Strategies of emergency precaution – position of an environmental NGO

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Bund für Umwelt und Naturschutz Deutschland

BUND

FRIENDS OF THE EARTH GERMANY

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Targets, Criteria, Decision

- Risks of industrial entreprises
- Danger control
- Emergency preparedness
- German: „rest“ risk
- Not to forget: liability
- „Im Ernstfall hilflos“ – helpless in case of emergency or better stop before?
- Examples: nuclear power, CCS, Fracking
- We don´t want this, but need emergency preparedness
- Which is fully sufficient and the company cannot pay for.

Never forget:
Social trustfull energy supply is only possible without nuclear power

Chernobyl und Fukushima are the biggest humanitarian catastrophes with long term following.

Region Fukushima:

350.000 people fight for the right for evacuation“ because there i no payment and compensation in some „delibarate“ areas when they will leave.

Is the paradigm of probability right ?

Firstly it comes different, secondly as you think (german proverb)

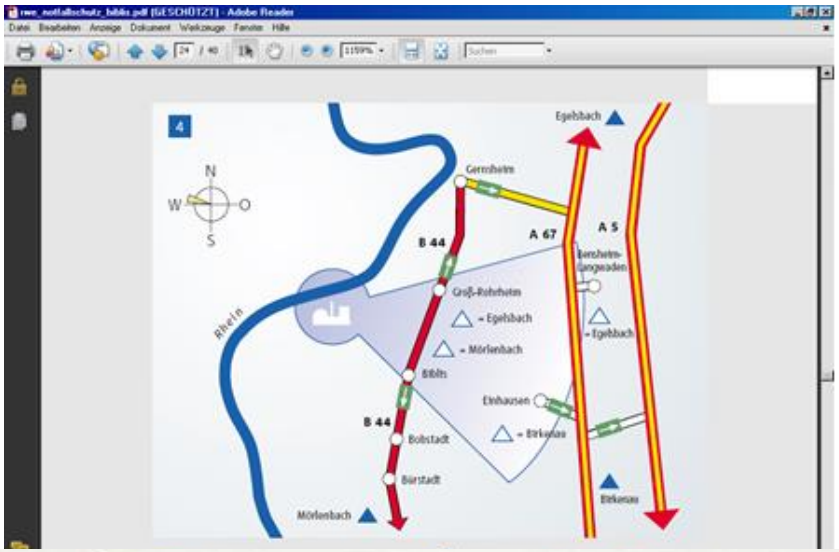
- Risk definition = probability of case * size of effect
- Probability ot nuclear emergency cases was only calculated by „probabilistic“ methods. Technical consequences and emergency treatment and follow up was never taken into account.
  (see i.e German Risk Study nuclear power)
- Risks of rare and huge cases cannot be treated by probability methods – it´s not throwing dices.
- Real huge cases had different reasons that predicted
  - Chernobyl - Interaction of wrong construction of steering rods and human faughts with not suffficient information
  - Fukushima – external reason and insufficient preparedness and no sufficient emergency plan.
  - See Challenger Case 1986 - breaking of small rubber sealing ring released hydrogen.
- Now additional dangers: terrorist attac and fuel intermediate storage next to power station
- „Rest“ risk can now NOT be separated any more (german court decision was, that this „rest-risk“ must be accepted)

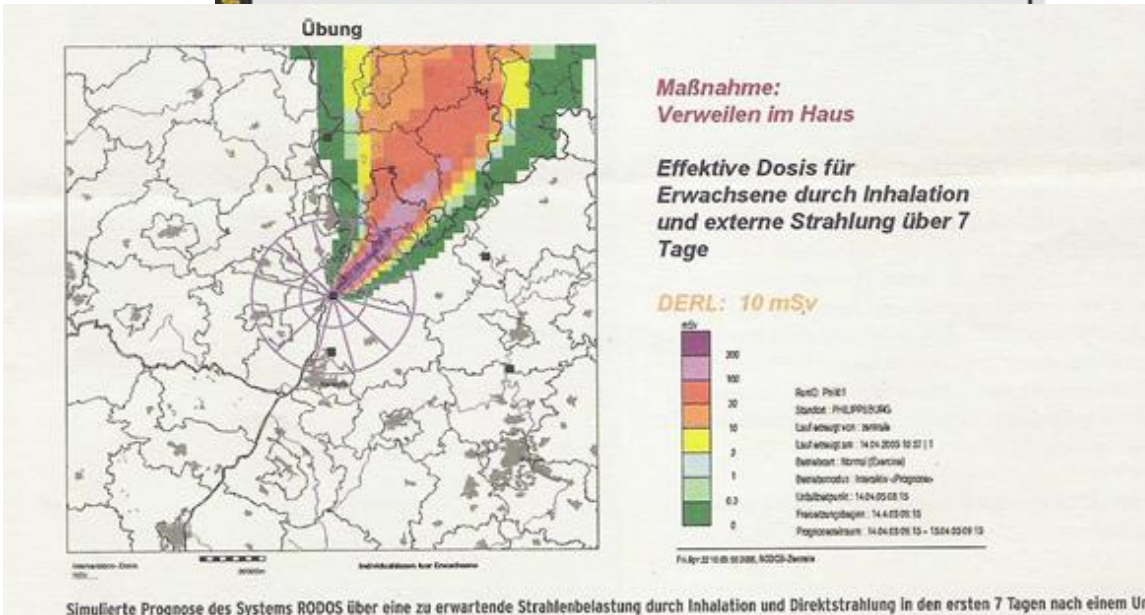
This definition of RISK does not provide precaution

- What is probability of emergency case ?
  - Theoretical value of constructed and calculated possible technical and human errors and error chains.
  - But „the impossible“ happens
  - Not chance to predict the exact time of case
  - Low probability suggests a LATER incidence
  - And later incidence is no excuse
  - RESULT: emercency plans, which „must“ suggest a full mastering of the catastrophe
  - Such Emergency plans are normally not sufficient, because the size of catastrophe is underestimated
  - And politics say: „everything is safe“, „no rebate for security“, „this will not happen here because, next to Frankfurt there are no tsunamis““

Example of emergency plan of typical german NPP

- Example BIBLIS (now shut down in 2011) others are similar
- Evacuation into direction of wind , towards contaminated areas and only from 5 km diameter to 30 km.
- Contradiction strategy:
- Stay PUT and go to pharmacy for your Iodin-tablets
- NOW: german radiation protection commission enlarges evacuation area to 20 km within 24 h. (13.2.2014)





Helpless in emergency

- Iodine tablets must be delivered from central storage and then be distributed
- Completely insufficient medical preparedness, missing beds, no sufficient training of doctors for radiation case *(Roentgen physician think they know about nuclear radiation)* , missing infrastructure.
- BUND critics now confirmed bei German State Schutzkommission (Bundesamt für Bevölkerungsschutz und Katastrophenhilfe) 2014 : medical preparedness needs „…strongly to be improved“

Abb. 1: Planungsradien für die Verteilung von Iodtabletten in der Bundesrepublik Deutschland

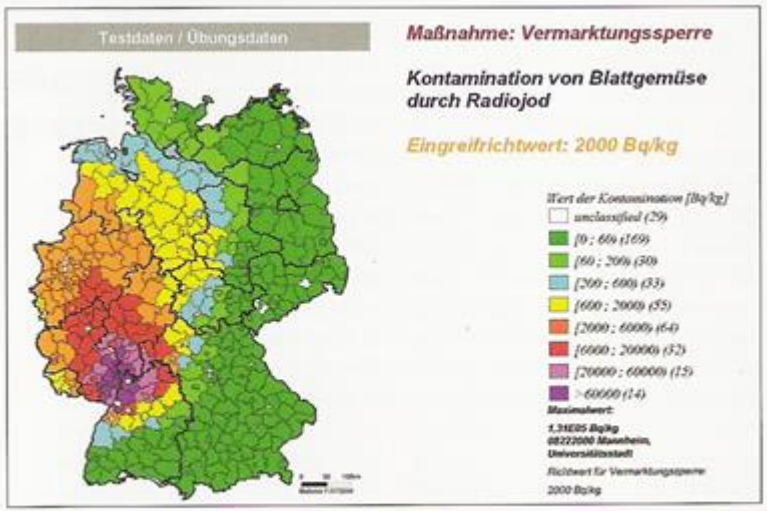
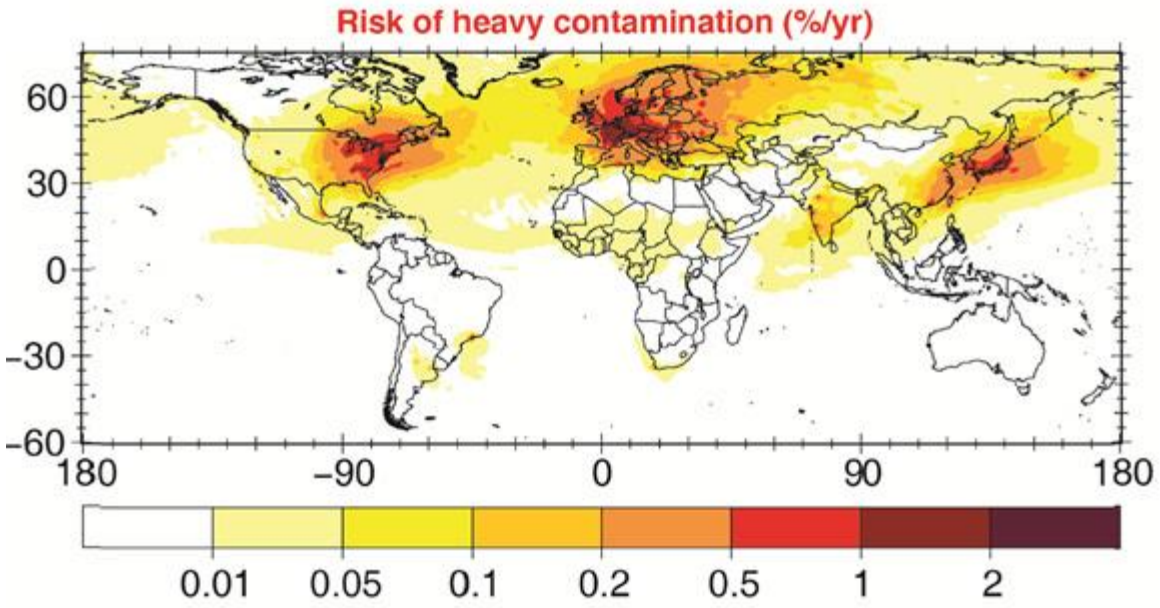


Abb. 3: Maßnahmenrelevante Darstellung der Kontamination von Blattgemüse mit Radiojod. Die Werte wurden im Rahmen einer Übung mit PARK berechnet.

The rest-risk is just the normal-risk

- Max Planck Institut Mainz: GAU (biggest emergency case) risk ist 200 times higher than US offices where thinking.
- Only 8% of Cs-137 fallout within 50 km, 50% within 1000 km area



http://www.mpg.de/5809185/Kernenergie_nuklearer_Gau

Studie BfS Bundesamt für Strahlenschutz – emergency precaution after Fukushima

Studie BfS SW 11-12, April 2012 shows that old evacuation radius was not sufficient any more

„action threshold value of 100 mSv for evacuation must by lowered for some scenarios“

„We will not be able to help you“ – IPPNW director Mr. Thiel 2013.

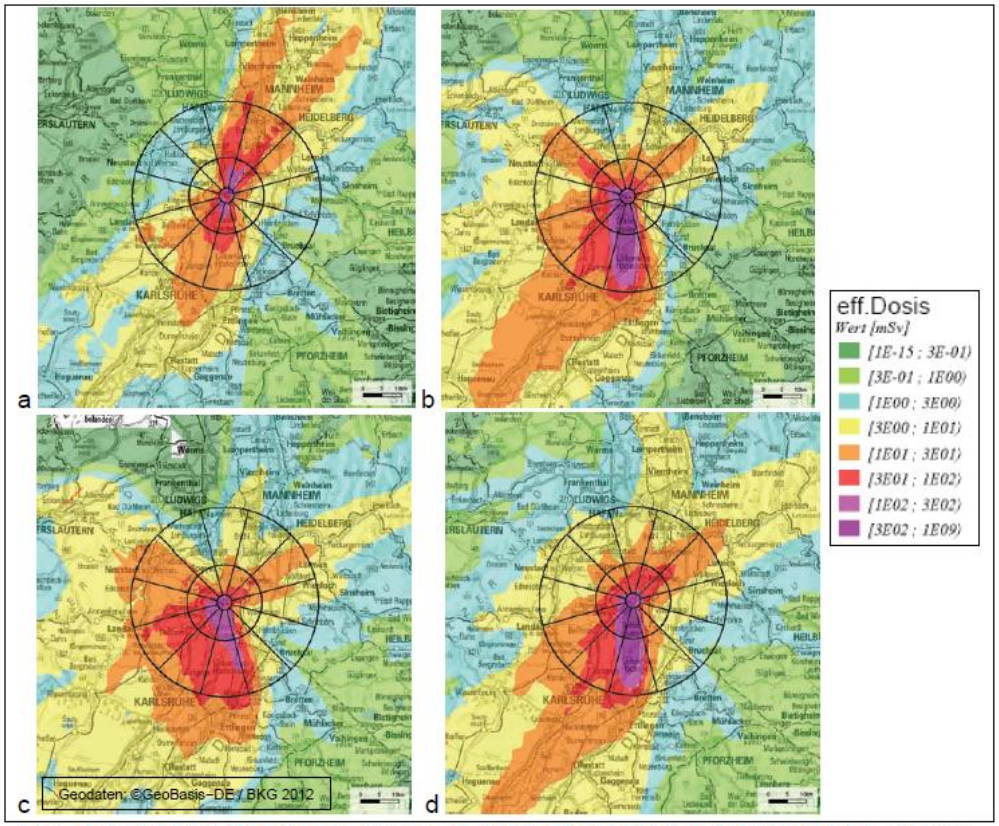
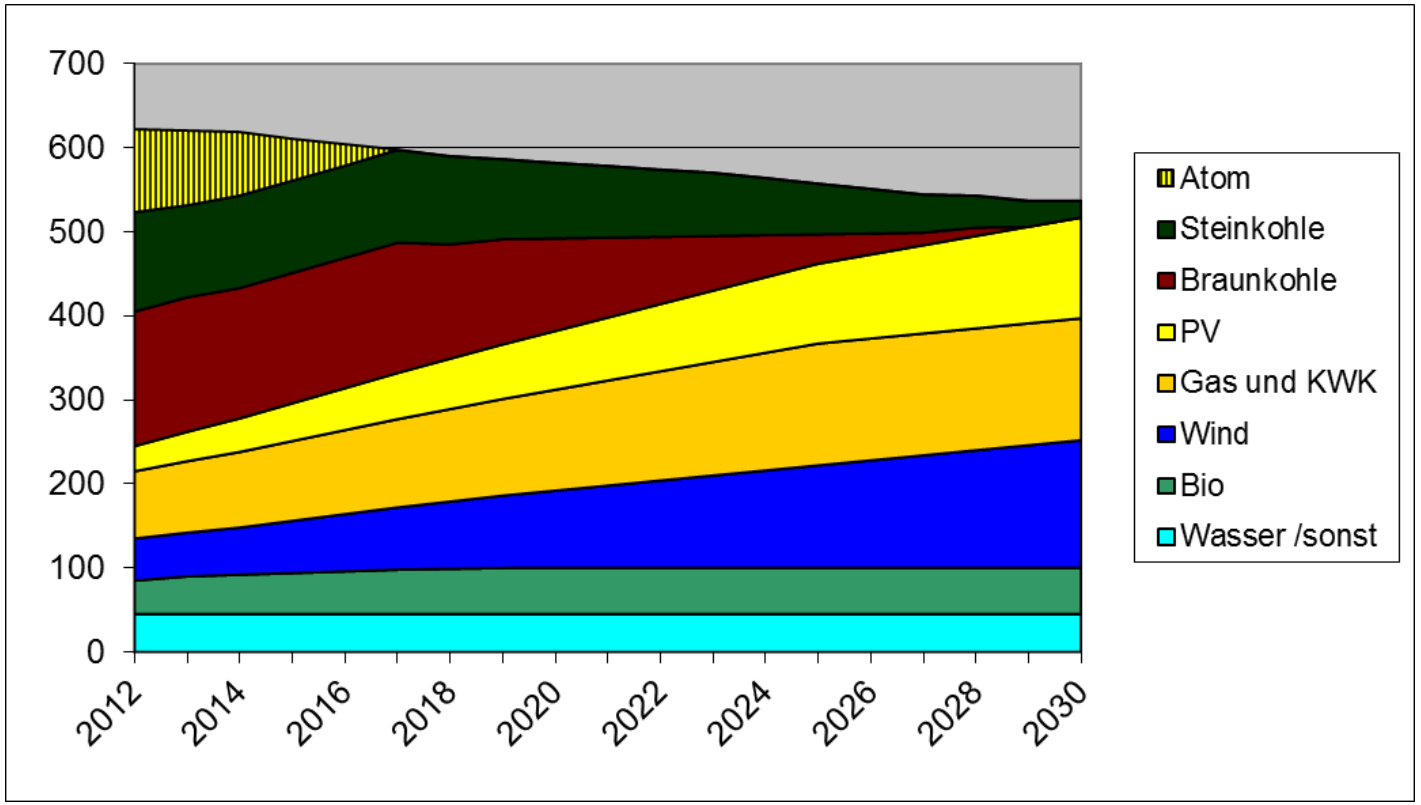


Abb. 5.3: RODOS-Ergebnisse für die **effektive Dosis für Erwachsene** durch externe Strahlung und Inhalation über 30 Tage, Wetterdaten für **Dezember 2010**: (a) Quellterm „Fukushima“, (b) Quellterm „FKA-30d“, (c) Quellterm „FKA-15d“, (d) konstanter Quellterm.

But what will be the consequences ?

- Paradigm of „controllable risk“ crushes down.
- There is everywhere a fully insufficient emergency preparedness.
- THIS is the reason to call for immediated shut down of all nuclear power plants.
- FoE Germany has plan for nuclear phase out until last September 2017 (Effizienz + KWK- Strom + erneuerbare Energien)
- But enlarged emergency preparedness will also be needed for storage of fuel rods nearby NPP „intermediate storage“ for many years.
- Court decision „OVG Schleswig“, that is was not shown, that security plan has not taken into account, attac from outside with weapons and airplan crash Airbus 380
- This needs: Enforcement of outer buildings and higher walls and enlargement AND enlargement of emergency preparedness (radius of evacuation, medical beds, preparing hospitals, emergency stations, training) – BUT this does not happen

Nuclear phase out 2017 and coal power phase out 2030 are possible in Germany



Every year plus 1% = 6 TWh more efficiency, more cogeneration, more windpower , more photovolatics = 24 TWh less nuclear and coal power

Government: nuclear phase out until latest 2022

FoE Germany : nuclear phase out is possible until 24. September 2017 (next election!)

Who takes the costs of risks and preparedness ?

- German finance control (federal audit court) annual report 2010:
- **Reserves of NPP companies are 28 Mrd. € (2009)**
- **(ca. 0,5 -1,0 ct/kWh)**
- But if too low, they will not be sufficient in case of emergency and for nuclear waste.
- If to high, than the companies have saved to much taxes.
- *„actually the official financial tax bodies can not say, if the energy companies have reliable reserves for nuclear power cases. There is a lack of information and specialised knowlegde in this offices*
- *The german federal audit court therefore thinks, that is should be necessary, that state offices should be able to do comprehensive controls. Practice shows that this is – contrary to the estimation of the german ministry of economy – actually not possible.*
- *Parliament and government have NO suffcient transparency, to asset the amount of these reserves correctly.*
- ***BUND claims for a national public fund for these reserves, for financing emergency preparedness and cases of emergency , demolishment and nuclear waste storage. The polluter has to pay.***

Risk – preparedness costs – liability

- Risk is the risk of future costs
- Question is, if it is cheaper to pay today for precaution, if advantage seems to be high enough
- OR are actual costs for sufficient precaution such high, that technology is today and in future „ineconomical“?
- Nuclear power „stress test“ says that costs of 25 Mrd. € for retrofit following stress test recommendation, are SUCH HIGH, that it will NOT be realized.
- DONT forget: liability insurance must be taken into account. BUT liability payments are limited, because the costs of big catastrophes cannot be payed be the companies.
- Exception of risks from nuclear power in private home insurances. But small entreprises, windpower, citizens have to pay for liability. (see case for midwifes, where high insurance payments are in discussion)
- Real costs must be taken by energy company. But regional states do not shift this costs by political reasons.
- We must insist that NEW risk and emergency assesment of emercency risks from national risk and securtiy commission has to be transformed into action. Otherwise risk costs will be controlled by companies.

Same procedure concerning CCS and Fracking

- Technology promises big advantages. Lower prices, more climate protection
- Reality: Ineffiziente technology, high enviromental risks, in both cases ground water pollution, effects will occur not only directly but spacial and temporal shifted and cannot be „repaired“ easily.
- Same paradigma: supposed very low probability of danger and emergency cases.
- Undestimation of costs of cases
- Shifting general risks to the community

BUND FoE Germany is asking for:

- Technologies must be evaluated and treated in permission cases from the long term risks and impacts: this means PRECAUTION principle. Not only direct and short term impacts.
- Total risk assessment comparison of different technologies
- Get away from the paradigma of impact probability !
- NEW paradigm must be on the basis of long term and bigger spatial risk assessment and emercency precaution
- The future risk and emergency costs have to be payed NOW!
- Result will be:
- 1. energy saving (lowest impact)
- 2. energy efficiency (stop of wasting energy , 25% in Germany)
- 3. renewable energies (lowest impacts concerning nuclear waste, CO2; impacts towards nature can be treated, minimized)
- Alternatives get no chance because nuclear and coal power industry do not pay for the historic and actual and future damages and do not pay for sufficient emergency preparedness.

Dangerous energy technologies can only survive, if they don´t pay for the environmental and health damage they are causing – in the past, today and not for emergency precaution.

We will reclaim emercency precaution **not** to develop „clean nuclear“ or „clean coal“ or „clean fracing gas“, but to show that the real costs are such high, that these technologies must be stopped.

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