

Report from Germany

Results of SBE16

Hamburg

Thomas Lützkendorf (KIT)
Co-organizer



Organisers:



International Co-owners:



Sustainable Buildings
and Climate Initiative
Promoting Policies and Practices for Sustainability

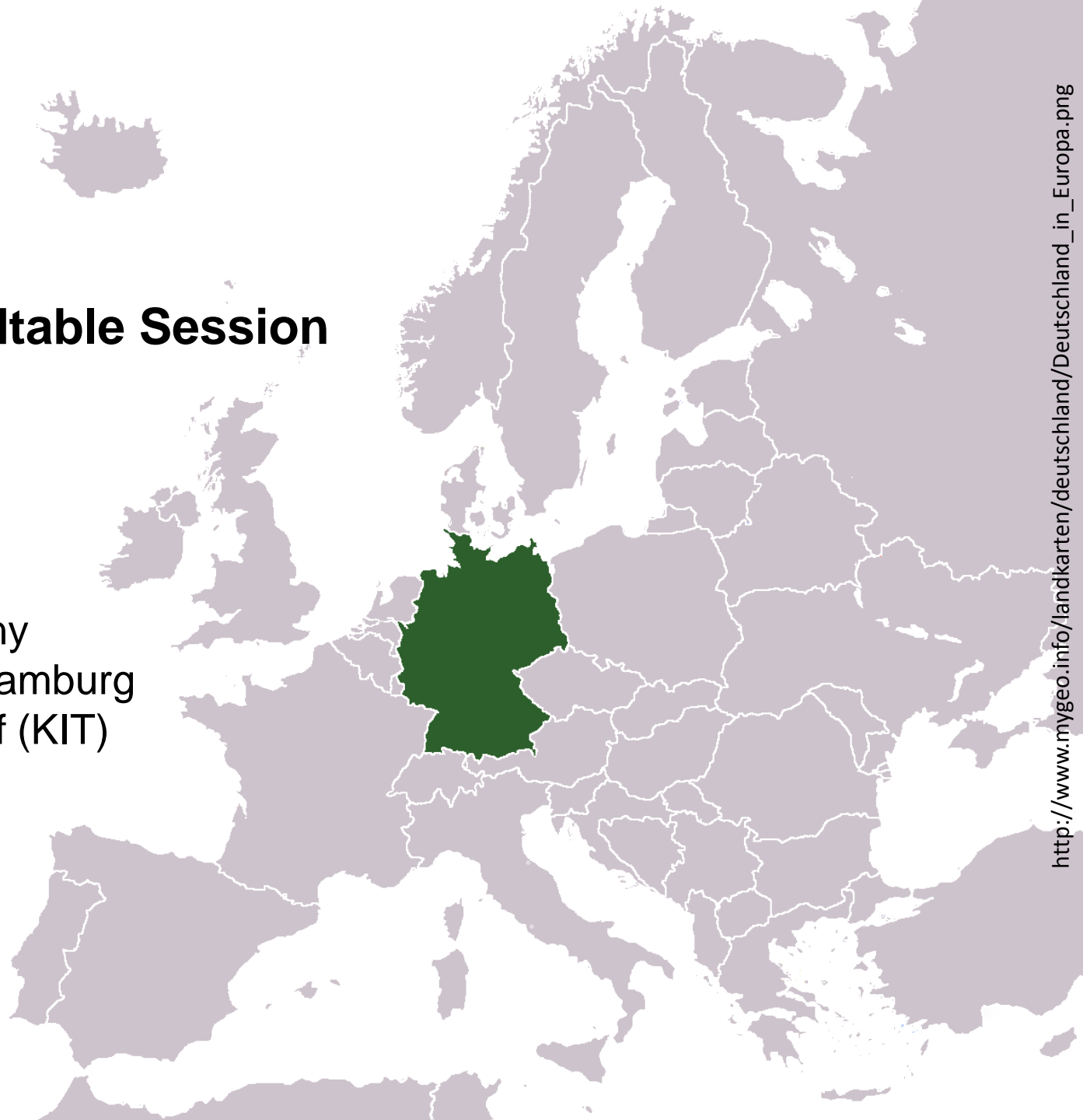




WSBE17

Regional Roundtable Session

Report from Germany
Results of SBE16 Hamburg
Thomas Lützkendorf (KIT)



SBE16 Hamburg

7th - 11th March 2016

Sustainable Built Environment Conference



Organisers:



International Co-owners:



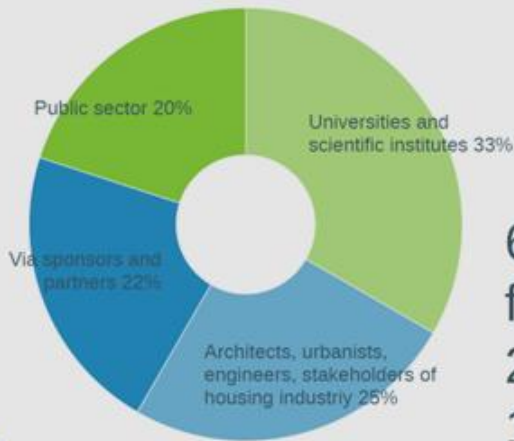


Organisers:



International Co-owners:





606 participants
from 41 countries
235 presentations
19 excursions



Organized by
ZEBAU
www.zebau.de
sbe@zebau.de

In collaboration with



HCU | HafenCity Universität
Hamburg

The SBE16 Hamburg Conference was supported by



Media partners



The theme days were supported by



www.sbe16hamburg.org

<http://www.hamburg.de/contentblob/2403660/bc8cbb6f11169601c2a3e88b8be41a11/data/blick-ueber-alster-stadt-und-hafen.jpg>



STRATEGIES
STAKEHOLDERS
SUCCESS FACTORS

SBE16 Hamburg

Sustainable Built Environment Conference

8th - 11th March 2016

WORLD SUSTAINABLE BUILT ENVIRONMENT CONFERENCE 2017 HONG KONG



Theme:
Transforming Our Built Environment
through Innovation and Integration:
Putting Ideas into **Action**

5-7 June 2017 • www.wsbe17hongkong.hk



WORLD SUSTAINABLE BUILT ENVIRONMENT CONFERENCE 2017 HONG KONG

The Construction Industry Council (CIC) and the Hong Kong Green Building Council (HKGBC) jointly present the World Sustainable Built Environment Conference 2017 Hong Kong (WSBE17 Hong Kong) to be held on 5-7 June 2017 in Hong Kong.



As one of the densest and most vibrant urban environments in the world, Hong Kong is the perfect setting for conference participants to experience and discuss both the challenges and solutions involved in creating a sustainable built environment. Serving as a strategic gateway to Mainland China, Hong Kong also provides an unparalleled viewpoint for reviewing and discussing China's rapid urbanisation.



Expecting around 1,800 attendees from all over the world

3-day conference comprises keynotes, roundtables, and over 100 parallel sessions and special forums

Side Events:

- Exhibition
- Gala Dinner
- Workshops
- Business Matching
- Networking Reception
- International Youth Competition
- Green Building Tours
- Community Involvement



WORLD SUSTAINABLE BUILT ENVIRONMENT CONFERENCE 2017 HONG KONG

WSBE17 Hong Kong is the world conference of the WSBE17 series of the network WSBE (World Sustainable Built Environment) which is now considered to be the most influential in the world. Following Hong Kong's selection as the host city, WSBE17 Hong Kong will provide the platform for exchanging ideas and experiences between global leaders in the built environment.

- ### Conference Focus
- Roundtables, workshops and debates at WSBE17 Hong Kong will address the most pressing issues in the built environment and sustainable development.
- ### The WSBE17 Hong Kong Focus Areas are:
- Sustainable Regeneration
 - Deep Building Renovation
 - High-performance Building
 - Community Engagement



WORLD SUSTAINABLE BUILT ENVIRONMENT CONFERENCE 2017 HONG KONG

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Keynote Sessions of World SBE Conference

- World Sustainable Built Environment (WSBE) Summit, 28th October 2017
- World Sustainable Built Environment (WSBE) Summit, 29th October 2017
- World Sustainable Built Environment (WSBE) Summit, 30th October 2017
- World Sustainable Built Environment (WSBE) Summit, 31st October 2017
- World Sustainable Built Environment (WSBE) Summit, 1st November 2017
- World Sustainable Built Environment (WSBE) Summit, 2nd November 2017



Foto: ZEBAU Hamburg

Topics

1. Strategies for sustainable urban development and construction
2. Sustainable neighbourhood and urban development
3. Project development
4. Methods and tools for sustainability in the building sector
5. Research on material and product innovation
6. Professional education: Design for sustainability

<http://www.hamburg.de/contentblob/2403660/bc8cbb6f11169601c2a3e88b8be41a11/data/blick-ueber-alster-stadt-und-hafen.jpg>



SBE16 Hamburg
Sustainable Built
Environment Conference
8th - 11th March 2016

Results

A critical success factor for sustainable building is the **integration of sustainability aspects into the education**, training and qualification of architects, engineers and leaders of the real estate industry.

The encouragement of the numerous existing **tools** to plan and valuate the preparation of **energy concepts** and **sustainable development for neighbourhoods** will be a great help for the **development of sustainable cities**.

The course of **decision-making processes** in reference to the integration of sustainability in planning processes must be analysed to define the **entry points** into the process.

The participants of the SBE16 Hamburg selected the topic of “**public strategies and policies**” as the priority action field to fulfill the goals of COP21.

<http://www.hamburg.de/contentblob/2403660/bc8cbb6f11169601c2a3e88b8be41a11/data/blick-ueber-alster-stadt-und-hafen.jpg>



SBE16 Hamburg
Sustainable Built
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Results

Outstanding papers

Building life cycle assessment: investigation of influent parameters in a helpful decision tool - *Marie-Lise Pannier; Bruno Peuportier; Patrick Schalbart; Mines ParisTech, France*

Innovative building technologies and technical equipment towards sustainable construction – a comparative LCA and LCC assessment
Alexander Passer; Petra Sölkner; Gernot Fischer; Sebastian Spaun; Graz University of Technology, Austria

http://primo.bibliothek.kit.edu/primo_library/libweb/action/diDisplay.do?vid=KIT&docId=KITSRCE1000051699&tab=kit_evastar&sr=date



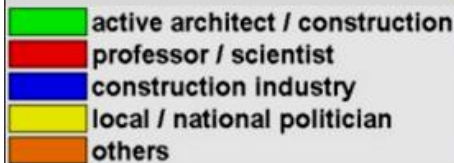
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SBE16 Hamburg

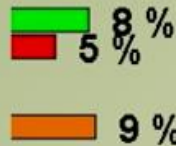
Sustainable Built Environment Conference

8th - 11th March 2016

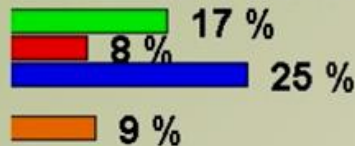


12. How do you assess the ratio of greenhouse gas-neutral and sustainable buildings?

1) Greenhouse gas-neutral buildings are more important.



2) Sustainable buildings are more important.



3) Greenhouse gas-neutrality is one aspect of sustainability.



National sustainable development strategy



“ ... On 11 January 2017, the Federal Government approved this new version of the Sustainable Development Strategy, the most extensive enhancement of the Strategy since its first adoption in 2002. ...

.... (The) fully revised National Sustainable Development Strategy, the Federal Government sets out the challenges stemming from this commitment to sustainable development, the specific targets it has set itself and the measures it is taking to meet them. ... “

https://www.bundesregierung.de/Content/DE/_Anlagen/2017/02/2017-02-27-nachhaltigkeit-neuaufgabe-engl.pdf?_blob=publicationFile&v=1



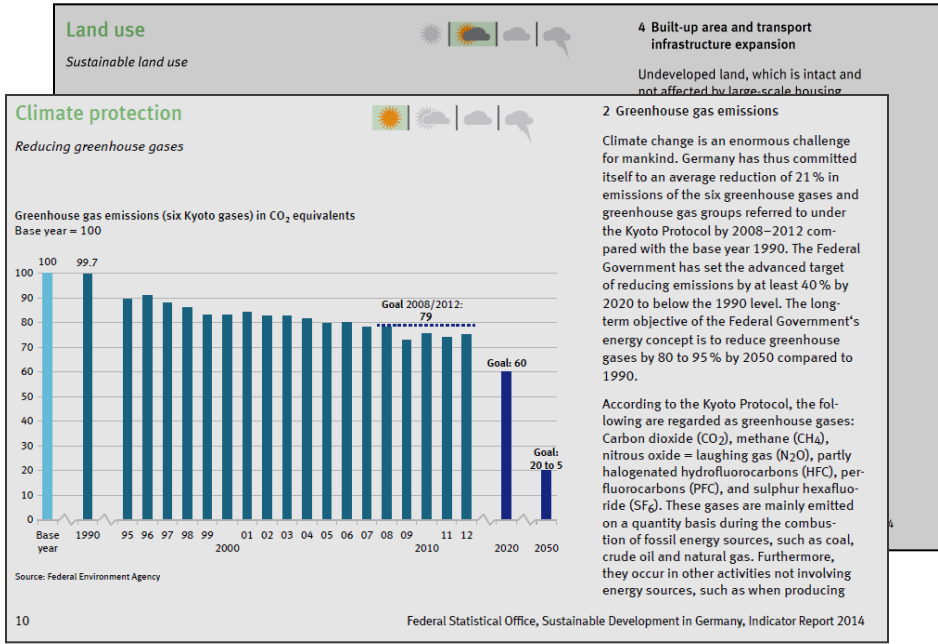
Organisers:



International Co-owners:



Sustainability reporting on national level



https://www.destatis.de/EN/Publications/Specialized/Environmental/EconomicAccounting/Indicators2014.pdf?__blob=publicationFile

Germany's national strategy for sustainable development has now been in place for 15 years. The Federal Statistical Office presents its report on the development of the sustainability indicators in the Indicator Report.



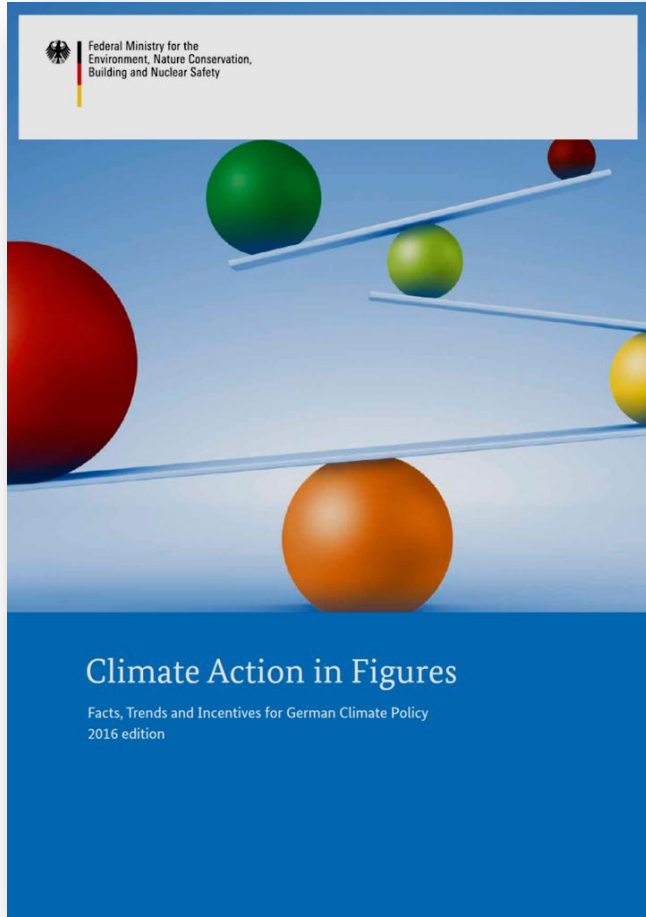
Organisers:



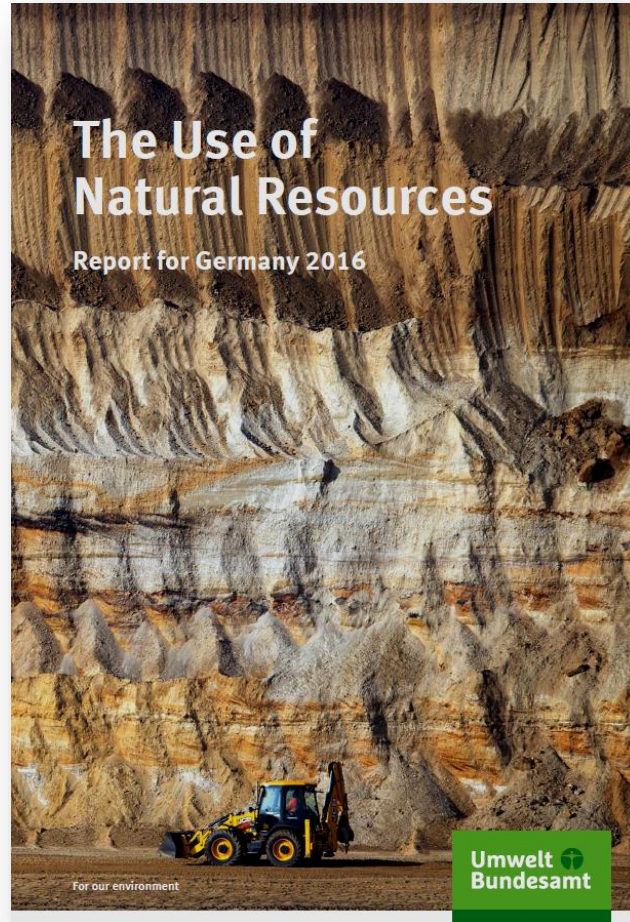
International Co-owners:



Available information from Germany



http://www.bmub.bund.de/fileadmin/Daten_BMU/Pool/Broschueren/klimaschutz_in_zahlen_broschuere_2016_en_bf.pdf



http://www.umweltbundesamt.de/sites/default/files/medien/377/publikationen/161025_ressourcenbericht_en.pdf



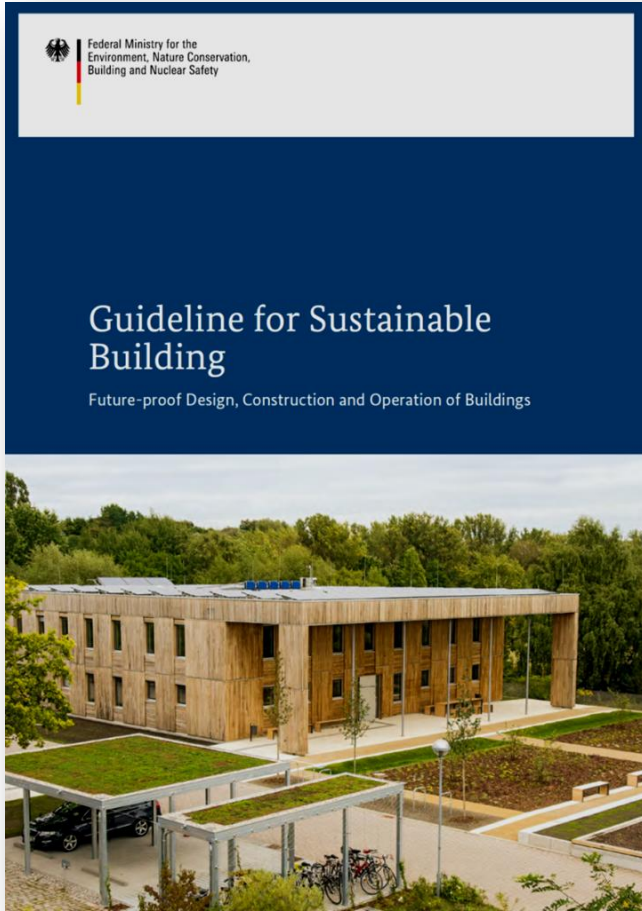
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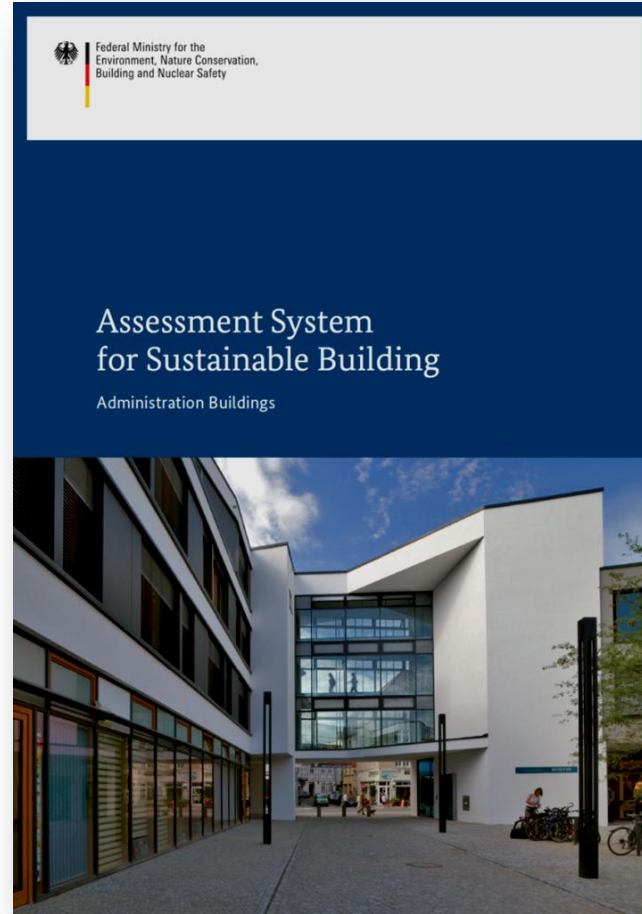
International Co-owners:



Available information from Germany



http://www.nachhaltigesbauen.de/fileadmin/pdf/Systemable_Building_LFNB_E_160309.pdf



http://www.nachhaltigesbauen.de/fileadmin/pdf/Systemable_Building/assessment_system_bnb.pdf



Organisers:



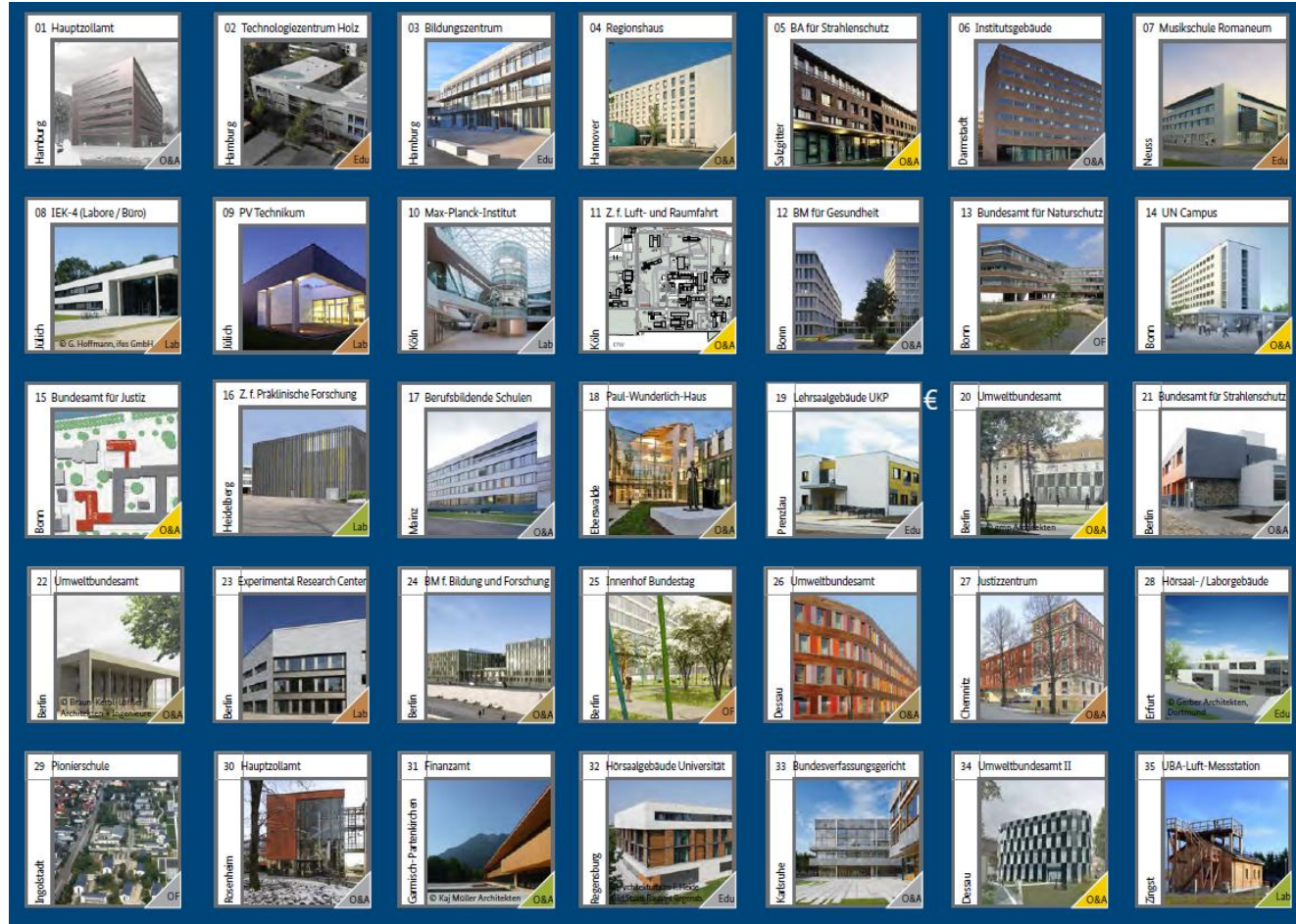
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Sustainability assessment of public buildings



For public (office) buildings it is mandatory to use guidelene and assessment system. The target is a „SILVER“ level.

BBSR



Organisers:



International Co-owners:



First public building on net-zero energy level



Office Building (New Construction)	Gold according to BNB_BN 2009_4
Client	Federal Republic of Germany
Architect / Planner	Braun-Kerbl-Löffler architekten+ingenieure
Auditor	Dipl.-Ing. Nicolas Kerz, BBSR within BBR
Completion	August 2013
Gross Floor Area (GFA)	1,254 m ²
Gross Construction Costs	€ 4.8 million
Construction Costs (KG 300, 400, 540)	2,218 €/m ² _{GFA} (net)
Operation Costs	996 €/m ² _{GFA} (net)
Life Cycle Costs (LCC)	3,214 €/m ² _{GFA} (net)
Primary Energy Demand (LCA)	total: 214 kWh/(m ² _{NFA,a} a)
Global Warming Potential (LCA)	16.6 kg CO ₂ eqv./ (m ² _{NFA,a} a)

Innovative Technologies

- Solar control always functional (independent from wind speed and temperature)
- Use of a façade with thermally conditioned wood to improve the durability (≥ 25 a) and to avoid chemical timber preservative
- Utilisation of detachable connections (e.g. stable laying of insulation on the flat roof by adding surcharge instead of bonding), in order to optimise the capability of future environmentally responsible dismantling of the entire building
- Optimisation of the component LCA by way of alternative consideration



Organisers:



International Co-owners:



National LCA-database

The database ökobau.dat. is freely available and contains also data for embodied energy – see www.nachhaltigesbauen.de

[▶ Prozess-Information](#)
[▶ Modellierung und Validierung](#)
[▶ Administrative Information](#)
[▼ Umweltindikatoren](#)

Parameter zur Beschreibung des Ressourceneinsatzes und sonstige Umweltinformationen

Unit	Production A1-A3	Construction A5	Waste processing C3	Disposal C3	Module D
<u>kg Sb-Äqv.</u>	0.0009389	4.667E-9	5.211E-10	2.133E-7	-1.372E-7
<u>kg R11-Äqv.</u>	2.839E-8	3.694E-11	2.1E-12	5.4E-10	6.833E-12
<u>kg SO2-Äqv.</u>	0.03972	0.00005444	0.000005356	0.003667	-0.01228
<u>kg Phosphat-Äqv.</u>	0.005367	0.00001067	0.000001133	0.0006611	-0.001
<u>kg CO2-Äqv.</u>	21.26	0.5056	0.1	2.994	-3.5
<u>MJ</u>	313	0.1444	0.01111	7.978	-42.21
<u>kg Ethen-Äqv.</u>	0.004867	0.000003406	6.333E-7	0.001044	-0.001839

ADPF Potenzial der Stratosphärischen Ozonschicht (SOCP)
Versauerungspotenzial von Boden und Wasser (AP)
Eutrophierungspotenzial (EP)
Globales Erwärmungspotenzial (GWP)
Potenzial für den abiotischen Abbau fossiler Brennstoffe (ADPF)
Bildungspotenzial für troposphärisches Ozon (POCP)

Dr. Brockmann, BBSR



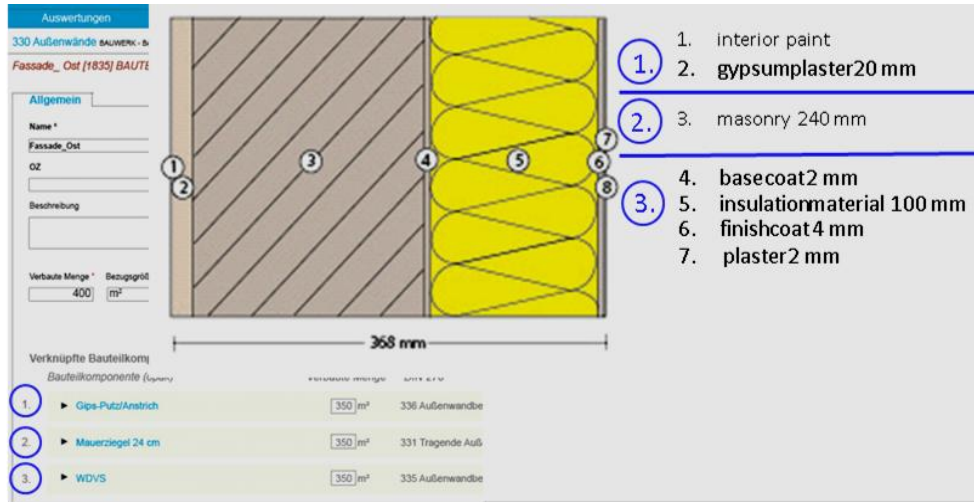
Organisers:



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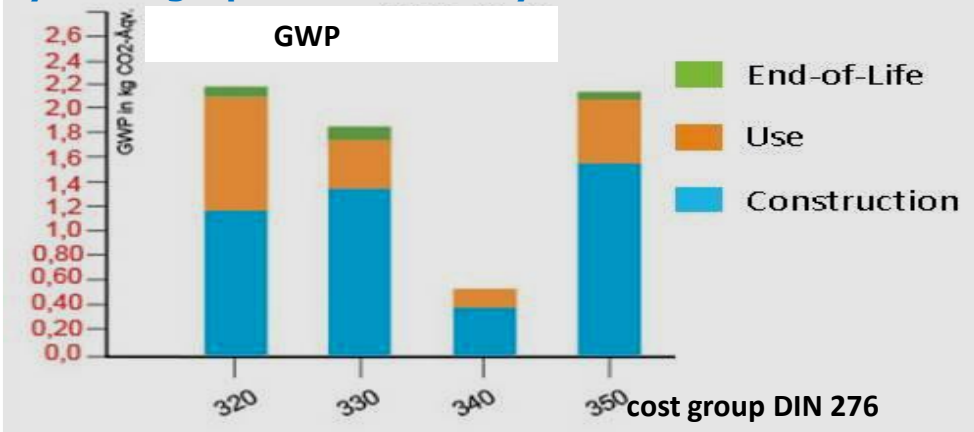


Public available LCA-calculation tool for building elements



Dynamic graph – visual check of input parameters

Dynamic graph – better analysis of results



Dr. Brockmann, BBSR

- Directly linked to ÖKOBAUDAT
- Conformity with BNB (i.e. calculation method, life cycle, reference service life; configuration production/end-of-life)
- Integrated examples for building elements (building materials)
- Dynamic (visual) construction of building elements
- Graphs and visual analysis of results
- Modular system, flexible for other applications
- Transparent
- Basis for benchmarks of BNB
- Administration – planning and project phases (*ES-Bau*, *EW-Bau*)

DGNB – the German Sustainable Building Council

DGNB
Deutsche Gesellschaft für Nachhaltiges Bauen
German Sustainable Building Council

Council | Membership | Events | Cooperations | News | Services

Home > Council

Built Positive

DGNB Discourse "Built Positive: Together We Build What Is Next"

Kick-off event of the Built Positive initiative in Germany on the 24th of April 2017 at the DGNB office

[More information](#)

DGNB ACADEMY

DGNB CRITERIA

PROCESS QUALITY 76.1%

ENVIRONMENTAL QUALITY 76.1%

TOPLINE DATA

Registered projects	> 390
Pre-certificated projects	> 457
Certificated projects	> 718
All Projects	> 1565



Organisers:

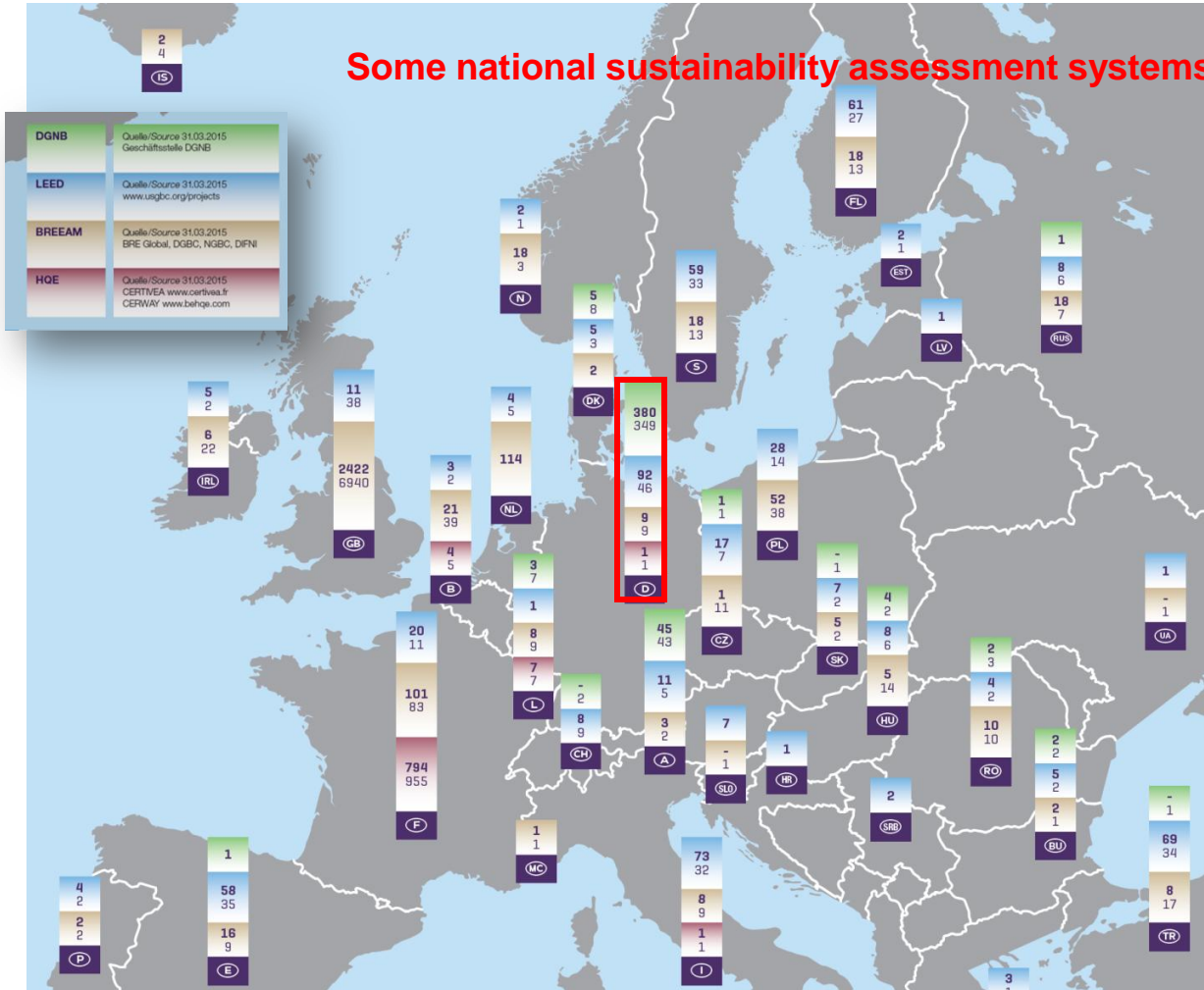


International Co-owners:



Certified buildings in Europe (2015)

Some national sustainability assessment systems are missing!



DGNB	Quelle/Source 31.03.2015 Geschäftsstelle DGNB
LEED	Quelle/Source 31.03.2015 www.usgbc.org/projects
BREEAM	Quelle/Source 31.03.2015 BRE Global, DGB, NGBC, DFN
HOE	Quelle/Source 31.03.2015 CERTIVEA www.certivea.fr CERWAY www.behqe.com

Insight

Grün kommt!
Europäische Nachhaltigkeitsstatistik 2015

Going for Green
Sustainable Building Certification Statistics
Europe 2015

rics.org/sustainability

<http://www.breeam.com/filelibrary/BREEAM%20and%20Value/Gr-n-kommt--2015.pdf>



Climate change and it's consequences in Europe

Arctic

- Temperature rise much larger than global average
- Decrease in Arctic sea ice coverage
- Decrease in Greenland ice sheet
- Decrease in permafrost areas
- Increasing risk of biodiversity loss
- Intensified shipping and exploitation of oil and gas resources

Coastal zones and regional seas

- Sea-level rise
- Increase in sea surface temperatures
- Increase in ocean acidity
- Northward expansion of fish and plankton species
- Changes in phytoplankton communities
- Increasing risk for fish stocks

North-western Europe

- Increase in winter precipitation
- Increase in river flow
- Northward movement of species
- Decrease in energy demand for heating
- Increasing risk of river and coastal flooding

Mediterranean region

- Temperature rise larger than European average
- Decrease in annual precipitation
- Decrease in annual river flow
- Increasing risk of biodiversity loss
- Increasing risk of desertification
- Increasing water demand for agriculture
- Decrease in crop yields
- Increasing risk of forest fire
- Increase in mortality from heat waves
- Expansion of habitats for southern disease vectors
- Decrease in hydropower potential
- Decrease in summer tourism and potential increase in other seasons

Northern Europe

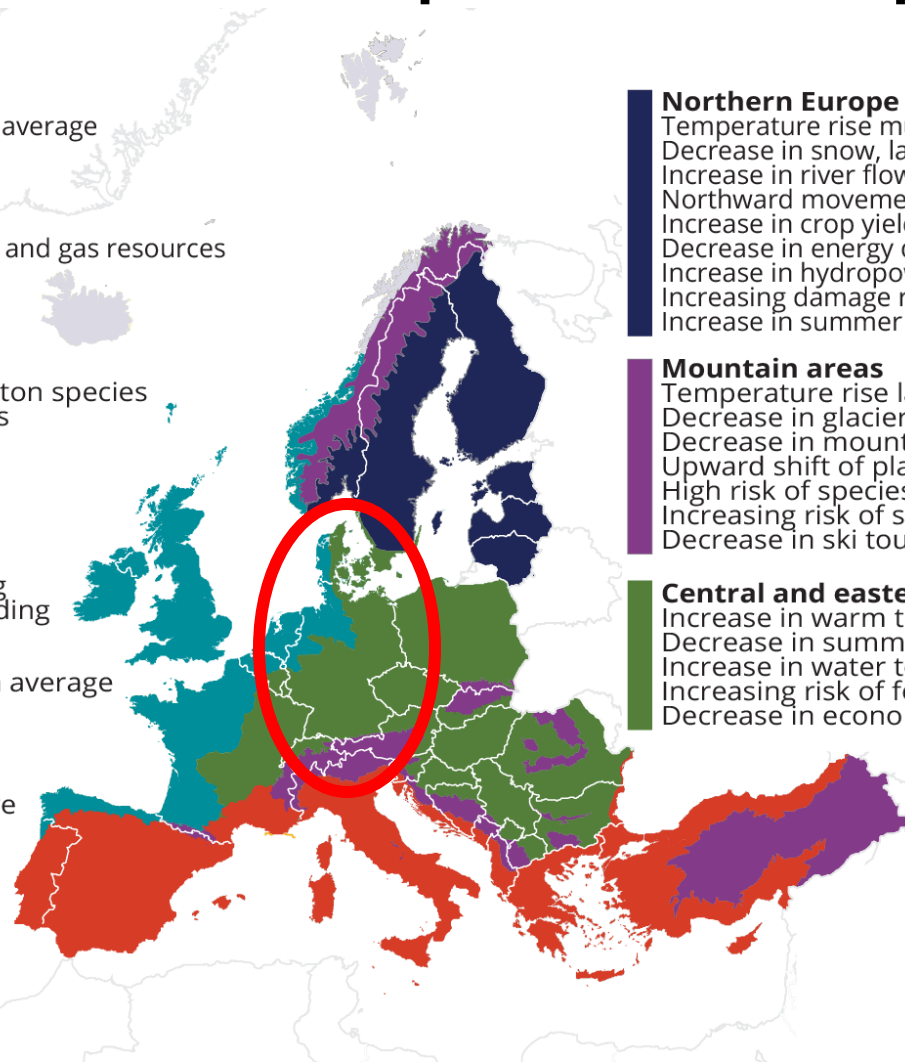
- Temperature rise much larger than global average
- Decrease in snow, lake and river ice cover
- Increase in river flows
- Northward movement of species
- Increase in crop yields
- Decrease in energy demand for heating
- Increase in hydropower potential
- Increasing damage risk from winter storms
- Increase in summer tourism

Mountain areas

- Temperature rise larger than European average
- Decrease in glacier extent and volume
- Decrease in mountain permafrost areas
- Upward shift of plant and animal species
- High risk of species extinction in Alpine regions
- Increasing risk of soil erosion
- Decrease in ski tourism

Central and eastern Europe

- Increase in warm temperature extremes
- Decrease in summer precipitation
- Increase in water temperature
- Increasing risk of forest fire
- Decrease in economic value of forests



European Environment Agency



<https://www.eea.europa.eu/soer-2015/europe/climate-change-impacts-and-adaptation/climate-change-impacts-in-europe/>



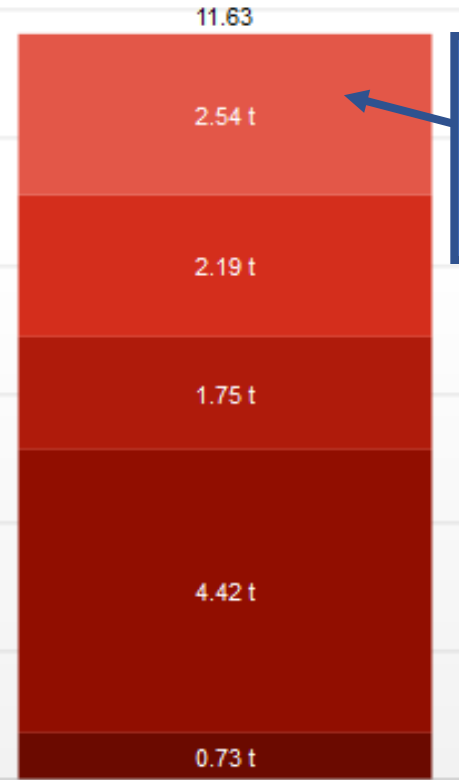
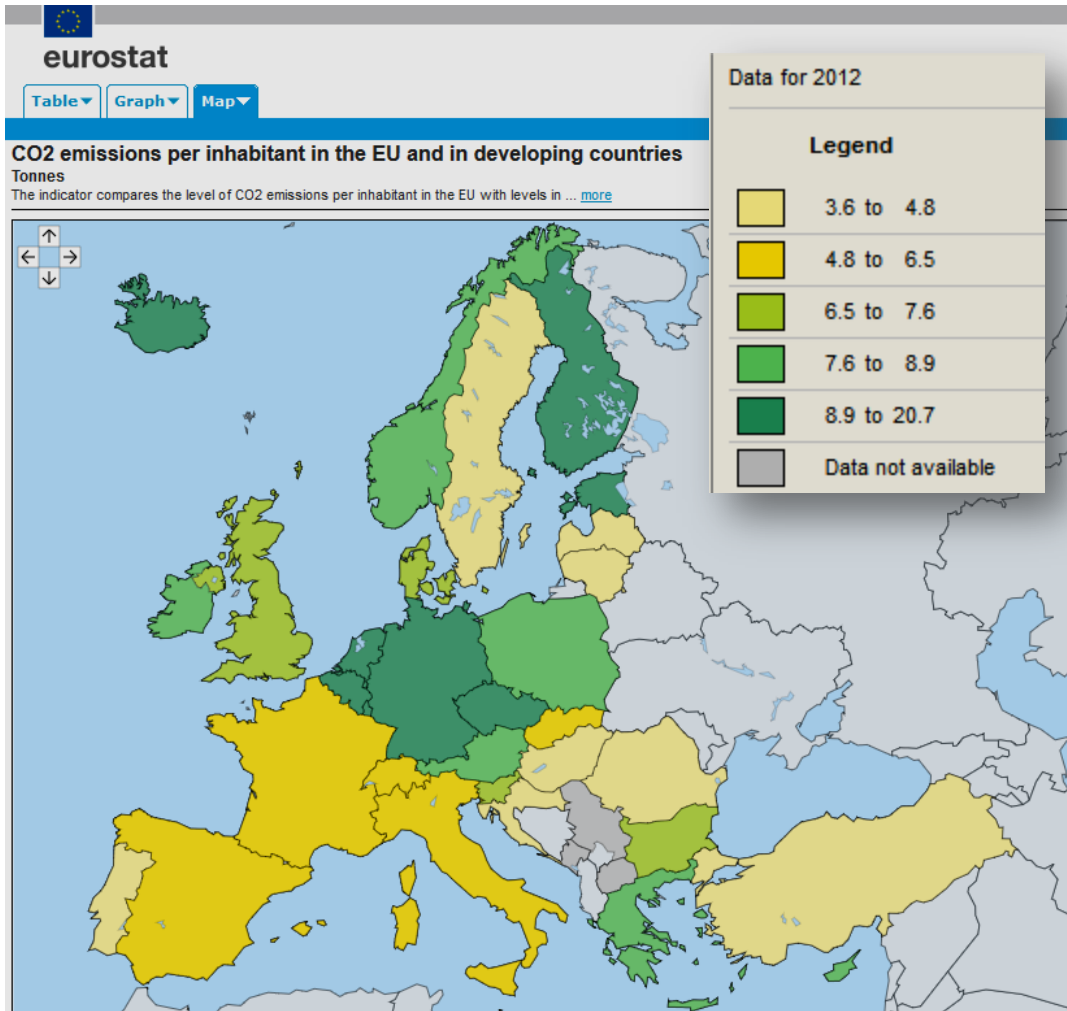
Organisers:



International Co-owners:



CO2-emissions / capita in 2012



Heating and electricity

CO2-equ./capita * a
 Average value in
 Germany

Germany and COP21

Germany has not formulated its own NDC, but has sent a communication **together with the other EU Member States** to the UN Climate Secretariat with the **EU medium and long-term binding climate protection targets**.

In November 2016, Germany adopted a **long-term climate protection plan**, which sets out its reduction targets for greenhouse gas emissions, **including also targets for individual sectors**. This Cabinet decision was presented in Marrakech at the 22nd UNFCCC Conference of the Parties in November 2016.

The achievement of the climate protection targets and the implementation of the measures have been documented in **annual climate protection reports since 2015**.



http://www.bmub.bund.de/fileadmin/Daten_BMU/Pool/Broschueren/klimaschutzbericht_2016_bf.pdf



Organisers:



International Co-owners:



Binding targets on EU-level



SUBMISSION BY LATVIA AND THE EUROPEAN COMMISSION ON BEHALF OF THE EUROPEAN UNION AND ITS MEMBER STATES

Riga, 6 March 2015

Subject: Intended Nationally Determined Contribution of the EU and its Member States

Introduction

1. The EU and its 28 Member States are fully committed to the UNFCCC negotiating process with a view to adopting a global legally binding agreement applicable to all Parties at the Paris Conference in December 2015 in line with the below 2°C objective.

Intended nationally determined contribution (INDC) of the EU and its Member States

2. The Lima Conference confirmed the Warsaw decision that all Parties ready to do so should communicate their INDC in the first quarter of 2015 in a manner that facilitates the clarity, transparency and understanding of the INDC.
3. The EU and its Member States wish to communicate the following INDC. The EU and its Member States are committed to a **binding target of an at least 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990**, to be fulfilled jointly, as set out in the conclusions by the European Council of October 2014. In line with the Lima Call for Climate Action, in particular its paragraph 14, the following quantifiable information is hereby submitted:

<http://www4.unfccc.int/ndcregistry/PublishedDocuments/European%20Union%20First/V-03-06-EU%20INDC.pdf>

The EU and its Member States are committed to a binding target of an at least 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990.

Intended Nationally Determined Contribution of the EU and its Member States	
Parties	EU and its Member States (Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, United Kingdom) acting jointly
Type	Absolute reduction from base year emissions.
Coverage	Economy-wide absolute reduction from base year emissions.
Scope	All greenhouse gases not controlled by the Montreal Protocol: Carbon Dioxide (CO ₂) <ul style="list-style-type: none"> • Methane (CH₄) • Nitrous Oxide (N₂O) • Hydrofluorocarbons (HFCs) • Perfluorocarbons (PFCs) • Sulphur hexafluoride (SF₆) • Nitrogen trifluoride (NF₃)
Base Year	1990.
Period	1 January 2021- 31 December 2030.
Reduction Level	At least 40% domestic reduction in greenhouse gas emissions by 2030.



Organisers:



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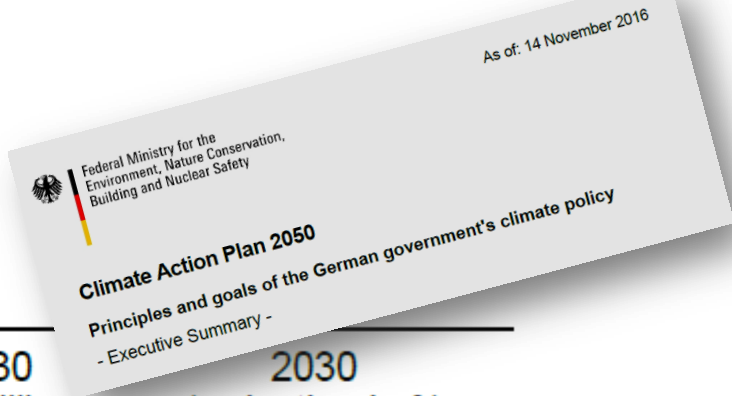


Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Building related targets in Germany

Emissions from areas of action set out in definition of the target:



Area of action	1990 (in million tonnes of CO ₂ equivalent)	2014 (in million tonnes of CO ₂ equivalent)	2030 (in million tonnes of CO ₂ equivalent)	2030 (reduction in % compared to 1990)
Energy sector	466	358	175 – 183	62 – 61 %
Buildings	209	119	70 – 72	67 – 66 %
Transport	163	160	95 – 98	42 – 40 %
Industry	283	181	140 – 143	51 – 49 %
Agriculture	88	72	58 – 61	34 – 31 %
Subtotal	1209	890	538 – 557	56 – 54 %
Other	39	12	5	87%
Total	1248	902	543 – 562	56 – 55 %



Organisers:



International Co-owners:



GHG-neutrality in 2050

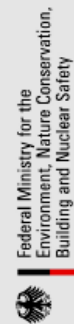
The goal: extensive greenhouse gas neutrality by 2050

In 2010, the German government decided to reduce greenhouse gas emissions by 80 to 95 percent by 2050 compared to 1990 levels. The German government reaffirms this long-term target and in pursuing it will make an appropriate contribution to implementing the commitment made in Paris, also with a view to the goal set out in the Paris Agreement of achieving global greenhouse gas neutrality in the second half of the century.

As a leading industrialised nation and the EU member state with the strongest economy, we have already geared our Climate Action Plan to the guiding principle of extensive greenhouse gas neutrality by the middle of the century. Germany's per capita greenhouse gas emissions are higher than the EU average, and considerably higher than the global average. It must also be borne in mind that the sum of the NDCs that are the backbone of the Paris Agreement is not yet enough to keep global warming below 2 degrees. Therefore, the onus is on all parties to go beyond their current targets.

http://www.bmub.bund.de/fileadmin/Daten_BMU/Download_PDF/Klimaschutz/klimaschutzplan_2050_kurzf_en_bf.pdf

As of: 14 November 2016



Climate Action Plan 2050

Principles and goals of the German government's climate policy
- Executive Summary -



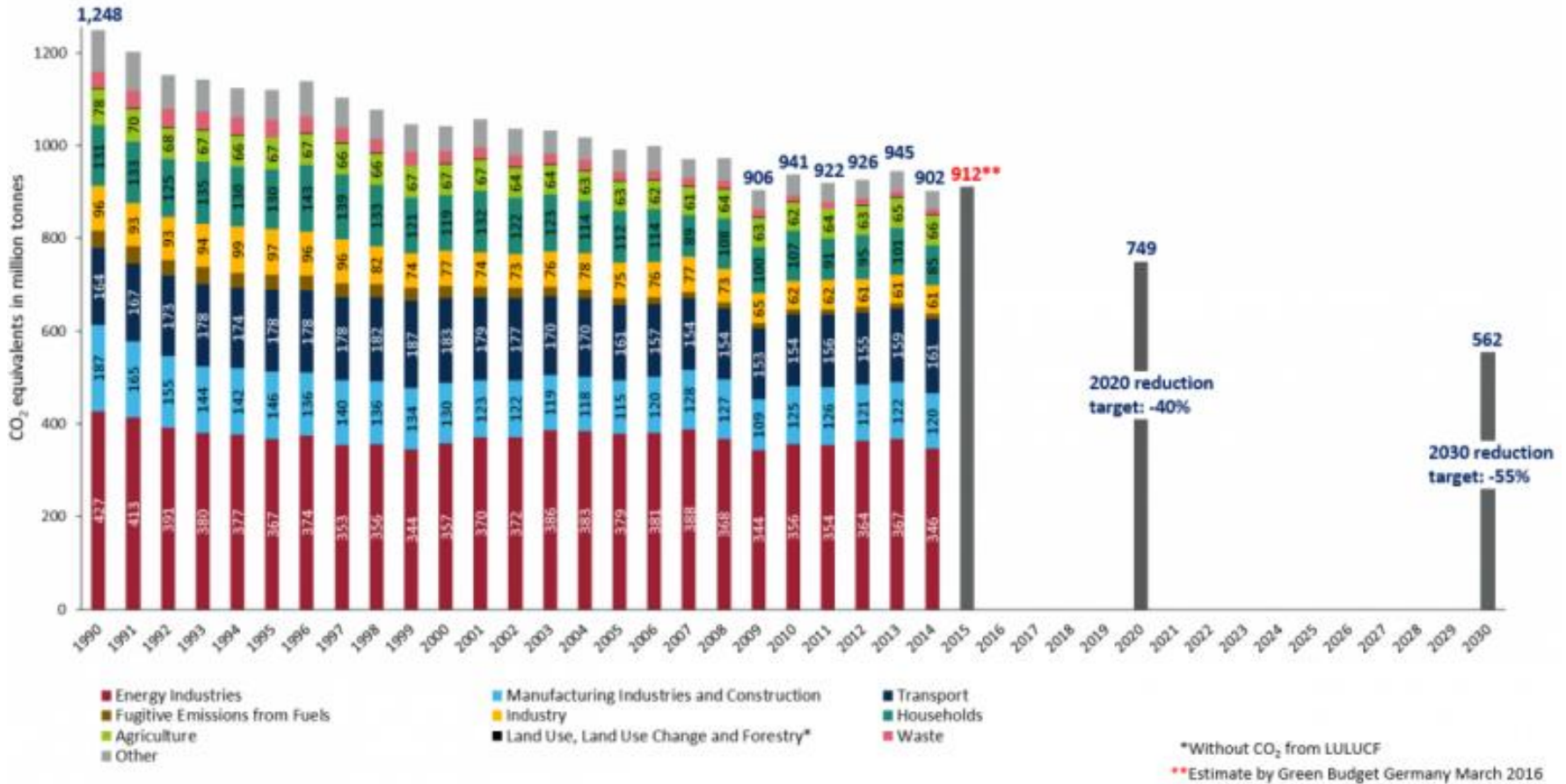
Organisers:



International Co-owners:



Trend in CO2-emissions



Graph by Clean Energy Wire, data from German Environment Agency (UBA) and Green Budget Germany
<http://www.climatechangenews.com/2016/03/14/german-co2-emissions-rise-10-million-tonnes-in-2015/>



Organisers:



International Co-owners:



Topics and trends

The following developments are expected to take place:

- ❖ The **further development** of the **national energy performance requirements for buildings** (a combination of requirements on energy efficiency and on renewable energy use to meet the requirement on the **nearly zero energy level**).
- ❖ The expansion of the use of **sustainability assessment** in the context of GPP of buildings **from the federal level to the state and local level**.
- ❖ The extension of the **national database for LCA** data (especially with regard to modules C and D)
- ❖ The introduction of **sustainability reporting for public building stock**
- ❖ Research activities to support **sustainable urban development and resource efficiency**.



Organisers:



International Co-owners:



Further information is available at the German booth



SEE *You* **THERE** 



Organisers:



International Co-owners:



Thank you

Xie Xie

谢谢

Danke



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction