Sustainable Investment Decision by Medium Sized Electricty Producer

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Background

- ALICE project investigates conditions of power generation investments
  - motives, drivers, risks
  - environmental/climate focus
- What can be done to achieve a decarbonisation of the electricity sector?
  - technologies
  - actors

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Background: Actors

- “The Big Four”
  - dominate German electricity market: ~ 80% share
  - attract political attention; in public/research focus
- Municipal Utilities (MUs)
  - until mid-1990s often seen as phase-out models
  - recently, MUs (re-)gained more positive reputation
    - link: decentralisation – sustainability

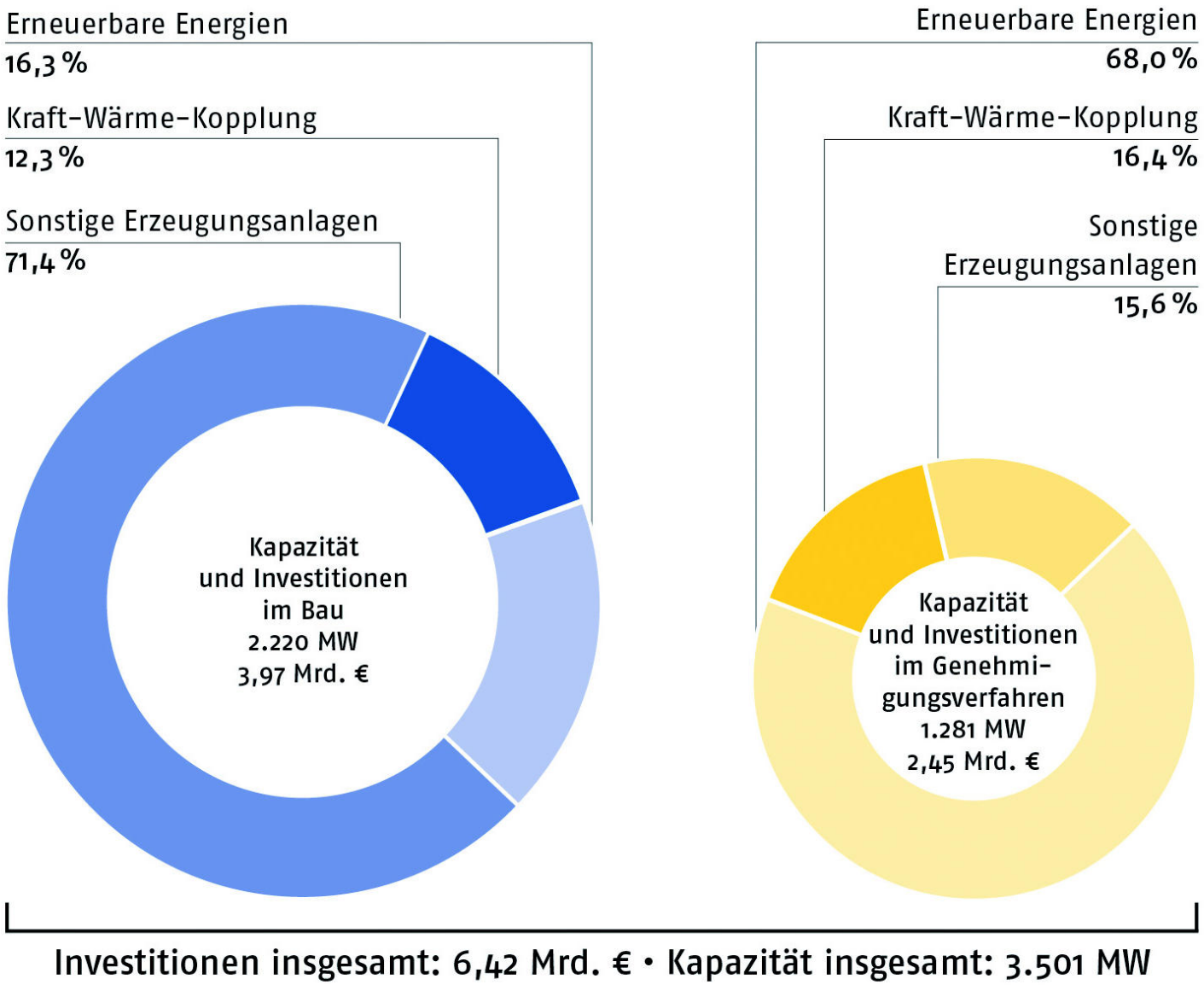
Recent figures & trends

- Municipal Utilities operate some 13 GW (~10% of German capacity)
- Additional 3.5 GW under construction
- 40% share in electricity sales
  - mostly small industry and households
- Re-communalisation, buyback/share increase
  - Hamburg, Dresden,... – ThüGa
  - networks and capacity
- MUs critizised runtime extension for nuclear power plants heavily

MUs are different

- 'Economy meets public/local politics'
  - provide services of general interest
  - price and product policy within social context
  - local politics influence MU business
  - synergies between municip. sectors / cross-financing
- Sustainability aspects:
  - Long experience in decentralized production
  - Smaller capacities ⇒ more technology alternatives
    - also: more “alternative” technologies suitable

Investments of Municipal Utilities



*Stand: Dezember 2009

Quelle: VKU 2009, Unternehmensrecherche

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Research questions

Are MUs agents of change?

- What are motivations for MUs to invest?
  - What role does environment/climate play?
  - What is the role of RES?
- What factors and risks have been considered in recent investment decisions?
- What kind of policy support necessary?
  - Minimize risks or create incentives?

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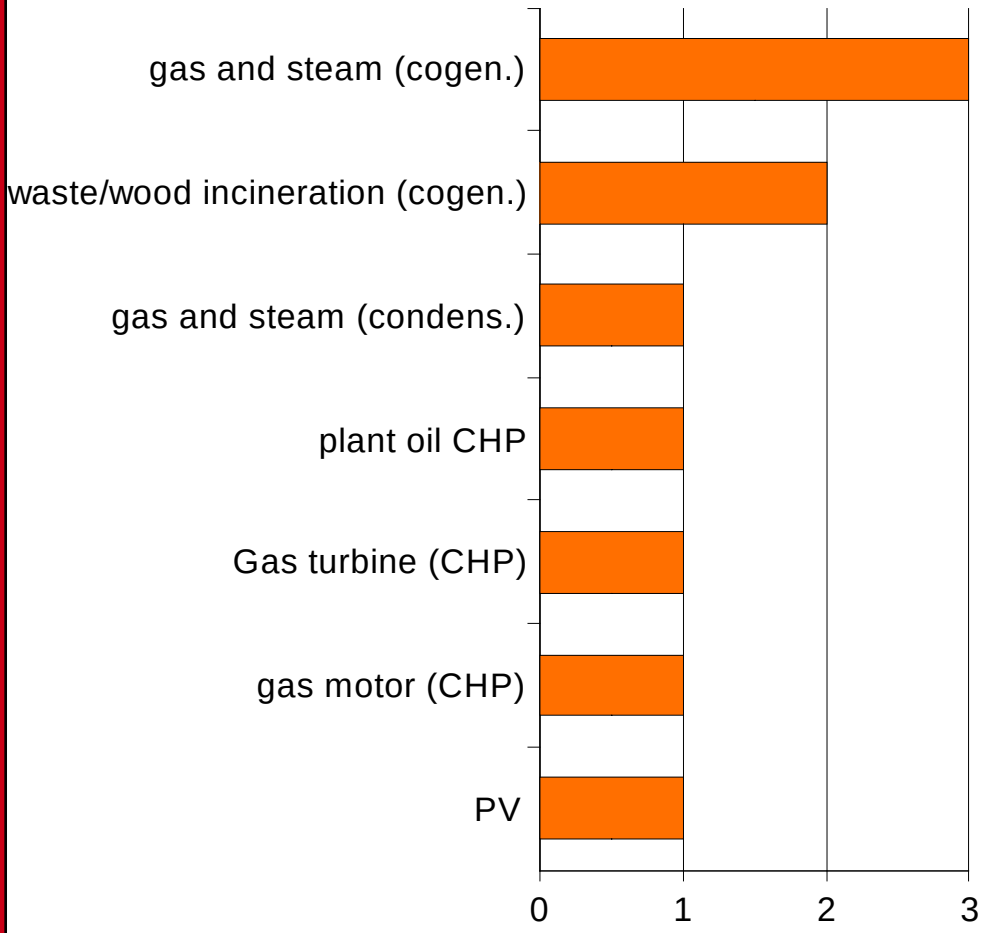
Method

- 12 Semi-structured face-to face Interviews
  - 11 in Germany
    - 10 MUs, 1 MU-related company
  - 1 in UK
    - medium-sized producer (1.3 GW)
  - 1 or 2 interviewees:
    - members of management board / department heads
  - 90-120 minutes, audio-taped, transliterated
  - semi-quantitative & qualitative content analysis
  - !! small sample, not representative !!
- Final workshop:
  - Feedback from pracitioners

Recent Investments

Technologies (D)



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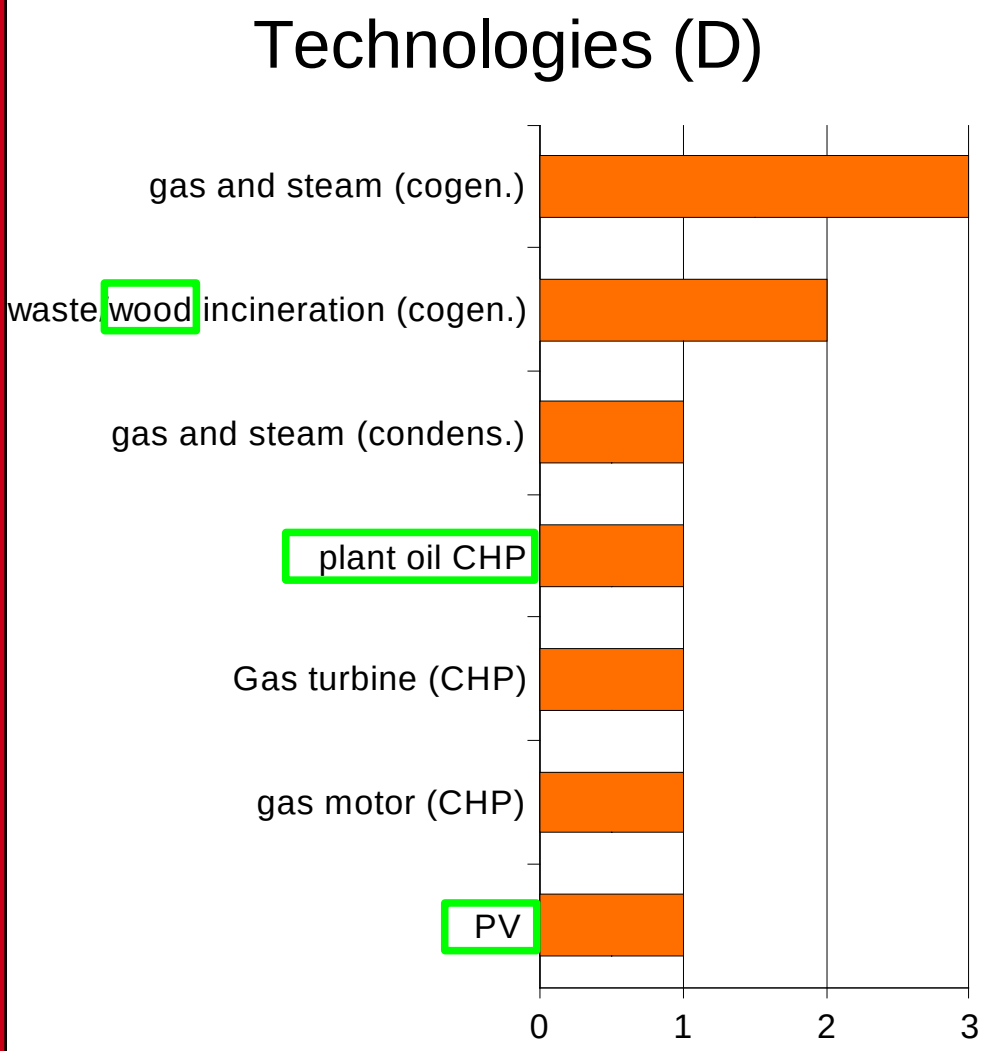
Recent Investments



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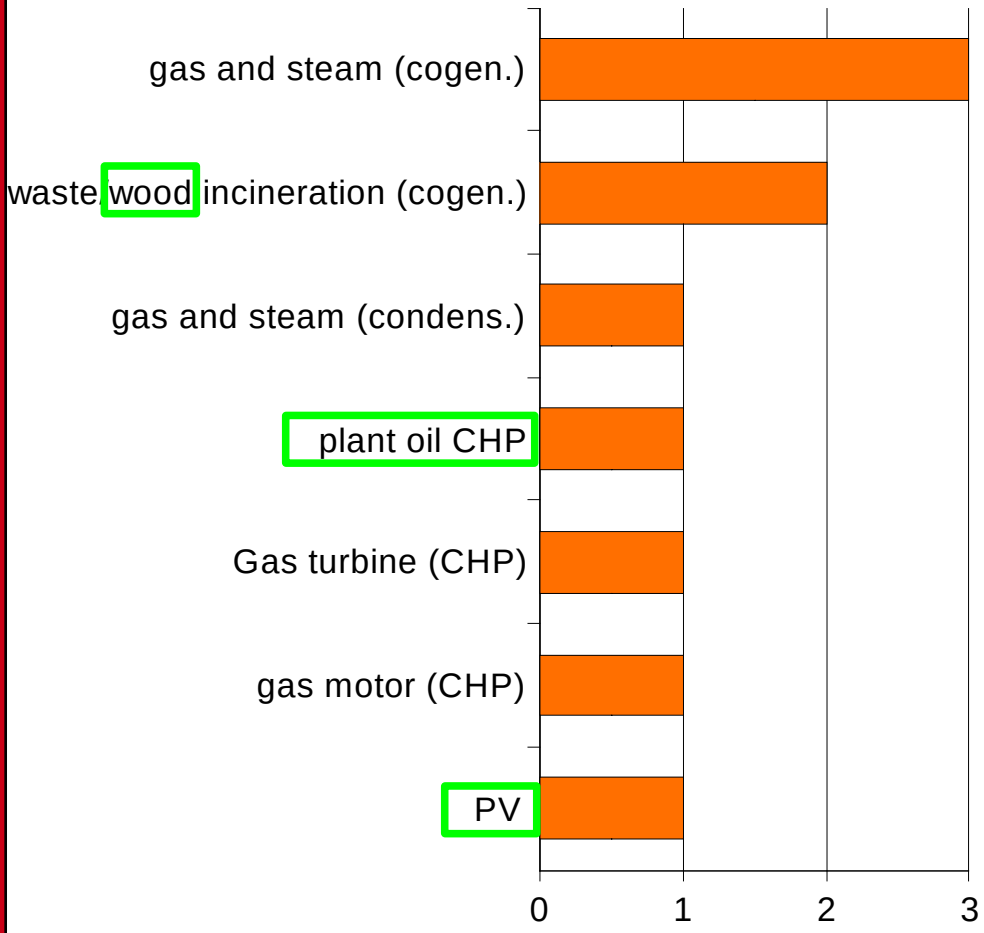
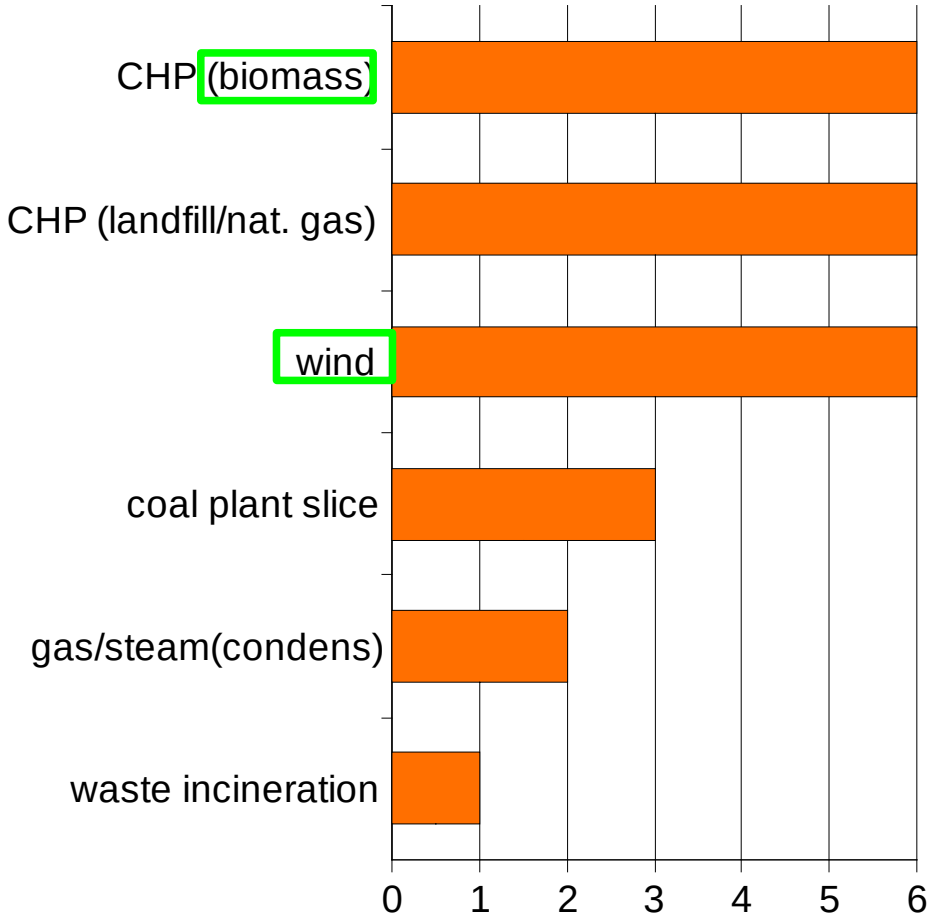
Recent Investments

Technologies (D)



Additional Technologies (D)



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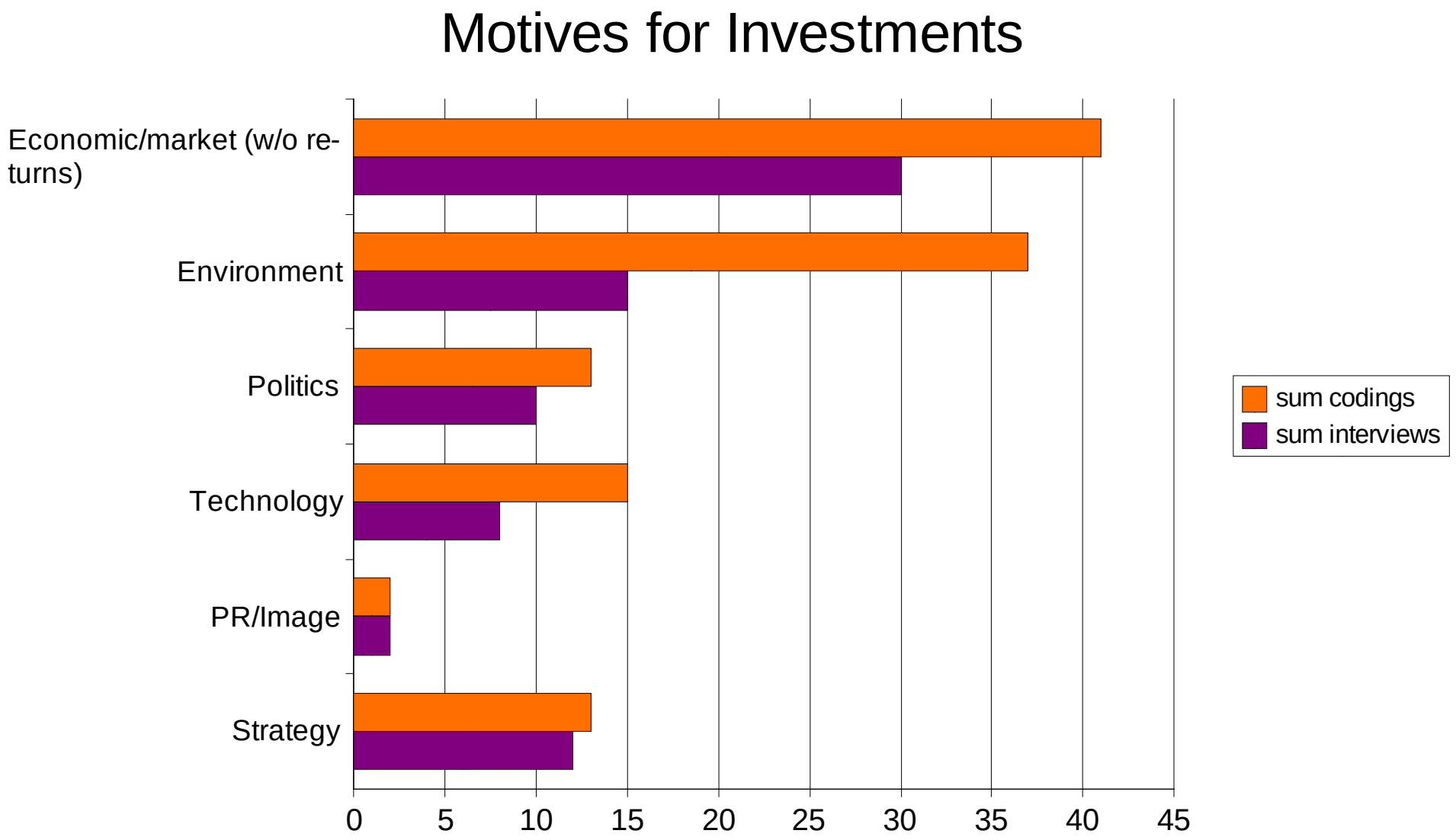
General Motives to Invest



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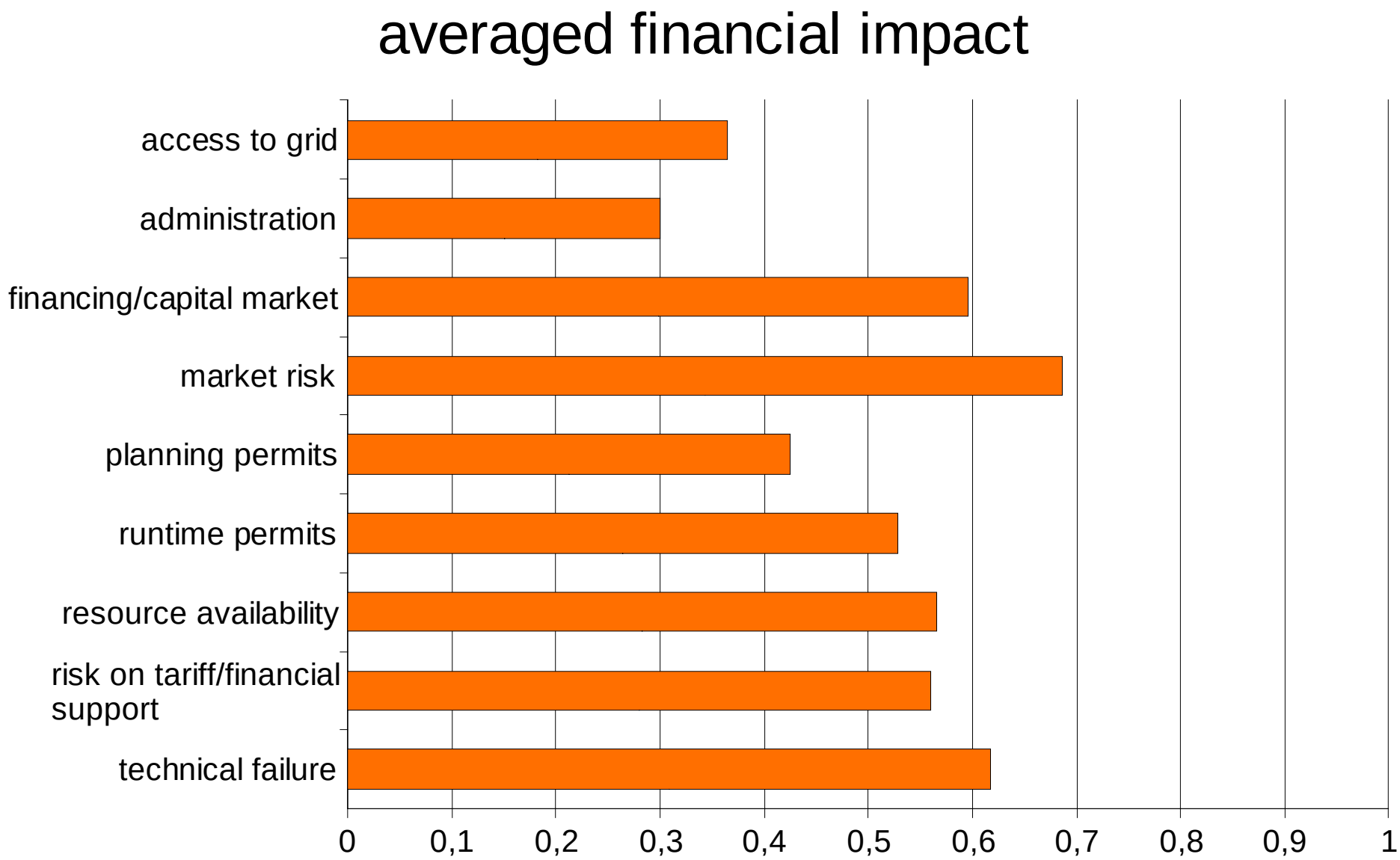
Wrap-up: Drivers

- Free answers match impacts in actual decisions:
  - Economic aspects are key, followed by environmental aspects
  - Technology and strategy less important
  - Politics less crucial, but interviews before discussion on extending runtime of nuclear power plants in Germany
- Less often, but very important if present:
  - political issues
  - PR/Image

Risk Perception



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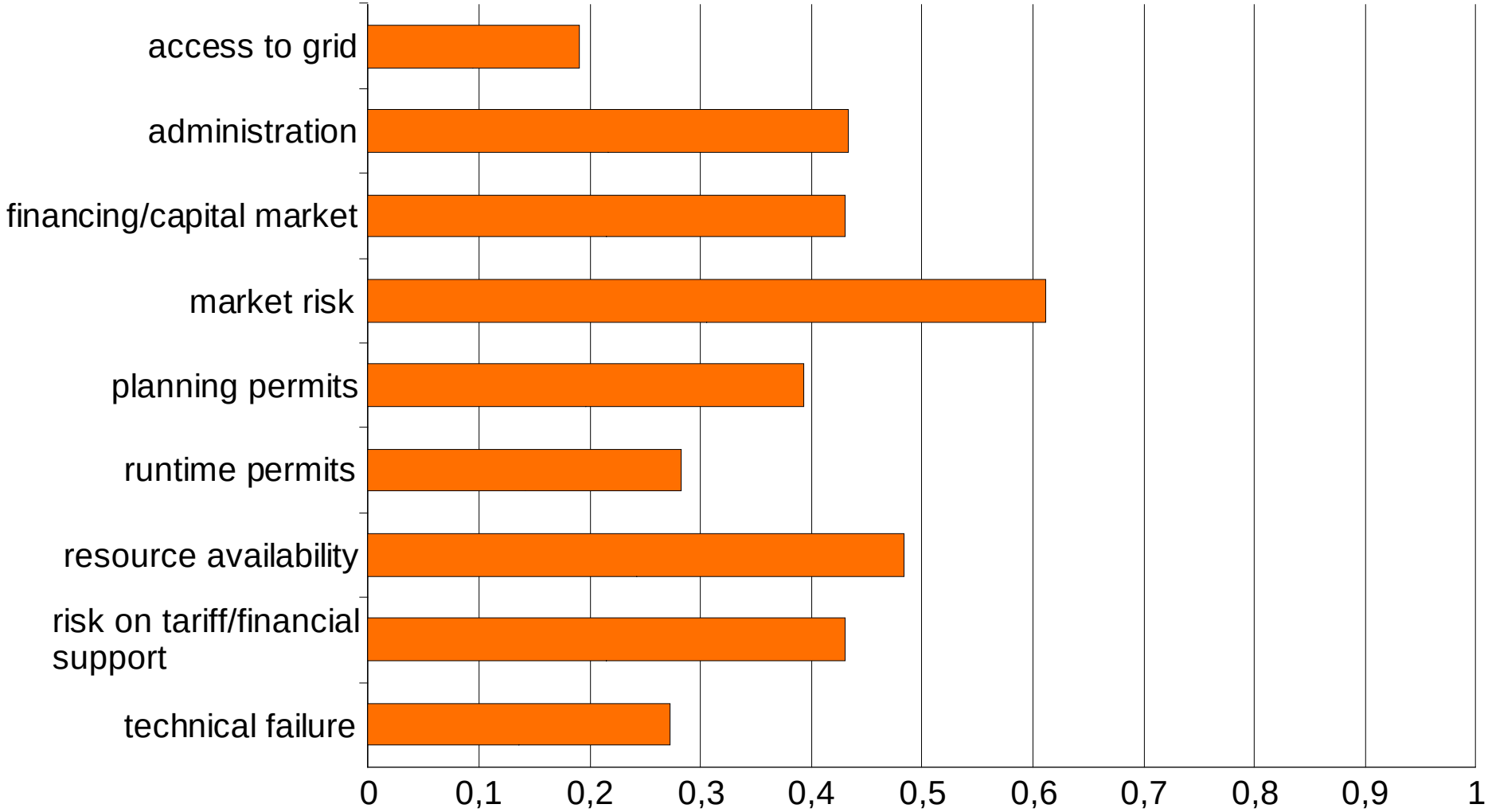
Risk Perception

averaged prob. of occurrence



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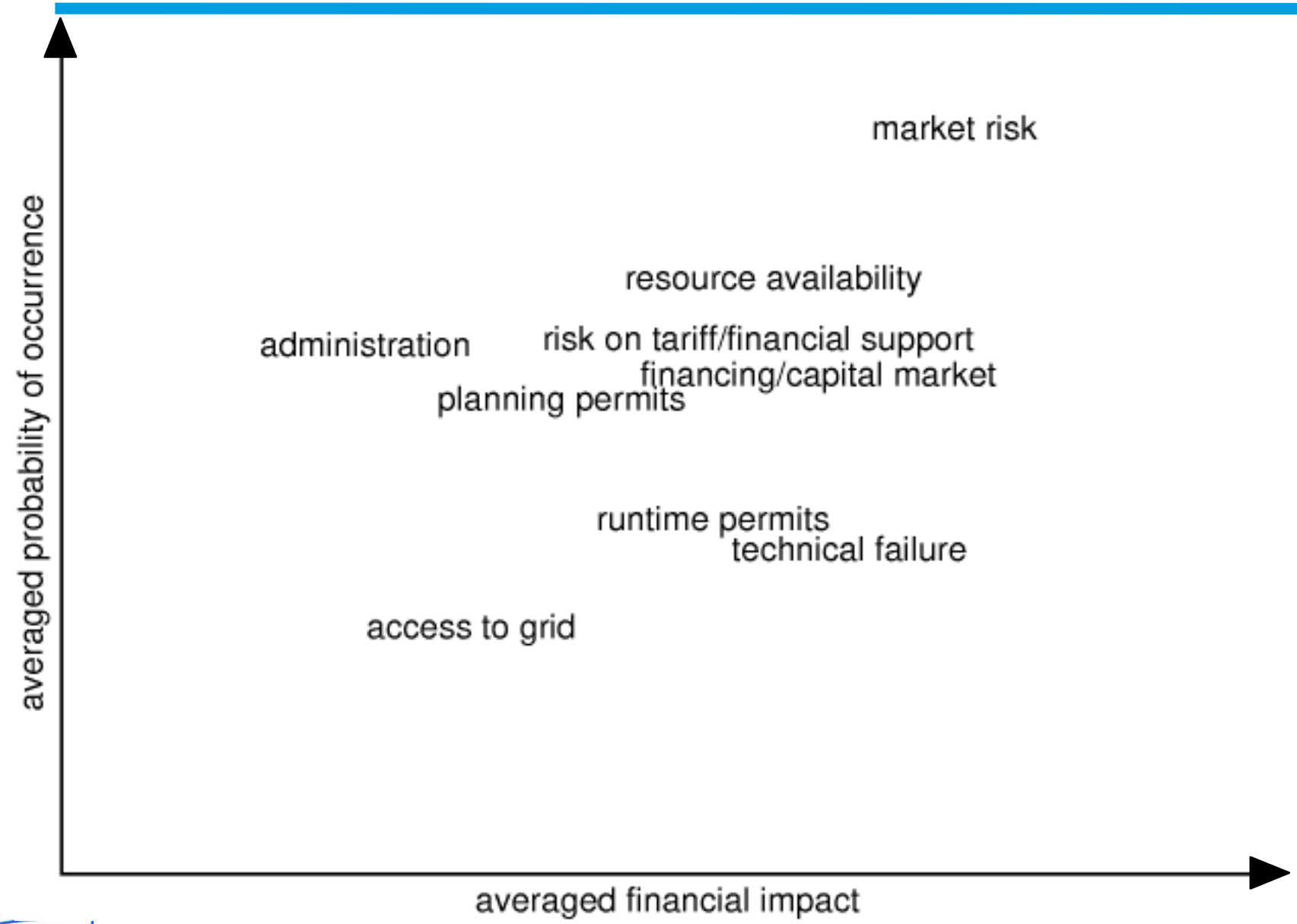
Risk Perception



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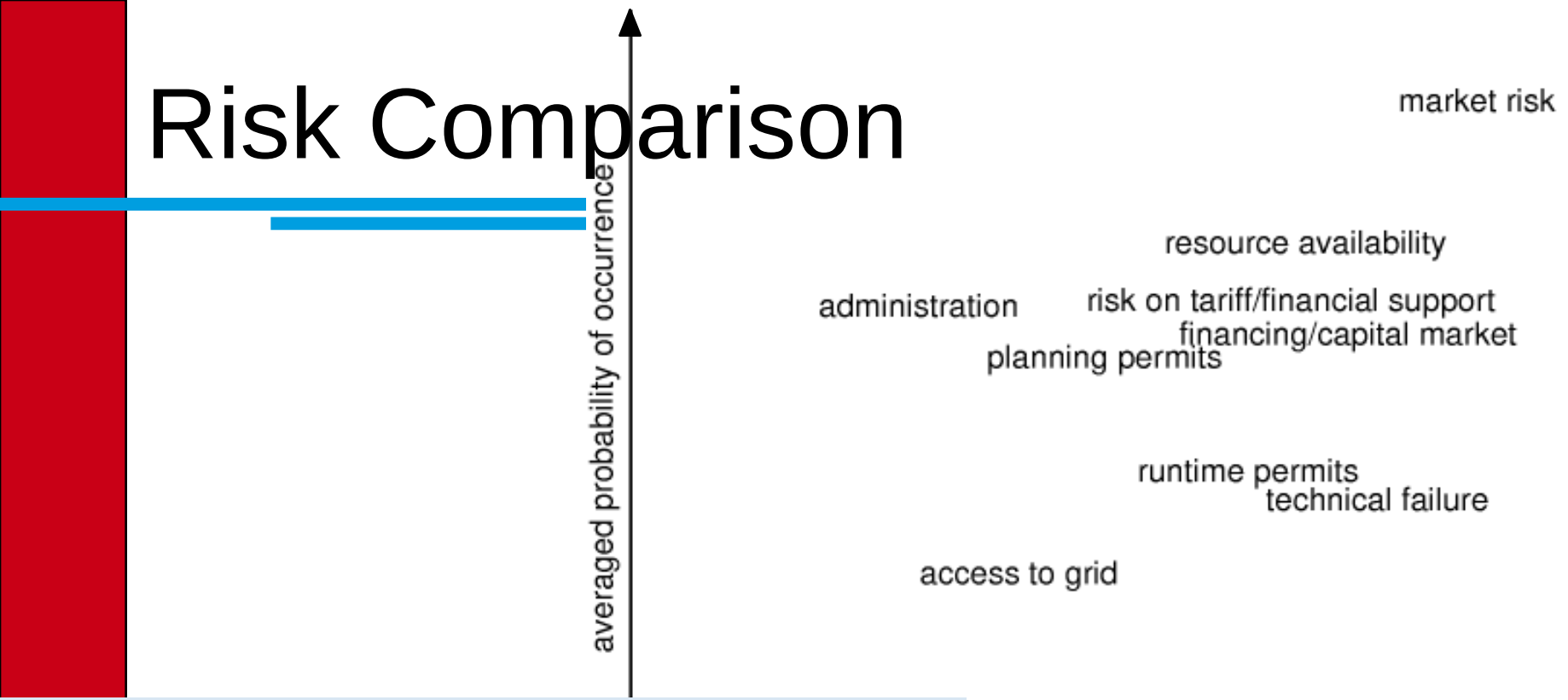
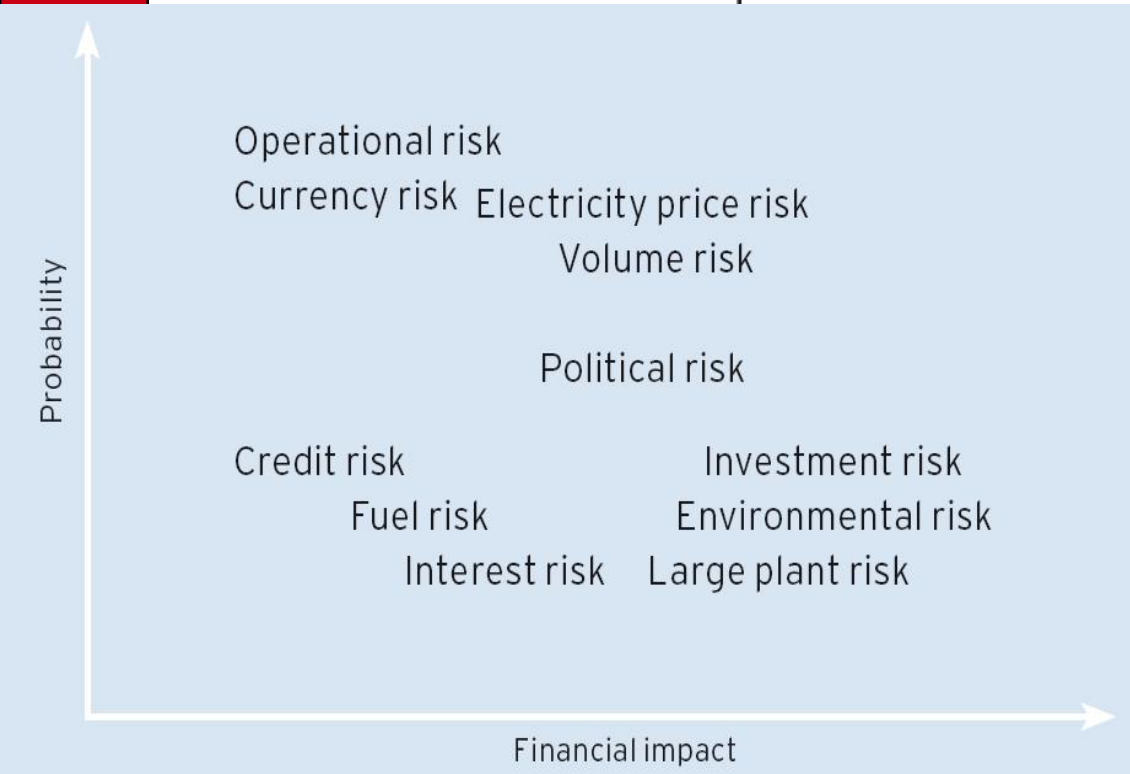
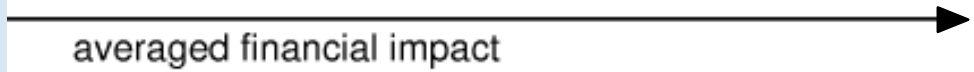
Wrap-up: Risk Perception

- Major risk is in the market
  - prices, demand, customers
- Next important cluster:
  - resources (fuel) / financial support / capital market
- Policy: medium riskiness
- Administration: less risky and manageable
- Grid access no issue
  - different to situation in the RES sector

Risk Comparison







[Vattenfall, Annual Report 2005]

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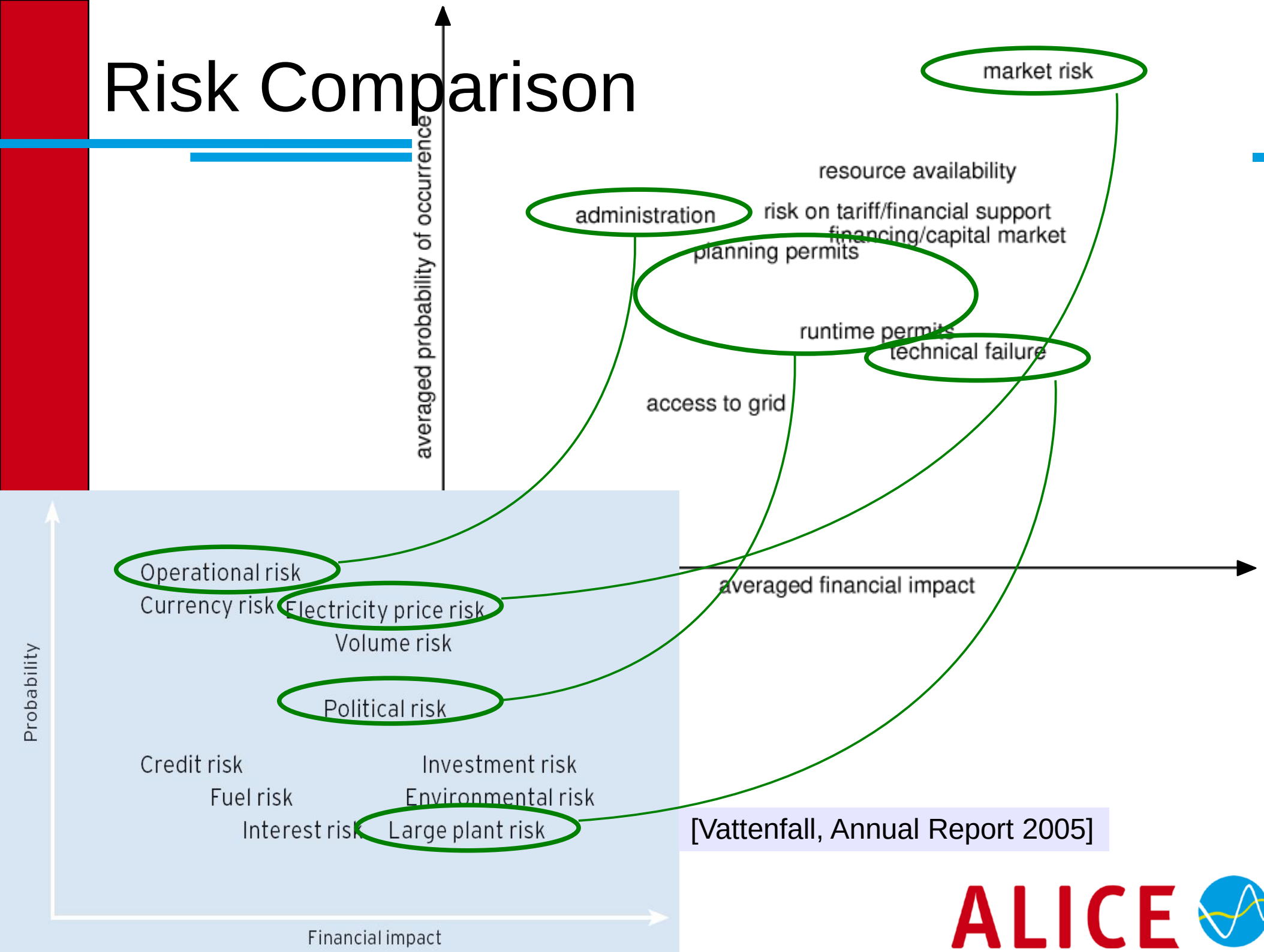
Risk Comparison



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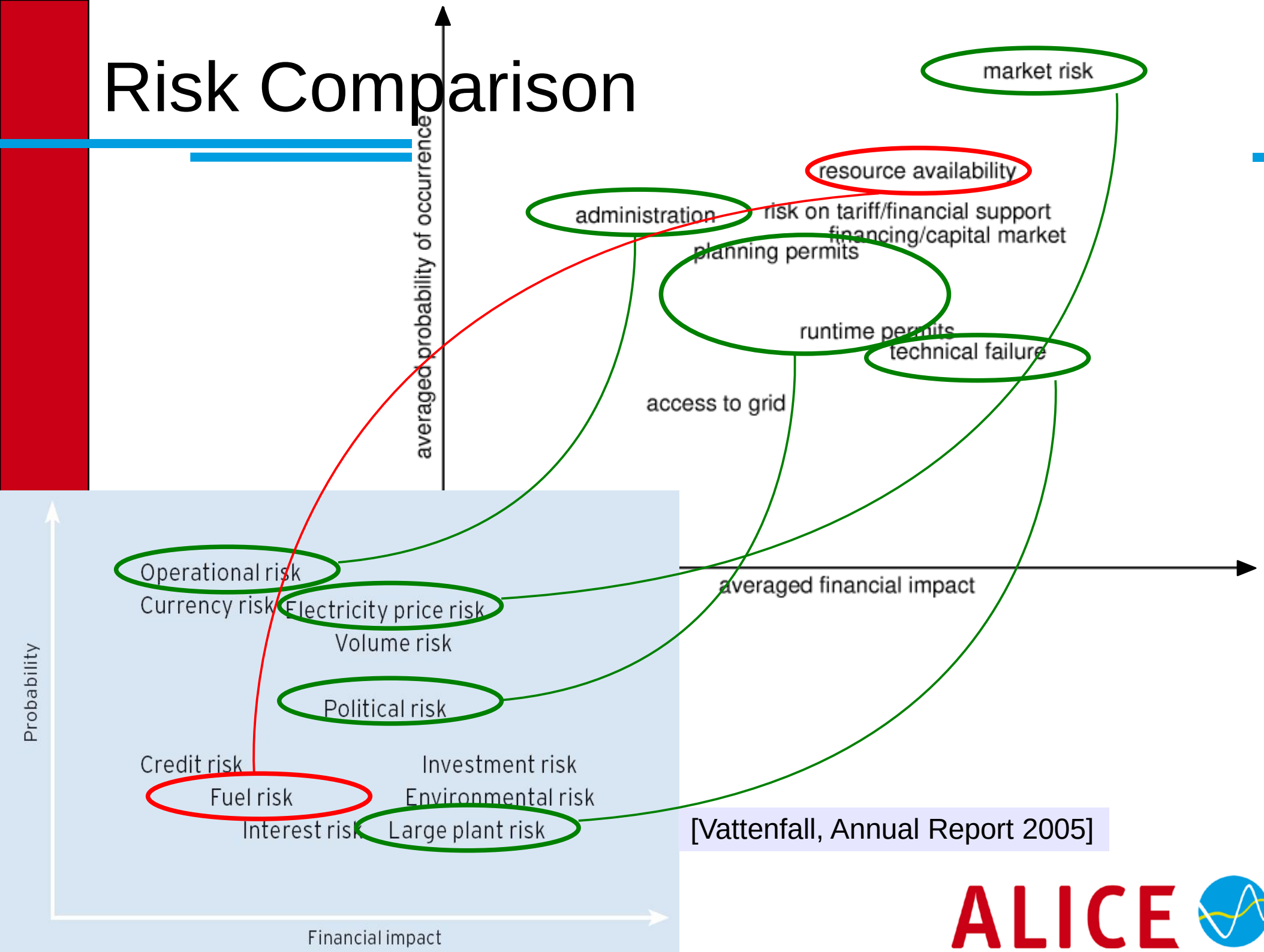

[Vattenfall, Annual Report 2005]

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Wrap-up: Risk Comparison

- On average, MUs perceive risks similar to big utilities
  - fuel / resource risk differently assessed
- However: risk assessments of individual MUs may deviate significantly
- Policy measures may be good for everyone (on average)
  - but miss individual cases (probably many!)

Conclusions

- Potential to be agents of change is there
  - Environmental motives second most important
  - MUs generally no pioneers: „proven technology“
    - Predominant choice of cogeneration plants
    - RES often only for smaller plants
- Risk perception
  - market risks prevail as least controllable
  - in part reflects current issues at the time of interview (financial crisis)

Policy Implications

- RES needs support in the future
- RES expansion via market incentives and risk reduction
- Technology support programme to support quick establishment of new technologies
- Recent political uncertainties hinder investment decisions in RES

Thank you!

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Conclusions

- Environmental motives second most important
  - Predominant choice of gas-fired cogeneration plants fits to this observation
- Technology and PR issues less important
  - MUs generally not technical pioneers: „proven technology“
- Risk perception in part reflects current issues at the time of interview
  - market risk prevails as least controllable

Motivation

- Historically, ...
  - ... electricity production evolved in Germany within regional monopolies
  - ... “the Big Four” still dominate electricity market: 80% of total generation
- Municipal Utilities (MUs) tended to be seen as phase-out models
- MUs slightly „off the (research) focus“