



University of St.Gallen



Sustainable Consumption and Behaviour Change

Week 1: Introduction to the course

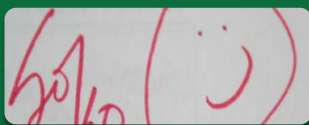
Stefanie Lena Hille, Assistant Professor on Energy
Consumer Behaviour

*"From insight
to impact"* 



University of St.Gallen

Content of today's session



Overview of course outline & grading



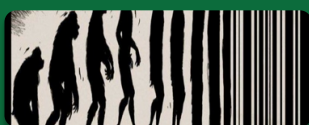
Introduction to group work



Worldwide growth in direct and indirect (energy)
demand and related greenhouse gas emissions



Growth in world population & middle class



History and drivers of (over-) consumption



2 – Sufficiency and well-being (September 30)



- ✓ Strategies for ecological consumption (consistency, efficiency, sufficiency)
- ✓ Social movements advocating sufficiency
- ✓ Business strategies for sufficiency
- ✓ Insights into well-being/ happiness economics
- ✓ Treadmills to explain the paradox of happiness

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3 – Insights from psychology on behavior change (October 7)



- ✓ Traditional behavior change instruments and their limitations
- ✓ Power of social norms and peer effects
- ✓ Power of cross-norm effects
- ✓ Breaking habits
- ✓ Positive spillover & moral licensing
- ✓ etc.

4



4 – Insights from behavioral economics on behavior change (October 21)



- ✓ Power of bounded rationality
- ✓ Power of framing effects
- ✓ Power of prompts and gamification
- ✓ Power of the default option
- ✓ Etc.

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5 & 6 – Entrepreneurship as social change (full day on November 2)



- ✓ Guest lecturer Dr. rec. soc. Kim Poldner (lecturer at Wageningen University and Research centre)



6



7 & 8: Role of multinational companies to foster sustainable consumption (full day on November 3)



®

- ✓ Guest lecturer Lorenz Isler
(Sustainability manager at IKEA Switzerland)



- ✓ Guest lecturer Gieri Hinnen
(Senior Manager Political Affairs and Environment at Swiss International Airlines)

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9 – Greenwashing & market research for sustainable consumption (morning on November 4)



- ✓ Attitude-behavior gap due to lack of trust in green claims
- ✓ Sins of greenwashing
- ✓ Market research for sustainability

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10 & 11 & 12 – Exam and student presentations



- ✓ 10 – In-class final exam (60 minutes) and group reflection of the course (**November 18**)
- ✓ Student presentations of groups 1-6 of developed campaigns (**December 2**)
- ✓ Student presentations of groups 7-12 of developed campaigns (**December 9**)

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Grading

- Written exam (50%):
 - ✓ 60 minutes
 - ✓ November 18
 - ✓ Room: 09-011
 - ✓ Power point presentations serve as scripts of the lectures
 - ✓ Slide-sets will be uploaded on the studynet continuously previous to corresponding lectures that will constitute the basic studying material for the exam
 - ✓ All slides relevant for the final written exam will be ready by **November 4** on the studynet
- Group examination paper with presentation (50%)

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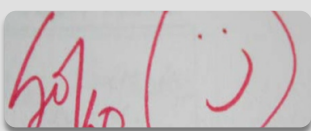
Course material available on Studynet

- StudyNet is the electronic learning platform of the University of St. Gallen
- Teaching and learning materials are provided in the virtual course room during the semester
- You can access the log-in page of StudyNet through the following address: <http://studynet.unisg.ch>
- To log in, you have to use your user name (e.g. jsmith for John Smith) and the HSG password

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Development of a behavior change campaign for the city of St. Gallen



- ✓ Throughout the semester, groups of **2 students** shall design a **fresh idea** for an **awareness and/or behavior change campaign**
- ✓ The campaign should challenge peoples' existing thoughts & raise awareness/understanding of different issues and eventually change behavior
- ✓ The ideas for the campaigns will serve as inputs for **the City of St. Gallen (2050 Energy Concept)**

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City administration - Department for environment and energy



Stadt St.Gallen

- ✓ Protection from noise and non radioactive radiation (e.g. antennas for mobile communication)
- ✓ Air pollution prevention and control
- ✓ Mobility and environment
- ✓ Sustainable development
- ✓ Nature in the city
- ✓ Climate protection
- ✓ Energy concept 2050 (strategy, coordination, consulting, controlling)

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Which energy future for the city of St. Gallen?



1. What do we have to do to live up to the needs of the population in the year 2050? How can we satisfy the needs in the fields electricity, heating and mobility in a sustainable way?
2. How do we reach the 2000 Watt society (today we need 6000 Watt/head)?
3. Where are the borders of efficiency? Where starts sufficiency?

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Vision of the energy concept for 2050

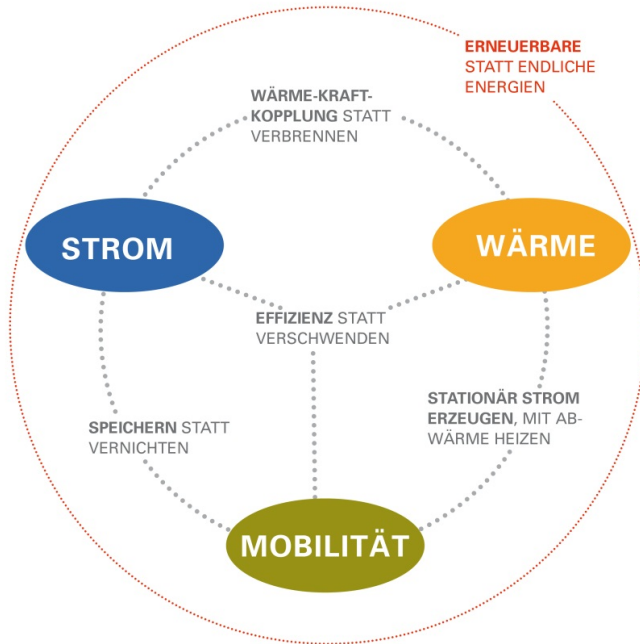


- ✓ A better life with less and cleaner energy
- In 2050 the city of St. Gallen will have a sustainable energy supply – environmentally friendly and 50% renewable, efficient and economical, safe and socially fair.

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Vision of the energy concept for 2050



- ✓ Fields of **heating, electricity** and **mobility** are all influencing each other
- ✓ The energy concept accounts for all **three** and can achieve a much greater effect than when considered separately

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Regional opportunity



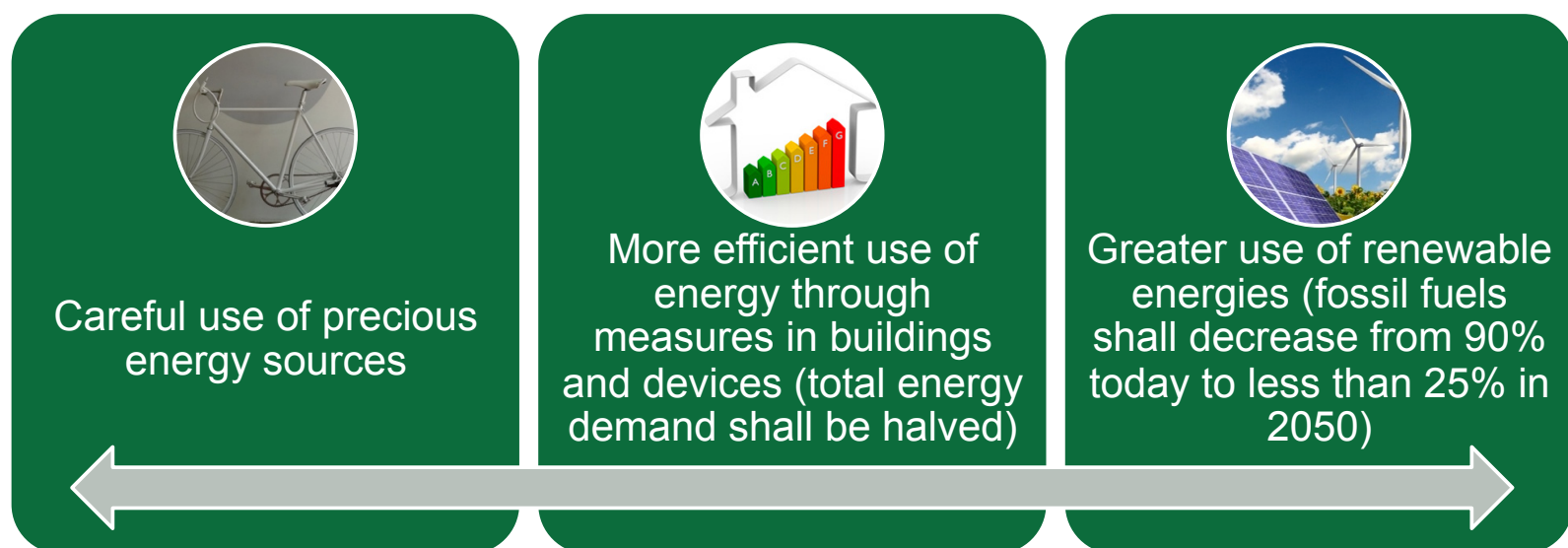
- ✓ More than climate protection
- ✓ Creation of regional values and jobs
- ✓ Strengthen the regional business cycle
- ✓ Reducing the dependency on other countries (oil, gas)

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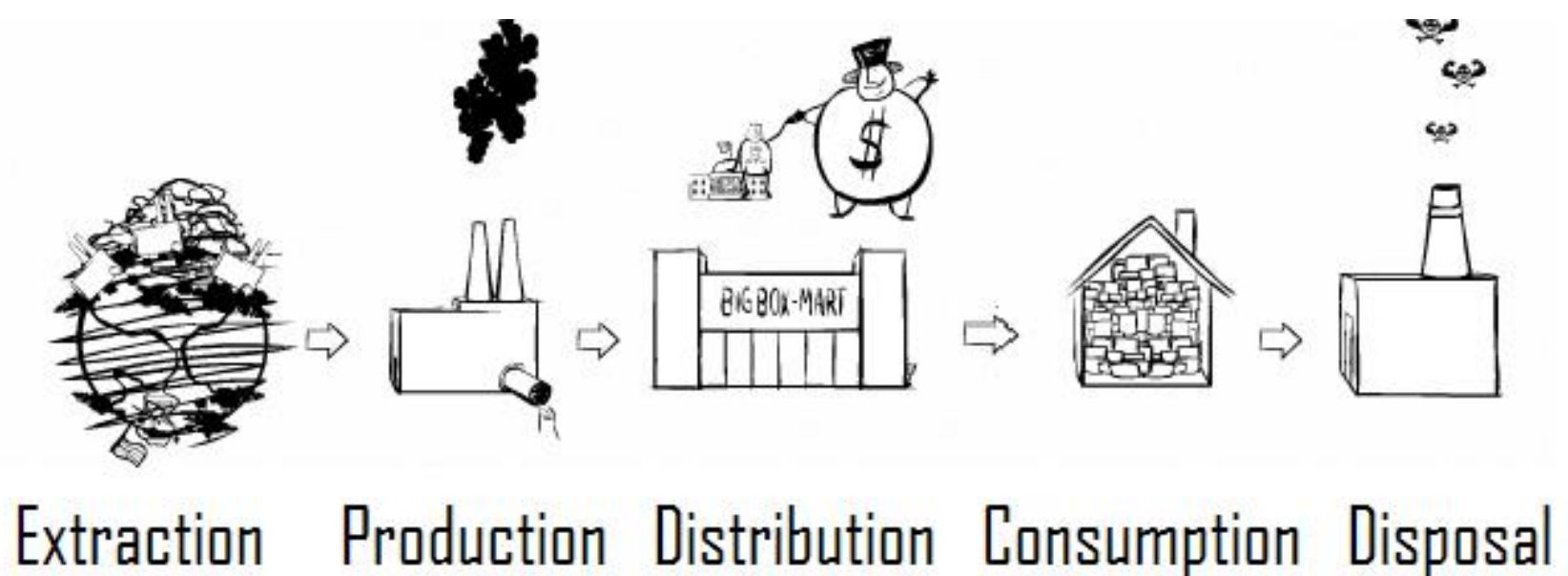


Goals of the 2050 Energy Concept

- The Energy Concept of the city of St.Gallen is in line with the goals of the “2000 Watt Society”: reduction of individual’s energy consumption to 2,000 watts and carbon dioxide emissions (CO₂) to 1 ton per person per year
- The concept rests on three pillars:



Lifestyle change needed due to significant energy use linked to consumer activities (embodied energy)





St. Gallen part of joint campaign “Wir leben 2000 Watt” (www.wirleben2000watt.com)



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Theme Food: “2,000 watt meal”

- World Environment Day (2014 & 2015): local restaurants offered a “2,000 Watt meal”



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- Meals in restaurants
- Urban gardening project
- Guided tours and cooking course



**clever
geniessen**
in St.Gallen

Essbare Wildpflanzen in der Stadt
Spaziergang mit Kräuterfachfrau Judith Degen

Auch in der Stadt wächst eine Fülle an wilden Pflanzen, mit denen man wunderbar kochen kann. Auf dem Streifzug erfahren Sie Spannendes zu essbaren Kräutern, Früchten und Blüten vor unserer Haustüre.

Donnerstag, 4. Juni 2015, 17.30 bis 20 Uhr
Treffpunkt: Vadiandenkmal, Marktplatz St.Gallen

Anmeldung bis 2. Juni 2015 an:
umwelt.energie@stadt.sg.ch, T 071 224 56 76

Ein Projekt im Rahmen des Energiekonzepts 2050 der Stadt St.Gallen:
umwelt.stadt.sg.ch

Stadt St.Gallen
Umwelt und Energie

MIT 2000 WATT

Theme Consumption: Puppet theatres



Theme Mobility: Campaign “Clever mobil”

- Mobility market
- Test events: efficient cars, e-Bikes and -Scooters

Bike4Car: Vom Gas- aufs Velopedal



Source: Bike4car.ch

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12 different teams à 2 students

	Target group 1: 5-27 years	Target group 2: 28-65 years	Target group 3: Above 65 years
Food	Group 1	Group 2	Group 3
Mobility	Group 4	Group 5	Group 6
Energy consumption at home (electricity, heating, etc.)	Group 7	Group 8	Group 9
Everyday shopping behavior (appliances, etc.)	Group 10	Group 11	Group 12

- ✓ Students select the behavior they would like to target themselves
- ✓ Students select the specific target group they would like to reach (within the given broad target group)

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Student tasks

- ✓ Students will work on designing an idea for a campaign throughout the semester and will need to hand in a power point presentation by November 30 (midnight)
- ✓ Presentations will take place on December 2 (Group 1-6) and December 9 (Groups 7-12)
- ✓ The presentation should last 20 minutes, followed by 5 minutes of Q&A
- ✓ All team members should be presenting
- ✓ Students will be evaluated on the content, creativity and novelty of the materials they created

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Definition of behavior

- Clear definition of behavior in the allocated domain that should be changed
- Example: in the domain of energy use at home, the goal might be to encourage the installation of insulation in an attic, installing water-saving devices, etc.

Analysis of problem

- Discussion of current unsustainable consumption patterns related to the behavior, scale of the problem in terms of environmental impacts, etc.
- Identification of main barriers that exist that prevent people to switch to the desired mode
- Identification of benefits that are associated with the alternative behavior you are trying to promote, etc.

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Analysis of messenger

- Analyze the role of the city of St. Gallen and the strengths and weaknesses, chances and risks (SWOT) in communicating to citizens about environmental issues (e.g. what experience does the city have in running similar campaigns, what impact would negative publicity have on the cities' credibility, etc.?)
- Analyze what other organizations could convey similar messages (e.g. environmental NGOs)?

Definition of the goals/ core message

- Definition of the specific quantitative targets of the campaign that can be measured after the campaign (SMART: specific, measurable, attainable, relevant, time-bound)
- What is the core message you want to get across (work on taking the essence of your message to no more than 8 words)

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Analysis of target group

- Definition and analysis of the specific target groups (e.g. within the target group of >65 year olds, do you aim to target the general population or only parts of that sub-population, e.g. women or car drivers)?
- Include demographics, geographics, readiness to change, values, lifestyles, etc.

Analysis of previous campaigns

- Analysis of what other campaigns the city of St. Gallen has conducted in the specific domain for the specific target group

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Definition of the timing

- Definition of the timing (i.e. during what season, etc. should the campaign be launched? How long should the campaign last, etc.)

Campaign plan & material

- Description of detailed campaign plan including detailed communication strategy (i.e. how do want to reach your target audience, e.g. via video, social media, contests, community events, direct mail, etc.)
- Describe the methods/techniques/tools in detail (e.g. content of event, etc.)
- Identification of potential partners (what specific involvement do you want them to have)?

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Definition of budget

- Clearly define how much the campaign would cost (e.g. by asking for a non-binding offer from a graphic designer, etc.)
- Keep in mind that the maximum budget to spend is approximately 50.000 CHF – but better if the budget is not spent ;)

Evaluation of campaign

- Provide a recommendation on how to evaluate the success of the campaign

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Next steps

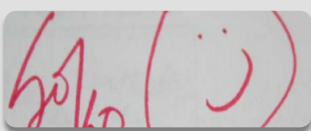


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Introduction to group work



Worldwide growth in direct and indirect (energy) demand and related greenhouse gas emissions



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History and drivers of (over-) consumption

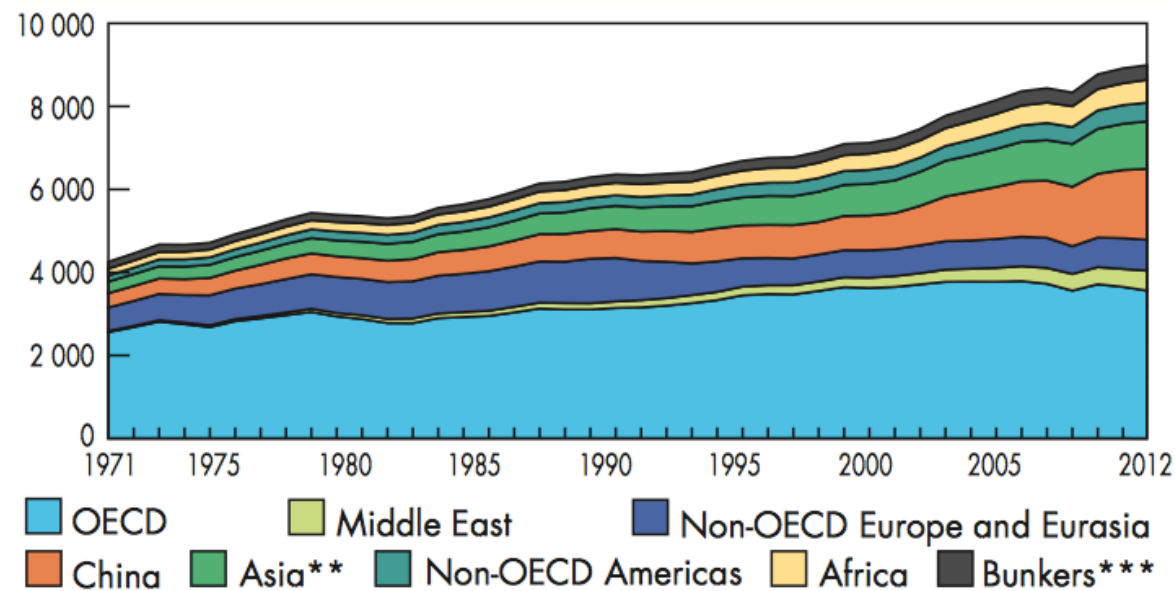
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Growing worldwide energy demand

- Growing world energy demand is putting increasing pressure on the environment and is a key challenge to address climate change

World total final consumption* from 1971 to 2012
by region (Mtoe)

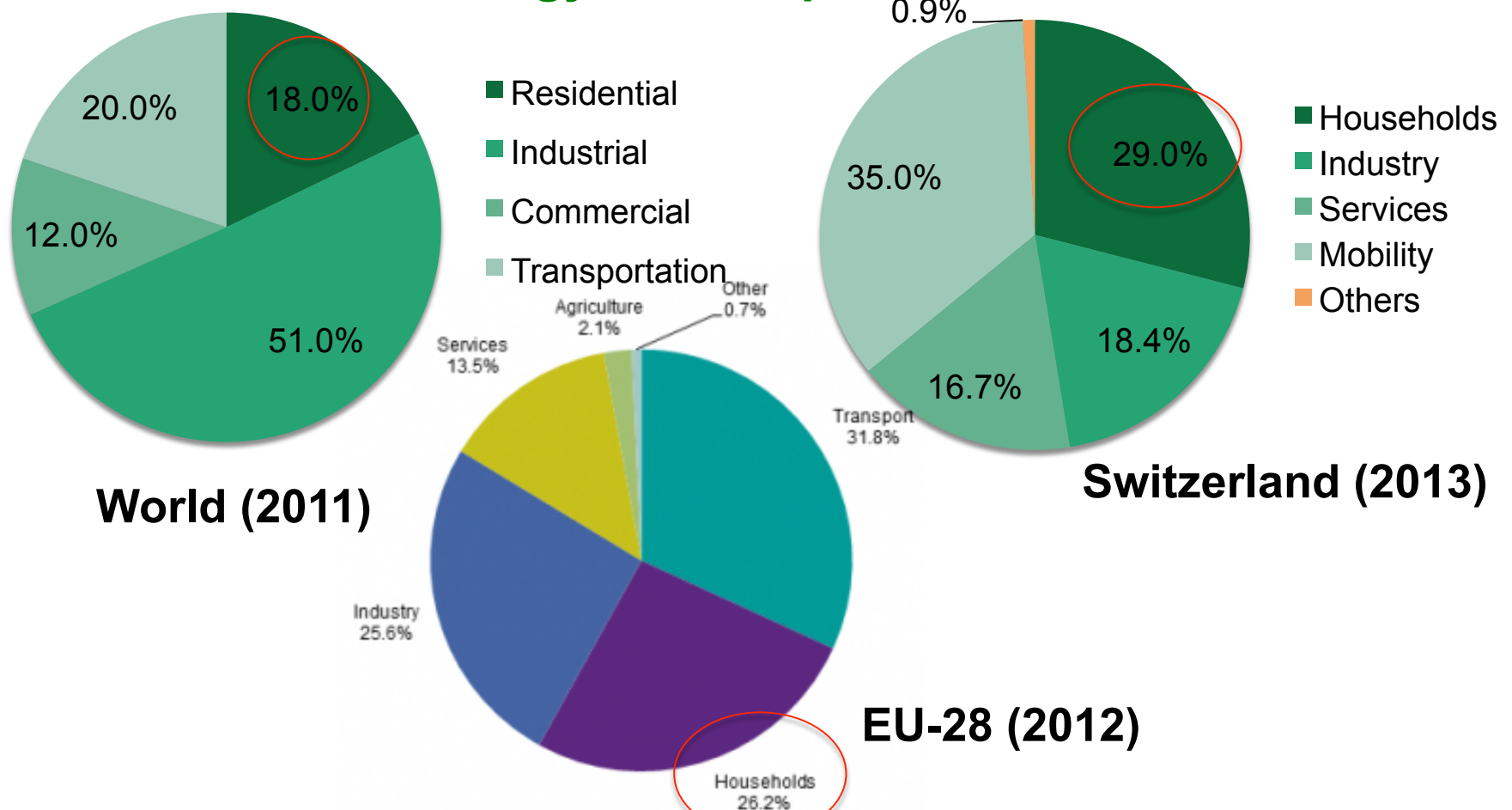


Source: International Energy Agency (2014): Key World Energy Statistics:
<http://www.iea.org/publications/freepublications/publication/KeyWorld2014.pdf>

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Residential energy consumption

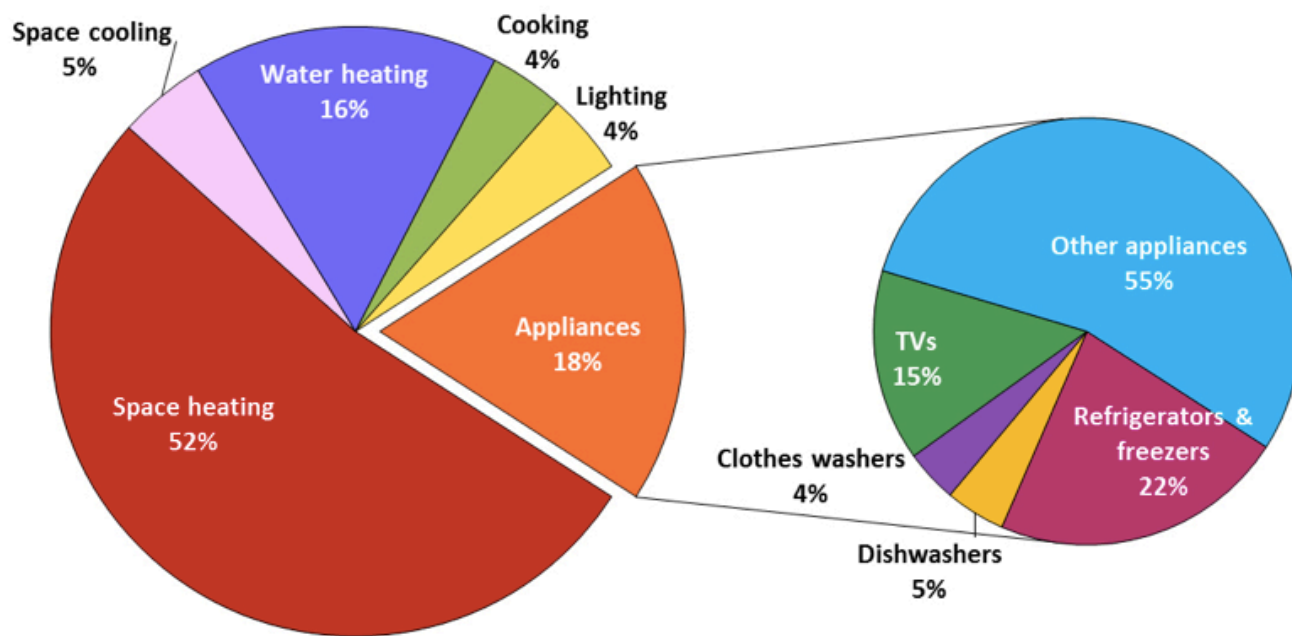


Source: <http://www.eia.gov/tools/faqs/faq.cfm?id=447&t=1>; Federal Office of Energy – Energy statistics (2013); Eurostat (online data code: tsdpc320)

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Breakdown of OECD energy consumption in the residential sector (2011)



Breakdown of OECD energy consumption in the residential sector (2011)

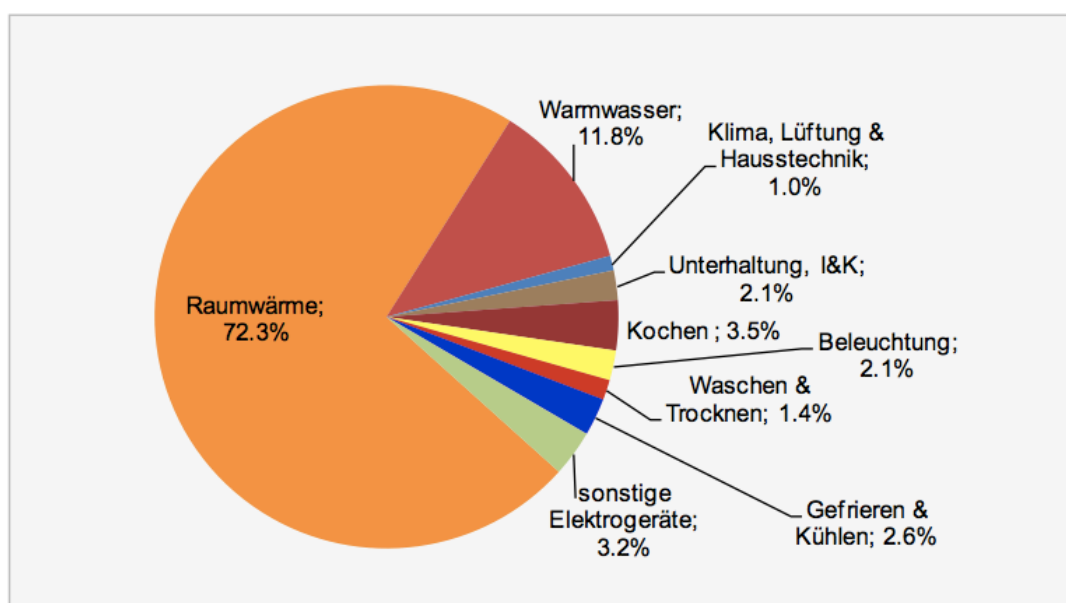
Source: IEA energy efficiency indicators database 2014

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Breakdown of Switzerland's energy consumption in the residential sector (2011)

Abbildung 4.1: Anteile der unterschiedenen Verwendungszwecke am Energieverbrauch der Privaten Haushalte im Jahr 2010



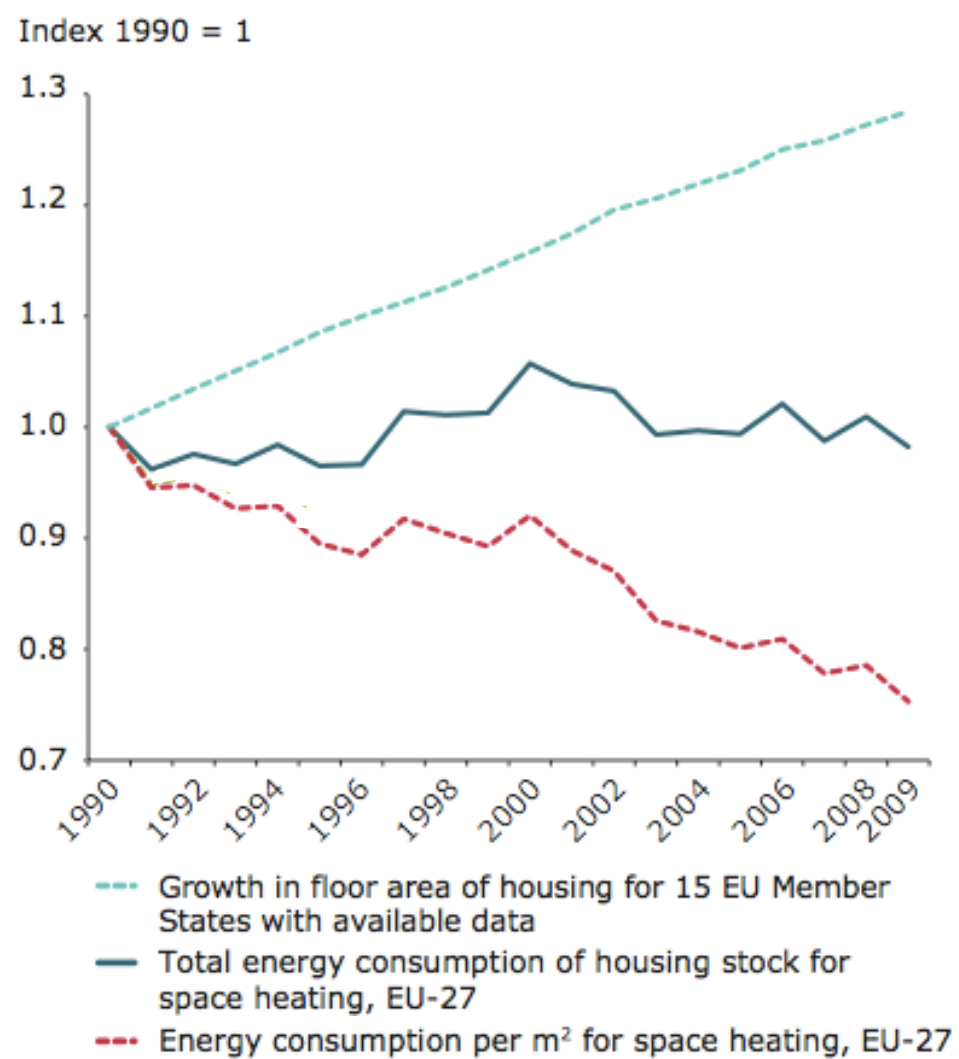
- Space heating is responsible for 72.3% of final energy consumption in the residential sector in Switzerland

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Trends in heating energy consumption and energy efficiency of housing (European Union)



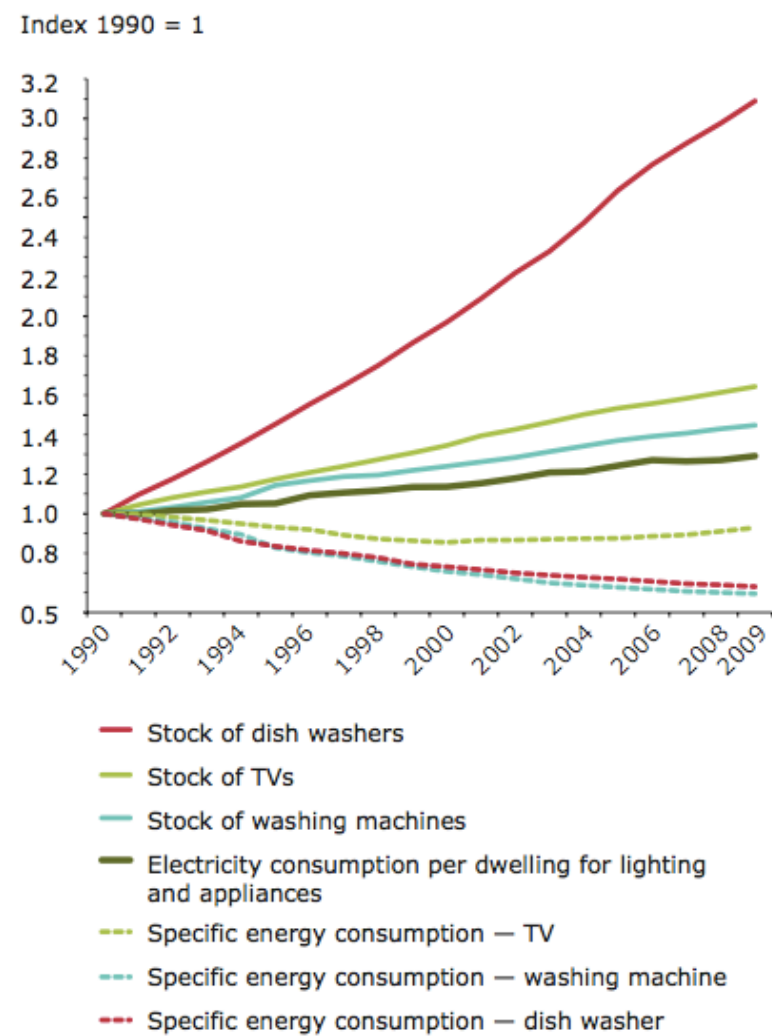
Source: Odyssee database, 2012.

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Trends in appliance energy efficiency and ownership (European Union)



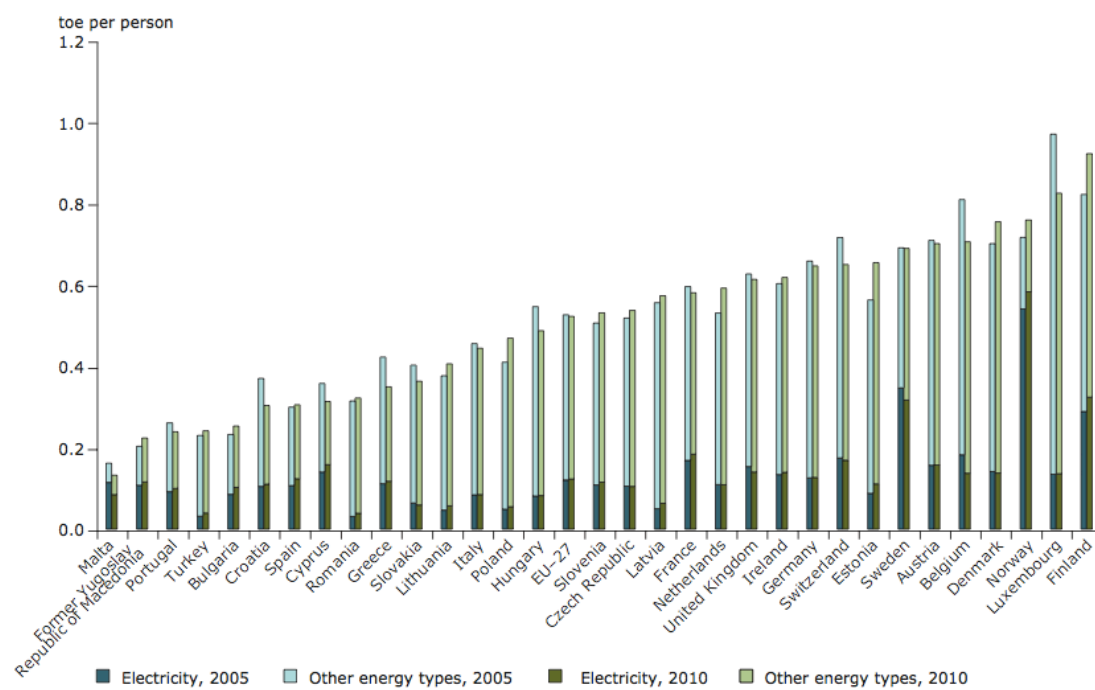
Source: Odyssee database, 2012.

Source: European Environment Agency (2012): Consumption and the environment – 2012 update. The European Environment – State and Outlook.



Final household energy consumption per person in EEA member countries

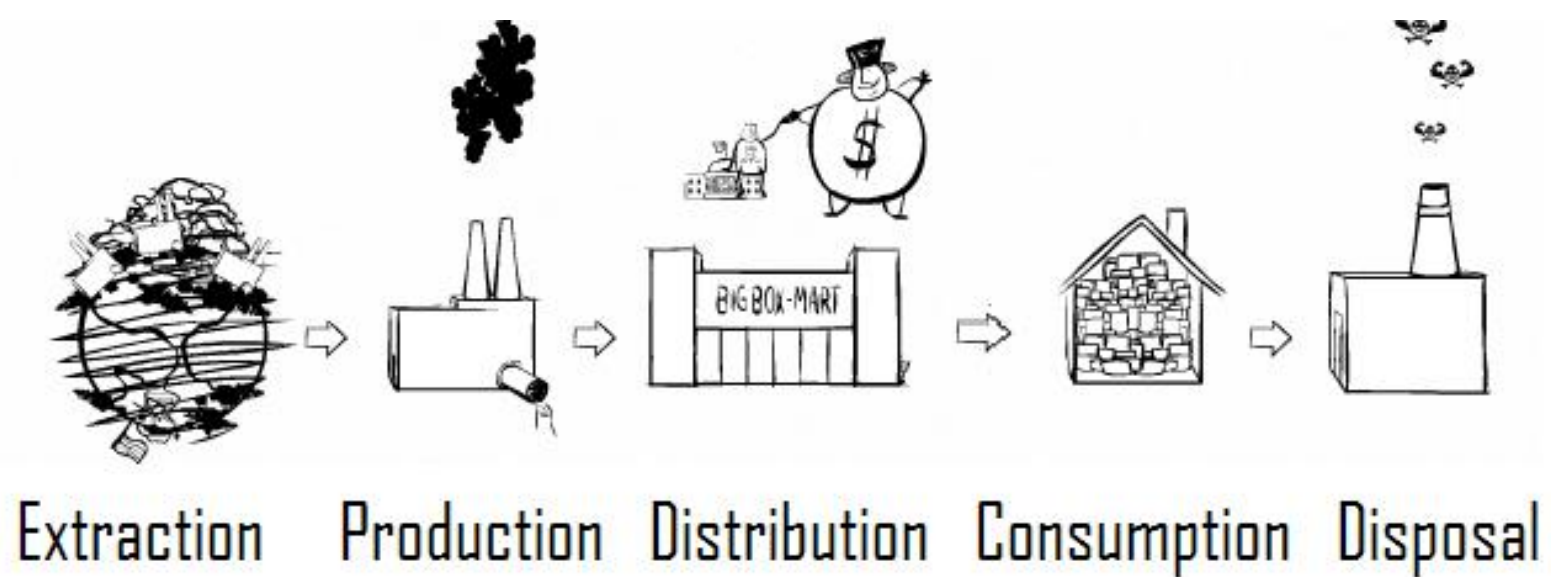
Figure 5.1 Final household energy consumption per person in EEA member countries, 2005 and 2010



Source: Eurostat energy statistics.



Indirect (embodied) energy consumption





Embodied energy is what lurks beneath ...



- Embodied energy accounts for more than 2/3 of Swiss household energy's demand
- In the future, embodied energy will become increasingly important

Source: Prof. Mehdi Farsi

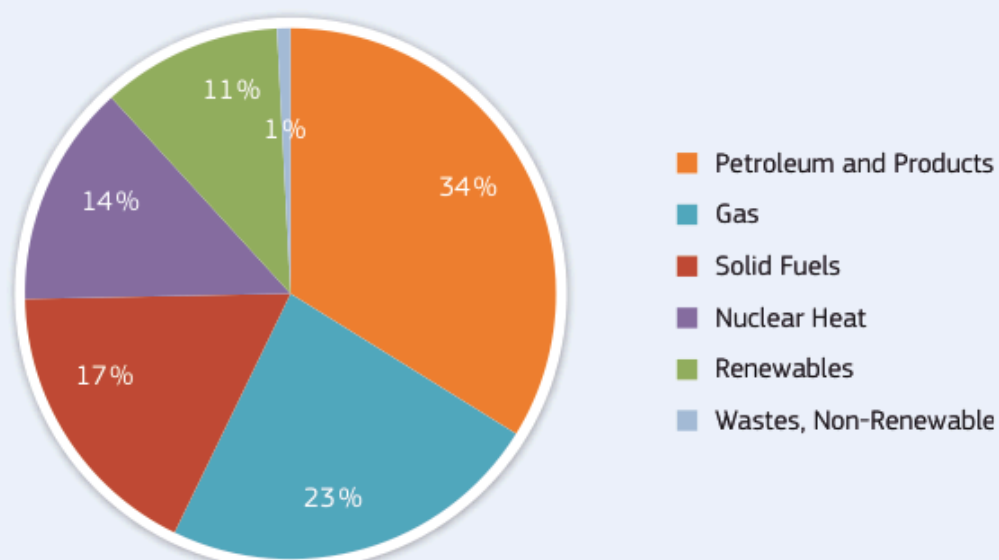
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Energy Mix of Europe (2012)

EU-28 Gross Inland Consumption – Energy Mix (%) – Primary Products Only

Total Primary 2012: 1 682 Mtoe
(Total Primary and Secondary 2012: 1 683 Mtoe)



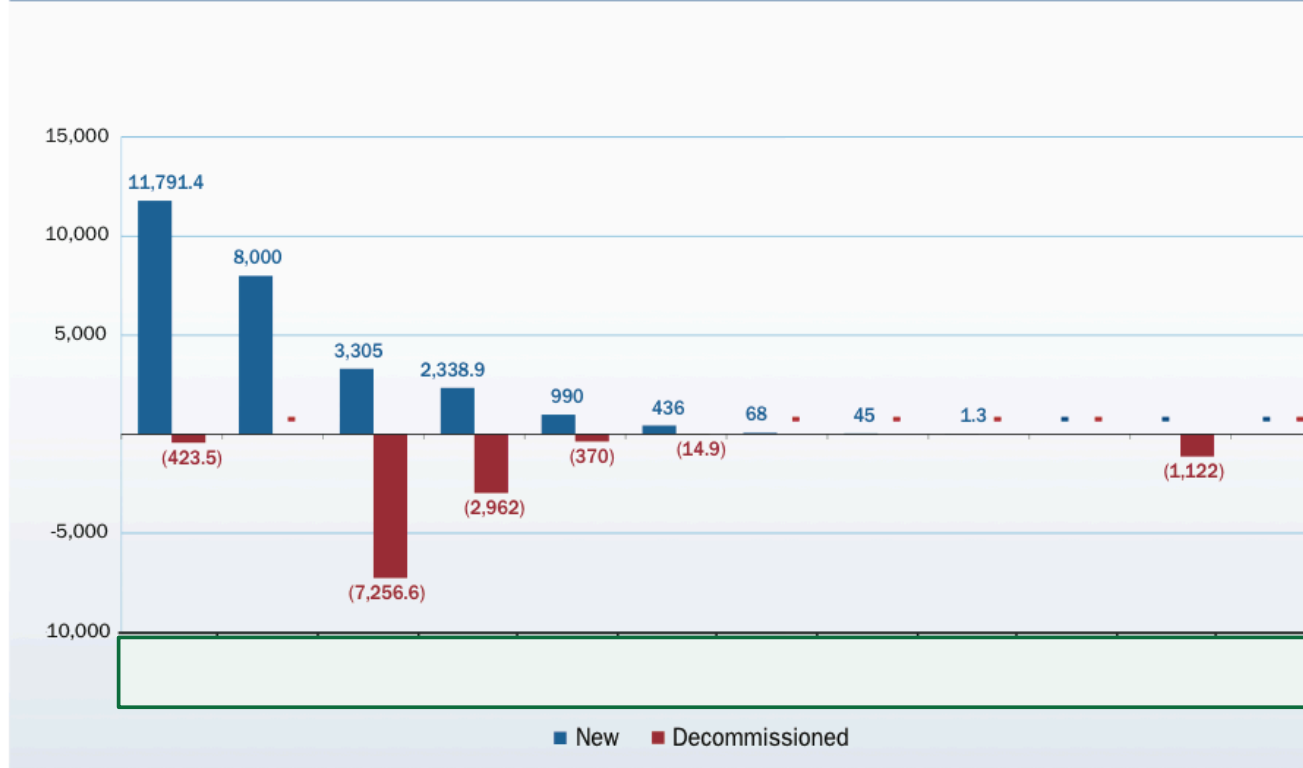
Source: https://ec.europa.eu/energy/sites/ener/files/documents/2014_pocketbook.pdf

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New installed capacity for electricity generation in the EU

FIGURE 3: NEW INSTALLED CAPACITY AND DECOMMISSIONED CAPACITY (MW)

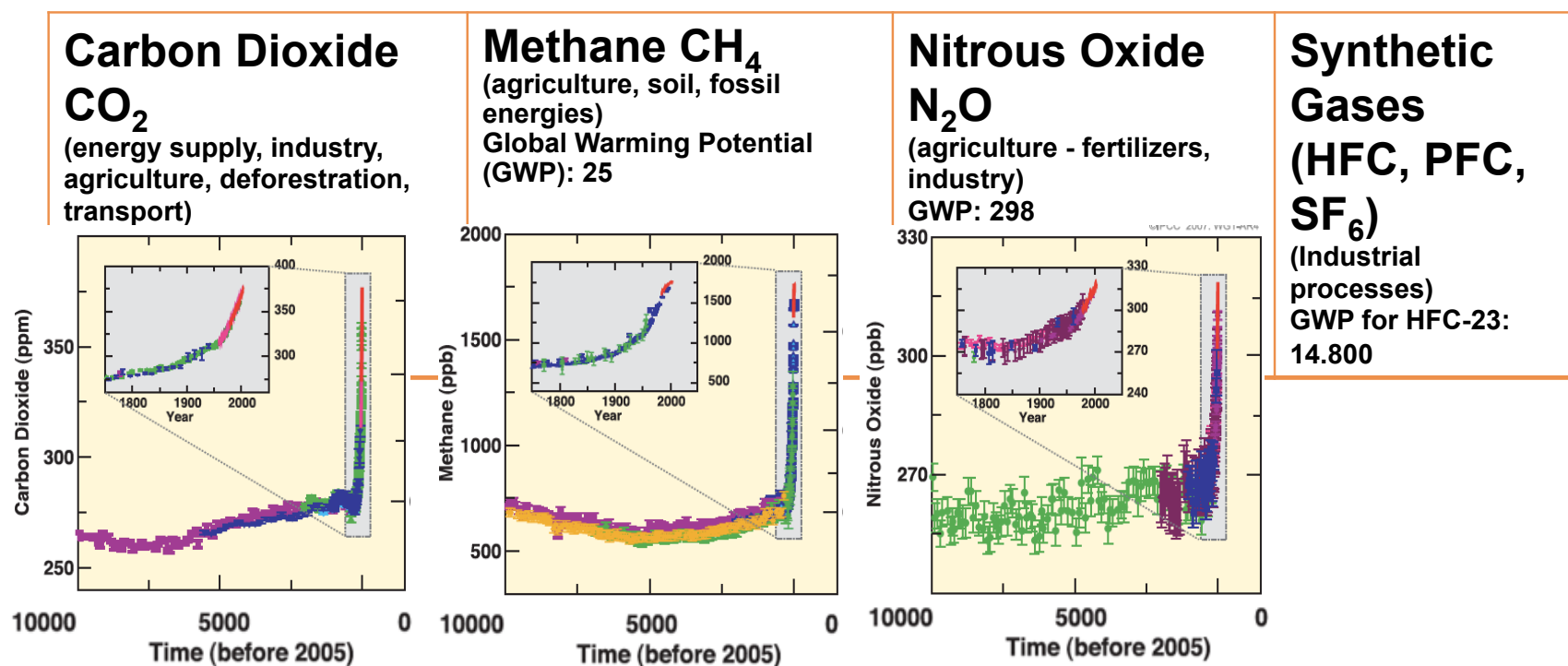


Source: <http://www.ewea.org/fileadmin/files/library/publications/statistics/EWEA-Annual-Statistics-2014.pdf>

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Greenhouse gases



CO_2 -Equivalent (CO_2eq) is a quantity that describes for a greenhouse gas the amount of CO_2 that would have the same global warming potential (GWP) - e.g. 1 kg CH_4 equals 25 kg CO_2

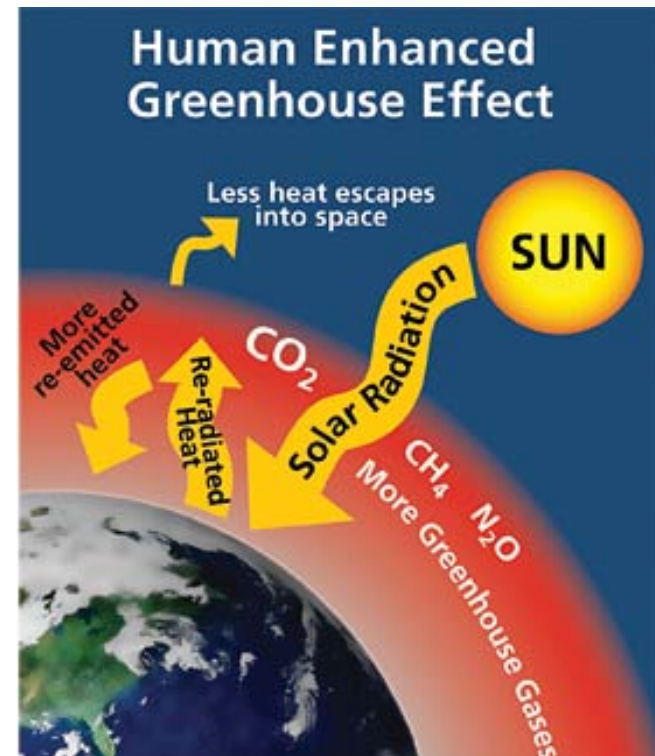
Source: Presentation of IPCC 4th Assessment Report by Martin Manning 2007

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Global warming by Human enhanced greenhouse effect

- Humans are pumping more greenhouse gases into the atmosphere
- The atmosphere acts like the glass walls of a greenhouse
- Adding more GHGs to the atmosphere increases the atmosphere's heat trapping power



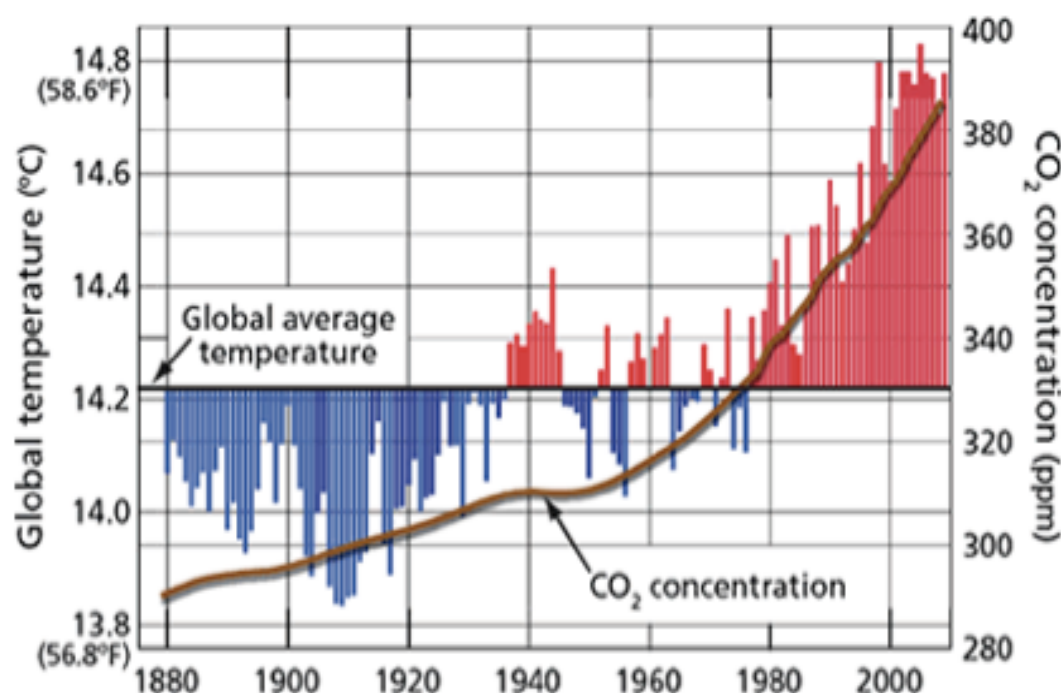
Source: <http://rodneyjonesme.wordpress.com/2012/03/02/unit-2-compilation/>

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Global temperature increase

Global Temperature and Carbon Dioxide (CO₂)

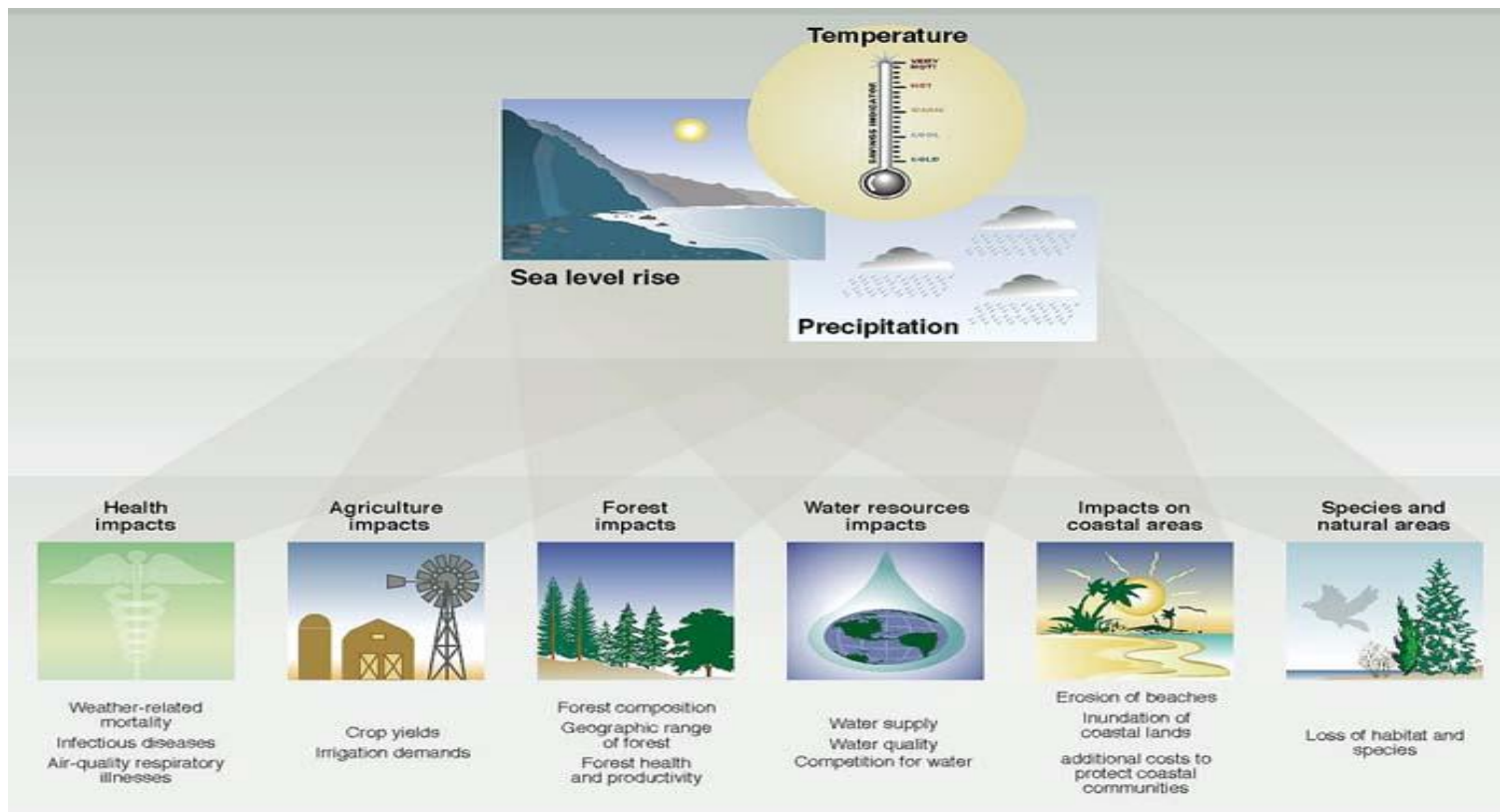


- Red bars indicate temperatures above, and blue bars indicate temperature below, the average for 1901–2000
- The brown line shows atmospheric CO₂ concentration in parts per million (ppm)

Source: NOAA/NCDC

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Consequences of climate change



Source: Intergovernmental Panel on Climate Change (IPCC)

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Impacts of climate change

Directed by John P. Reisman
 Graphics/ Animations/ Camera: Goddard Space Flight Center, Rebecca Fischler,
 Haritimedia GmbH, Sharon Martin, Jannis Productions, Makiko Sato, Gavin Schmidt
 Video & Images Courtesy of Department of Energy (DOE),
 Earth Systems Research Laboratory (ESRL), Environmental Protection Agency (EPA),
 Goddard Space Flight Center (GSFC), Goddard Institute of Space Studies (GISS),
 Hadley Meteorological Center, International Panel on Climate Change (IPCC),
 International Space Station (ISS), Japanese Meteorological Agency (JMA),
 John P. Reisman, OSS Foundation, Kendrick Taylor, Desert Research Institute,
 The Koshland Museum, National Academy of Science (NAS),
 Nat'l Aeronautics & Space Administration (NASA),
 Nat'l Atmospheric & Oceanic Administration (NOAA), Nat'l Climate Data Center (NCDC)
 Nat'l Hurricane Center (NHC), National Research Council (NRC)
 Nat'l Snow & Ice Data Center (NSIDC), Nat'l Physical Measurement Laboratory (NIST)
 The U.S. Geological Survey (USGS)

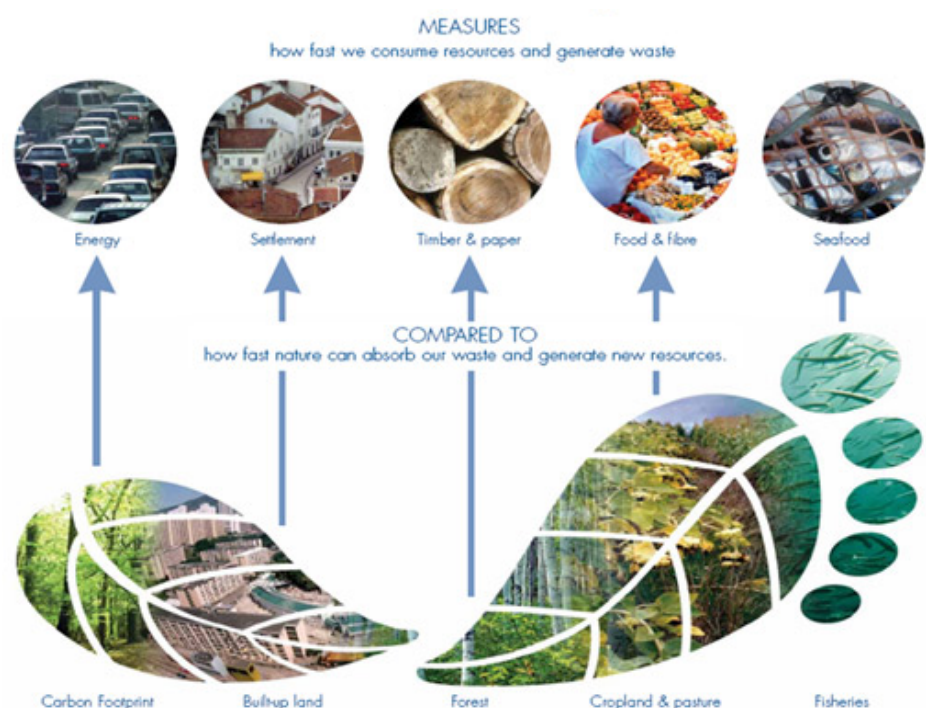
Source: National Academies of Sciences: Climate Change, Lines of Evidence (2):
<https://www.youtube.com/watch?v=-luVzcp39rs&index=2&list=PL38EB9C0BC54A9EE2>

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Ecological footprint (accounting system)

- Area used to support a population's consumption
- Includes the area needed to produce the materials consumed and the area needed to absorb greenhouse gas emissions
- Calculated as the nation's primary production footprint plus the footprint of import minus the footprint of exports

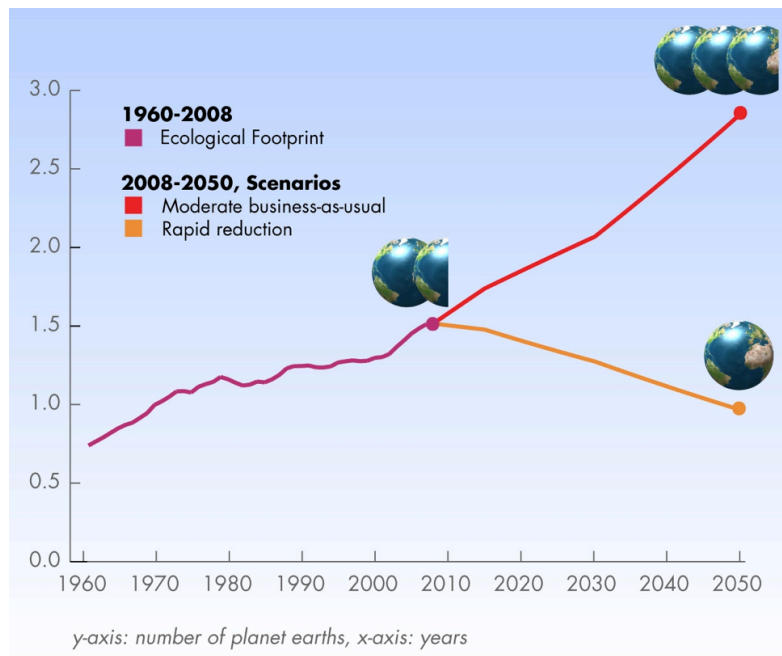


Source: Global Footprint Network

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Global ecological overshoot



- Humanity's demand on the biosphere exceeds the available biological capacity of the planet
- At our current rate of consumption, the Earth needs **1.5 years to produce and replenish the natural resources that we consume in a year**

- By definition, overshoot leads to a depletion of the planet's life supporting biological capital (→ shrinking forests, species loss, etc.) and/or to accumulation of CO₂ (→ climate change)

Sources: Global Footprint Network

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Task (in pairs depending on availability of computer)

- Go to <http://www.footprintnetwork.org/en/index.php/GFN/page/calculators/> and calculate your ecological footprint
- Use "enter detailed information" (for more accurate answers)



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Group discussion (in groups of 4)

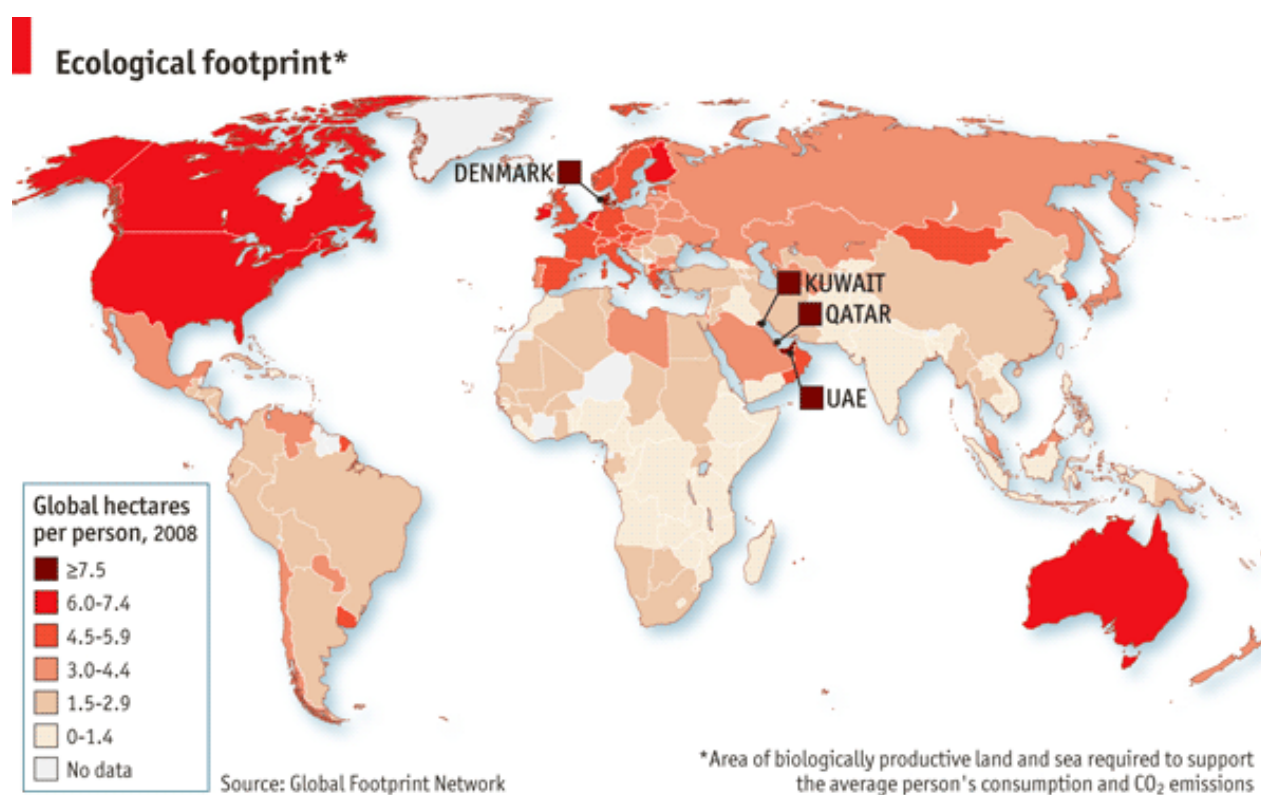


- After having measured your environmental footprint, did the result surprise you?
- What do you think are the major reasons for the (possible) wide ranges of footprints within your group?
- <http://www.footprintnetwork.org/en/index.php/GFN/page/calculators>

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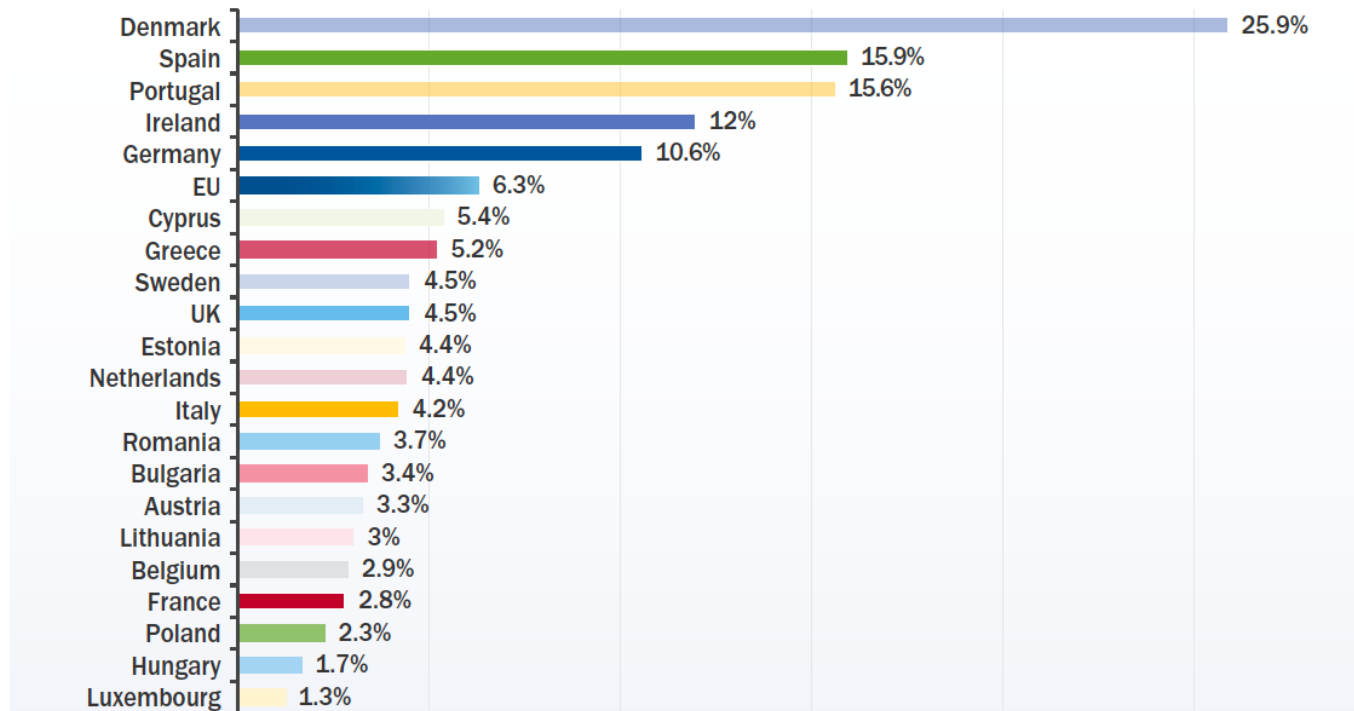


World map of countries by ecological footprint – Top 4





Wind energy in 2011: 25.9 % of power generation in Denmark



Source: EWEA 2012

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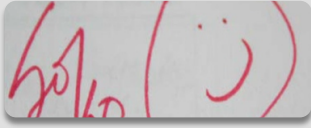
Group discussion: Why is Denmark among the top 4?

- Denmark's ecological footprint is 8.25 global hectares per person → if everyone in the world consumed like people living in Denmark, then the Ecological Footprint would be **4.5 planets**
 - Denmark has the largest rate of electricity produced by wind turbines (30 percent in 2012)
 - 25% of residents in Copenhagen commute to school and work by bicycle & decent public transport system
 - Increasing number of electric cars
 - Strict recycling laws
- Why could Denmark's footprint be so high?

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Content of today's session



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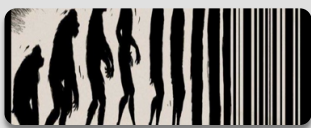
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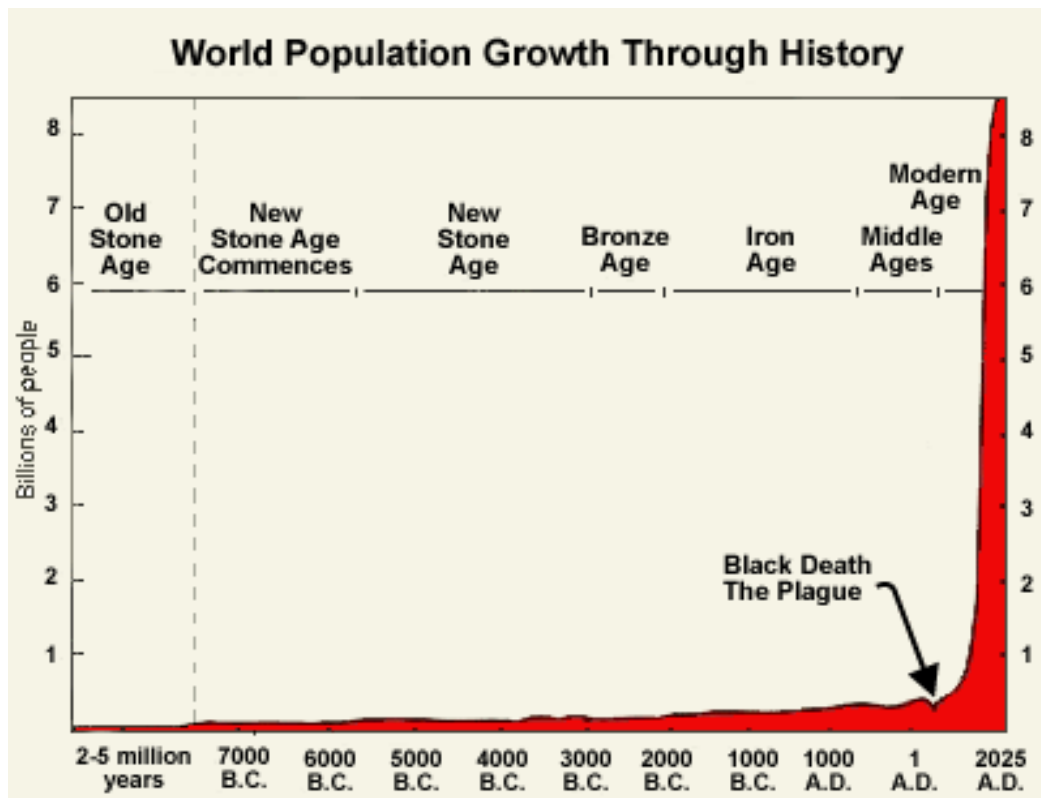
Increase in world population per day

228.000

World population is expected to grow by more than
200.000 people per day



Development of worlds' population



- ✓ 1804: 1 billion
- ✓ 1927: 2 billion
- ✓ 1974: 4 billion
- ✓ 1987: 5 billion
- ✓ 1999: 6 billion
- ✓ 2011: 7 billion
- ✓ 2015: 7.3 billion

Source: <http://ecology2011tamara2011sp.files.wordpress.com/2011/05/pic1.gif>; <http://mkto.euromonitor.com/rs/euromonitorinternational/images/Consumer%20Trends%20for%202012.pdf>



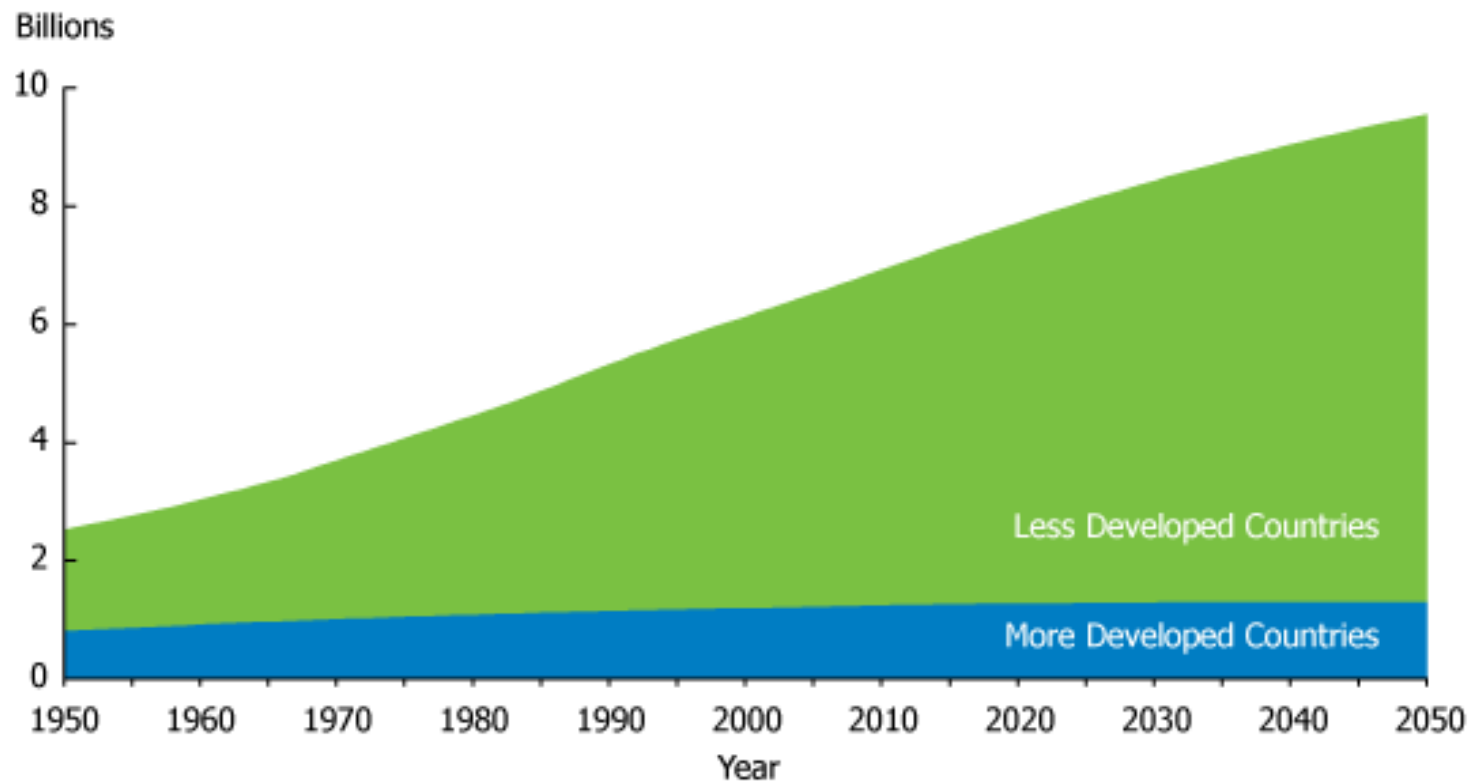
Video: Development of population growth



Source: <https://www.youtube.com/watch?v=VcSX4ytEfcE>



UN projections on population growth: 9.6 billion in 2050

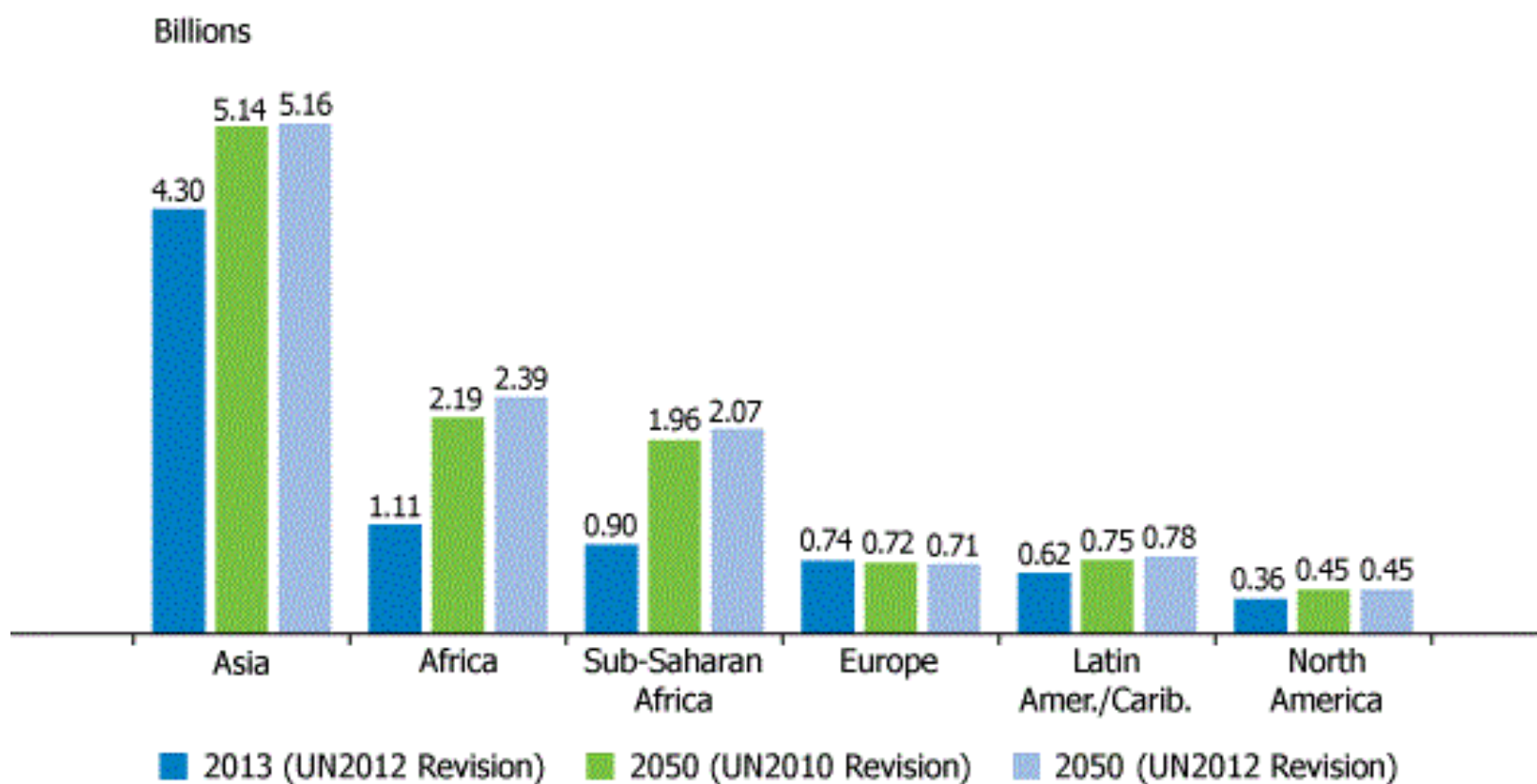


Source: United Nations Population Division, *World Population Prospects, the 2012 Revision (Medium Variant)*.

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Worlds' population in 2050



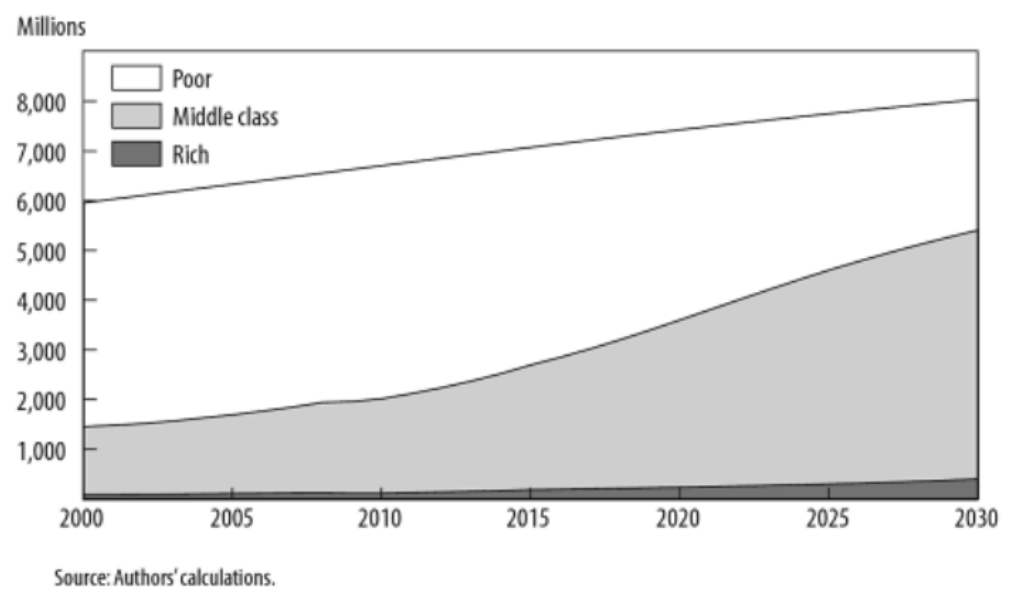
Source: United Nations Population Division, *World Population Prospects, the 2010 and 2012 Revisions (Medium Variants)*.

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Global population of poor, middle class, and rich consumers

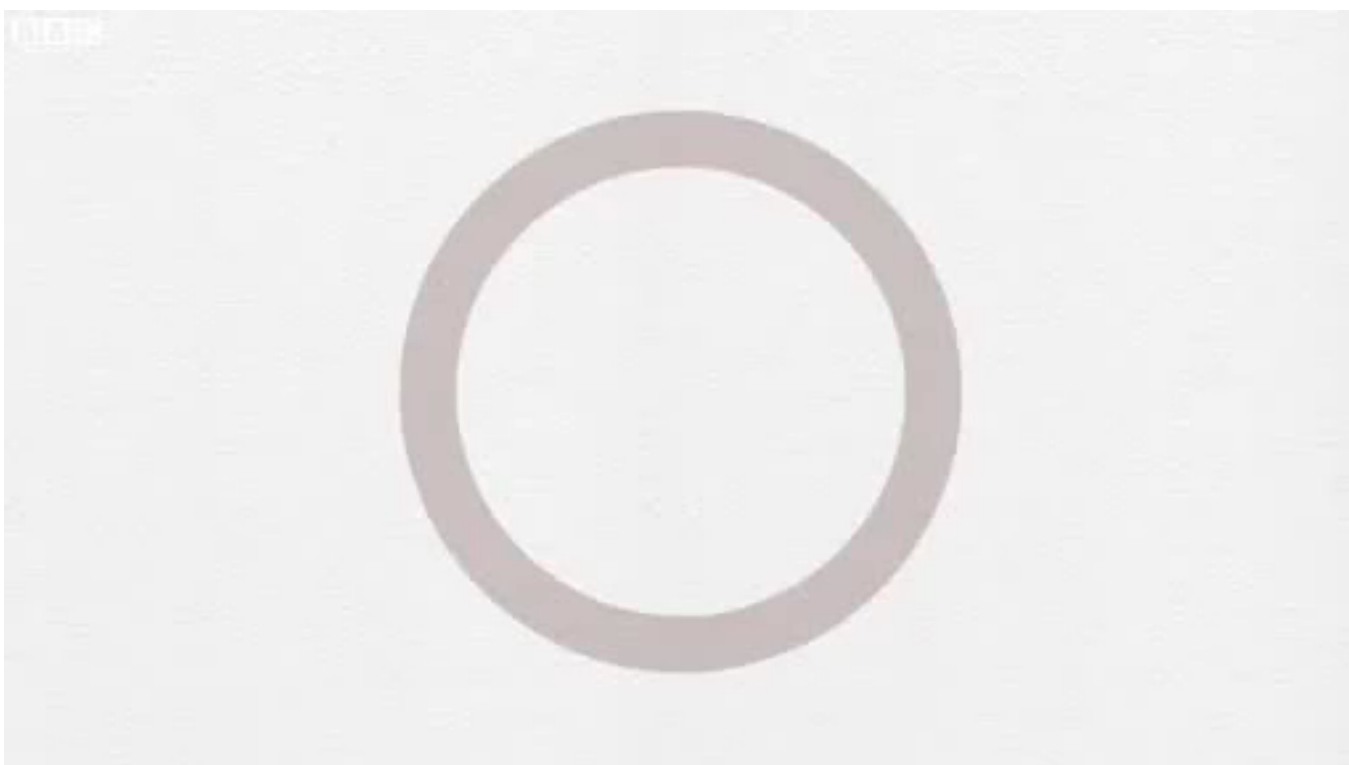
- Structural force behind increasing consumption is a rising middle class
- By 2030, **5 billion people could be middle class**



Source: Kharas, H. & Gertz, G. (2010): The new global middle class: a cross-over from west to east. Chapter 2 in „China's Emerging Middle Class: Beyond Economic Transformation“ (Cheng Li, editor), Washington, DC: Brookings Institution Press. 65



Rise of middle class in emerging countries

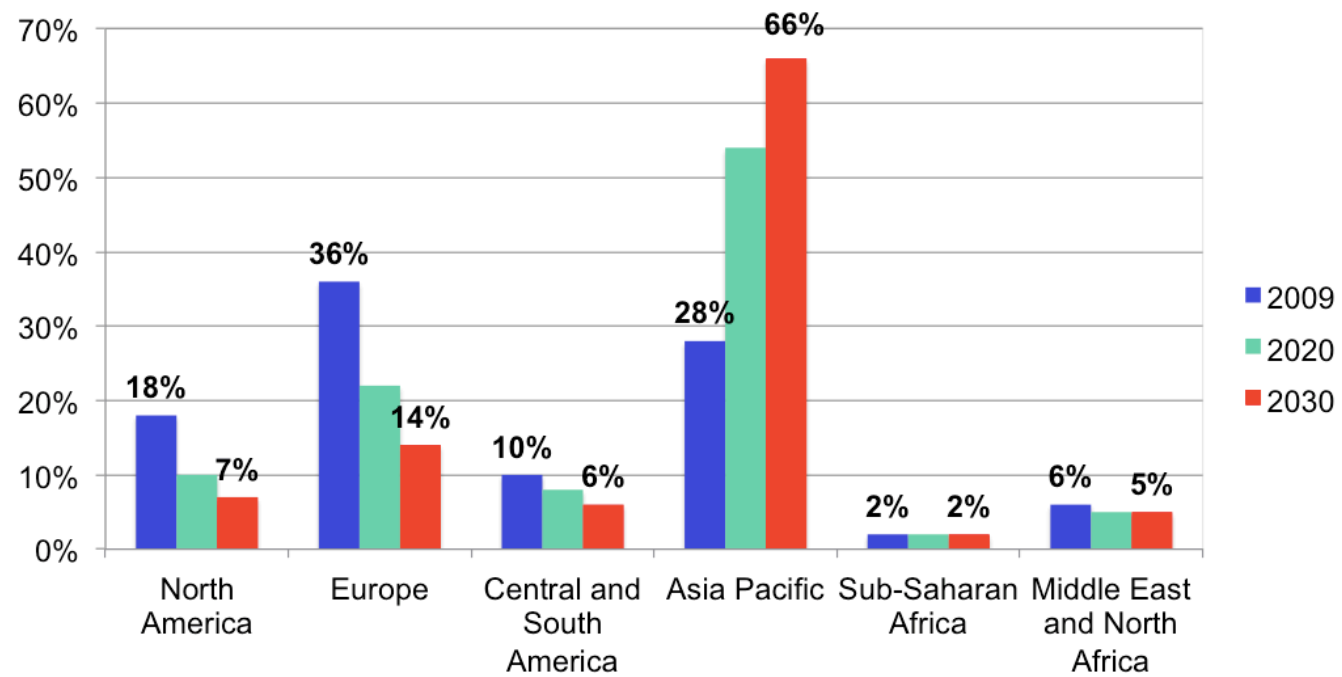


Source: BBC News (2013): <http://www.youtube.com/watch?v=Xn2hw7tY5JU>



Emerging middle class in Asia-Pacific countries

- Rise in global middle class is associated with a significant geographical redistribution



Source: "The Emerging Middle Class in Developing Countries", Homi Kharas, OECD Working Paper No 285, 2010

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Example: Rise of middle class in Bangladesh



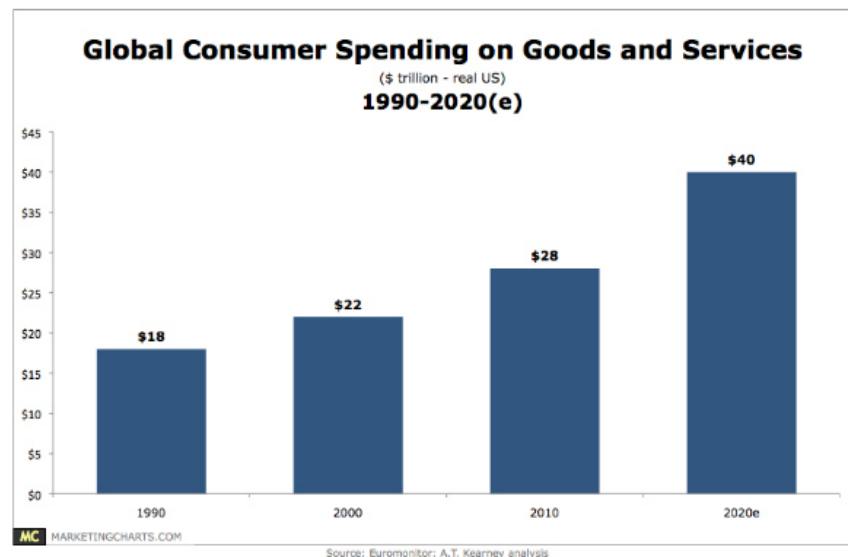
Source: Al Jazeera English (2009): <http://www.youtube.com/watch?v=xexAtc0X57g>

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Global consumer spending on goods and services

- Global spending is forecast to grow from \$28 trillion **real** US dollars in 2010 to an estimated \$40 trillion in 2020, a \$12 trillion rise after accounting for inflation

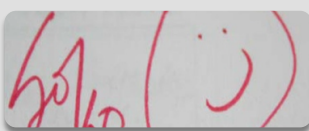


Source: AT Kearney (http://www.atkearney.com/news-media/news-releases/news-release/-/asset_publisher/00OIL7Jc67KL/content/a-t-%C2%A0kearney-study-of-global-wealth-and-spending-projects-12-trillion-in-new-consumer-spending-over-the-next-decade/10192)

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Content of today's session



Overview of course outline & grading



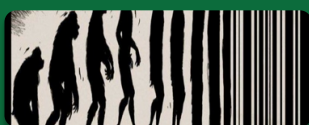
Introduction to group work



Worldwide growth in direct and indirect (energy) demand and related greenhouse gas emissions



Growth in world population & middle class



History and drivers of (over-) consumption



Rise of consumption in Western societies

- People purchasing goods and consuming materials in excess of their basic needs is as old as the first civilizations (e.g. Ancient Egypt, Ancient Rome, etc.)
- The seeds of modern day consumerism grew out of the **Industrial Revolution** that dramatically increased the availability of consumer goods



Source: Barbara Kruger (1987)

→ Era of mass production through use of assembly lines

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Drivers of consumption (I)

- **Access to credit** in the form of installment payments became popular in the 1920s that aided further consumption (*11-fold increase in consumer credit in the US between 1945-1960*)
- **Department stores** became popular → shopping became a common leisure activity
- Steadily increasing **real wages** → Higher disposable income aided middle-class households to buy products
- **Aspirational marketing**: Rise of advertising that advertised that being modern was associated with being Western or at least with consuming Western goods

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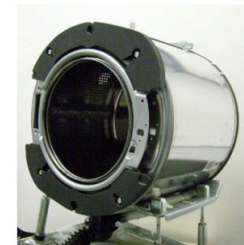


Drivers of consumption (II): Planned obsolescence

- In its strict sense, planned obsolescence consists of designing a product to have a shorter life, if necessary by designing it to run only for a limited number of operations

- Examples:

- Washing machine: tub made of plastic or steel (Steel > 20 years possible)



- Plastic gear in handheld electric mixers



Source: http://www.beuc.eu/documents/files/FC/durablegoods/conference/presentations/Christian_Kreiss.pdf

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Indirect obsolescence

- Occurs because the components required to repair the product are unobtainable or because it cannot be repaired or is too expensive to repair



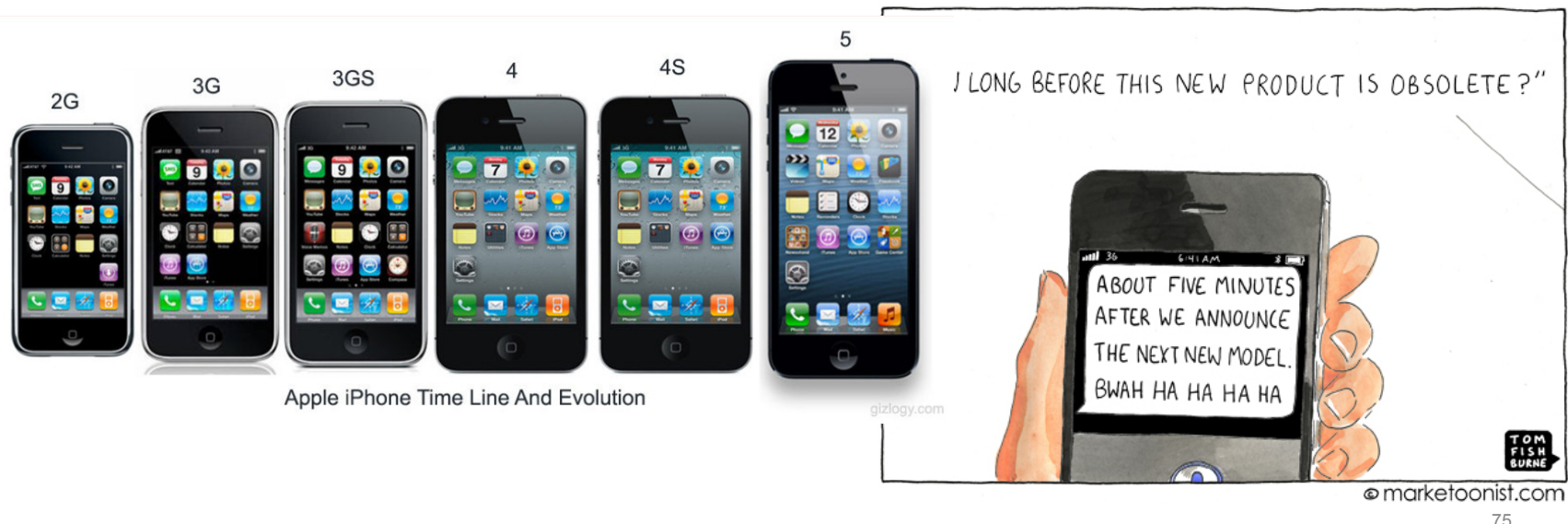
Source: http://www.beuc.eu/documents/files/FC/durablegoods/conference/presentations/Christian_Kreiss.pdf

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Style obsolescence

- *Style obsolescence* occurs because marketing campaigns/new product launches lead consumers to perceive existing products as out-of-date. For example, mobile phones are replaced every 20 months on average (every 10 months in the 12-17 age group).



Negative consequences of planned obsolescence

- Over-exploitation of natural resources
- Massive energy consumption to produce goods
- Massive waste production
- Disappearance of the repairs sector
- Growing mistrust of industry



Source: <https://www.youtube.com/watch?v=vfbbF3oxf-E>

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Group discussion (in groups of four)

- Have you experienced planned obsolescence yourself?
- What could be done at the political level to fight planned obsolescence?



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Drivers of consumption (III): “shopping as hobby”

- Shopping is increasingly perceived as a **hobby** by youth than a necessity
- **Window shopping** is the most popular hobby among youths (aged 15-29): 56% like to visit malls, even without planning to buy anything (Euromonitor, 2012)
- 2007 survey of 6000 Chinese shoppers:
 - More than 40 percent of Chinese survey respondents said shopping was a favorite leisure activity



Source: <http://blog.euromonitor.com/2012/05/top-10-consumer-trends-for-2012-youth-future-imperfect.html>; Chan, W.-C. & Tse, A. (2007): The Consumer Trap: Retailers Need to Adapt to Entice Fickle Chinese Shoppers into Their Stores,” McKinsey & Company

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Drivers of consumption (IV): “drive to specialization”



I.N.A.O



Cabernet



Pinot Noir



Syrah



Gamay

What other products can you think of where people buy many variants of a product?



Drivers of consumption (V): “consumer passivism”

- **Consumer passivism** occurs when consumers have less ability and willingness to meet their consumption needs through own production
- **Reasons:** lack of knowledge (e.g. cooking, knitting, etc.), lack of time, convenience factor, etc.
- Consumers place a disproportionately **high value** on products they (partly) **created** → potentially less willing to throw-away/replace stuff?

Can you name examples of what your grandmother/grandfather used to be able to do what you are not capable to do anymore?

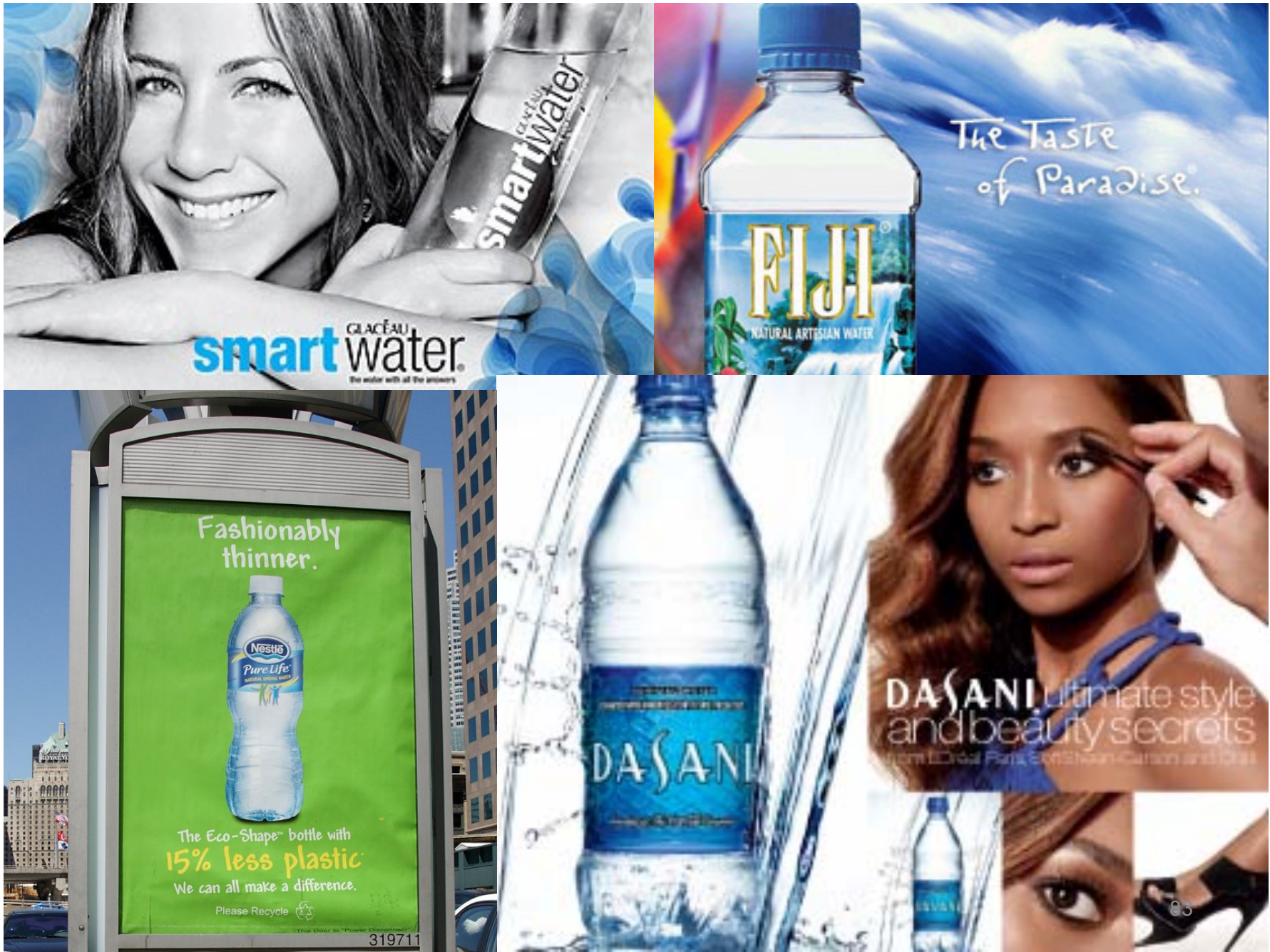
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Drivers of consumption (VI): “Creation of demand”

- Successfully marketing a product or service can create a subjective desire that may have not existed previously which in turn can influence demand
- This \$60 billion bottled water industry sold 241 billion liters of water in 2008 (more than double the amount sold in 2000)
- Through its global advertising efforts, the industry has helped create the impression that bottled water is healthier, tastier, and more fashionable than publicly supplied water





University of St.Gallen



Increase of consumption of bottled water

- Consumption of bottled water has **drastically increased** over the last years
- Many regions of the world **lack access to clean drinking water**, and bottled water is the **only safe alternative**
- However, tap water is one of the strictest controlled product on the market in Europe (tap water is subject to much more rigorous testing for contamination from chemicals)
- Often held beliefs in mineral water's **superior taste, safety and health benefits**

Source:

<http://www.test.de/presse/pressemitteilungen/Stilles-Mineralwasser-Vieles-spricht-fuer-Leitungswasser-4410914-0/>

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Bottled water often has few minerals and one third of tested waters contained microbes

The screenshot shows the test.de website interface. At the top, there's a navigation bar with links like 'Kontakt', 'Impressum', 'Newsletter', 'Hilfe', 'Über uns', 'Presse', 'Einloggen', and 'Jetzt registrieren'. Below this is a search bar and a main menu with 'Tests', 'Shop', 'Abo', 'Mein test.de', and 'Warenkorb'. The main content area displays a press release titled 'Stilles Mineralwasser: Vieles spricht für Leitungswasser' dated 28.06.2012. The text discusses the results of a test conducted by Stiftung Warentest, highlighting that tap water is often a better choice than bottled water due to lower costs and fewer contaminants. A sidebar on the left lists various categories like 'Presse', 'Pressemitteilungen', 'Presseverteiler', etc. A right sidebar titled 'Mehr bei test.de' lists links to 'Mineralwasser', 'Saft und Limonade', and 'Schadstoffe'.

Source: <http://www.test.de/presse/pressemitteilungen/Stilles-Mineralwasser-Vieles-spricht-fuer-Leitungswasser-4410914-0/>

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Resources needed

- Typically it takes **2 liters of water** to produce 1L of bottled water
- A quarter of the water bottled worldwide annually are consumed **outside their country of origin**
- Emissions of the CO₂, caused by transporting bottled water within and between countries, contribute to climate change
- The total carbon footprint of 1 liter bottle of plain water in Europe is **194 g CO₂** → equivalent of the emissions produced by driving 2 km with a car emitting 95 g CO₂/km



Source: http://www.spadel.com/userfiles/pdf/200_EFBW%20Sustainability%20Report%20Final.pdf

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Outlook for next week



- ✓ (Continuation: Drivers of consumerism – Media)
- ✓ Strategies for ecological consumption (consistency, efficiency, sufficiency)
- ✓ Insights into well-being/ happiness economics
- ✓ Treadmills to explain the paradox of happiness
- ✓ Social movements advocating sufficiency
- ✓ Collaborative consumption & the sharing society

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