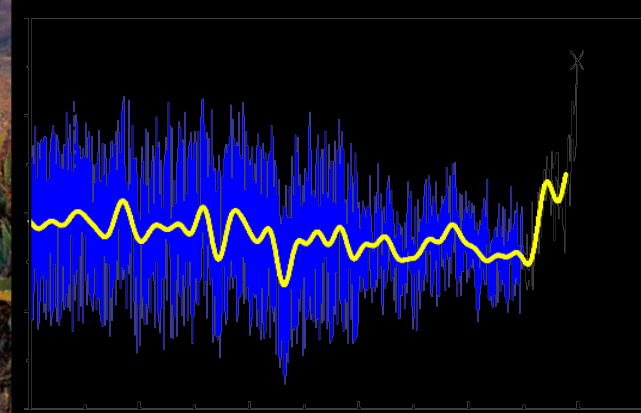
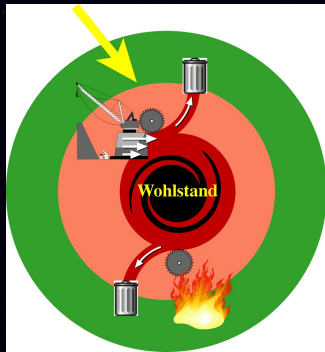
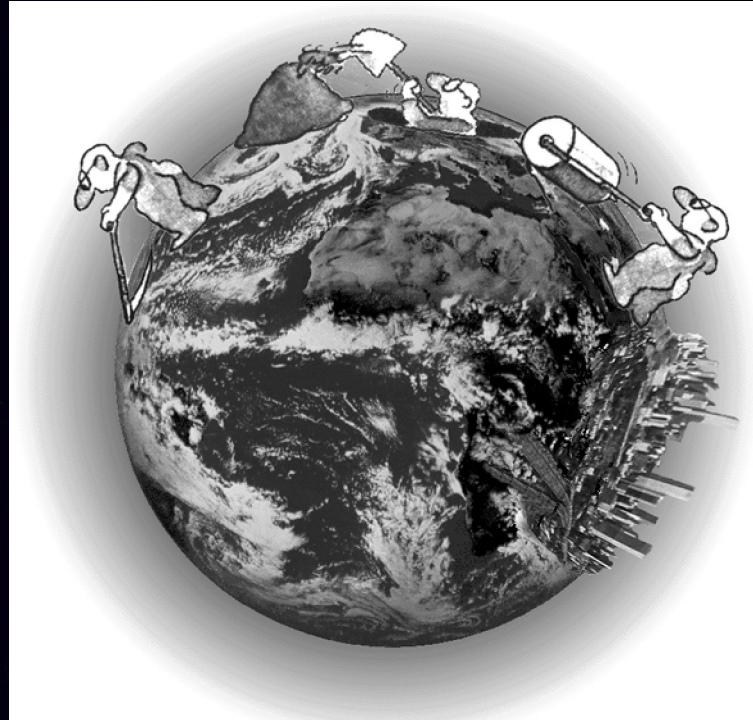
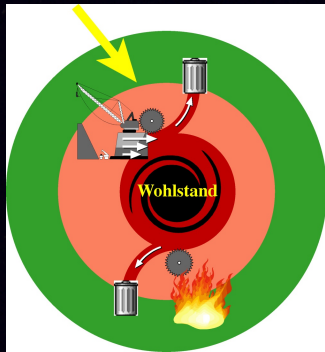
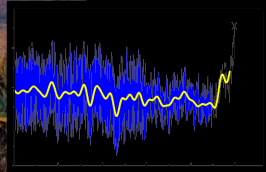


A non sustainable „wealth“ Machine



Climate Change

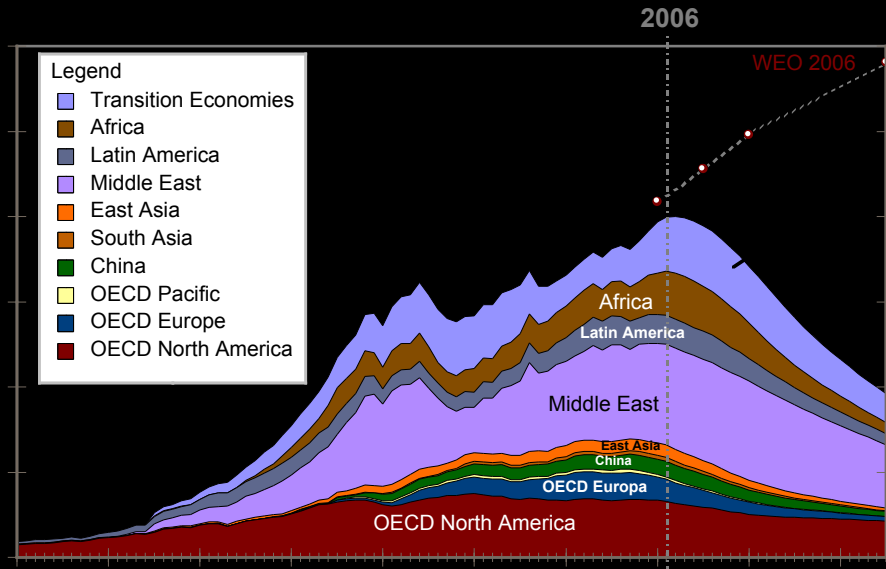
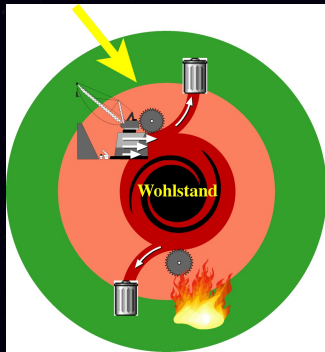
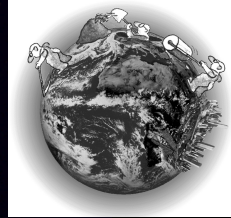
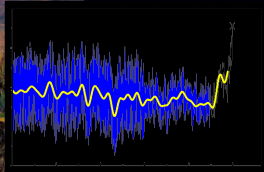
A non sustainable „wealth“ Machine



Use of Resources

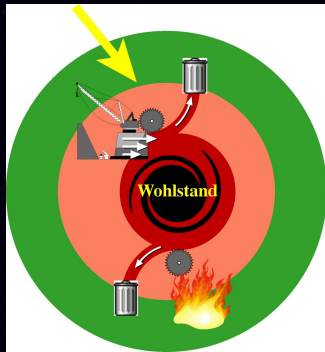
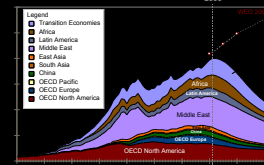
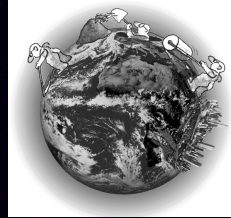
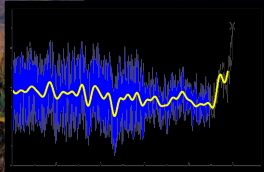
22 kg per cap and day / 44 kg (EU)

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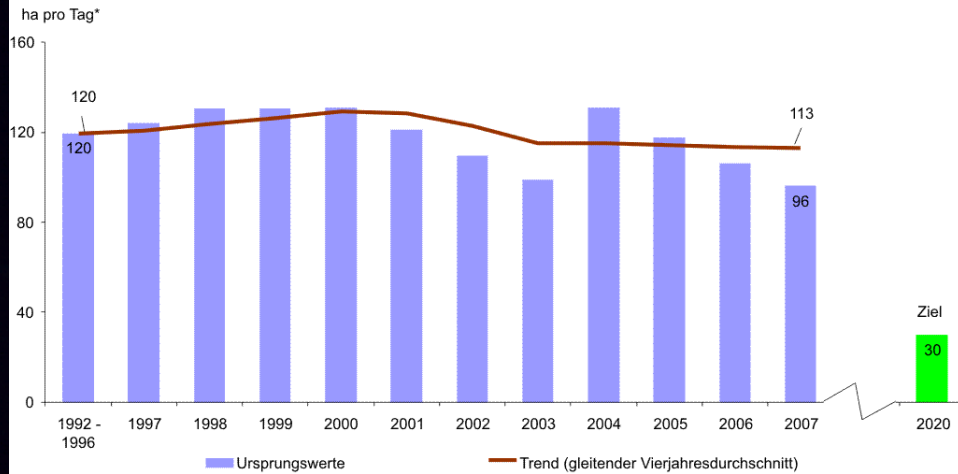


„Mid-depletion“ Point of Oil

A non sustainable „wealth“ Machine



Anstieg der Siedlungs- und Verkehrsfläche

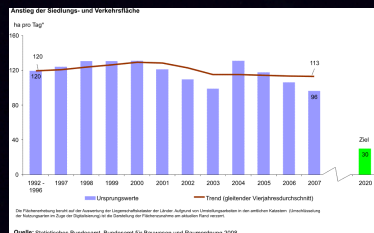
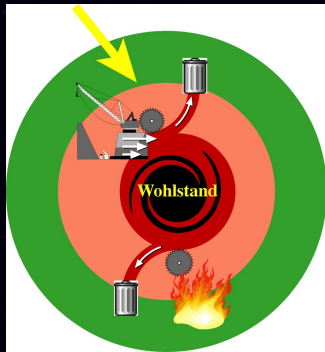
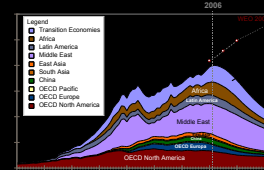
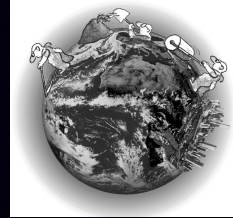
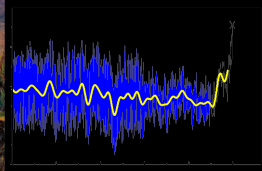


Die Flächenerhebung beruht auf der Auswertung der Liegenschaftskataster der Länder. Aufgrund von Umstellungsarbeiten in den amtlichen Katastern (Umschlüsselung der Nutzungsarten im Zuge der Digitalisierung) ist die Darstellung der Flächenzunahme am aktuellen Rand verzerrt.

Quelle: Statistisches Bundesamt, Bundesamt für Bauwesen und Raumordnung 2008

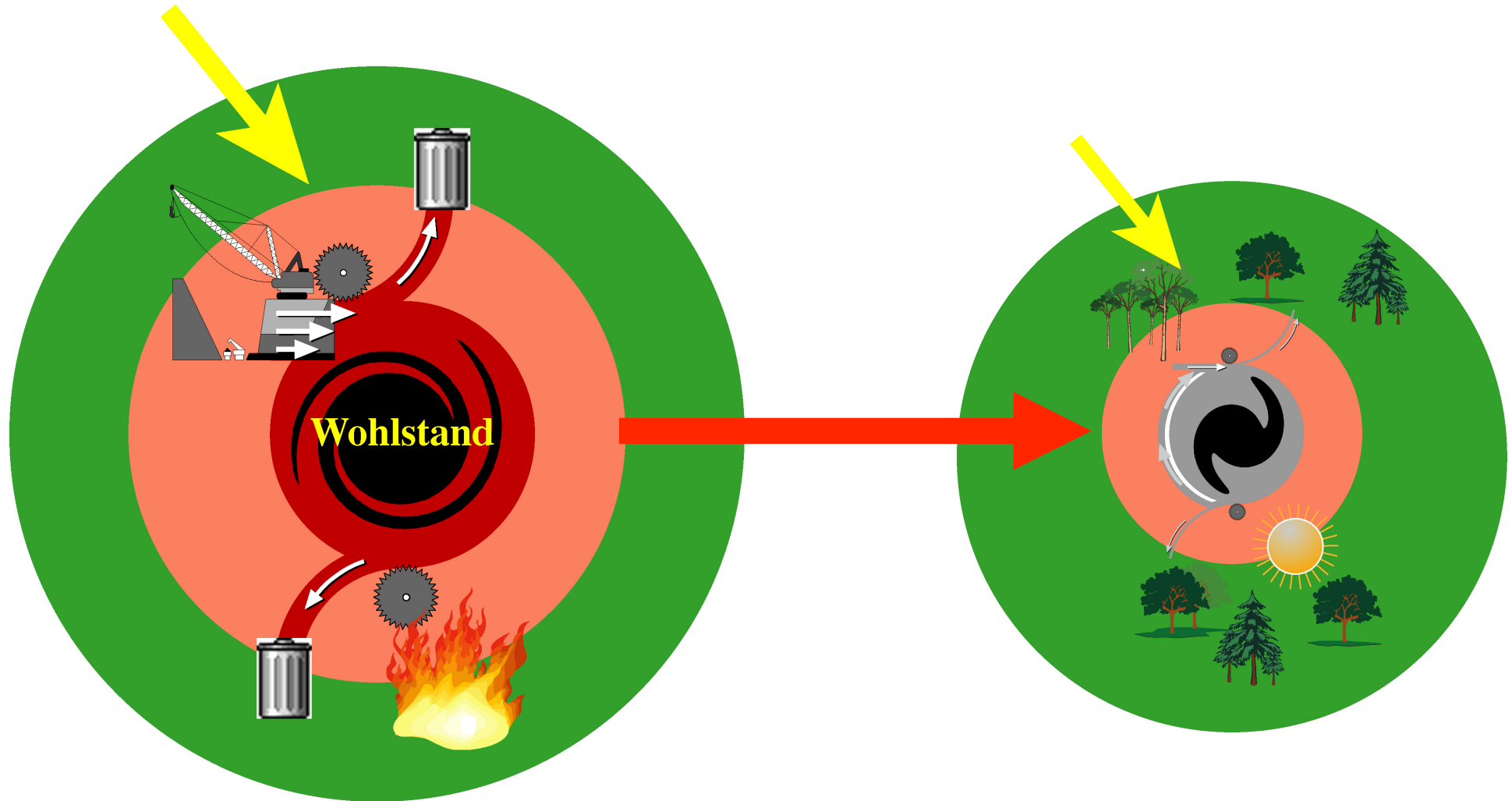
Sealing in Germany - 100 ha/Day
 Target 40 ha/Day(2020)
 Loss of Biodiversity

A non sustainable „wealth“ Machine

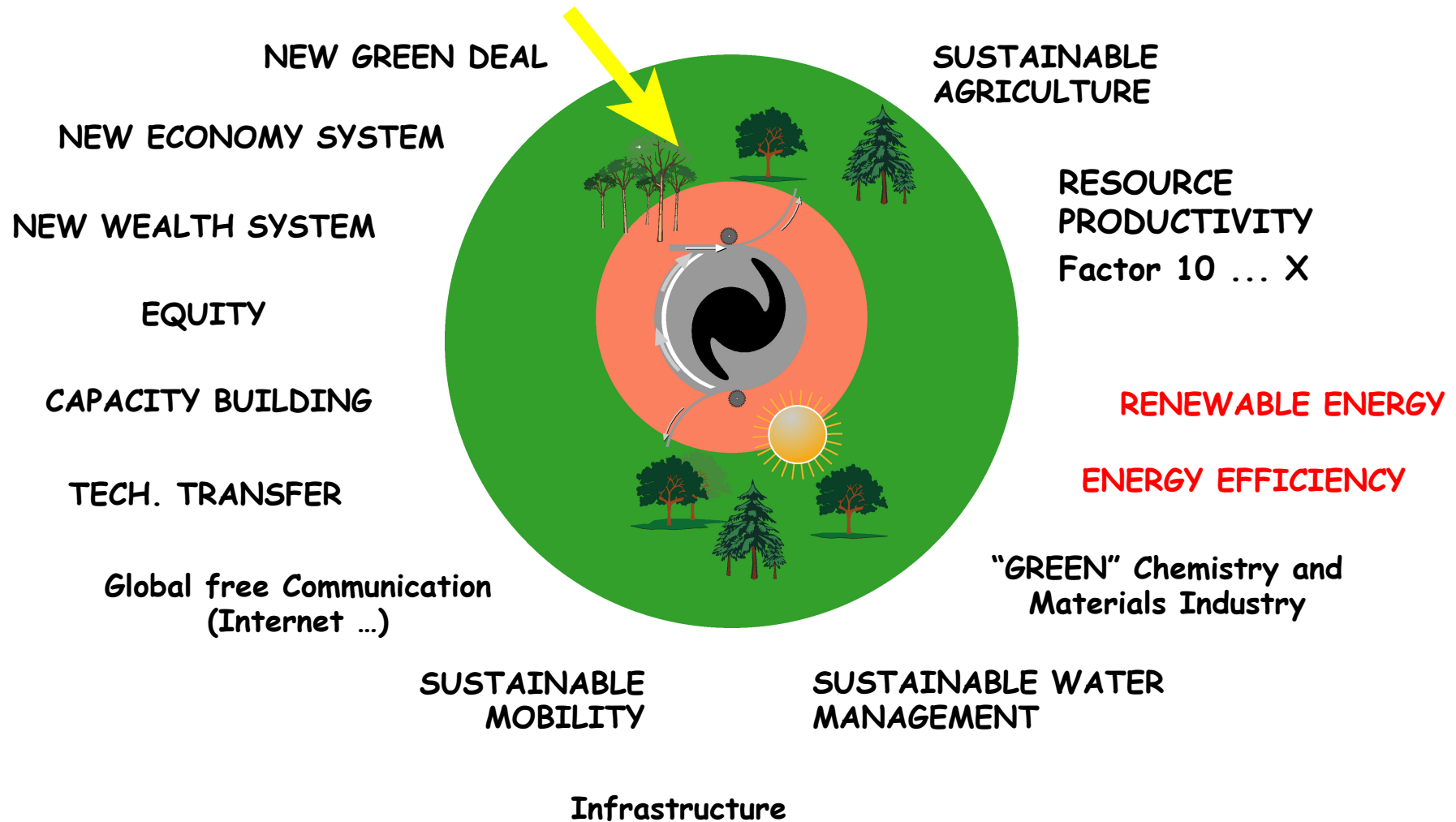


A non sustainable „wealth“ Machine

The „Great Transformation“

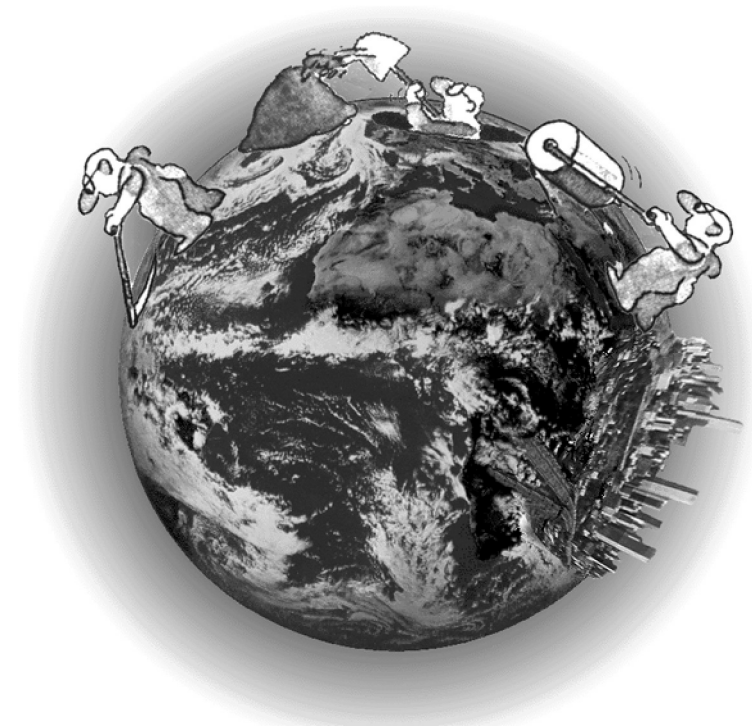


Elements of sustainable Development



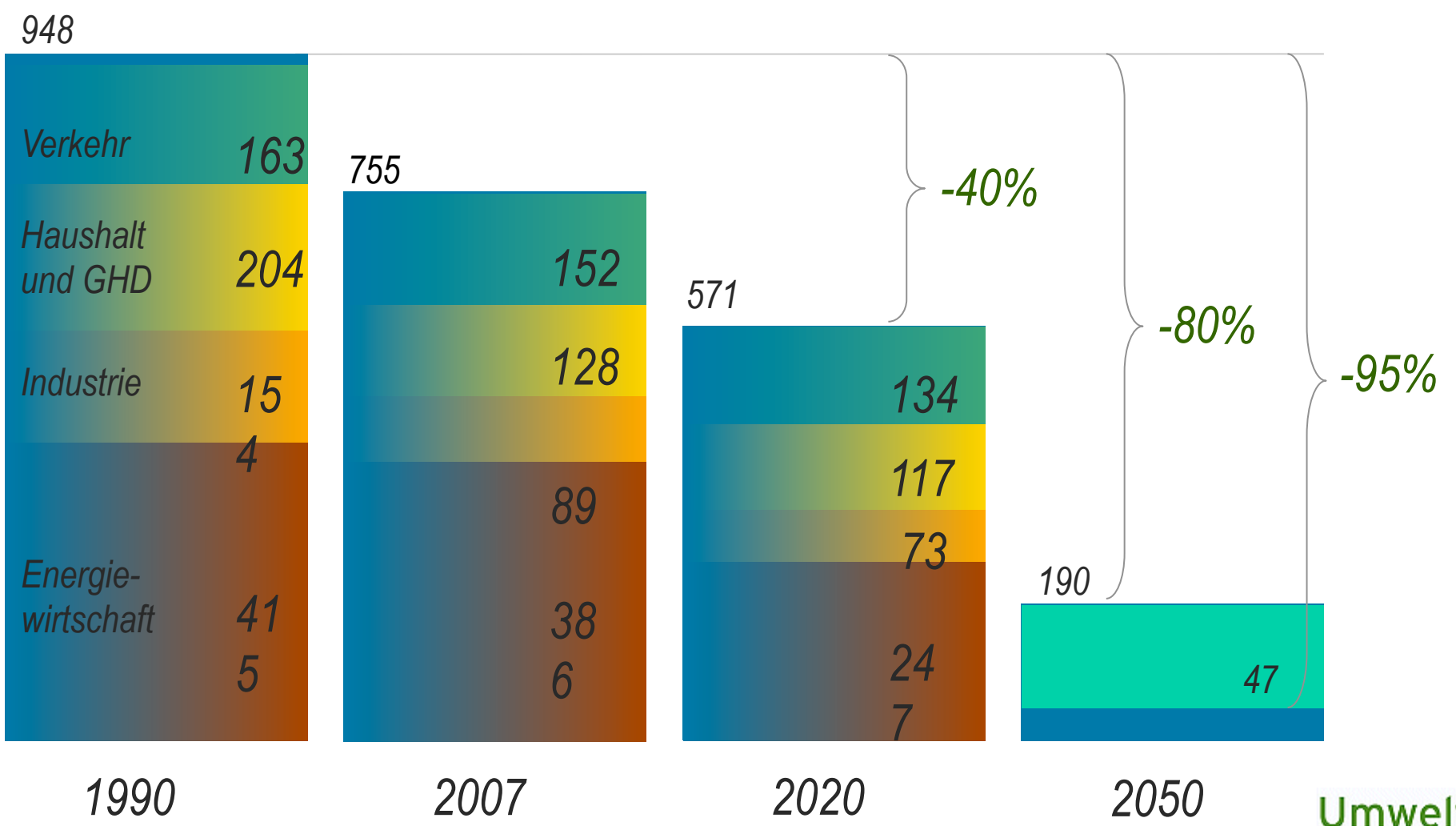
Source: Harry Lehmann, 2004

100% EE - Goals- Structure



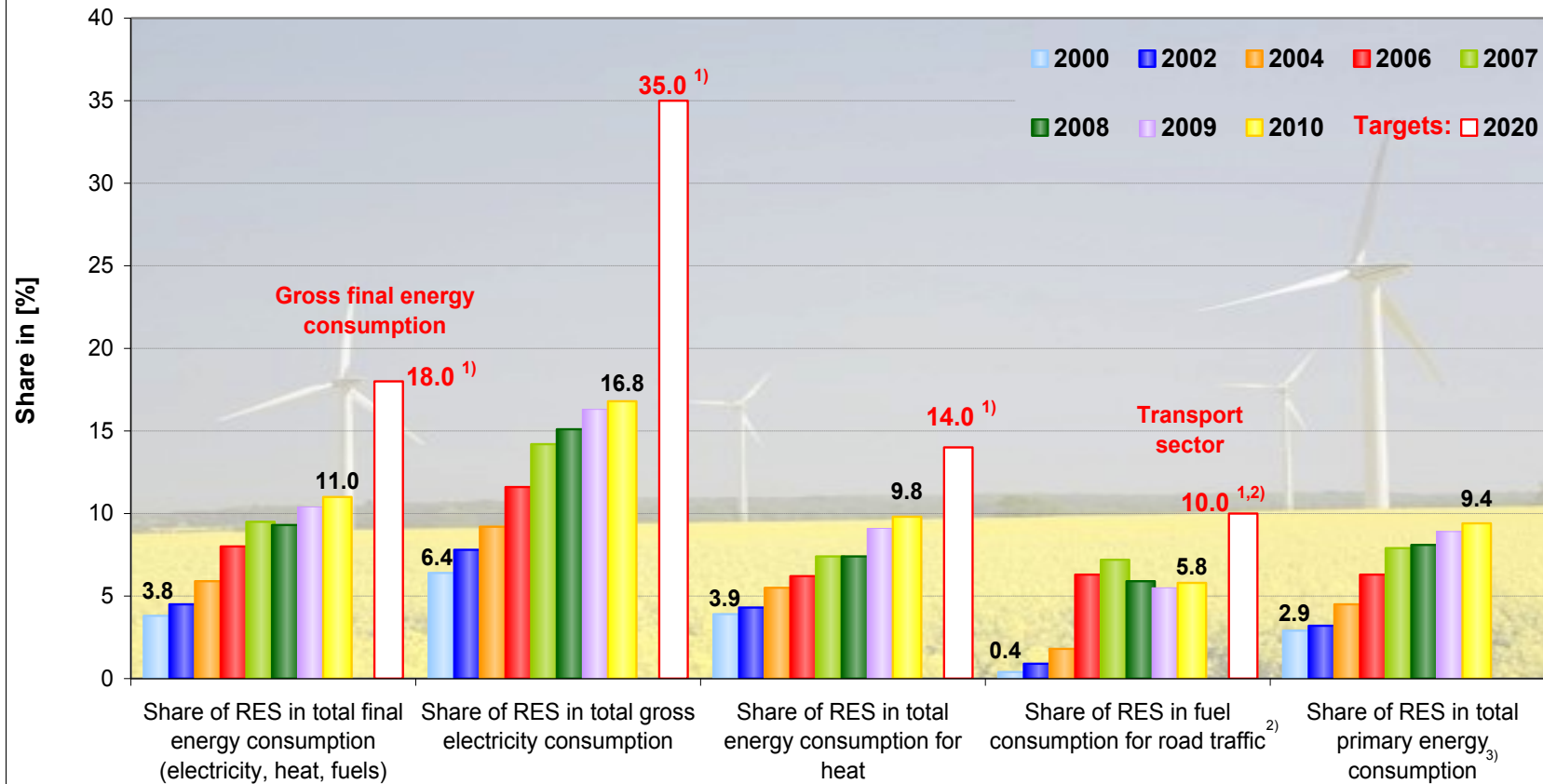
Limits to growth

Source: Harry Lehmann, 1994





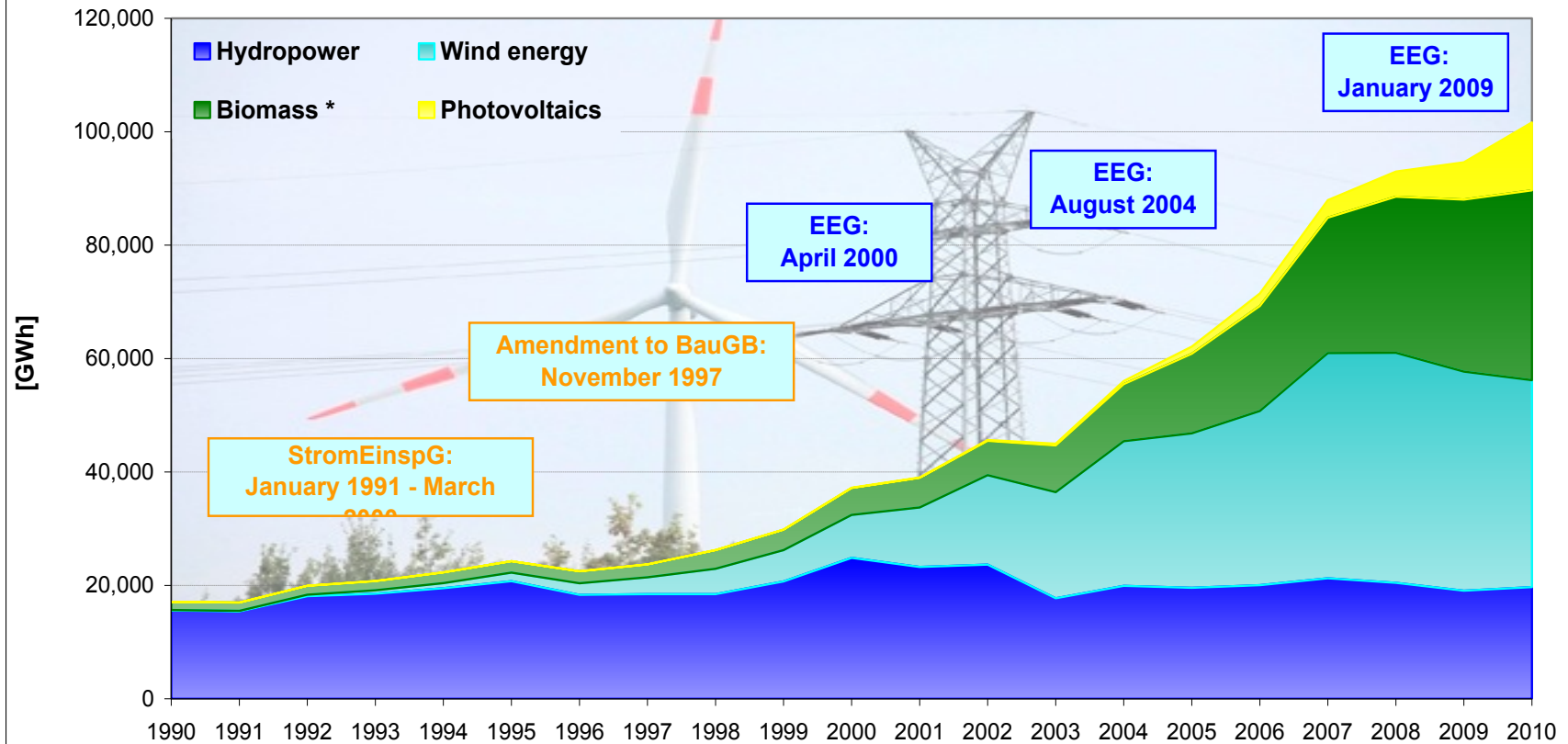
Renewable energy sources as a share of energy supply in Germany



RES: Renewable Energy Sources; 1) Sources: Targets of the German Government according to Energy Concept, Renewable Energy Sources Heat Act (EEWärmeG) and EU-Directive 2009/28/EC; 2) Total consumption of engine fuels, excluding fuel in air traffic; 3) Calculated using efficiency method; Source: Working Group on Energy Balances e.V. (AGEB); Source: BMU-KI III 1 according to Working Group on Renewable Energy Sources-Statistics (AGEE-Stat); image: BMU / Brigitte Hiss; as at: March 2011; all figures provisional



Development of electricity generation from renewable energy sources in Germany



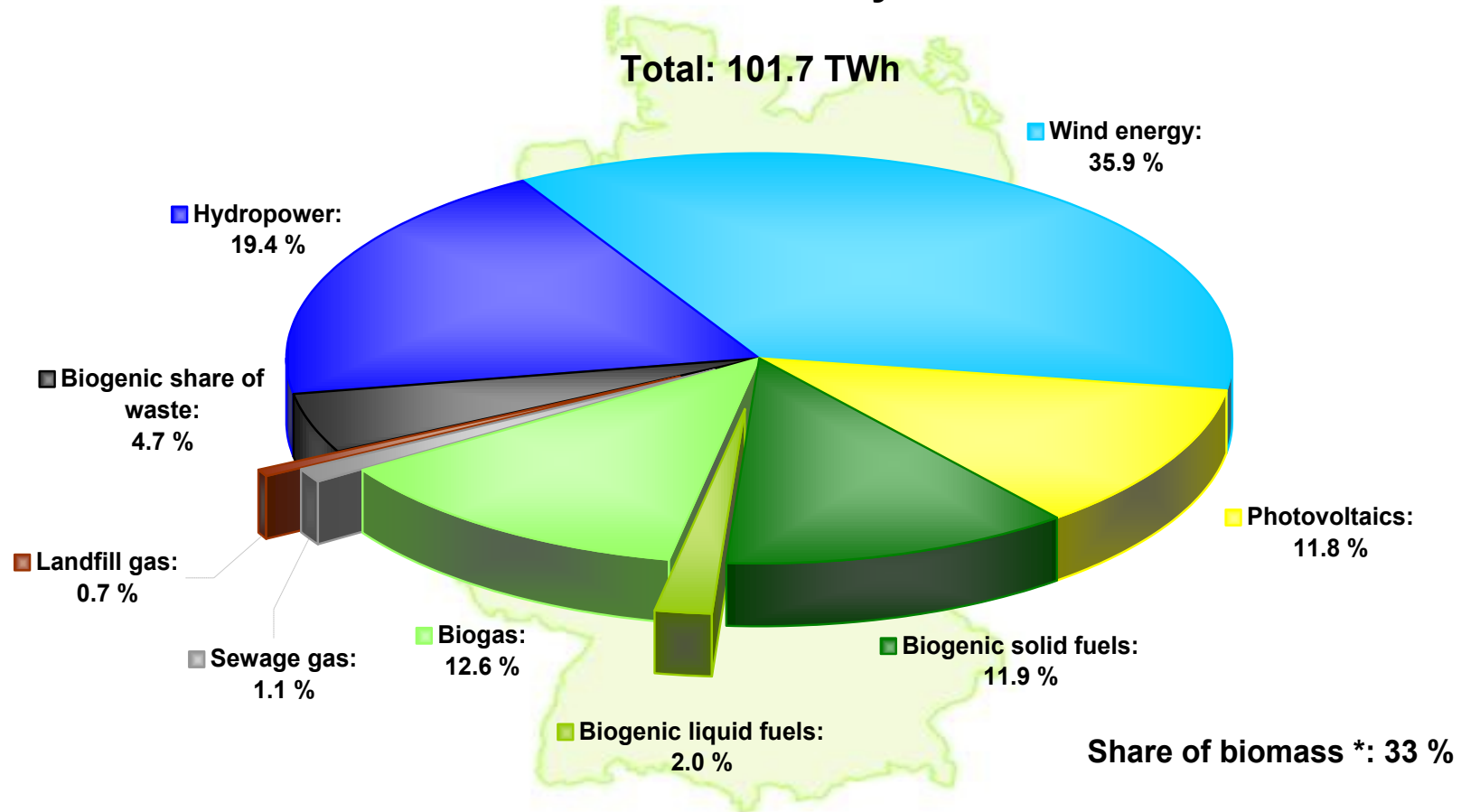
* Solid and liquid biomass, biogas, sewage and landfill gas, biogenic share of waste; electricity from geothermal energy not presented due to negligible quantities produced; 1 GWh = 1 Mill. kWh;

StromEinspG: Act on the Sale of Electricity to the Grid; BauGB: Construction Code; EEG: Renewable Energy Sources Act;

Source: BMU-KI III 1 according to Working Group on Renewable Energy Sources-Statistics (AGEE-Stat); image: BMU / Christoph Edelhoff; as at: March 2011; all figures provisional

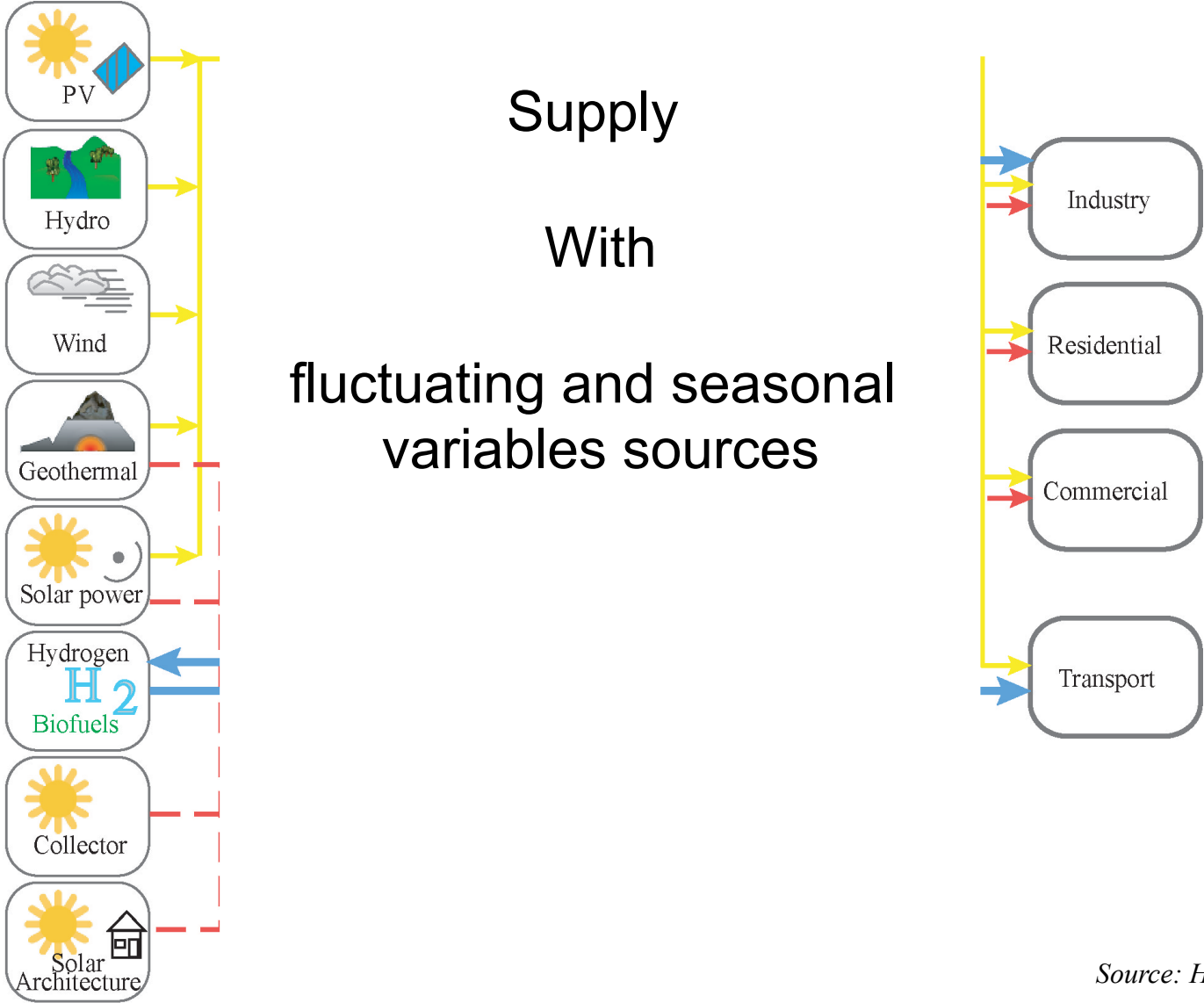


Structure of electricity supply from renewable energy sources in Germany 2010



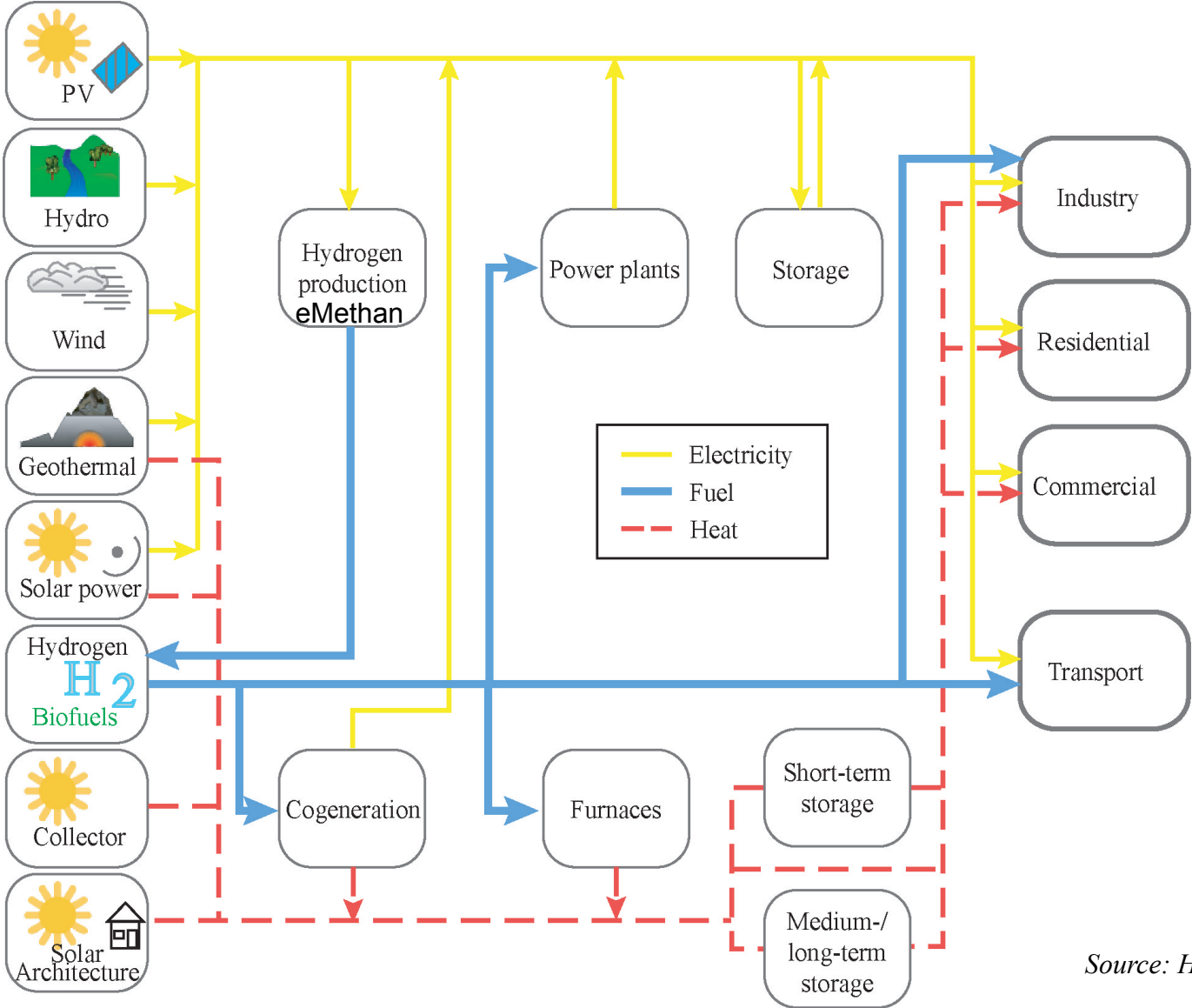
* Solid and liquid biomass, biogas, sewage and landfill gas, biogenic share of waste; electricity from geothermal energy not presented due to negligible quantities produced; deviations in the totals are due to rounding; 1 TWh = 1 Bill. kWh; Source: BMU-KI III 1 according to Working Group on Renewable Energy Sources-Statistics (AGEE-Stat); as at: March 2011; all figures provisional

Energy System based on renewable Sources



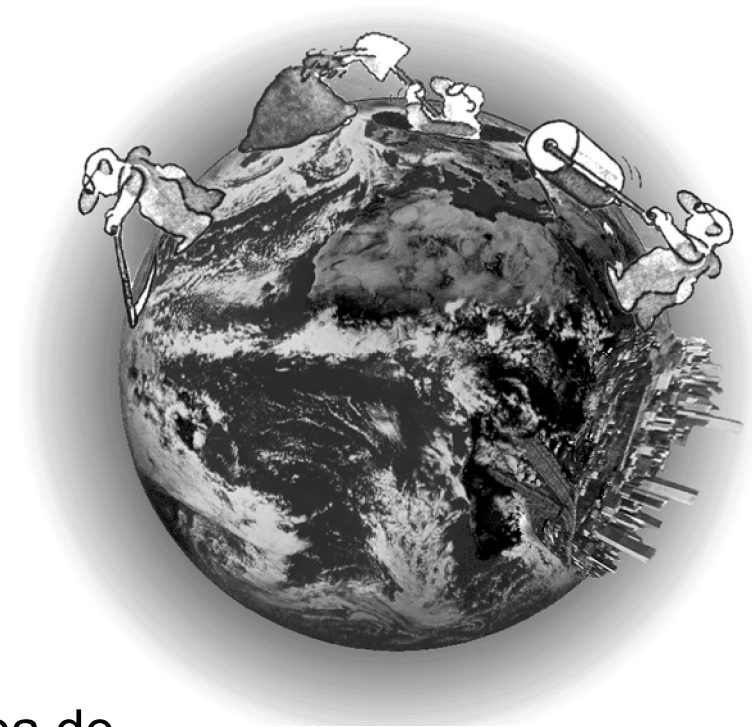
Source: Harry Lehmann, 1996

Energy System based on renewable Sources



Source: Harry Lehmann, 1996

... Continuation Part 2



Limits to growth

harry.lehmann @ uba.de

Source: Harry Lehmann, 1994