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Climate justice as an integrated left issue

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Excursus: Current news from Astria: Former right populist model region CARINTHIA (in the southern part of Austria) bankrupt

Austrian federal state CARINTHIA (~ 1/2 million people)

- Probably first region in Europe controlled by far right since the early 90ies
- 20 years under right populist leadership (JOERG HAIDER !)
- Because of right populist policy, corruption, mismanagement:
- Now bankruptsy is probable, but bailed out partially by national state
- Dimension of financial obligation per capita is similar to Greece
- Even streets are under discussion to be taken over by financial funds
- But nevertheless by using the refugee crisis far right is dominating policy and has become strongest party

Multiple crisis

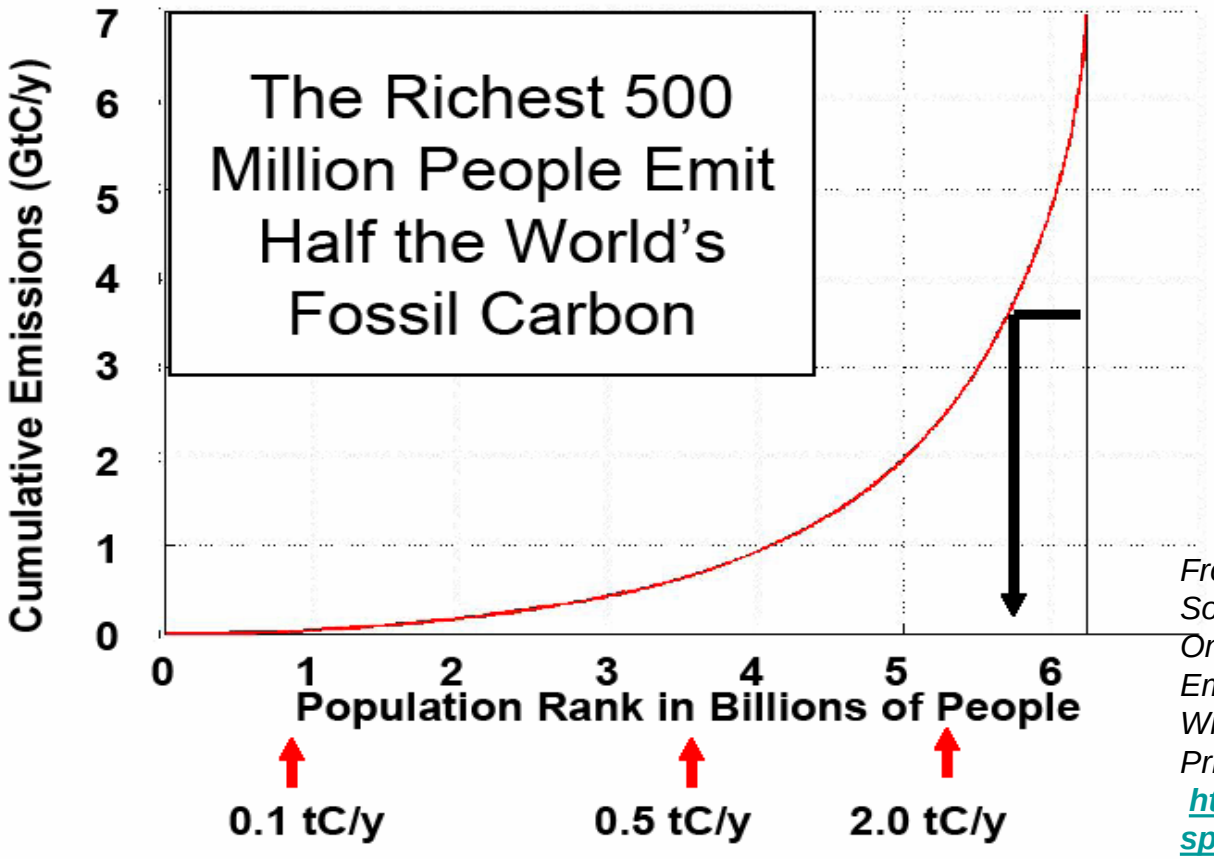
- **Financial** crisis
- **Economic** crisis (unemployment)
- **Refugee** crisis
- .....
- **various environmetal crises** (decrease of species, water, soil,.....)
- **Climate crisis - probably the most fundamental - in the long run**

COMMON DENOMINATOR OF CAUSATION

UNEQUAL DISTRIBUTION +

SHORT TERM MECHANISM (of profitmaking)

Climate crisis and global distribution



From: Pacala S.W.: Equitable Solutions to Greenhouse Warming: On the Distribution of Wealth, Emissions and Responsibility Within and Between Nations. Princeton, at IIASA, November 2007
http://www.iiasa.ac.at/iiasa35/docs/speakers/speech/ppts/pacala.pdf

==>Integrated solution for Multiple crisis

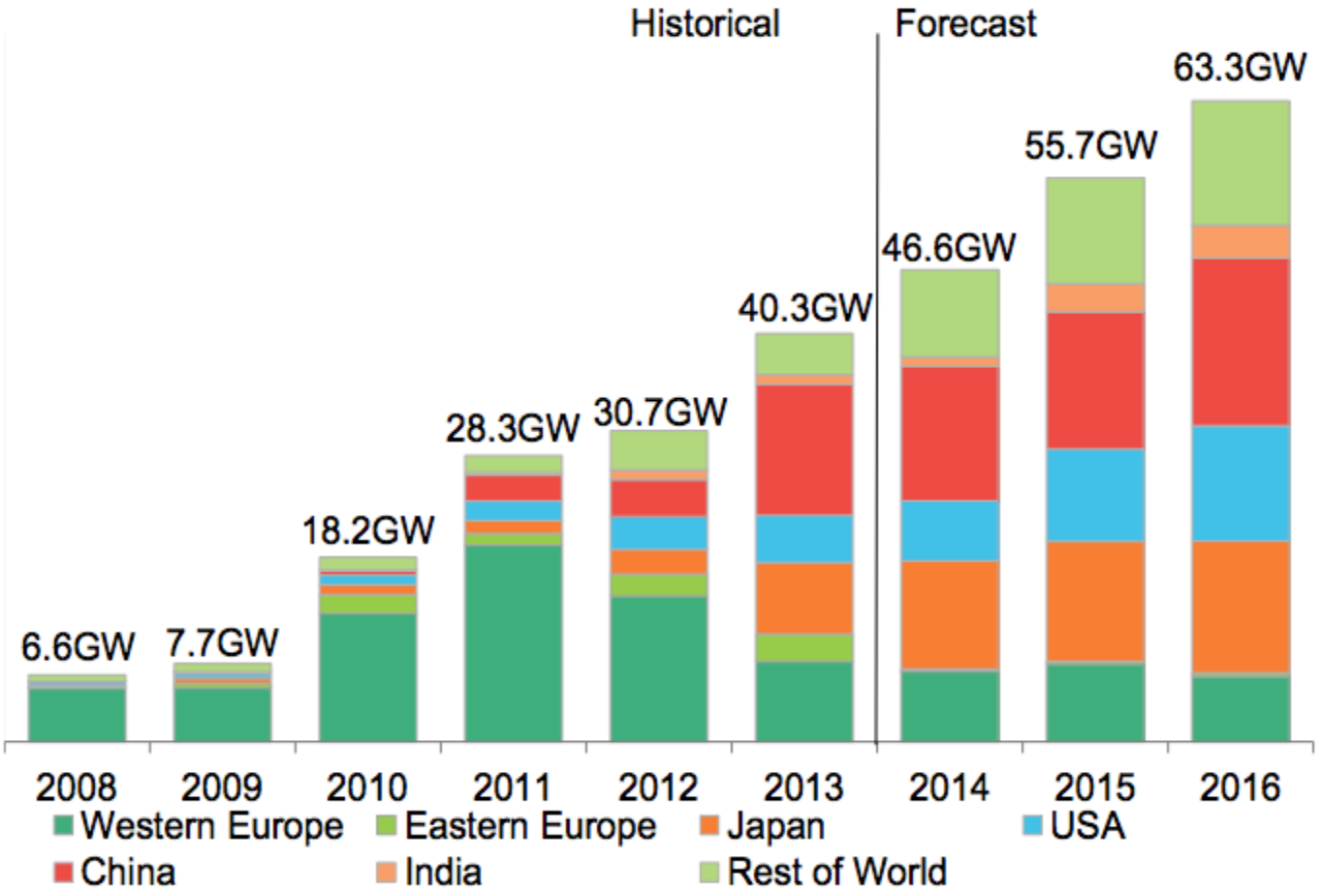
NOW various crises reinforce each other

- Financial crisis
- Economic crisis (unemployment)
- Refugee crisis
- .....
- various environmetal crises (decrease of species, water, soil,.....)
- **Climate crisis**

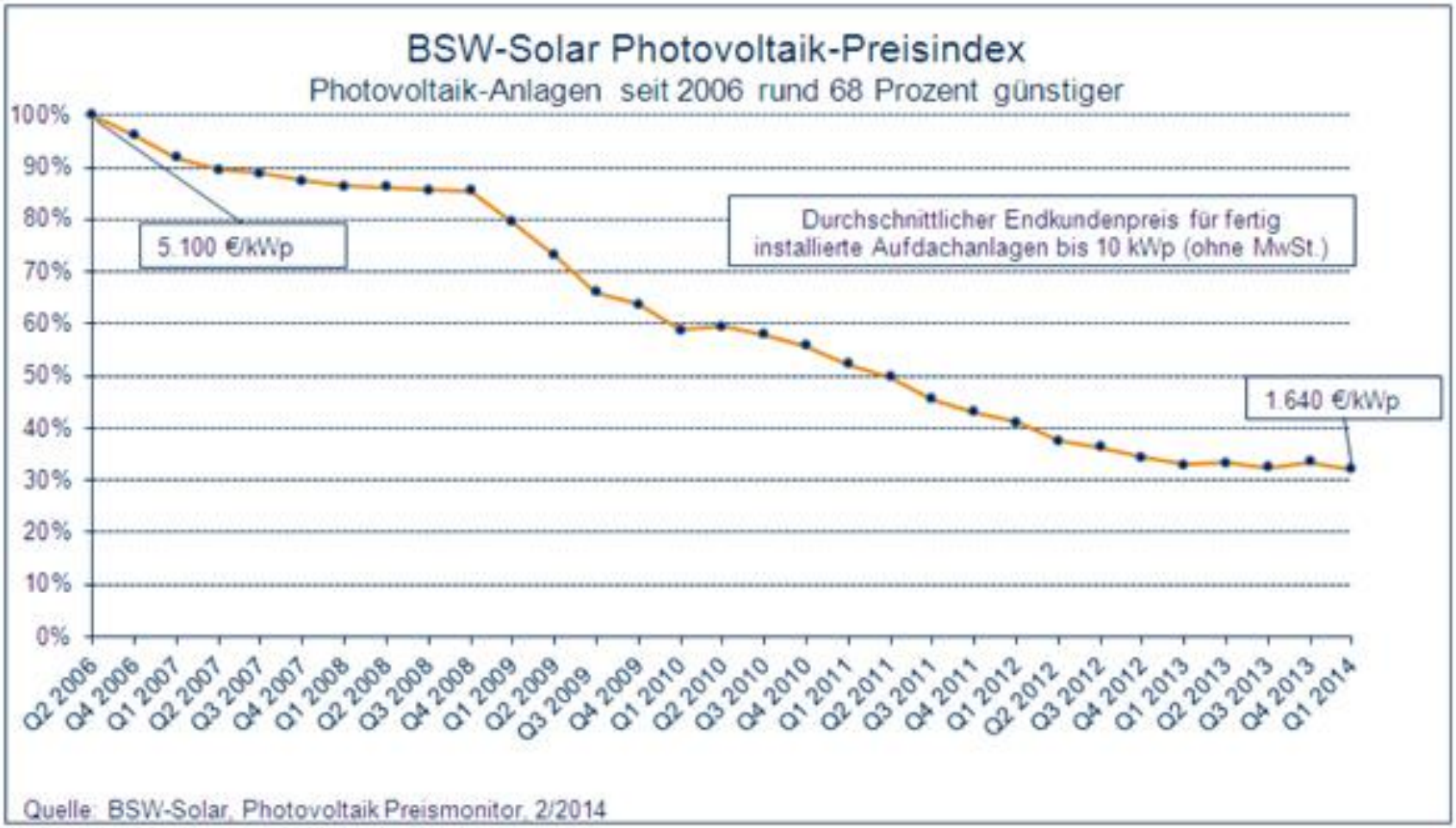
COMMON CAUSATION - COMMON SOLUTION

Measures that simultaneously relieve different crises
Integrated solution for multiple crises
REDISTRIBUTION
System change
Eco- ocialism

Europe is tremendously loosing global shares in renewable energy - capacity additions in clean Energy



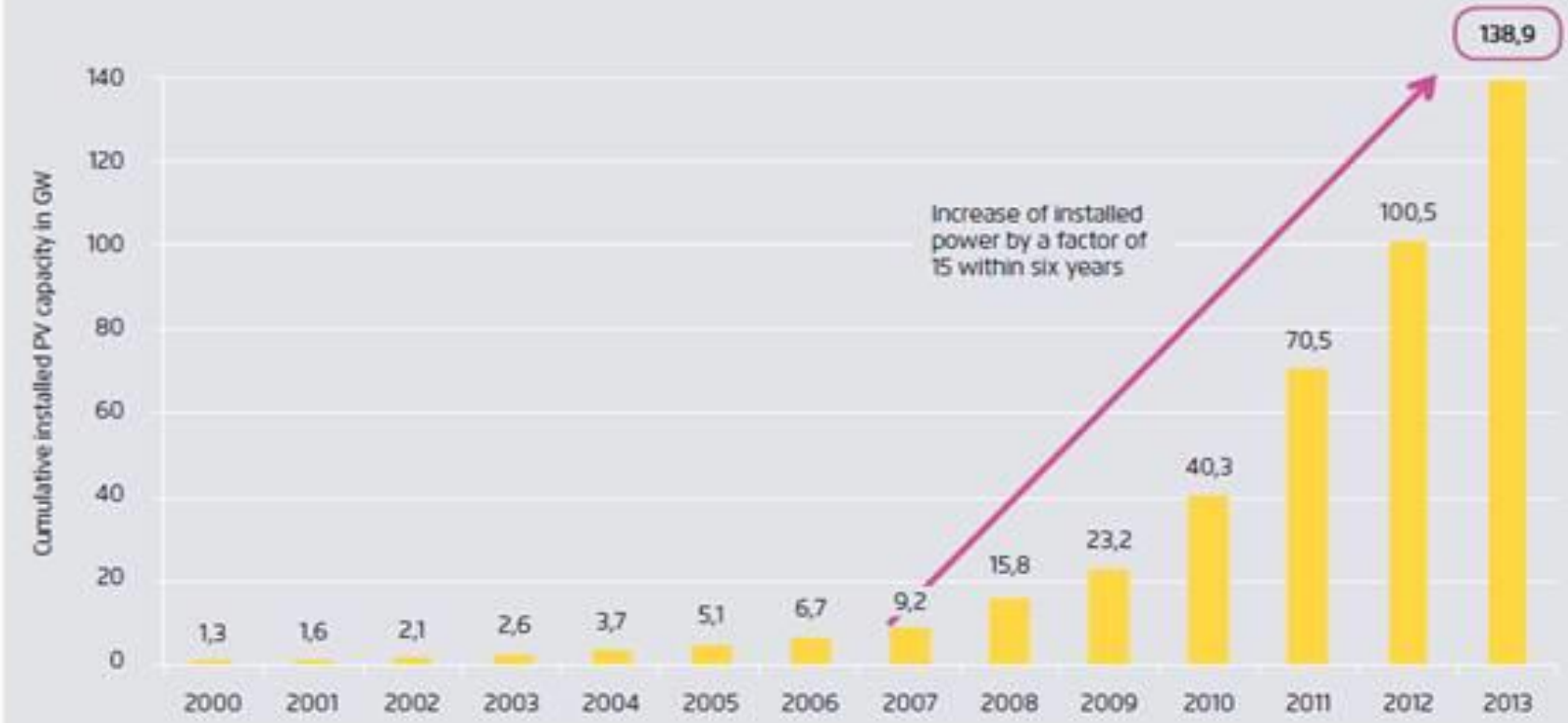
Source: Bloomberg New Energy Finance
("clean energy" including nuclear)
/



Significant drop of prices 2008-2010, reaction to chinese anti-crisis programme

Historical development of installed PV capacity worldwide

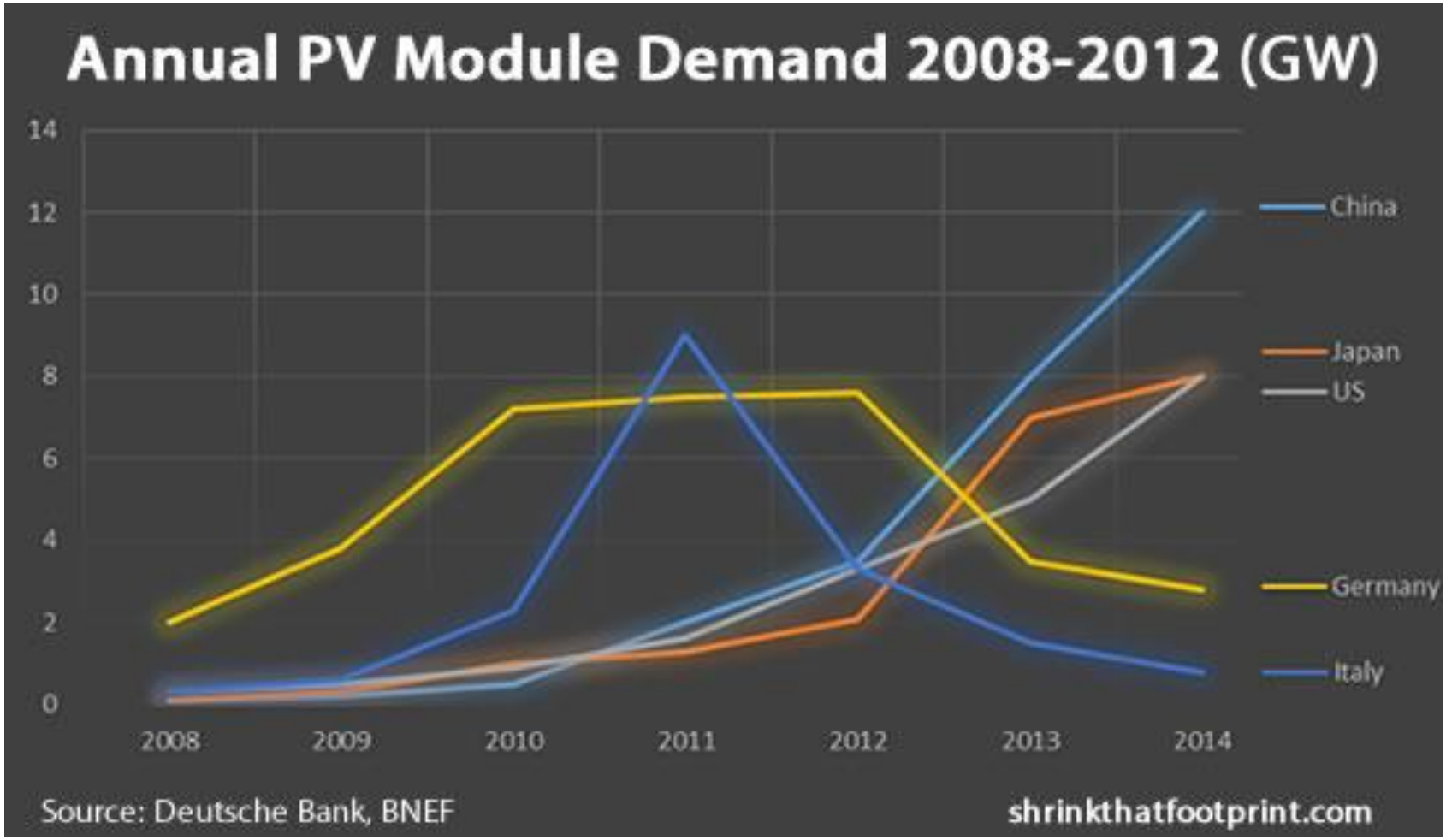
Figure



Own illustration based on data by EPIA [4]

Fraunhofer-Institute for Solar Energy Systems (ISE)(Feb 2015): Current and Future Cost of Photovoltaics. P. 19

Europe is tremendously loosing global shares in renewable energy



http://cleantechnica.com/2014/05/16/europe/

Correlation between income and emissions

•Socially differentiated emissions per capita

•Empiric correlation of stratification along income for consumption and emissions per capita

Evidence of differentiated emissions/consumption of the traffic services a day for Austria:
4 quartiles (income):

1st quartile	20 km
2nd quartile	40 km
3rd quartile	53 km
4th quartile	80 km

(see: Steininger K., Gobiet W. (2005): Technologien und Wirkungen von Pkw-Road Pricing im Vergleich, Wegener Center Graz, Bericht 1/2005, p 20f

Basic status

- Currently still high and increasing GHG-emissions

- weak awareness in the global north
  - for development issues of the south
  - for the distributional core of the problem
  - for the **historical dimension** of the problem

Current mechansisms in global climate policy:

Transfer from the more poor in the global north

to the more rich in the global south

PARIS TREATY DECEMBER 2015

- **Obviously the dominating forces did not want a binding treaty like KYOTO**
- **The aggreement unfortunately is the sum of voluntary goals without a relevant distribution setting which would be required to come to efficient mitigation**

  ==> „**intended** nationally determined contributions (INDCs),
- **Setback behind Rio 1992 and Rio 2012, where the principle of "common but differentiated responsibilty" (CBDR) was acknowledged**

Basics of climate policy

2°C target Copenhagen accord

because of irreversibility and uncontrollable implications when > **2°C**

➔**fixed** volume of remaining GHG emissions

How to allocate this volume of remaining GHG emissions? =Which **distribution** among countries and persons?

Missing link of climate policy

2°C target Copenhagen accord

+

CBDR (Rio 1992 and Rio+20)

basic distribution principle

(Common but differentiated responsibility

=X (but which concrete implementation?)

The equation for the missing link of climate policy

2°C target Copenhagen accord

+

CBDR (Rio 1992 and Rio+20)

+

x = **climate stabilization**

Shortly:

2°C target + CBDR + X=climate stabilization

The missing link of climate policy:

Equal rights

2°C target Copenhagen accord

+

CBDR (Rio 1992 and Rio+20)

+

Equal rights

=climate stabilization

“Climate change is the greatest market failure the world has ever seen.”*

- The Stern-Report states: „Climate change is the greatest market failure the world has ever seen.
  - “But here "**market" is apparently a synonym for capitalism**, therefore we could deduce: climate crisis can be seen as **"the greatest failure of capitalism the world has ever seen"**

- In general the Stern Report – although highlighting the problem - produces also some new base lines of defense in the foreseeable discussion on issue of climate change, capitalism and the distribution costs of climate policy

- The Stern Report is inconsistent, too: If climate change is the "biggest market failure” why climate change should be tackled with even more market (CO2 trading, etc.), especially since these recipes did hardly work till now.

Stern Review: The Economics of Climate Change (2006)
www.hmtreasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

Sir Stern (Stern Report, updates currently): a new strong narrative of capitalism

- On the one hand Stern has a very **realistic analysis** of BAU (business as usual) in climate change scenarios – good rationale for massive and quick actions
- Climate change is "**biggest market failure**" in history
- **But only capitalism has the creative potential to handle the challenges** (Schumpeter!?) – stressing current developments in PV-industry

But what about

the **rebound effect** (more energy efficiency but also more demand to energy) because of capital accumulation implications?

Lock- in in fossil technologies because strong oligopolies can prevent devaluation of capital invested in fossil technologies

(Shifting to**)** short **term** rents and profits (determined also by the financial sector) – profit rates as "discount factors" devalutate future

Lacking compass: No or small integration of social and environmental costs in prices

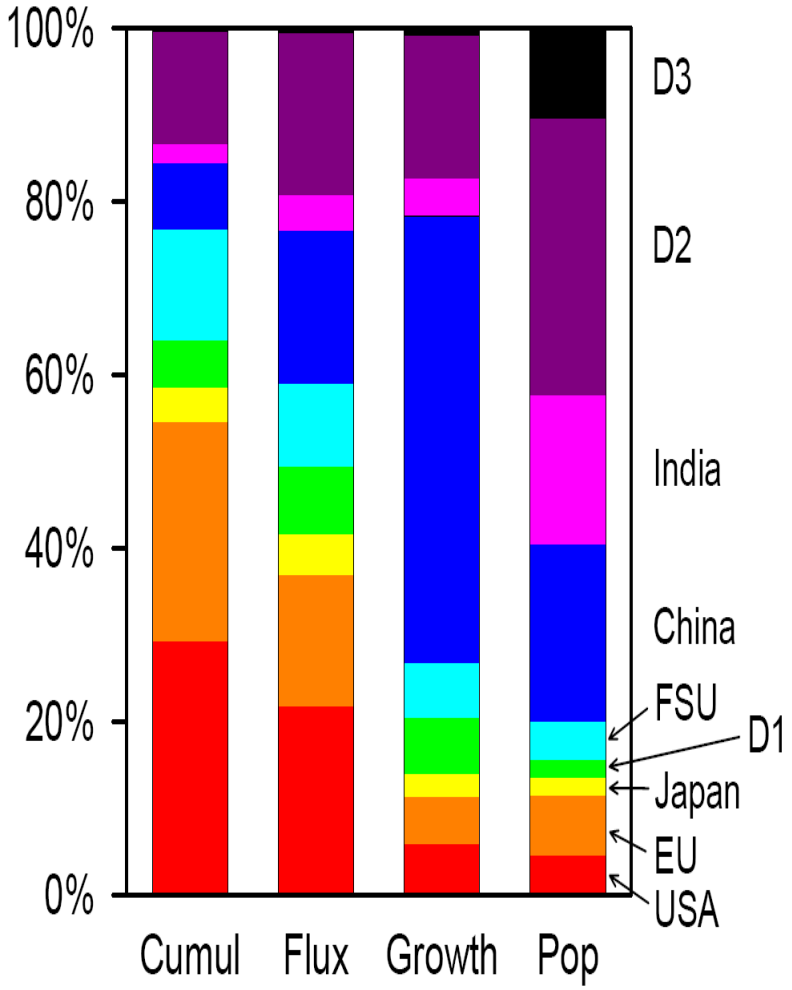
Climate change as the greatest failure of capitalism the world has ever seen (2)

- Non-linear, rather sudden developments, which could lead to relatively fast disasters, are hardly taken into account in general climate models or at Stern (because it is very difficult to model) ,

- Possible self-reinforcing effects:
  - thawing of tundra with extensive methane release
  - melting of the Greenland ice
  - melting of the West Antarctic

    and others; all with very far reaching consequences.


CLIMATE
SUMMIT
WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?
• ENERGY INDEPENDENCE
• PRESERVE RAINFORESTS
• SUSTAINABILITY
• GREEN JOBS
• LIVABLE CITIES
• RENEWABLES
• CLEAN WATER, AIR
• HEALTHY CHILDREN
• ETC. ETC.
JOEL PETT
12/7/19 USATODAY



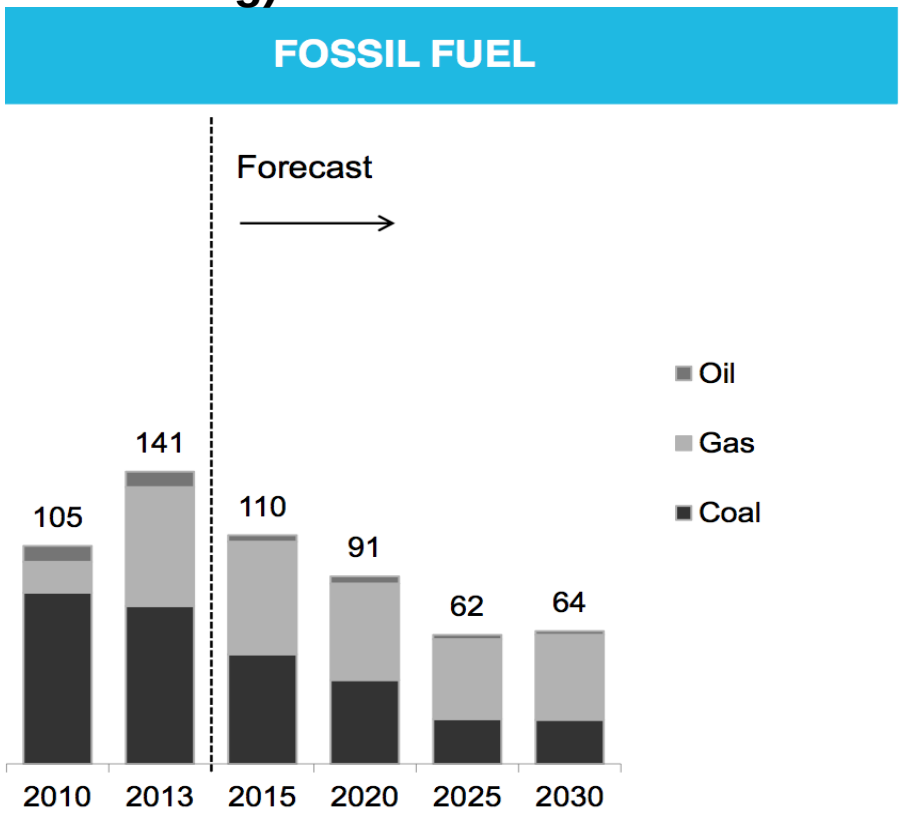
Different basic views on foundations for solutions (GHG): [columns]
1.Cumulative historical causation
2.Current flux
3.Probable growth potential
4.in relation to population

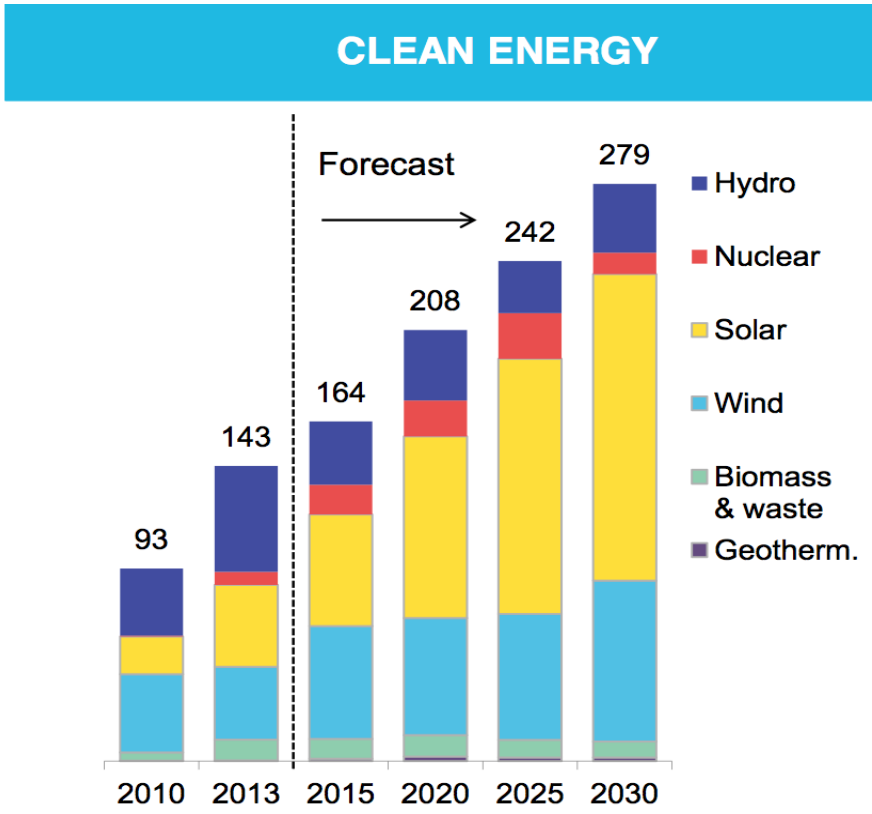
The Beginning of the End of Fossil Fuel:

Power generation capacity additions (GW)

Solar (PV) makes up less than 1 % of electricity today but will be the biggest single source by 2050, according to the Intern. Energy Agency.

Global investment in clean energy is increasing (in fossil energy decreasing)





Bloomberg New Energy Finance, 2015

Fundamentally new: the "deadline“ can enforce "simultaneous" solutions

- complex patterns of many losers and only few winners of climate change
- probably the “poor” are hit relatively stronger climate change also will significantly strike the “rich”

- In proportion to the huge challenge there is not much time: a window of opportunity of about 10 years to keep any drastic change in the framework of “known territory”

- The solution to the climate issue can only be global, requires the involvement of almost all countries

- The poorer countries can and will only join on the basis of fairness and equality

Fundamentally New: the "deadline“ can enforce "simultaneous" solutions

- Fairness and equality put questions for the historic responsibility of the accumulation of greenhouse gases.
- This question brings capitalist north’s past back in an rather unexpected way. For the first time strong trump cards belong to the south in the central question of burden sharing; because climate change hits also the “rich” strongly and they only hardly can escape
- There will be only comprehensive large or no relevant solutions
- A fair solution for costs of climate change mitigation and adaptation can bring the foundation for the development of the South by redistribution, and thus global convergence and cohesion
- But perhaps only after several attempts

Energy as central factor for poltical economy and political ecology

- **Energy connects climate change via emissions of CO2 of fossil energy**
- **Energy has been decisive for productivity of labour**

➔**Energy** issues can be seen as pivot:

E.g. ***food prices are highly correlated to energy prices****, because in food there is incorporated much fossil fuel*

“Energy union”- proposals for the EU energy policy concentrating on

- "markets" (but oligopolies in reality)
- (imperialist) power policy.
- fossil lock-in

Alternatives focussing on

- renewable energy
- energy efficiency
- energy democracy – democratic control
- cutting all fossil (and nuclear) subsidies
- improved cooperation with neighbour regions

Photovoltaics is achieving grid parity!!

Grid parity := the point at which the cost of photovoltaic electricity is equal to or cheaper than the price of grid power; dependent of concrete circumstances

(Somehow surprising) cost development in solar energy - photovoltaics over the last decade

Global modul price since 2007: ~ *minus 75%!!!!!*

➔20 % of the level of 2007

Break-through in cost of renewable energies

PV-cost minus ~75 % - current level is 25 % of level of 10 years ago

- Without fundamental new technologies, but by scale and learning effects

Open issues: grid integration, storage

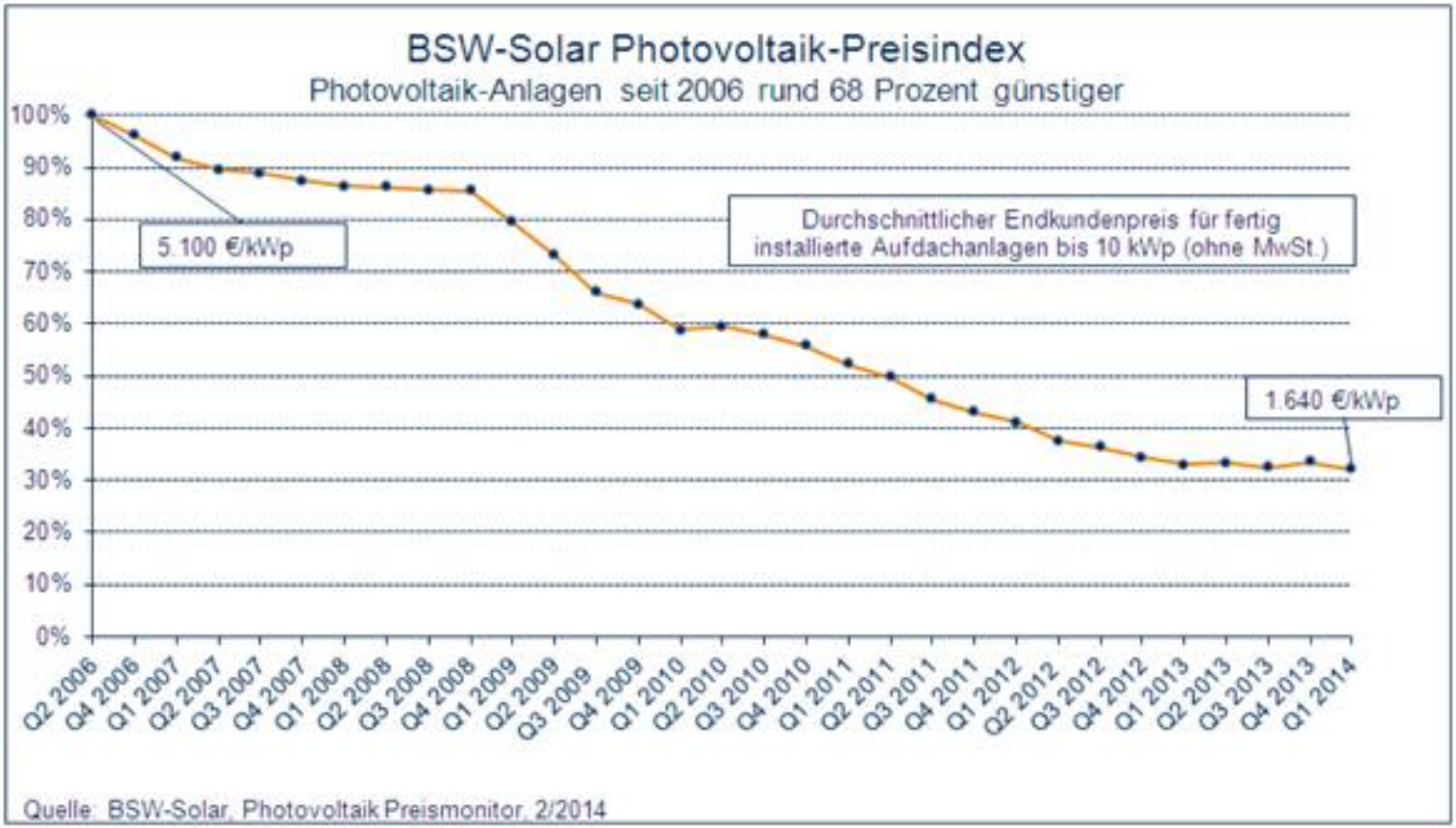
Fossil mobility?

Nuclear energy- also economically hardly competitive; if costs of waste storage included➔ completly out

Currently also cost revolutions at storage of solar energy

Do not overestimate negative effects of lower prices of fossil energy

- Because of break-through in costs of renewable energies – in the range of competitiveness
- Will limit investments in fossil fuels with very negative effects (deep sea drilling, Arctic, tar sands, fracking…)
- Sun does hardly compete with Oil - Oil mainly is for cars; PV is for electricity.



Significant drop of prices 2008-2010, reaction to chinese anti-crisis programme

"**Solar photovoltaics is already today a low-cost renewable energy** technology.

Cost of power from large scale photovoltaic installations in Germany fell **from over 40 ct/kWh in 2005 to 9 ct/kWh in 2014.** Even lower prices have been reported in sunnier regions of the world, since a major share of cost components is traded on global markets.

Solar power will soon be the cheapest form of electricity in many regions of the world.

Even in conservative scenarios and assuming no major technological breakthroughs, an end to cost reduction is not in sight. Depending on annual sunshine, power cost of 4-6 ct/kWh are expected by 2025, reaching 2-4 ct/kWh by 2050 (conservative estimate)".

Fraunhofer-Institute for Solar Energy Systems (ISE)(Feb 2015): Current and Future Cost of Photovoltaics. P. 1 (Accentuation J.B.)

"**Financial and regulatory environments will be key** to reducing cost in the future.

Cost of hardware sourced from global markets will decrease irrespective of local conditions. However, inadequate regulatory regimes may increase cost of power by up to 50 percent through higher cost of finance. This may even overcompensate the effect of better local solar resources.

Most scenarios fundamentally underestimate the role of solar power in future energy systems.

Based on outdated cost estimates, most scenarios modeling future domestic, regional or global power systems foresee only a small contribution of solar power. The results of our analysis indicate that a fundamental review of cost-optimal power system pathways is necessary".

Fraunhofer-Institute for Solar Energy Systems (ISE)(Feb 2015): Current and Future Cost of Photovoltaics. P. 1 (Accentuation J.B.)

USA

- Unconventional fossil resources impede US to come out of **fossil lock-in**; will impede higher energy efficiency and impede innovation generally.
- **Higher energy prices in EU** should/will be **incentives** for EU-industry to invest in energy efficiency, so to **innovate**, come to new technology und **have lower energy bills not by lower energy prieces but by lower quantities of energy** by better energy efficiency

Fossil-fuel subsidies outpace renewable-energy subsidies by a factor 6:1

(Bloomberg, IEA- World Energy Outlook 2011)

State spending to cut retail prices of gasoline, coal and natural gas rose 36 percent to $409 billion as global energy costs increased. Aid for biofuels, wind power and solar energy, rose 10 percent to $66 billion.

- The OECD estimated its member countries gave oil, coal and natural gas producers between $45 billion and $75 billion a year in support for production from 2005 through 2010.

http://www.bloomberg.com/news/articles/2011-11-09/fossil-fuels-got-more-aid-than-clean-energy-iea

Fossil-fuel subsidies outpace renewable-energy subsidies by a factor 6:1

(IEA, Bloomberg)

While governments argue that fossil fuel subsidies are designed to help the poorest members of society, they generally fail to meet that goal, the IEA said. Just 8 percent of aid reached the poorest 20 percent of each country's population

http://www.bloomberg.com/news/articles/2011-11-09/fossil-fuels-got-more-aid-than-clean-energy-iea

Containment of effects of climate change needs a radical turn

- Basic results (Stern-report and others:) the sooner effective climate policy starts the „cheaper“ and less sacrifices“
- To converge to the level of 550 ppm CO_2 in the atmosphere at the end of the century the sum of CO2-emissions would have to get at least roughly 80 % below the actual level
- In the north: fair global solutions at least minus 90 %
- G77-paper in Bali: north minus 95 %

What is unrealistic?

A radical turn just now seems rather unrealistic

But further business as usual even more seems to be an “utopian fantasy”*

Foster Bellamy (2009): The ecological revolution – making peace with the planet. P.259 (citing Raskin)

There are "deadlines" for solving the climate issue, now an existential question of humanity

Irreversible tipping points

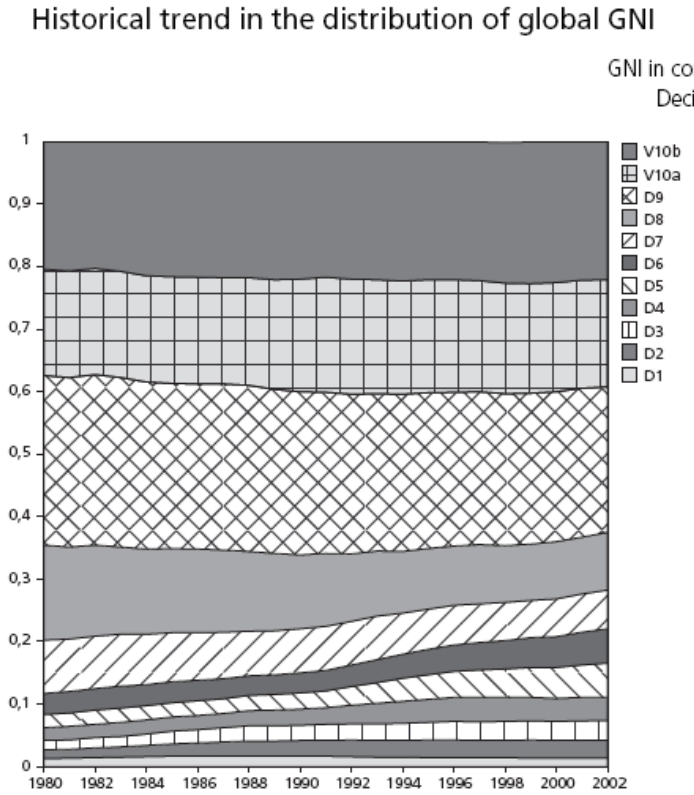
change the rules of the game

See the book of NAOMI KLEIN: “THIS CHANGES EVERTHING. Capitalism vs. climate"

B. (Global) distributional disparities

Bourguignon, Levin & Rosenblatt / Économie internationale 100 (2004), p. 13-25.

Historical trend in the distribution of global GNI



←**Gross National Income**

•still very high gaps

•complicated development of the global patterns of disparities - various contradicting intra-and interregional effects.

•global convergence and divergence effects

5 central elements of political ecology: C. Oligopolization

- Further distributional assymetries
- within regions of a country
- along gender
- …
- C. Oligopolization (monopolization)
- inherent to market
- connected with concentration of political decision making - de-democratisation

  See increasing proportion of large corporations in controlling world production

  But ambivalently: shows also socialization of production

5 central elements of political ecology: D. losses of biodiversity

- D. Tremendous irreversible losses of biodiversity (species and ecosystems: minus 50 % at + 3,6 ° Celsius in 21st century, see IPCC) and thus unconceivable losses of resources and safety for future generations
- **The problem: Variety of options enables more capability for adaptability**
- **(Drastic) decrease of biodiversity with the beginning of industrialization**

Global megatrends of socio-ecological development (pronounced in the years since 2000)

- ←WORLD STEEL PRODUCTION
- (Global) industrialization with some exponential processes
- Example of a particular resource and emitting intensive sector
- China's per capita is still only around one third of Japan or Austria

Aus: Ameling Dieter (20./21.9.07): Die Rolle Südost-Europas im Umfeld globaler Stahlmärkte. Vortrag Stein/Nürnberg. Stahlinstitut

Industrialization on a global scale - big emerging countries "- **is not surprising**

- What is surprising is rather
- that current global industrialization of developing countries seemed to be a surprise to many organizations such as the OECD, IMF and World Bank;
- and that the corresponding
  *commodity demand,
  *price and
  *emissions consequences
  has not been seriously envisaged and
- that no global concepts and contingent preparations have been made,
- on the contrary, in the wake of neoliberal deregulation food stocks were dismantled.

Industrialization on a global scale - big emerging countries "- **is not surprising**

- Recent years: An intensification of the social metabolism - on all continents:
  →Consumption growth of commodities, including fossil fuels in
  →Increase in climate emissions
-
- commodity prices - apart from oil and gas prices - over decades rather stable (with fluctuations)
- so there was a long period of low investment
-
- In recent years extreme soaring in commodity prices incl. of metals and in heavy industry sectors

- Also the EU responded very lately with a new focus on raw materials policy

Fundamentally New: the "deadline“ can enforce "simultaneous" solutions

- There are "deadlines" for solving the climate issue, now an existential question of humanity

- In proportion to the huge challenge there is not much time: a window of opportunity of about 15 years to keep any drastic change in the framework of “known territory”
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- The solution to the climate issue can only be global, requires the involvement of almost all countries

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- But perhaps only after several attempts
-

Concept of matrix of distribution by effects of climate change

- Dimensions: Distribution along various levels:
- Spatial dimension
  - Global
  - continental
  - national
  - regional
  - lokal
- Distribution along strata or classes)
  - Operationalized via income

Correlation between income and emissions

- Socially differentiated emissions per capita
- Empiric correlation of stratification along income for consumption and emissions per capita

Evidence of differentiated emissions/consumption of the traffic services a day for Austria:
4 quartiles (income):

1st quartile	**20 km**
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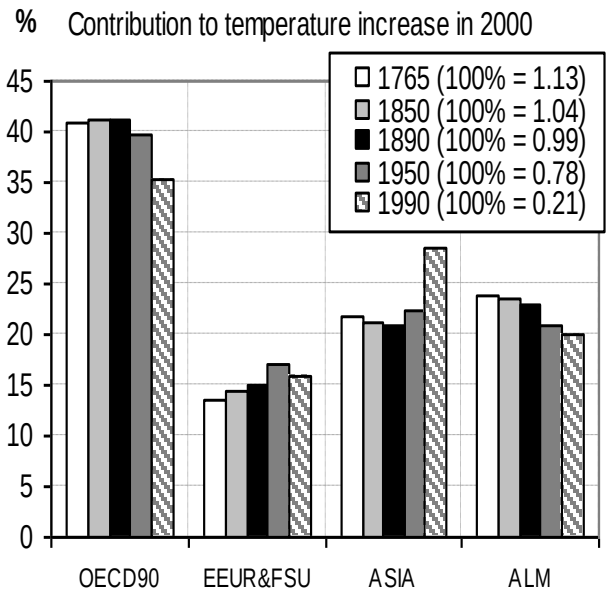
Concept of matrix of distribution by effects of climate change

- Distribution along gender

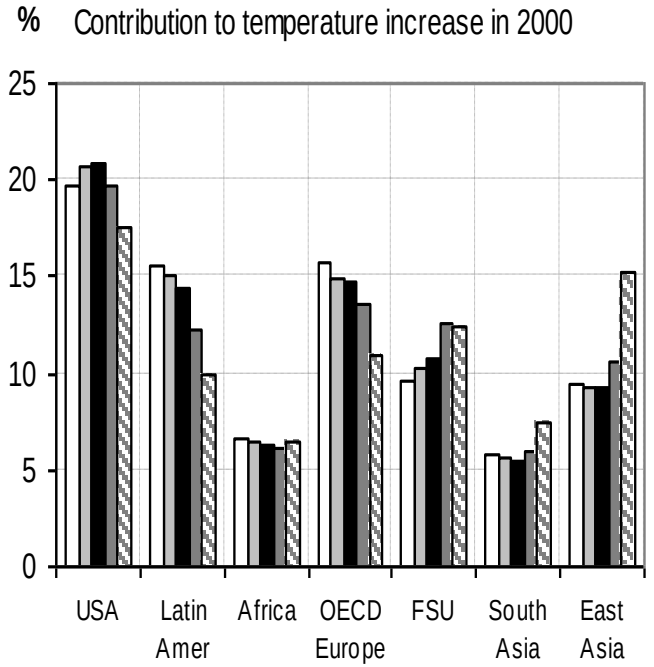
- all for:
- Mitigation
- Adaptation
- Vulnerability-Impacts-Risk

Historical dimension

- EEUR: Eastern Europe
- FSU: Former Soviet Union
- ALM: Africa and Latin Americ
- Contributions to climate change on the basis of greenhouse warming potentials (GWP) cumulative weighted emissions (These are NOT per capita values but relative global shares)



06 MATCH-Pape



Correlation between GDP per capita and historical accumulation

- There is a largely confirmed correlation between GDP per capita on the one hand and the causing of emissions in the sense of historic responsibility for the accumulation of greenhouse gases in the atmosphere on the other hand.

- Relevant deviations from this only are for countries with high GDP growth rates per head in recent times (like China or Asian "tigers”)

Discounting central for distribution

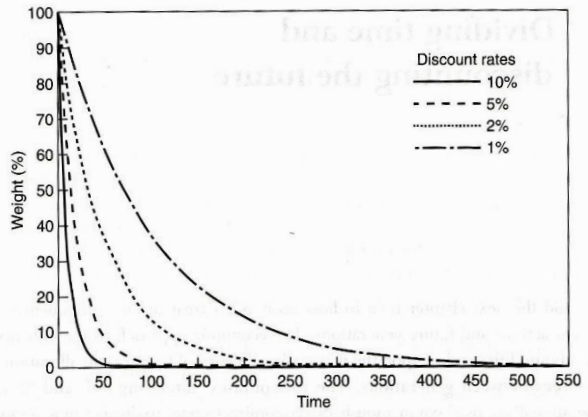
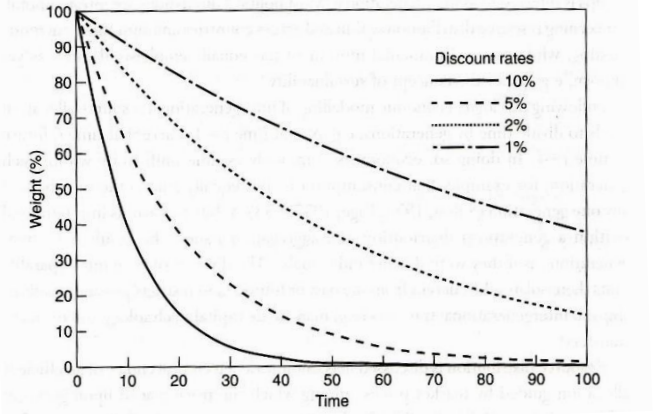


Figure 8.1 Reducing the weight of future events



Time

Figure 8.2 Weighting for 100 years of disounting

within about 40 years, at which point values (flows of costs or benefits) would add almost nothing to the summed discounted value arising from a project. Even the lower rates of 1 or 2 per cent limit time horizons to a few hundred years with events then having little or effectively no weight in decisions. Figure 8.2 shows the impact within a 100-year time horizon. For example, under the 10 per cent rate half the

C. Spash (2002)

Spash, C.L. (2002): Greenhouse Economics. Routledge, Seite 202

Discount rates in the height of avarage profit rates push the value of future near zero

Profit rate devalues future

- Via discount rates (" time preference rate"), future values are transformed to present values(future harms or positive effects).

$$\$X=\$X/(1+r)^n$$

r:= discount rate n:= number of accounted years

- Mechanism of compound interest !

- Usually in practical terms in cost-benefit analyses discount rates are assumed as high as the average profit rates of about 5-6%.

- Discount rates, which are not close to zero, devalue future damage (or positive effects) beyond the immediate next few years or decades to a value close to zero. See the diagram.

- So mitigation of climate change would hardly be worthwile. Future in general or the life basis of life for future generations almost completely is devalued (e. g. the calculations of Nordhaus on climate change).

Sustainability by zero-profit rate ?

- Well known Stern-Report on climate change is citicized by mainstream economics due to “too low” discount rates: Stern report would so implicate „too high“ values of future harms (Nordhaus*) and „alarmism“
- (but Stern Report is to criticize for other reasons)
- So:
- Only when the decisions on investments no longer dependent on the profit rate; or when the profit rate / discount rate is near to zero, a sustainable development is possible

*Nordhaus, William: Critical Assumptions in the Stern Review on climate Change. ***http://www.sciencemag.org*****. *SCIENCE Vol. 317, 13 July 2007***

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**Stern Review: The Economics of Climate Change (2006)*
www.hmtreasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

Climate change as the “greatest failure” of mainstream economics?

- If, according to the Stern report climate change is the “greatest market failure of history”, then mainstream economics has been involved essentially at the biggest "market failure“

- Profit in mainstream economics often is a premium for “risk” to make capital available

- Now in some dialectical turn the profit mechanism and the capital accumulation turned back the risk by the CO2 accumulation in the atmosphere - an absolute socialisation of risk
- By the “risk” of profit the global risk for mankind and civilization.
has developed to the largest extent.

Climate change as the greatest failure of capitalism the world has ever seen (1)

- Historically - see 5 factors of climate crisis
- CO2 accumulation in the atmosphere triggered by long term capital accumulation generally is
  = privatization of the atmosphere
  = privatization of the global commons
  = expropriation of the environmental space

Containment of effects of climate change needs a radical turn (1)

- Basic result of Stern-report: the sooner effective climate policy starts the „cheaper“ and less s“sacrifices“

- To converge to the level of 550 ppm CO_2 in the atmosphere at the end of the century the sum of CO2-emissions would have to get at least roughly 80 % below the actual level
- In the north: fair global solutions at least minus 90 %

Containment of effects of climate change needs a radical turn (2)

- Heuristic approach

- The starting points for the view of equality and fairness in connection with the climate change can come e. g. from:
  - ethical moral reasons,
  - obligations from international documents,
  - concepts of the sustainable development.

- Or from the fact that necessary international contracts simply will not come into being otherwise

- Fundamental principles of distribution
- can be e. g. – (pre- scientific/political/ethical):
-
  - Parity
  - Proportionality
  - Priority

Containment of effects of climate change needs a radical turn (3)

- In principle we can see procedual, effort-oriented and results-oriented principles of equality and fairness

- Oxfam e. g. uses 3 princples:
  - **Fairness,**
  - **capability,**
  - **simplicity**

- CICERO-ECZ stress
  - **guilt,**
  - **capacity und**
  - **need**

Procedual principles of equality and fairness

- Market mechanism
- Willingness to pay
- Auction
- Consent (can mean very different: from discretionary to fixed rules)

„Efficiency“ targets

- Equal CO2-emissions per unit GDP
- Equal marginal mitigation costs
- Mitigation costs in proportion to emissions per unit of GDP

Grandfathering

- ❖ Equality of absolute CO2-reductions per capita (could be negative at poor countries, therefore not possible logically at any events)
- ❖ Equality of relative CO2-reductions per capita (for industrial countries - Kyoto),
- ❖ Equal proportion of reductions in relation to historical accumulation of emissions
- ❖ “Ability to pay”: equal proportion in mitigation costs/GDP
- ❖ Outcome based, “horizontal”: Equal net welfare change (equal proportion of GDP)
- * compensation for net-loosing countries: “No nation should be made worse off” –

Grandfathering with securing of minimum

- Rawls - Maximin (Maximization of lower incomes within the existing environment)
- “No purchase“: poor countries get CO2-certificate without payment within a basis scenario
- „No harm“: No costs for more poor countries

Equal rights for the atmosphere (1)

- “Outcome based – vertical”:
- (Net)gains inverted to GDP, losses proportional to GDP

- Egalitarian: Equal right for pollution (per capita) – territorial
- - Position of G-77
- Date of convergence has to be fixed

- Egalitarian: Equal right for pollution (per capita) – functional
- compare „ecological footprint
- Clearing up of trade - net
- Modified polluter pays principle
- Production (incl. emissions) for whom (not : where)
- “Net exports (in China) accounted for 23 % of China´s total CO2 emissions.”[1]

[1] Watson J., Tao Wang, Is the west to blame for China’s emissions? December 20, 2007 http://www.chinadialogue.net

Equal rights for the atmosphere(2)

- ❿ ❖ Egalitarian: causal historical responsibility for greenhouse gas emissions – territorial
- = "Brazil proposal"
- *Former economic and ecological asymmetric distribution integrated
- *UNFCCC - MATCH-process
- *In the context of the Kyoto process Brazil made a proposal which aims at differentiated emission reduction after accounting the sums of the historical contributions of greenhouse gas emissions by various countries.

- Egalitarian: causal historical responsibility for greenhouse gas emissions – functional
- *Clearing up of trade - net
- *Historical polluter pays principle
- *Production (incl. emissions) for whom? (not : where?)

Equal rights for the atmosphere(3)

- ❿ ❖ Egalitarian: Equal right for pollution (per capita) – control view
- *Rights of property and power of disposal?
- *Who controls the value added?
- - *58% of Chinese exports are controlled by transnational companies
-

- ❿ ❖ Egalitarian: Equal right for pollution (per capita) – control view for the whole viewed era - historical
- *Who has had the property and disposal rights in previous time periods?
- *And who has checked the obtained net product?
- *World-system approach - (Wallerstein)