



MEASURING GREEN GROWTH: OECD INDICATORS

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BACKGROUND



The OECD Green Growth Strategy

- Strategy delivered to OECD Ministers in 2011:
 - Towards Green Growth
 - Tools for delivering on green growth
 - Towards Green Growth: Measuring Progress – OECD Indicators



Green growth – a definition

Green growth is about fostering **economic growth** and development while ensuring that the **natural assets** continue to provide the resources and environmental services on which our well-being relies.

To do this it must catalyse investment and innovation which will underpin sustained growth and give rise to new **economic opportunities**.



...what's different from Sustainable Development?

- SD provides important context for GG
- GG: more narrowly focused and with a strong policy component
- Green growth:
 - Emphasises *flows* and greening of growth
 - Emphasises economic opportunities: fostering innovation, investment and competition that can give rise to new sources of economic growth
 - Takes an 'optimistic' stance about growth and resilient ecosystems



Sources of green growth

Green growth can **open up new sources of growth through:**

- Enhanced productivity
- Innovation
- New markets
- Confidence
- Stability

and also **reduce risks of negative shocks to growth from:**

- Bottlenecks from resource scarcity
- Imbalances in natural systems



INDICATOR FRAMEWORK



Four dimensions

1. Low-carbon, resource-efficient economy:
Indicators of environmental and resource productivity
-> IS GROWTH BECOMING GREENER?
2. Rising productivity is not enough: often, an *absolute* decline in environmental pressures is needed to **keep the natural asset base intact**
-> IS THERE A RISK OF FUTURE SHOCK TO GROWTH?



Four dimensions

3. Capturing the direct interaction between people and the environment : **indicators of environmental quality of life**

→ *DO PEOPLE SUFFER OR BENEFIT FROM THEIR ENVIRONMENT?*

4. **Economic opportunities** from environmental considerations and **policy responses**

→ *IS GREENING OPENING UP NEW SOURCES OF GROWTH & EMPLOYMENT?*



Indicator groups and topics

1 Environmental and resource productivity

- Carbon and energy productivity
- Resource productivity: materials, nutrients, water
- Multi-factor productivity

2 The natural asset base

- Renewable stocks: water, forest, fish resources
- Non-renewable stocks: mineral resources
- Biodiversity and ecosystems

3 The environmental dimension of quality of life

- Environmental health and risks
- Environmental services and amenities

4 Economic opportunities and policy responses

- Technology and innovation
- Environmental goods & services
- International financial flows
- Prices and transfers
- Skills and training
- Regulations and management approaches

Socio-economic context and characteristics of growth

- Economic growth and structure
- Productivity and trade
- Labour markets, education and income
- Socio-demographic patterns



OECD approach

- **Choice of indicators**
 - Pragmatic
 - Selected from existing indicator sets and refined
 - Criteria: policy relevance; analytical soundness; measurability
 - No composite indicator, rather a set of internationally comparable indicators (≈ 25)
 - Flexible framework
 - easy to adapt to countries' circumstances
 - easy to improve and develop further
- **Implementation challenges**
 - Data quality and availability
 - Interpretation and communication
 - Institutional arrangements and capacity: many actors involved; need for continuity in measurement effort; funding
- **Online access** to GG indicators database
 - www.oecd.org/greengrowth/indicators



Headline indicators

- Agreement on a sub-set is a complex issue
- But there is a proposal now:
 - **Environmental and resource productivity**
 1. CO₂ Productivity
 2. Material Productivity
 3. Environmentally-adjusted multi-factor productivity
 4. Land cover
 - **Natural asset base**
 5. Index of natural resources
 - **Environmental quality of life**
 6. Population exposure to PM
 - **Economic opportunities [placeholder – no choice currently]**



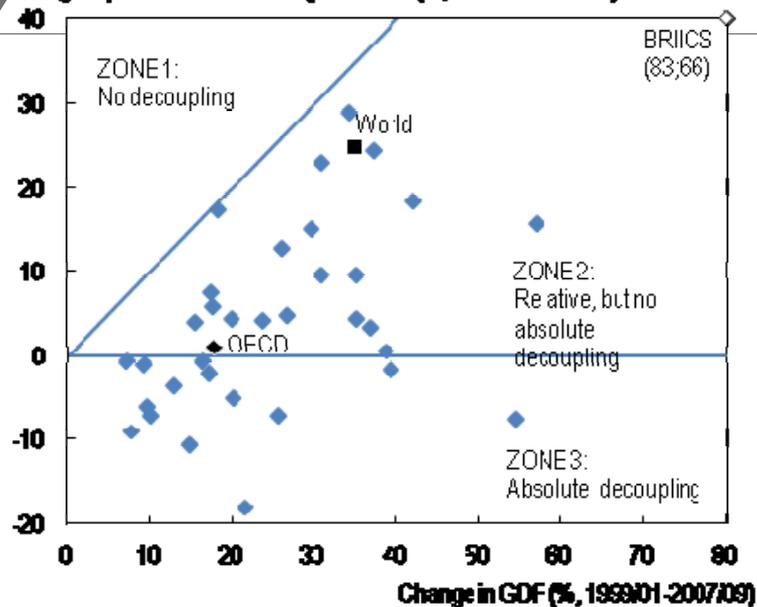
Headline indicators example – CO₂ Productivity

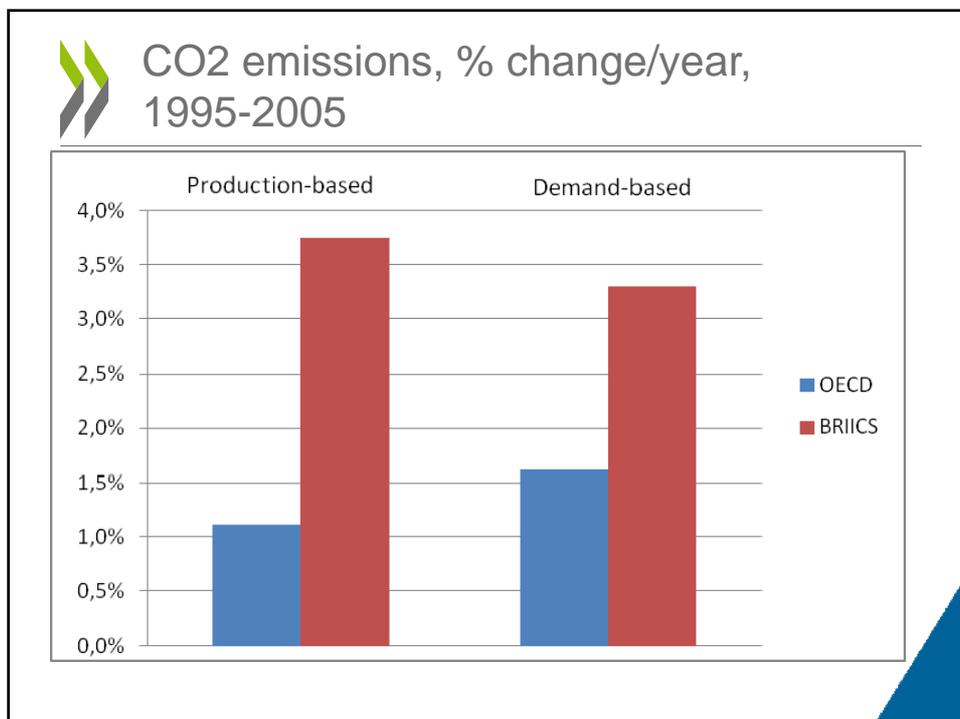
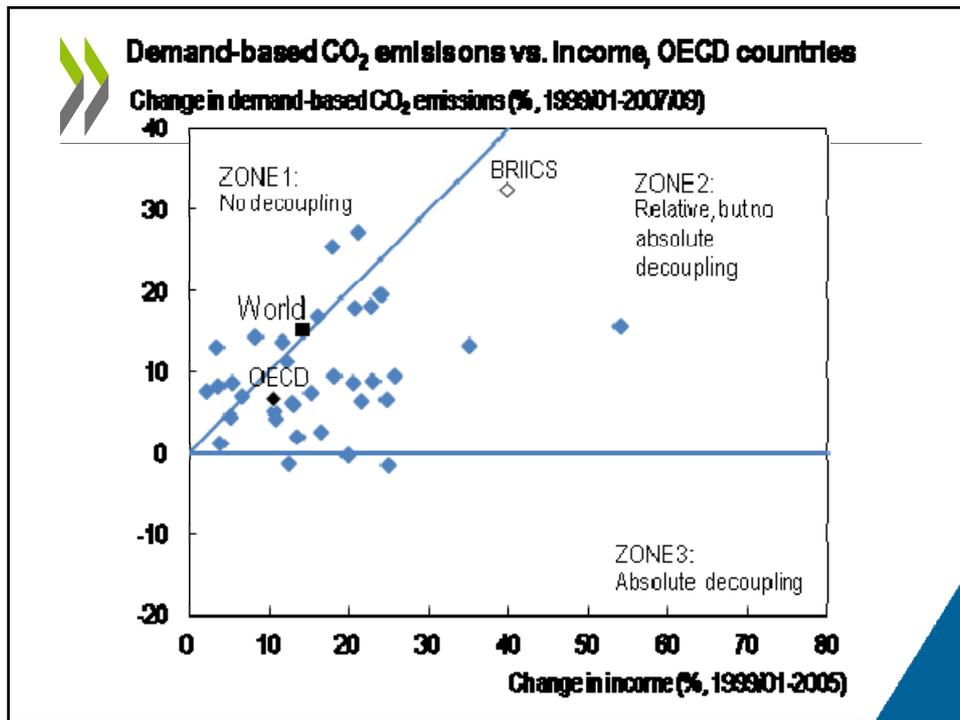
- A story of de-coupling
- But also: production and demand-based measures
 - Growth of production-based CO₂ emissions < growth of GDP?
 - Growth of demand-based CO₂ emissions < growth of real income?



Production-based CO₂ emissions vs. GDP, OECD countries

Change in production-based CO₂ emissions (% , 1999/01-2007/09)







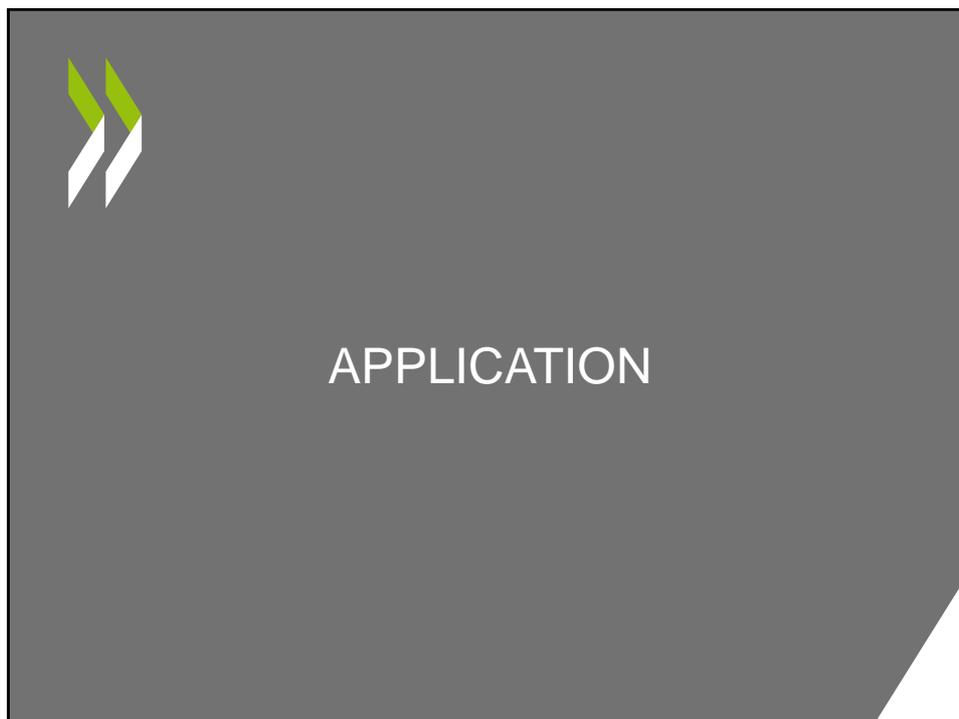
Headline indicators example – index of natural resources

- Capital measures should include natural resources
 - Mineral and energy resources
 - Soil
 - Timber
 - Aquatic resources
 - Water
- Only minority of countries monitors these assets
- Now standard measurement with SEEA



Headline indicators example – index of natural resources (2)

- Key question: aggregation
- Which weights?
- OECD headline indicator starts with simple weights based only on private economic benefits that natural resources deliver
- More ambitious, but not yet feasible: social benefits → ecosystem accounting



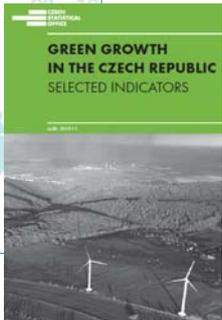
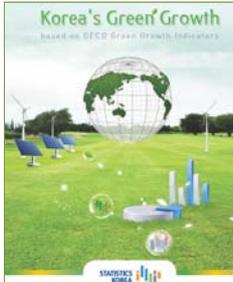


Green Growth Indicators Framework applied in countries

Green growth indicators are **applied in countries**

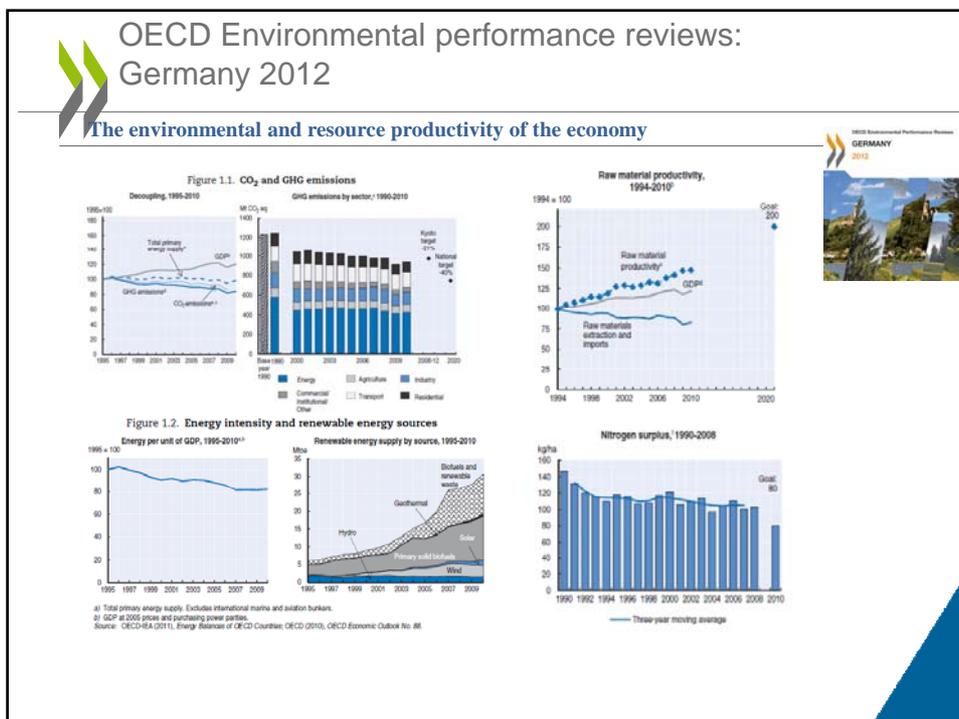
- The Czech Republic, Korea, the Netherlands, Mexico, Denmark
- Work underway in Colombia, Costa Rica, Ecuador, Guatemala, Paraguay, and is planned in Peru
- Work planned in East-Asian countries.

→ Feedback on policy relevance
→ Exchange of experience and best practices
→ Indicator improvement

OECD Environmental performance reviews: Germany 2012

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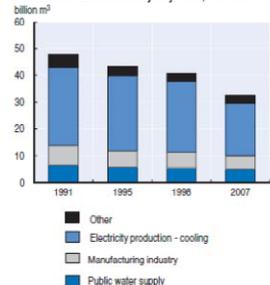


OECD Environmental performance reviews: Germany 2012

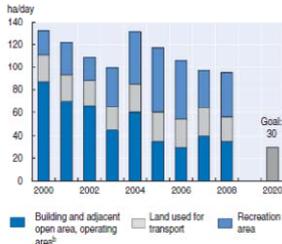
The environmental quality of life

The natural asset base

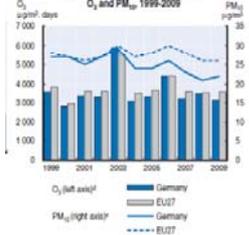
Freshwater abstractions by major use, 1991-2007*



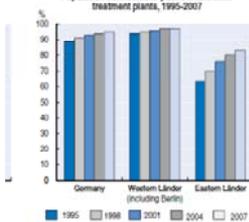
Sustainable land use, 2000-08



Urban exposure to air pollution by O₃ and PM₁₀, 1999-2009



Population connected to public wastewater treatment plants, 1995-2007



Economic opportunities

Pollution abatement and control expenditure by sector 2000 and 2008

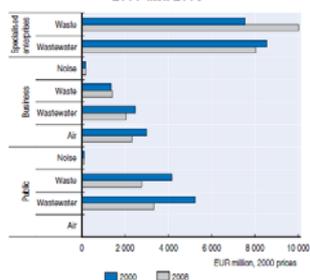
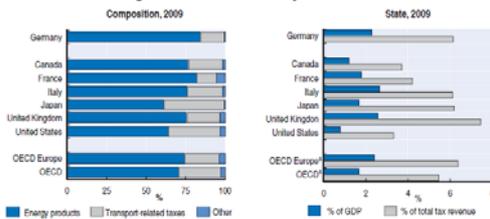
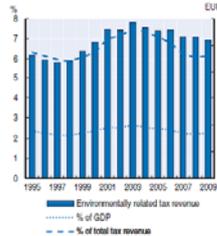


Figure 3.1. Environmentally related taxes

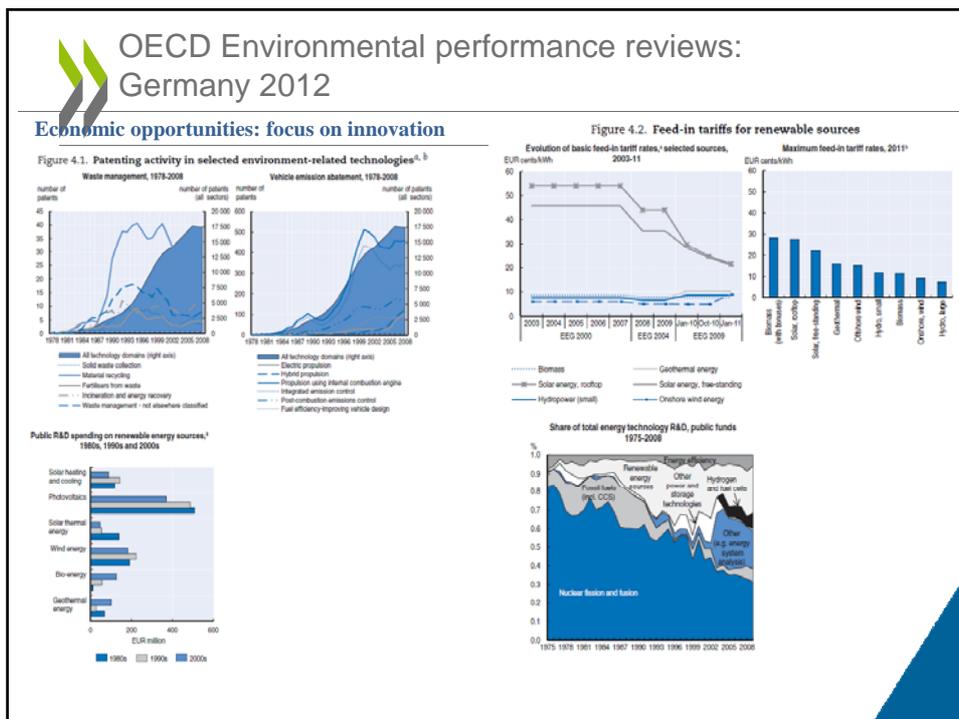


Environmentally related tax revenue



Environmentally related tax revenue by tax base





Delivering on green growth OECD Sectoral and Thematic Green Growth Studies

- Green Growth Reports for Emerging Economies
- Green Growth and Developing Countries
- Food and Agriculture
- Energy (OECD/IEA)
- Biodiversity
- Water
- Development
- Innovation and technology transfer
- Freedom of investment for green growth
- Green Financing
- Green Cities
- Environmental regulations and growth
- Job potential of a shift towards a low-carbon economy

OECD Green Growth Studies
Food and Agriculture

OECD Studies on Water
Meeting the Challenge of Financing Water and Sanitation
TOOLS AND APPROACHES

OECD Studies on Water
Meeting the Water Reform Challenge



Delivering on green growth International cooperation for green growth

- GG Knowledge Platform (GGGI, WB, UNEP, OECD)
 - enhance and expand efforts to identify and address major knowledge gaps
 - help countries design and implement green growth policy
- OECD contribution to Rio+20
 - Environmental Outlook to 2050
 - Green Growth Strategy and indicators
- OECD cooperation and partnerships on indicators and measurement frameworks
 - UNEP
 - UNSD
 - UNIDO
 - UNESCWA
 - World Bank
 - EU, ...



For more information, see
www.oecd.org/greengrowth
www.oecd.org/greengrowth/indicators



Thank you!