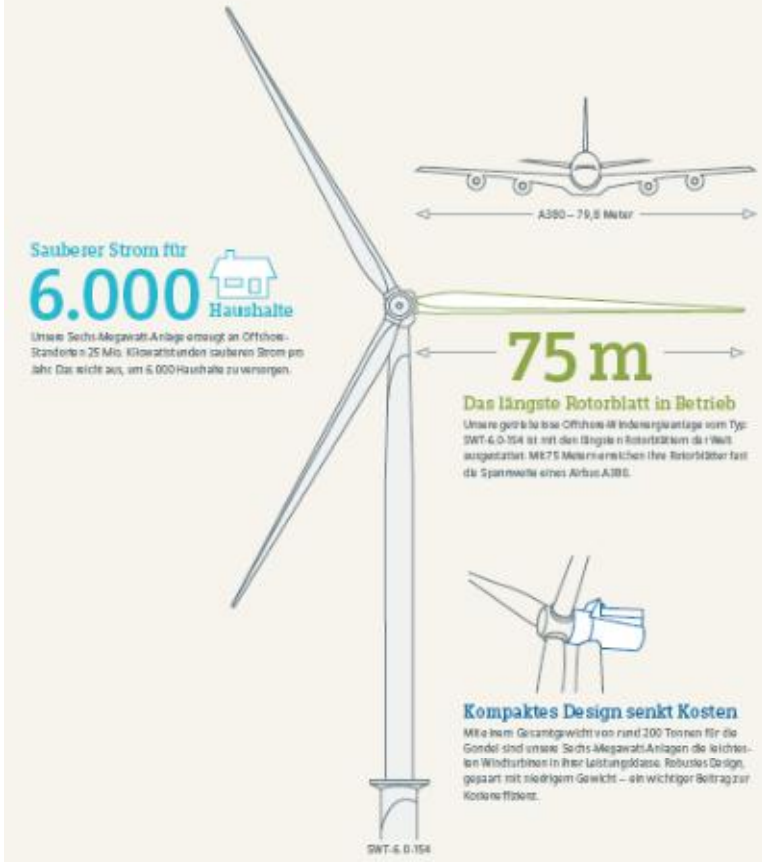
Die Zukunft der Offshore-Windenergie hat begonnen

Mit der Installation der ersten beiden Sechs-Megawatt-Windenergieanlagen im britischen Offshore-Testfeld Gunfleet Sands III haben wir einen Meilenstein erreicht. Siemens ist Vorreiter in der Offshore-Windturbinentechnologie und hat sich auch zu einem Pionier bei der herausfordernden Offshore-Installation von Windturbinen entwickelt. Ziel aller Anstrengungen ist es, die Kosten der Windenergie weiter zu senken und damit Windkraft wettbewerbsfähig zu traditionellen Energiequellen zu machen.



Sauberer Strom für 6.000 Haushalte

Unsere Sechs-Megawatt-Anlage erzeugt an Offshore-Standorten 25 Mio. Kilowattstunden sauberen Strom pro Jahr. Das reicht aus, um 6.000 Haushalte zu versorgen.

Das längste Rotorblatt in Betrieb

Unsere gezeigte Offshore-Windenergieanlage vom Typ SWT-6.0-154 ist mit den längsten Rotorblättern der Welt ausgestattet. Mit 75 Metern erreichen ihre Rotorblätter fast die Spannweite eines Airbus A380.

Kompaktes Design senkt Kosten

Mit einem Gesamtgewicht von rund 200 Tonnen für die Gondel sind unsere Sechs-Megawatt-Anlagen die leichtesten Windturbinen in ihrer Leistungsklasse. Robustes Design, gepaart mit niedrigem Gewicht – ein wichtiger Beitrag zur Kostensenkung.

Siemens beschleunigt Prozesse über den gesamten Produktentwicklungs- und Produktionsprozess

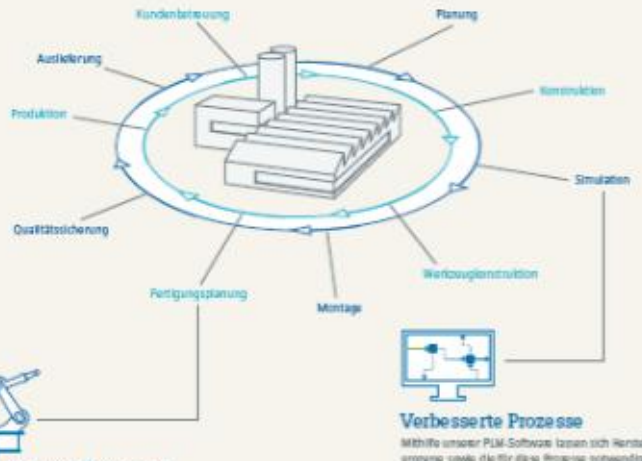
Die industrielle Fertigung steht heute vor großen Herausforderungen: Rahmenbedingungen, die sich schnell ändern, kürzere Innovationszyklen und ein erhöhter Wettbewerb erfordern intelligentes Handeln – und zwar über den gesamten Produktentwicklungs- und Produktionsprozess: von der Planung über die Fertigung bis zu den Services. Führende Hersteller wie Siemens bauen daher auf digitale Fertigungslösungen von Siemens. Sie versetzen sie in die Lage, rascher auf aktuelle Anforderungen zu reagieren, die Produktivität zu erhöhen sowie Kosten und Ressourcenverbrauch zu senken.

↓ 26 %
Reduzierung der Produktionskosten

↑ 27 %
Steigerung der Produktion

Kundennutzen

Welchen Kundennutzen PLM-Software konkret bieten kann, zeigt das Beispiel der Firma bibus. INDISM konnte seinen Kunden mithilfe unserer Tecnomatix-Softwarelösung dabei unterstützen, seine Produktionskosten um 26 % zu reduzieren und gleichzeitig die Produktion um 27 % zu steigern.



Effiziente Fertigung

Tecnomatix deckt den gesamten Fertigungszyklus ab, von der Konzept- über die Detailplanung bis zum Start der Produktion. Wissens-Management-Funktionen erlauben es, das vorhandene Wissen zu sammeln und weiterzuverwenden.

Verbesserte Prozesse

Mithilfe unserer PLM-Software lassen sich Herstellungsprozesse sowie die für diese Prozesse notwendigen Produktionsanlagen schon während der Entwicklung simulieren, testen und optimieren, lange bevor eine reale Anlage anläuft. Dies ist unser Beitrag zur Prozessoptimierung.

Siemens insights into "how to become sustainable", jointly developed with major world cities

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Perception studies

Megacity Challenges

- Comprehensive analysis based on interviews with over 500 city managers in 25 selected megacities
- Urban infrastructure trends and challenges as well as global best practices

Comparative studies

Green City Index (GCI)

- Index compares cities across 8 dimensions of environmental sustainability: CO_2, energy, buildings, transportation, waste & land use, water, air, governance
- Available for Europe and Latin America, planned for Australia/Pacific

Implementation studies

Sustainable urban infrastructure series

- "How to become a sustainable city" with focus on measures for resource efficiency and CO_2 abatement
- Examples:
  London, Munich, Yekaterinburg, Dublin, Trondheim

Designing innovative products that save energy and reduce costs

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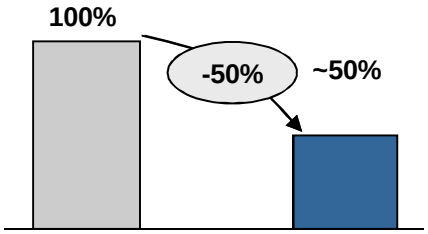
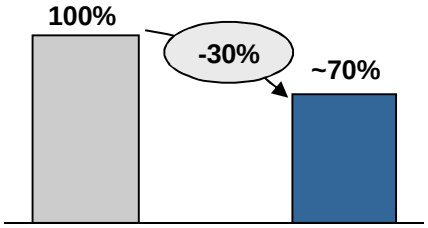
Energy Reduction



MAGNETOM ESSENZA

Low operating costs reduce energy bill up to 50%
Zero-helium boil-off during normal operation

Energy Reduction



SOMATOM Definition AS

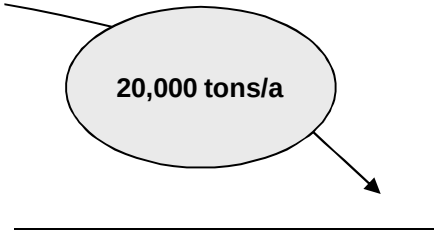
Energy Savings up to 30%
Material recycling rate up to 98% (in weight)
No lead used for counterweights

Dose Reduction and Energy Savings

SOMATOM Definition Flash

Dose reduction to less than 1 mSv for cardiac examination
Average **Energy Savings** of 85% during cardiac examinations

CO_2 Reduction and Energy Savings



Refurbished Systems

20,000 t **CO_2 Savings** per year
Energy savings in the range of 5,400 three-person households or of around 32 hectares of tropical rain forest.

The four-stage product take-back concept of Refurbished Systems

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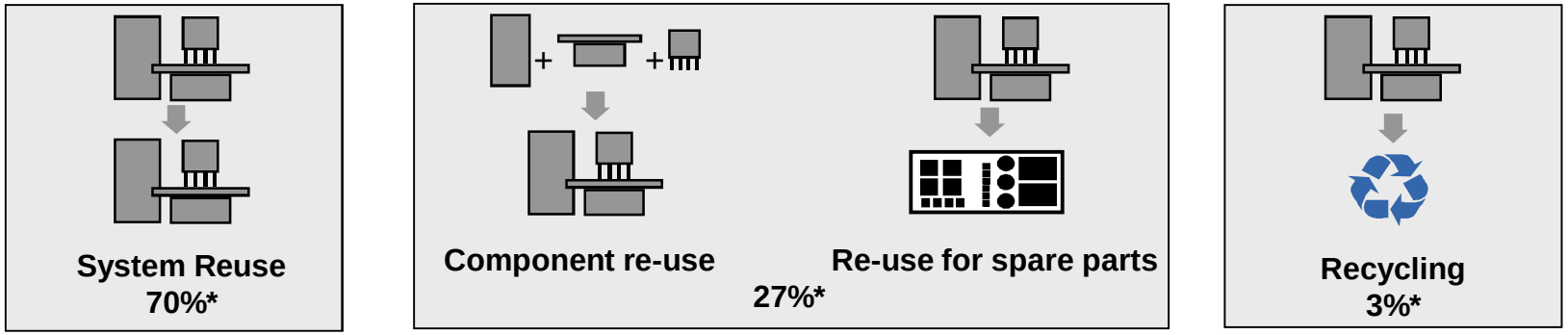
Refurbish
Proven Excellence

Re-use

Recycle



- Old devices will be taken back, dismantled and recycled in an environmentally-friendly manner by a network of recycling facilities
- Refurbished devices bearing the "Proven Excellence" quality seal ensure comparable quality to a new system at up to 30% lower costs
- Our refurbishing process enables the reuse of approximately 90% of materials

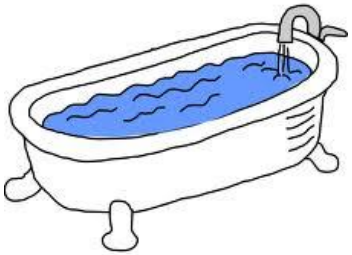
Extending the life of the devices and preserving valuable resources
CO2 savings of 150,000 tons over the last 10 years

*Based on an analysis of 100 systems

Digitales Röntgensystem Multix Select DR

Einsparungen jährlich bei dem Beispielkunden im SR12

Stapel mit 36 m Röntgenbilder



40 Badewannen Entwicklerlösung (6.000l)

80 Badewannen Wasser (12.000l)

Successful implementation of sustainable infra-structure requires innovation along four dimensions

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Technology/ products

- Reduce costs
- Increase efficiency/ performance
- Develop break-through technologies

Business models

- Unlock financing
- Build new revenue models
- Reach new markets

Regulatory framework

- Price externalities
- Enable pionee-ring implementation
- Support basic R&D

Public acceptance

- Build consensus on goals
- Facilitate discussions on options
- Foster behavioral change

Our sustainability program: Initiatives, walk the talk and alliances

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Initiatives	Walk the talk	Alliances
We turn our approach to sustainability into concrete business opportunities	We are committed to embedding sustain-ability throughout our organization and operations	To achieve our sustainability targets, we work with all relevant interest groups

Sustainability – our guiding principle

Siemens values: excellent – innovative - responsible

The EEP Book shows examples of 14 projects in different Siemens factories

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Presented projects in the EEP-Book:	
Total Investments EEP	17,264,032 €
Total Savings EEP	3,469,330 €/a
Total CO_2 Savings	13,645 t/a
Further energy efficiency measures:	
Total Investments	2,711,947 €
Total Savings	949,688 €/a
Total CO_2 Savings	2,956 t/a
Total of all measures:	
Total Investments	19,975,979 €
Total Savings	4,419,018 €/a
Total CO_2 Savings	16,601 t/a

Energy efficiency at suppliers – Example SCHMOLZ + BICKENBACH

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- Supplier: Tool producer
- Analysis of Krefeld company location by team of Siemens experts
- Goal: Identify improvement potential for energy efficiency

SCHMOLZ + BICKENBACH

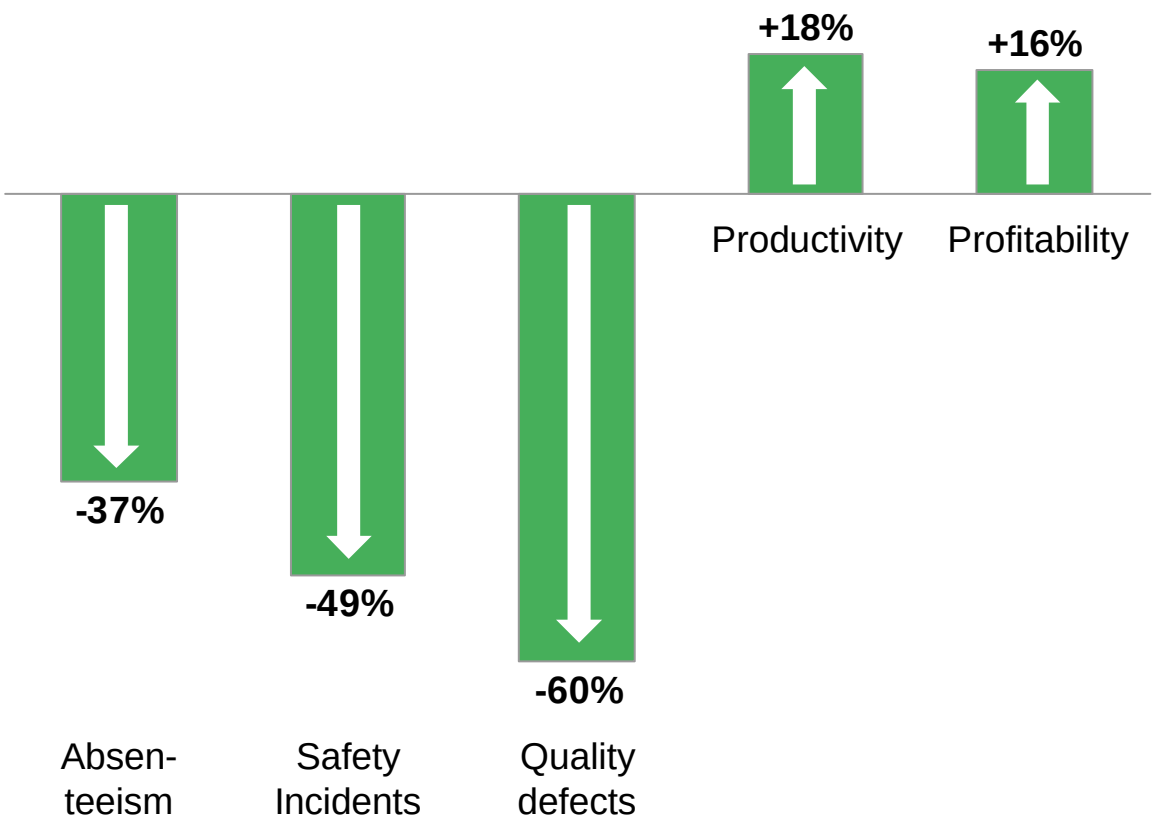
Results of the energy analysis:
Energy cost savings potential of 10 – 15 %

Examples of measures:

- Replace dust removal systems
- Purchase 20-ton medium-frequency furnace
- Install photovoltaic system

Employee Engagement is a Key Business Driver

Impact of Employee Engagement on business



Companies with highly engaged employees perform significantly better than companies with low engagement.

It's a fact:

- Global Gallup study involving 6.5 Mio. employees
- Proven cross-industry relevancy

Source: Gallup Research 2010 (global study in over 170 countries across 70 sub-industries and over 6.5 million employees)

These Sustainability Employee Engagement activities drive Sustainability Awareness and Transformation

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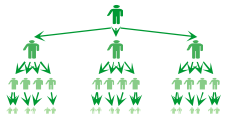
Sustainability Video Award Contest

- Intranet video contest
- Employees share 1-minute video clips with sustainability aspects of their work



Sustainability Interaction Workshop

- Objective is to make Sustainability relevant for participants and have them commit to actions
- Multiplier approach to reach 1.000s of employees within the next years

- Sustainability @ Sales launched;
- Next video in progress: Sustainability @ Supply Chain

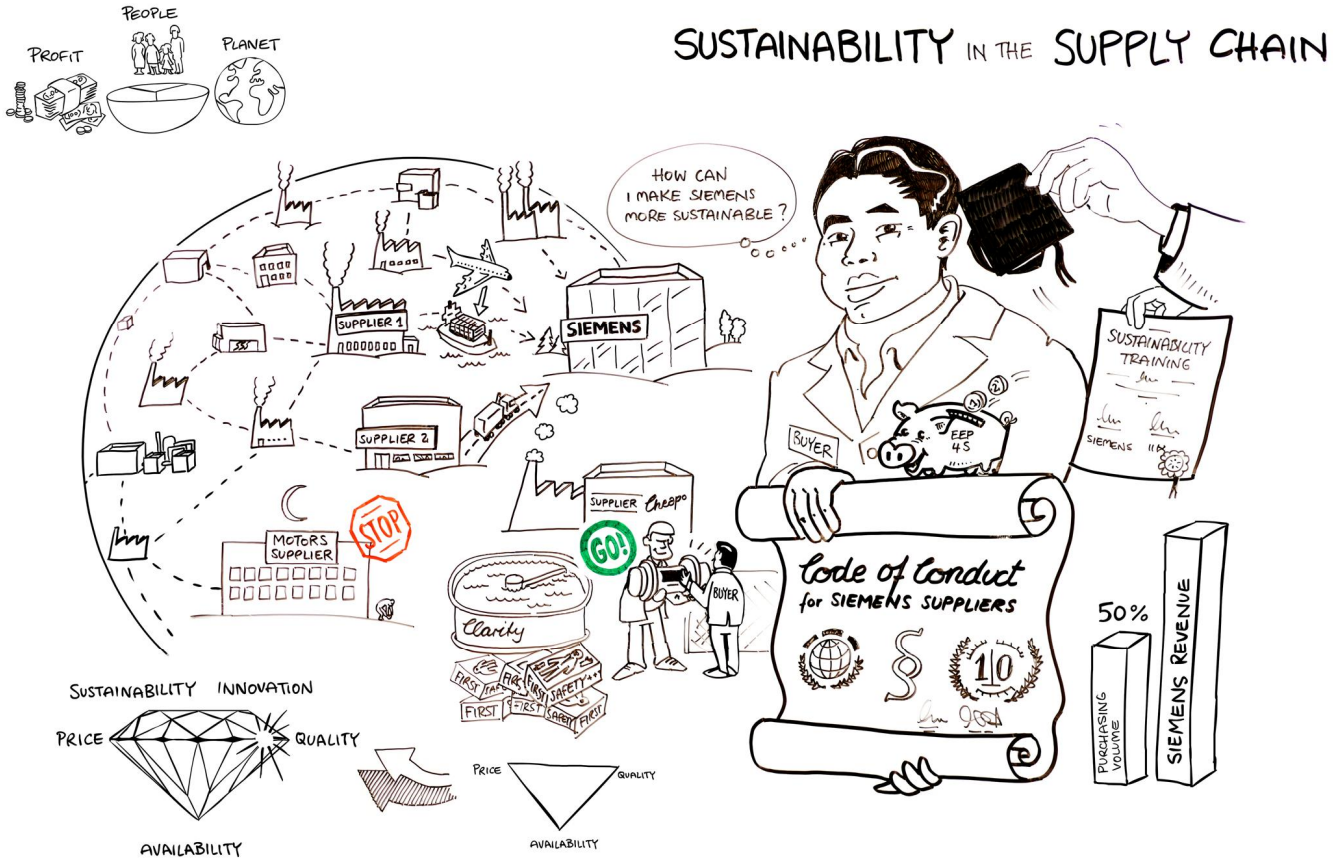
- Sustainability Breakfasts
- Dialoges
- Green Teams
- Green days, weeks, months

Sustainability @ Functions Videos

Sustainability Events/ actions

1	**Create awareness and understanding**	*Intranet-based*	**2** **Foster dialogue and productive conflict**	**3** **Drive transformation for Sustainability**

Sustainability in the Supply Chain



Our sustainability program: Initiatives, walk the talk and alliances

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We turn our approach to sustainability into concrete business opportunities	We are committed to embedding sustain-ability throughout our organization and operations	To achieve our sustainability targets, we work with all relevant interest groups

Sustainability – our guiding principle

Siemens values: excellent – innovative - responsible

Siemens participates in cooperative sustainability projects

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"A world in which cities provide a sustainable environment to live, work and play."

World Business Council for Sustainable Development

Siemens is an active member of the "**Urban Infrastructure Initiative"** of the WBCSD, which provides a platform for dialog with cities and offers the opportunity

- to become a trusted partner for implementing sustainable urban development
- to design a vision and roadmap for sustainable urban development
- to satisfy the cities' interlinked sustainability challenges by integrating cross-sector solutions
- to be involved in strategic urban development

“Collective Action” is building alliances to jointly fight corruption

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Characteristics of “Collective Action”

- Fight corruption in joint agreement with industry peers and other stakeholders
- Foster equal compliance standards through a preventive concept
- Involve independent facilitator / monitor
- Define consequences in case of infringements

Involve independent 3rd party / Legal counsels to prevent anti-trust issues

Independent third parties (NGOs) [1)]

1) Non-governmental organizations such as Transparency International

Siemens Sustainability Report 2012
Sustainable creates business opportunities

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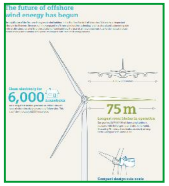
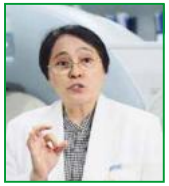
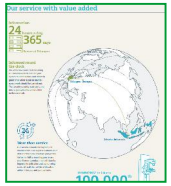
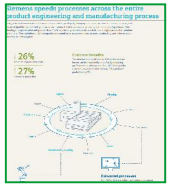
Sustainability Report 2012 (SR12)

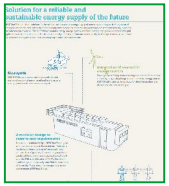


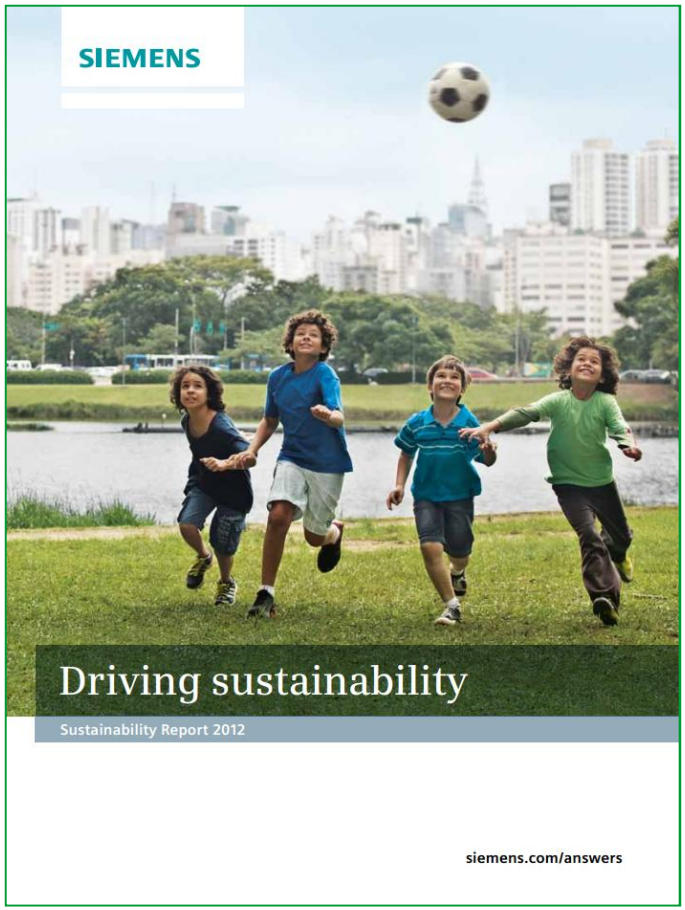



- 3 focus stories on **Sustainability creates business opportunities**
  - Interview with CSO Barbara Kux
  - 4 customer statements on sustainable Siemens products
  - Efficiency in the development production and use by customers of a Healthcare product in China
- Comprehensive discussion of the **sustainable strategy**
- **Facts and Figures** covering sustainable business strategy, environment, suppliers, employees, innovation, customers, corporate citizenship
- **"A+" level** by Global Reporting Initiative (GRI)
- **Limited assurance** statement through independent review of entire report by Ernst&Young
- More: www.siemens.com/sustainability-report



Source: CS

Top position in major sustainability rankings

2012

Dow Jones Sustainability Index

1st place (92/100 points): Supersector Leader "Industrial Goods & Services“

Thirteenth time in a row included in the DJSI World Index

Carbon Disclosure Project

High score (98/100 points): Fifth time in a row in the Global 500 Carbon Disclosure Leadership Index

Highest Performance Band (A/A–)

2011/2010

Oekom Corporate Rating

B- (prime): Best rated company at present in the category "Industrial Conglomerates"

IÖW/future Ranking

2nd place: Sustainability reports of the 150 largest companies in Germany

Interbrand Best Global Brands

8th place: Best Global Green Brands 2012 Ranking

German Sustainability Award

1st place: Germany’s Most Sustainable Strategies (Corporation)

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Summary

- **Sustainability provides many business opportunities, with customers and suppliers**
- **Sustainability helps to optimize the owner operations**
- **Sustainability positively influences employee engagement and motivation**
- **Impact with partners can be even higher**
- **ACT NOW!**