



## Energy Transition Dialogue in Luxembourg: **Human acceptance in view of energy transition processes**

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# Art of Hosting

DIE KUNST DES GASTGEBENS UND ERNTENS GUTER GESPRÄCHE



[HOME](#) [WORUM ES GEHT](#) [WIE ES FUNKTIONIERT](#) [IN DER PRAXIS](#) [TRAINING](#) [QUELLEN](#) [DIE AOH-COMMUNITY](#)

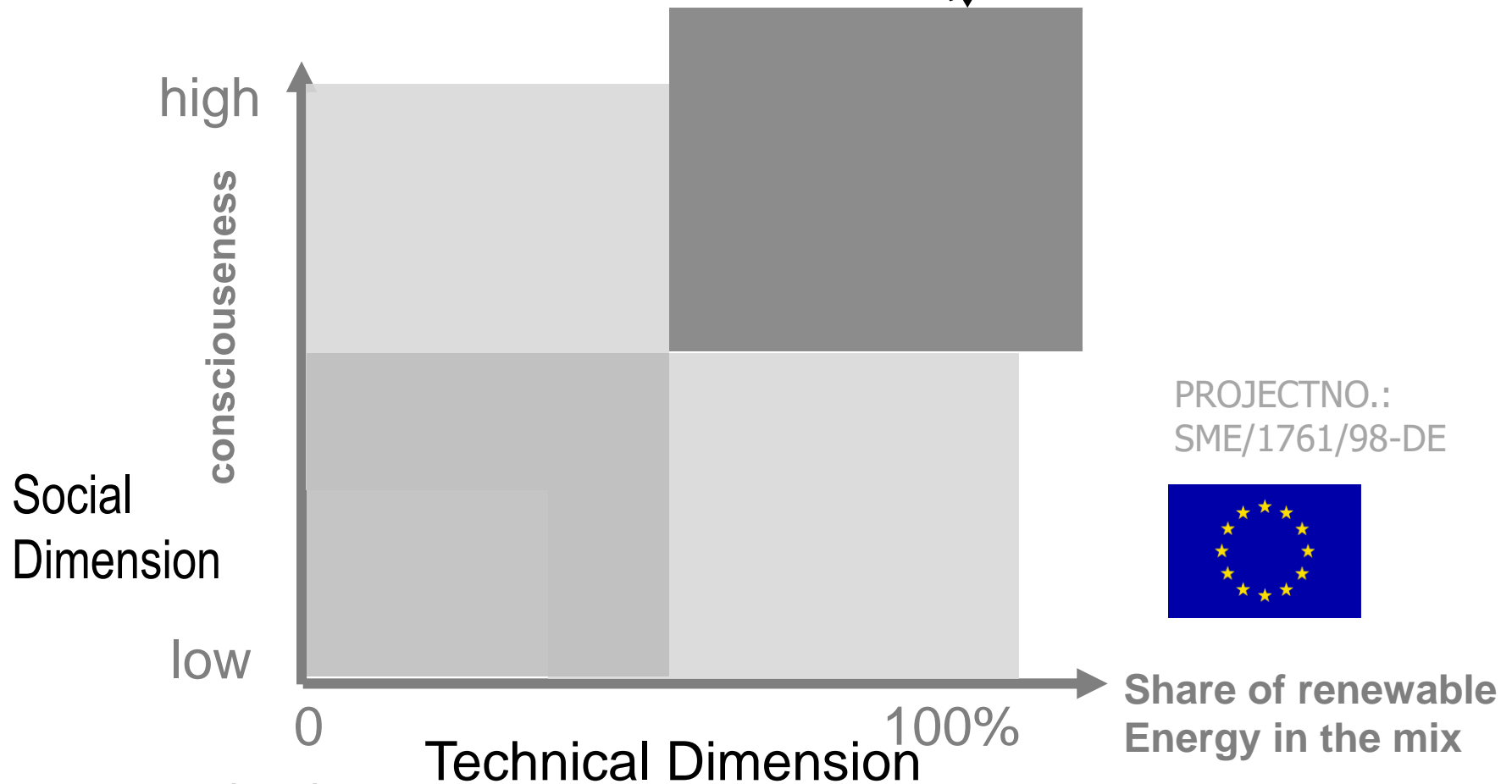
## Was ist Art of Hosting?

Art of Hosting ist die Kunst, gute Gespräche zu ermöglichen und dies als Führungsinstrument einzusetzen. Sie bezieht den einzelnen Menschen





## Energy Sustainable Communities (ESC) 100% Renewable Energy Communities

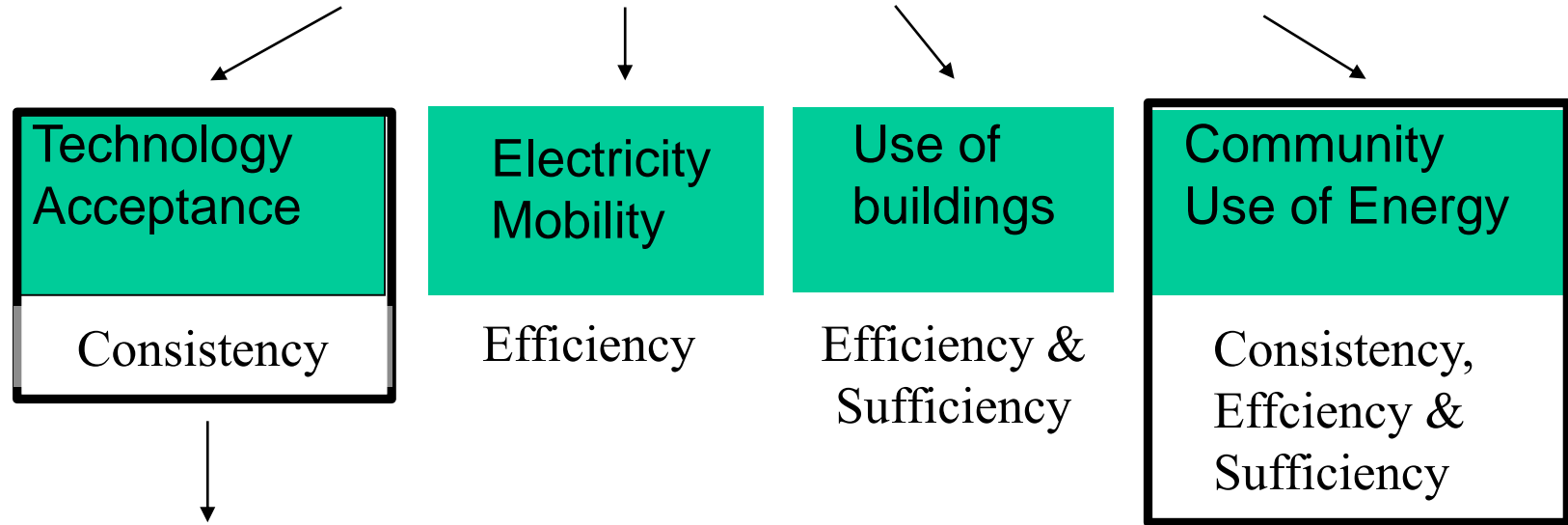


Schweizer-Ries (2008)





# Energy and Environmental Psychology



from experimental science to action research





# Dimensions of acceptance

Appraisal

(active) acceptance

positive

APPROVAL

70,7%\*

SUPPORT/  
COMMITMENT

10,8%\*

passive

active

Action

15,3%\*  
REJECTION

3,2%\*  
RESISTANCE

negative

\* Standardised Measurement of (Non-)Acceptance of RET; N = 991

Schweizer-Ries, Zoellner & Rau (2009)



Standardised Questionnaire, semi-open Interviews,  
Observations, Workshops, Focusgroups, Lab-  
experiments und online-questionnaire

# Investigation Areas in Germany

N der befragten AnwohnerInnen



Acceptance RET

N = 991



Act. Accept. & Particip.

N = 859



BiogasImage

N = 364



EnergyCity Magdeburg

N = 598



Sustainable Energy Communities

N = 145



National Climate Initiative

N = 99



DeepGeothermal

N = 664



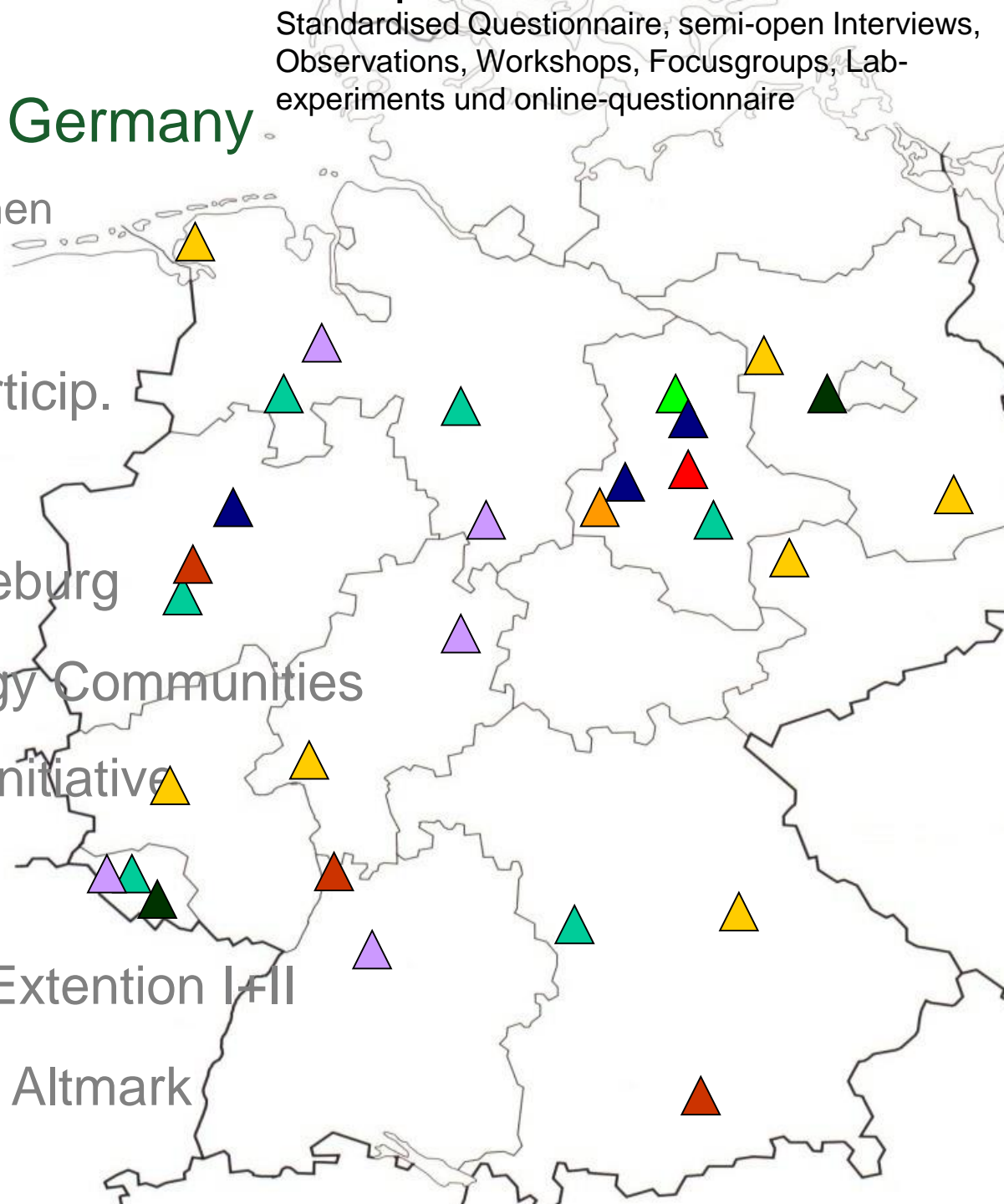
Acceptance Grid Extention I+II

N = ca. 1000



Bioenergy Region Altmark

N = 423





# Means per factor of acceptance of renewable energy separated by energy technology

Factors:  Technolo- gies:	Renew- ables	Self- estimated acceptance	Eco- nomy	Landscape Perception	Emo- tions	risc	justice
Wind	4,4	3,64	2,95	2,32	3,22	3,23	2,59
Solar	4,5	4,24	3,50	2,86	3,87	3,21	3,10
Biomass	4,5	3,98	3,26	2,80	3,29	2,83	2,77

Valuation:

negativ = 1 - 2,5 red

neutral = 2,6 - 3,6 yellow

positiv = 3,7 - 5 green



# Influences on Acceptance of Renewable Energy Technologies

- Local Value Creation
- Location/Landscape-appraisal
- Planing Procedure/Participation







# Acceptance of the German Energy Grid Extension

financed by the BMWI; 2011-2016



Für Landschafts- & Naturschutz; Bewahrung regionaler Charakteristika / Ortsidentität

Gesundheitliche Befürchtungen, z.B. Elektro-Magnetische Felder (EMF)

Angst vor sinkenden Immobilienpreisen, Altersarmut;  
Angst vor abnehmendem Tourismus, Schwächung der regionalen Wirtschaft

Gegen die Energiewende

Gegen zentrale Leitungen,  
Befürwortung dezentrales System

Wahrnehmung: „unfaire“ Verfahren, intransparente Entscheidungen, gefühlte Hilflosigkeit

Befürchtung steigender Energiekosten, z.B. durch Netzentgelte; ungerechte Verteilungen

## Questions:

What are the central factors for acceptance?

What are „real“ influencing factors, what are pretended reasons („masked“ motives?)



# Energy balancing technologies

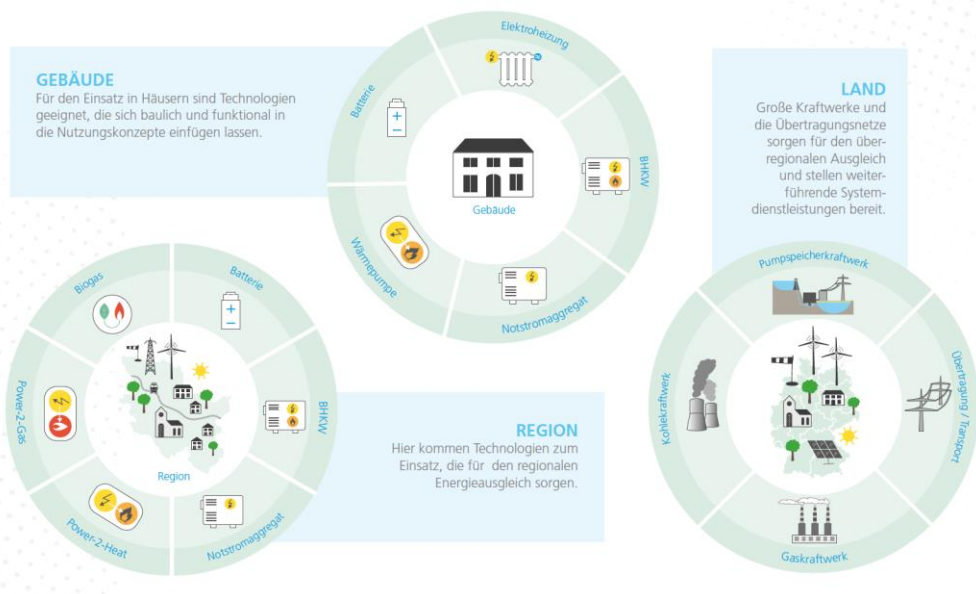
## and their acceptance

**storage technology**  
(e.g. Redox-flow-batteries and others)

**Energy balancing technologies**

**generators**  
(e.g. CHP plants, emergency power supply)

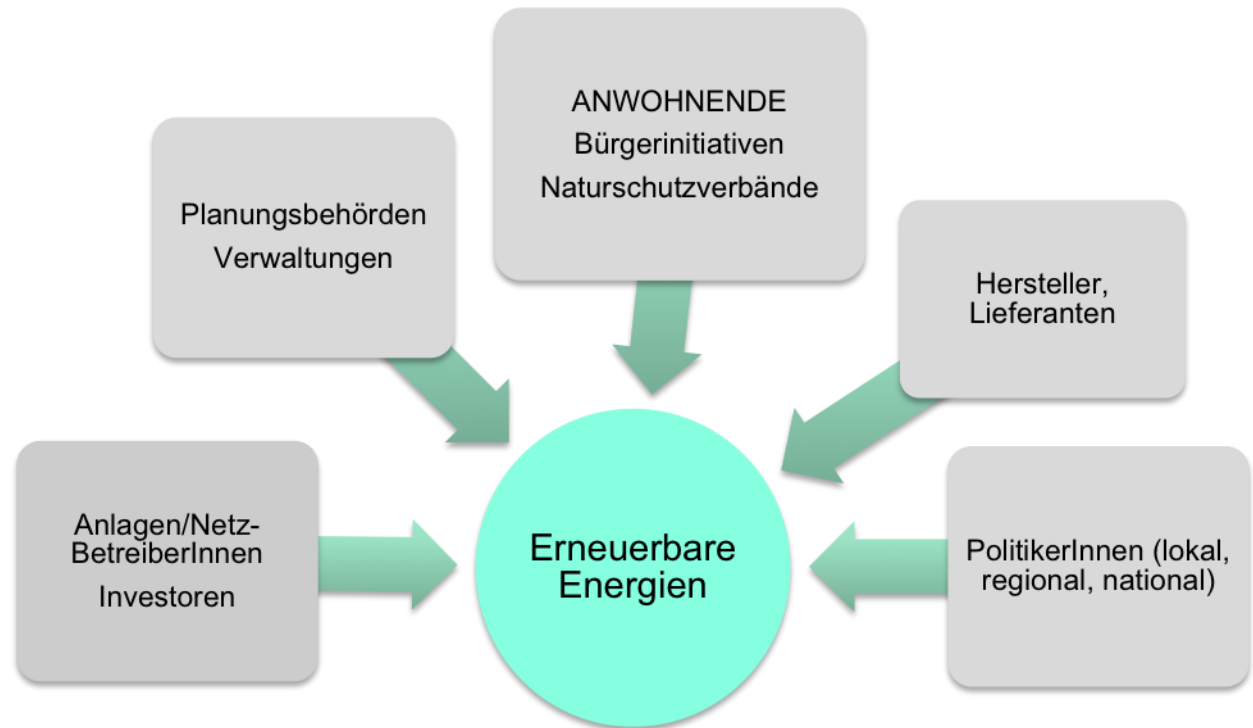
**consumers**  
(e.g. heat pumps, immersion heaters, storage heating, electric boiler)



Petra Schweizer-Ries, „Participative implementation processes of energy balancing concepts in different regions in Germany“, Department of Environmental Psychology, IZES gGmbH, ICEP 2017 - , A Coruña (Spain), 1st September 2017



Levels where people  
are affected, perspectives  
and realities



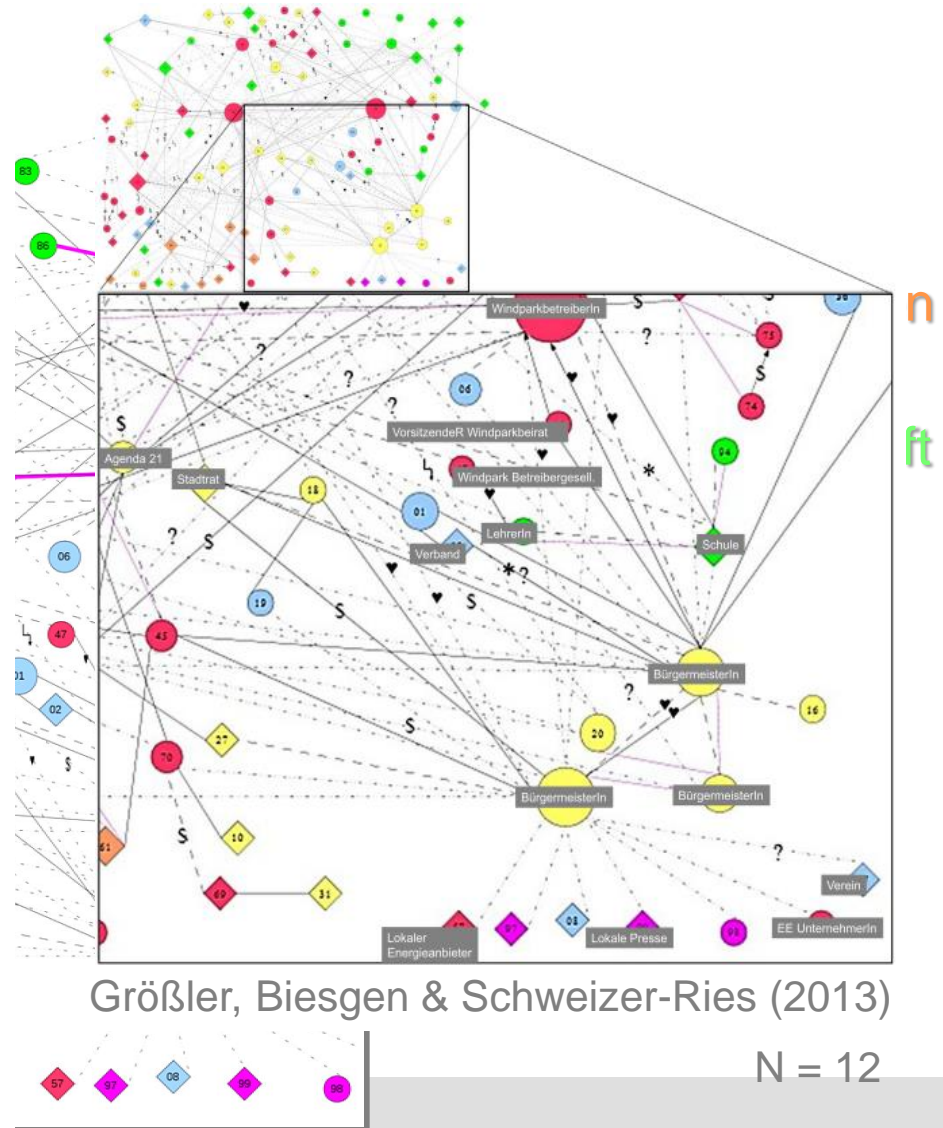
**Conflicts of ...**  
... Interests  
... Use and Distribution  
... Different Societal Levels.



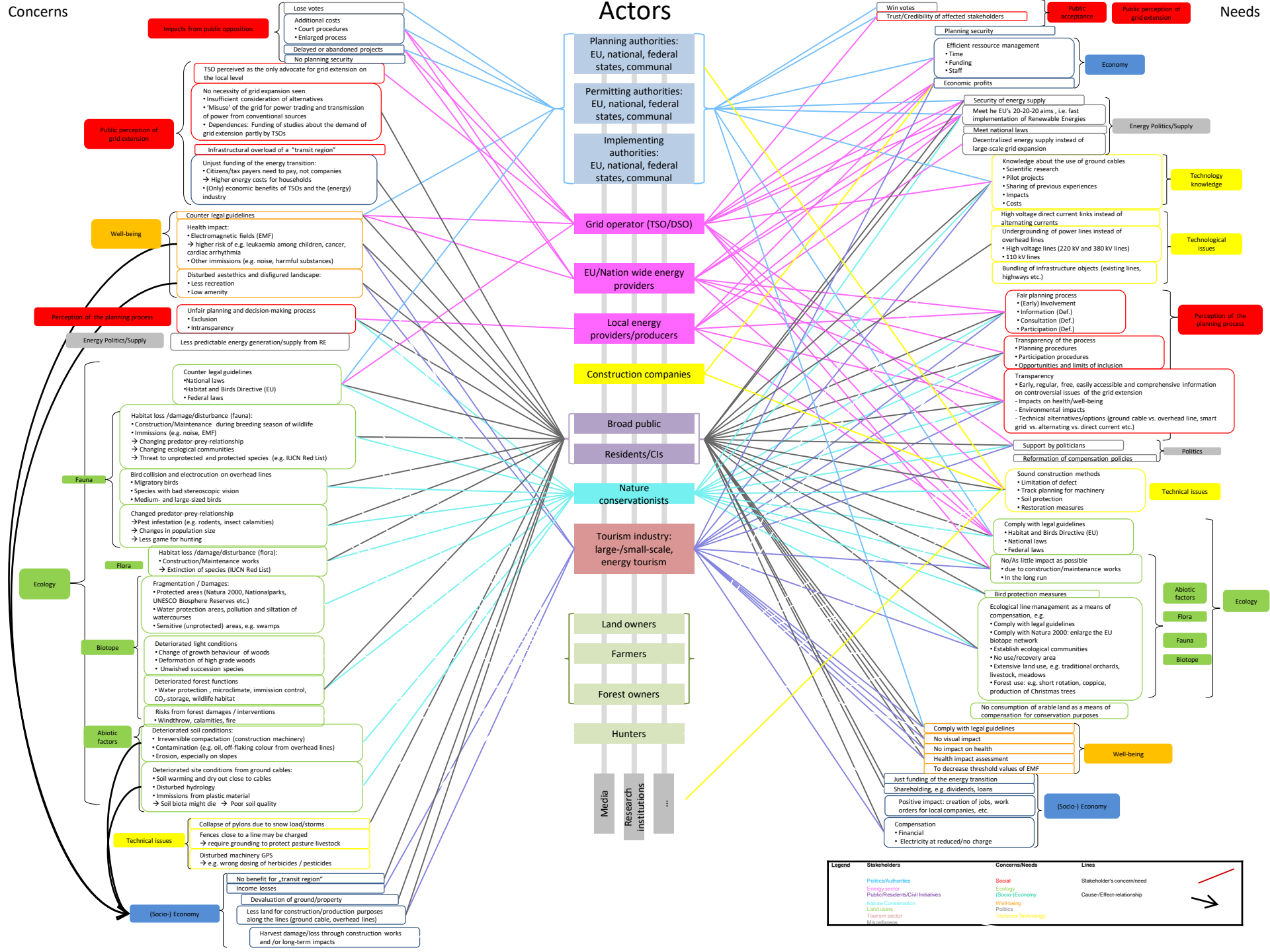
# AkteurInnen-Karte einer deutschen Kommune zur Energienachhaltigkeit

Vielzahl involvierter AkteurInnen  
bei dezentraler Energieversorgung  
mit jeweils eigenen Sichtweisen,  
Perspektiven, Konstruktionen von  
Realitäten

Akteurs-Analyse als  
wissenschaftliche Methode  
(vgl. Hermans & Thissen, 2004;  
Reed et al., 2009)

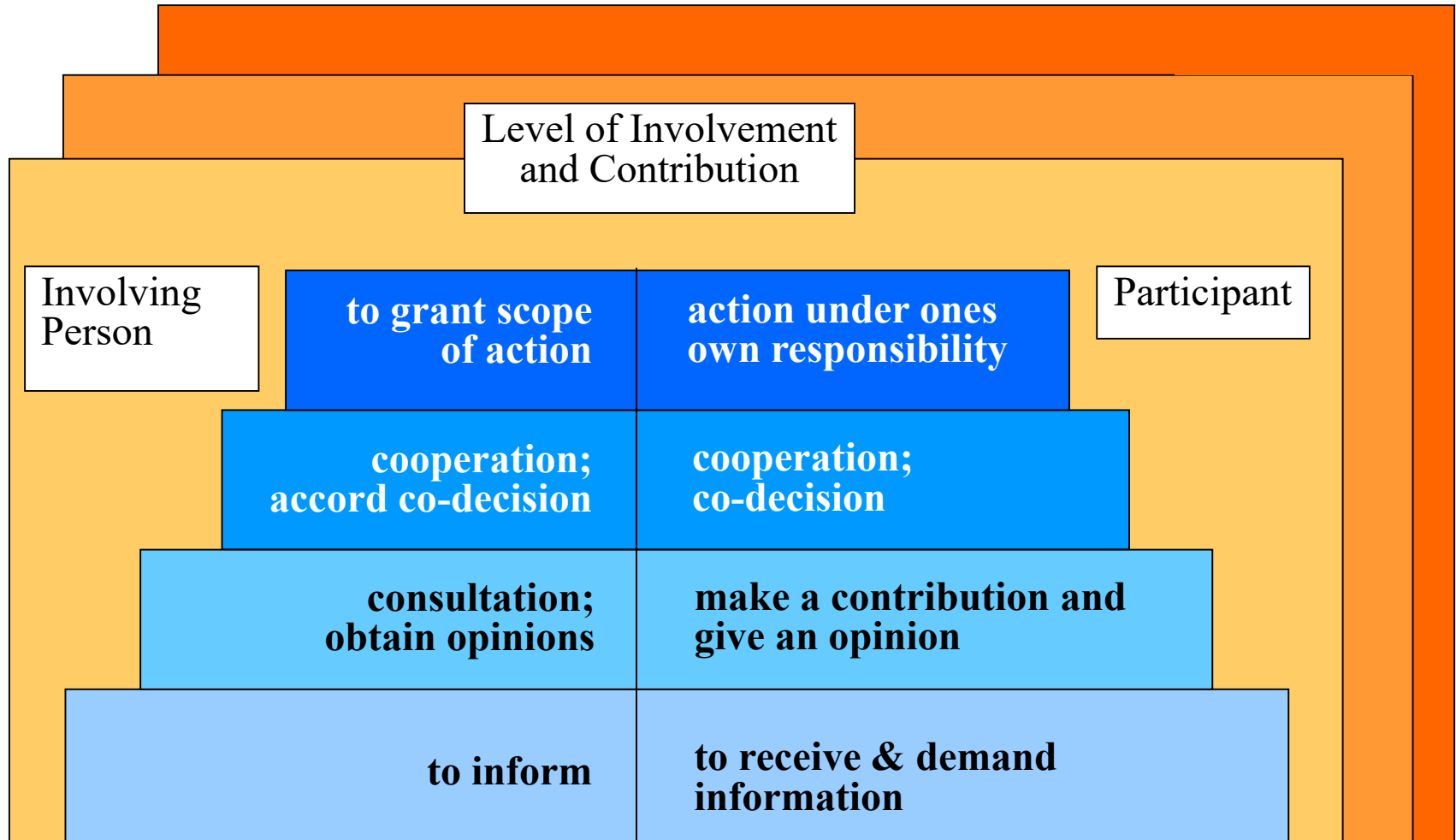








# Participation – Different Stages



Lüttringhaus, 2003; Rau, Schweizer-Ries & Hildebrand, 2012



## Relevante Faktoren für Veränderungen

- Infrastructural **Support & Participation** on all societal levels
- **Good Communication Structures** with Transparency → Understanding/Knowledge about Backgrounds, Emotional Involvement, Embeddedness/Beliefs
- Develop **joint Targets/Visions/Commitments** about Directions for Transitions
- **Diversity** included in the transition
- Positive **Feedbackculture** to be developed



Hochschule Bochum  
Bochum University  
of Applied Sciences



izes GmbH  
Institut für ZukunftsEnergieSysteme



FORSCHUNGSGRUPPE  
UmweltPsychologie

# Actors analysis, concerns and needs

- Analysis on different actors levels
- Analysis of acceptance/conflict relevant factors
- Identifying involved actors groups regarding their visions, interests, motives and needs
- Identifying formal and informal communication structures between the different actors groups in respect to the possibilities of public involvement within planning procedures





# Hypotheses

- There is a narrowed focus on the two groups Transmission System Operators (TSO, Übertragungsnetzbetreiber) & local Civil Initiatives (CI, Bürgerinitiative (BI)) in research and practice
- There is no homogenous public, but several different groups and structures
- Differentiation concerning the involved groups and their respective concerns and needs is mandatory
- Perceived justice on different levels is (one of) the key factor(s) in terms of acceptance and /or conflict solution



## Some quotes to grid extension

- „Doesn't matter, what we say – they ,above' decide anyway“
- „Only a few people profit – citizens are the ,stupid' payers“
- „We have already so much to carry – motorways, railtraces... Why now also the powerlines have to be built here?“
- „The southern people get the power which the northern people want to give away... and we inbetweeners carry all the burden.“

Zoellner & Rau, 2010



# About whose acceptance we're talking?

- Manufacturers
- Operating companies (TSO, DSO = Verteilungsnetzbetreiber (VNB))
- Investors
- Policy makers (federal, regional, local)
- Administrative bodies
- Planning authorities
- Local energy providers
- Nature conservation organizations
- Residents
- Local Initiatives
- Farmers ...

## Concerns

### Social Aspects

Exclusion and intransparency of planning and decision-making process

Untrustworthy TSOs and authorities

Violation of legal guidelines (e.g. Recommendation of the Council 1999/519/EC)

Health impact:

- EMF (e.g. higher risk of leukaemia among children, cancer, cardiac arrhythmia)
- Other immissions (e.g. noise, harmful substances)

Intrusion of landscape:

- Impaired aesthetics (e.g. through bundling of infrastructure)
- Reduced recreation and amenity

### Well-being

### Ecology

Violation of legal guidelines (e.g. Council Directive 92/43/EEC and 2009/147/EC)

Disturbance or loss of habitat:

- Construction and maintenance of HVTLS during breeding season of wildlife
- Impairment through immissions (e.g. noise, EMF)
- Disturbance of predator-prey-relationship (e.g. pest infestation, changes in population size)
- Disturbance of ecological communities
- Threat to unprotected and protected species (e.g. IUCN Red List)

Bird collision with and electrocution on overhead lines (e.g. migratory birds, species with poor stereoscopic vision, medium- and large-sized birds)

#### Fauna

#### Flora

Disturbance or loss of habitat through construction and maintenance work (e.g. extinction of species)

Fragmentation or impairment of:

- Protected areas (e.g. Natura 2000, Nationalparks, UNESCO biosphere reserves)
- Water protection areas
- Watercourses (e.g. through pollution or siltation)
- Sensitive (unprotected) areas (e.g. swamps)

Change of light conditions:

- Change of growth behavior of woods
- Deformation of high grade woods
- Unwished succession species

#### Biotope

Deterioration of forest functions:

- Water protection, microclimate, immission control, CO<sub>2</sub>-storage, wildlife habitat
- Risk of windthrow, calamities, fire

Deterioration of soil conditions:

- Irreversible compaction (e.g. through construction machinery)
- Contamination (e.g. oil, flaking colour from pylons)
- Erosion, especially on slopes

#### Abiotic factors

Deterioration of soil conditions through ground cables:

- Soil warming and dry out
- Disturbed hydrology
- Immissions from plastic material
- Impairment of soil boita and quality

### Technology

Collapse of pylons due to snow load or storms

Disturbed of navigation systems (GPS)  
(e.g. wrong dosing of herbicides or pesticides)

Bundling of infrastructure objects  
(e.g. with existing lines, highways etc.)

### (Socio-) Economy

Requirement of grounding due to electric charging of fences (in order to protect livestock)

No benefits for „transit regions“

Devaluation of property

Restricted land use for construction or production purposes along the lines

## Needs

Fair planning process

- (Early) Involvement
- Information
- Consultation
- Cooperation

Transparency of planning process

- Planning procedures
- Participation procedures
- Opportunities and limits of participation

Transparency of information

- Early, regular, free, easily accessible and comprehensive information on controversial issues of the grid extension
- Impacts on health and well-being
- Environmental impacts
- Technical alternatives
  - ground cable, overhead line, smart grid, AC/DC.)
  - costs
  - pilot projects
  - scientific research

### Social Aspects

No health impact

Health impact assessment

No visual intrusion

### Well-being

Compliance with legal guidelines  
(e.g. Council Directive 2009/147/EC, Natura 2000)

As little impact as possible through construction and maintenance work of HVTLS regarding fauna, flora, biotope and abiotic factors

Ecological line management as means of compensation (e.g. enlarge the EU biotope network, establish ecological communities)

No consumption of arable land as means of compensation for conservation purposes

Soil protection and restoration measures

### Ecology

Limitation of error-proneness (e.g. underground cables)

Entrance and track planning for machinery

Bundling of infrastructure objects  
(e.g. with existing lines, highways etc.)

### Technology

Land use under HVTLS (e.g. traditional orchards, livestock, meadows)

Forest use under HVTLS (e.g. short rotation, coppice, production of Christmas trees)

Financial compensation:

- Shareholding (e.g. dividends, loans)
- Electricity at reduced or no charge

### (Socio-) Economy

Transition of energy systems (use of renewable energies)

Support by politicians within planning process and regarding compensation

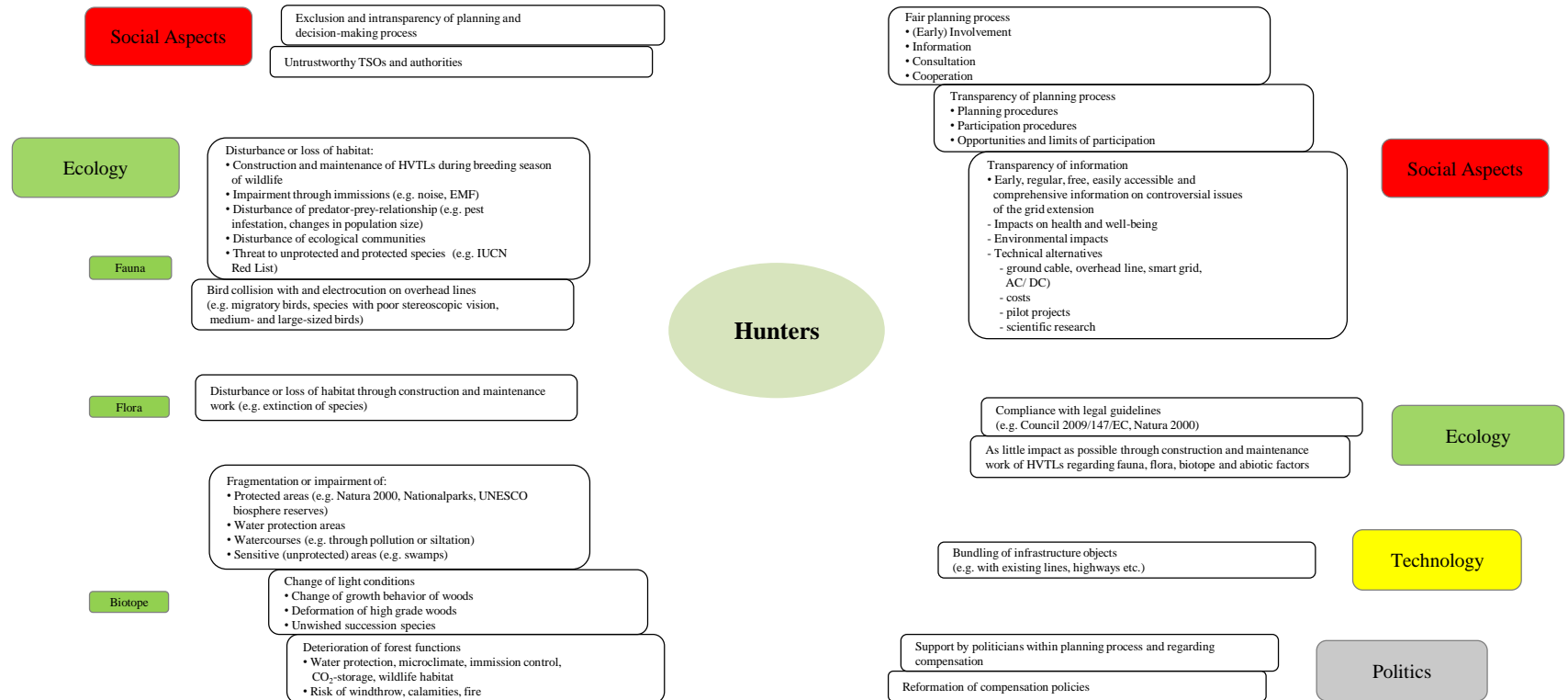
Reformation of compensation policies (e.g. regular loan)

## Land owners Forest owners Farmers



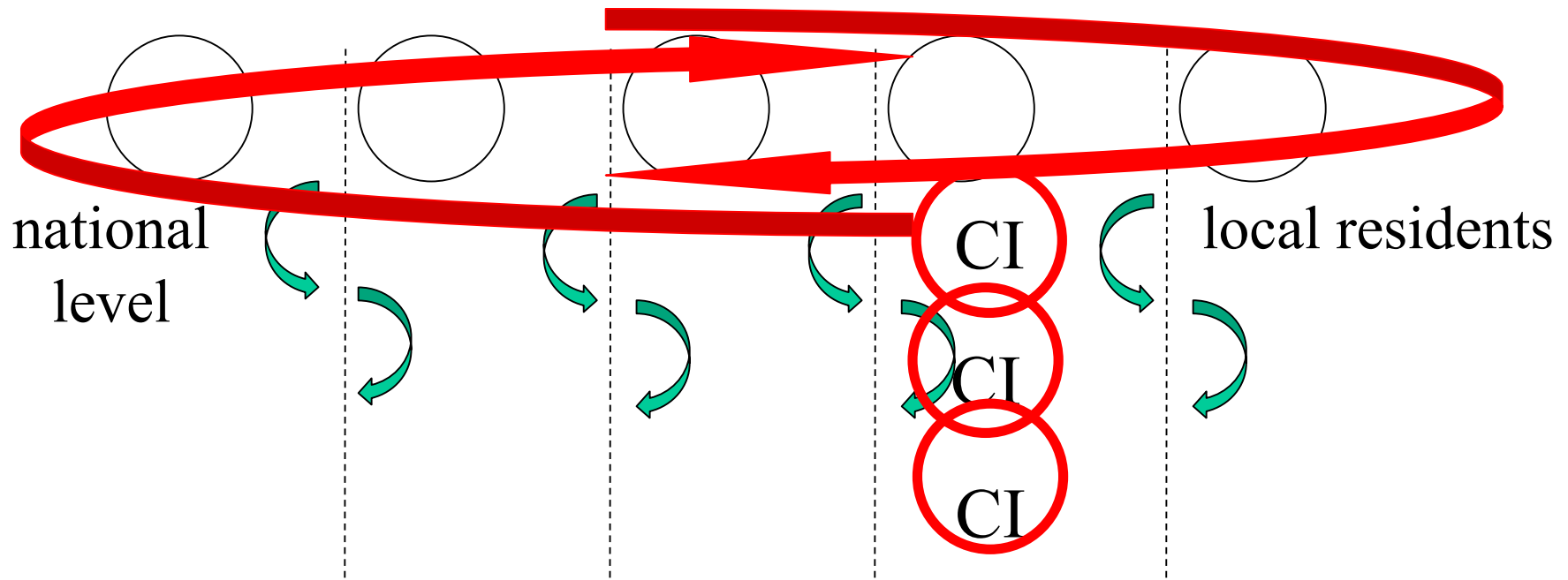
## Concerns

## Needs





# Lines of communication: changes in the actors perception and valuation



media coverage (local regional and national) Zoellner & Rau, 2010

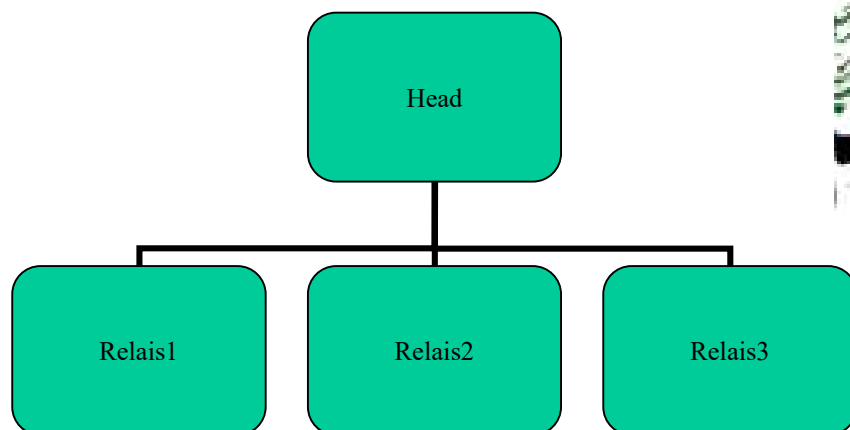


**STROMTRASSE**  
**ZERSTÖRT BRUTAL**  
 Protestkunst

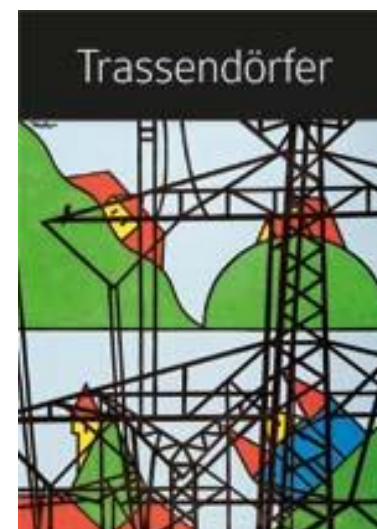
„destroys brutally“-protest art



Communication structure, press offices



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Sources: [www.stromautobahn.de](http://www.stromautobahn.de)

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<http://stromtrasse-zerstoert-brutal.de/>



# Grid Impressions

Stop the 380-kV power line!

Save the green heart of Germany!

The Thüringer Wald (Thuringia Forest) shall live and so our children!

“Classical” Attributes:

- Oversized
- Insanity
- Monsterlines / traces
- Unsystematic, methodless





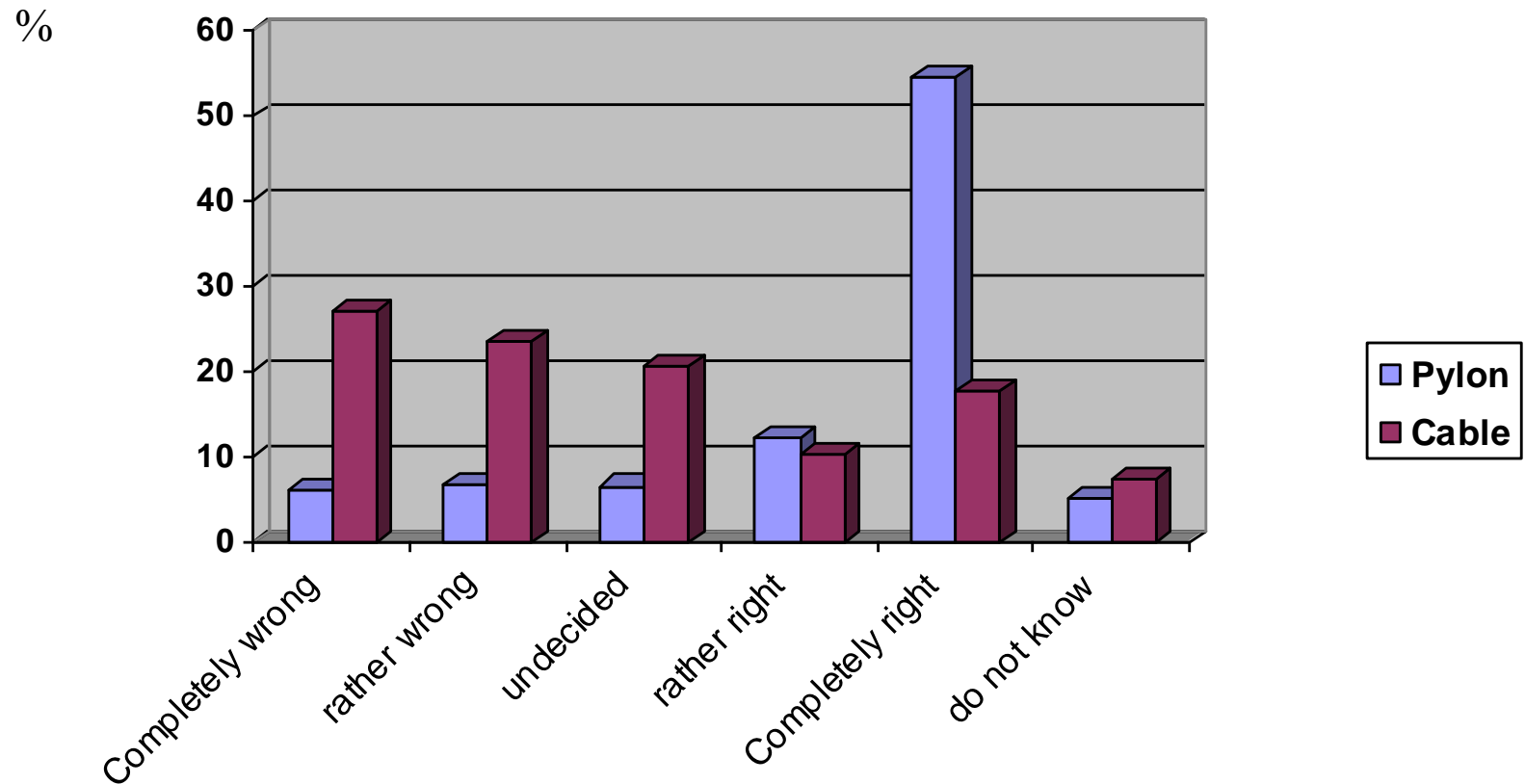
# Levels of acceptance

- System level: perception / acceptance that there is a need for grid extension (‘if-question’): Need for new lines has to be proven
  - Example Germany: new goals for offshore wind (from 10 GWh to 6,5 GWh – a main argument broke away)
  - Alternative: Decentralised energy-production
- Local ‘trace’ level: perception / acceptance of the planning outcome (‘how-question’)
  - Perception of (mainly) negative impacts on
    - landscape (place identity, place attachment)
    - real estate, tourism, energy costs
    - nature / environment
    - health (EMF), well-being
  - Planning procedures: Information about planning process and technological aspects, fairness and transparency
  - Trust in other stakeholders, communication patterns



# Property values

I fear a decrease of property values due to the construction of pylons/ cables.

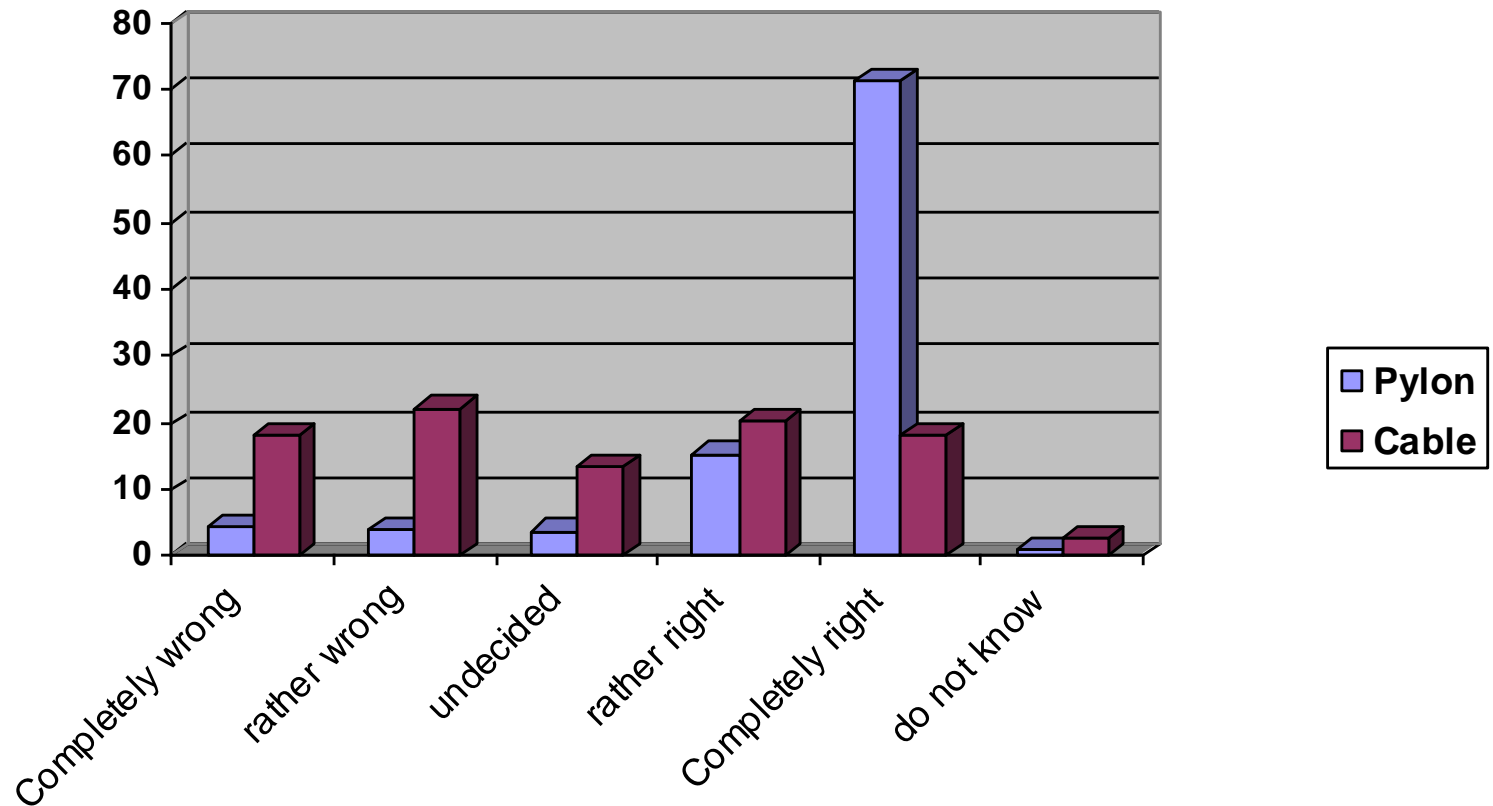




# Threat

I feel threatend by pylons/cables near my house.

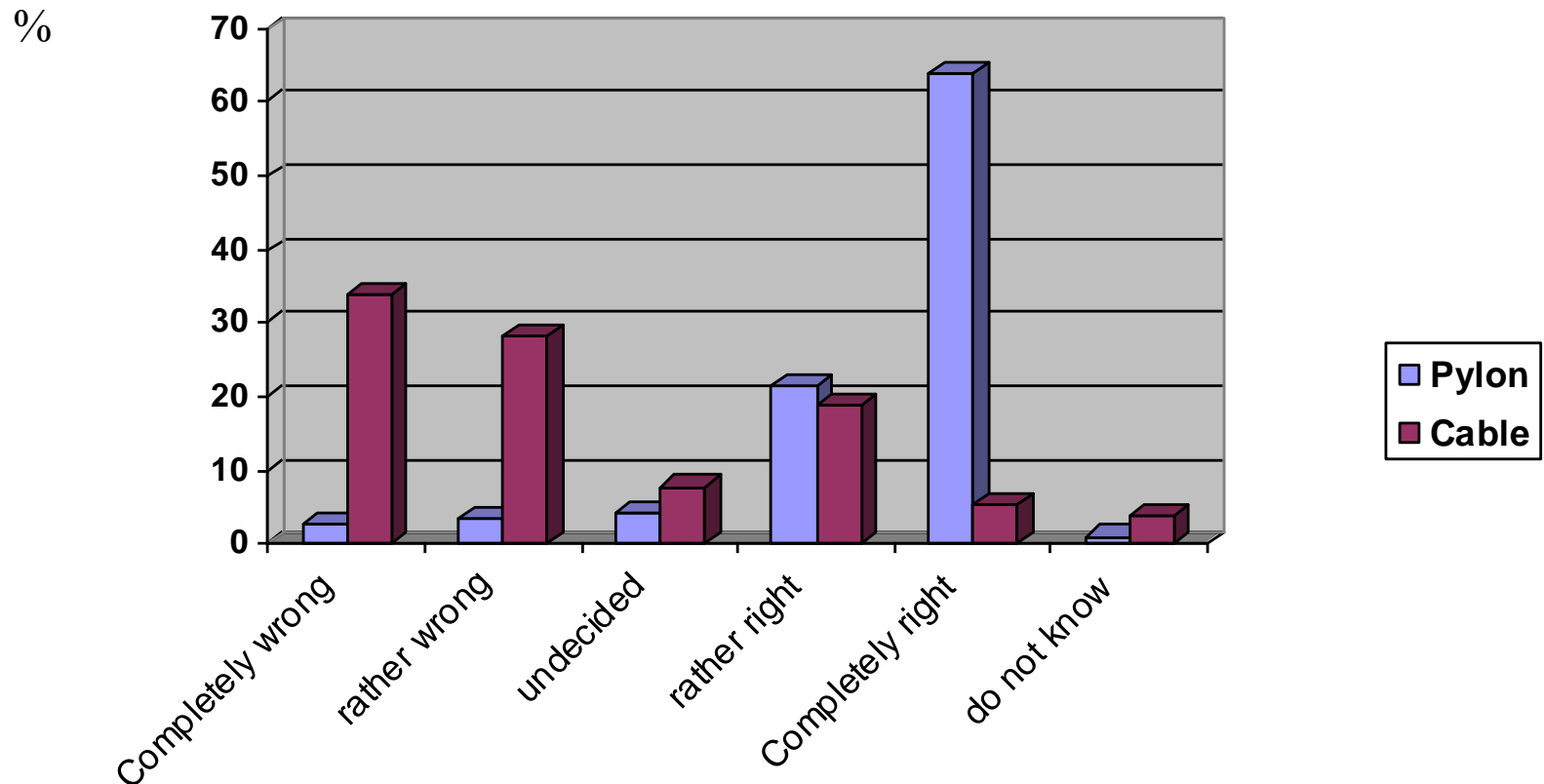
%





# Landscape changes

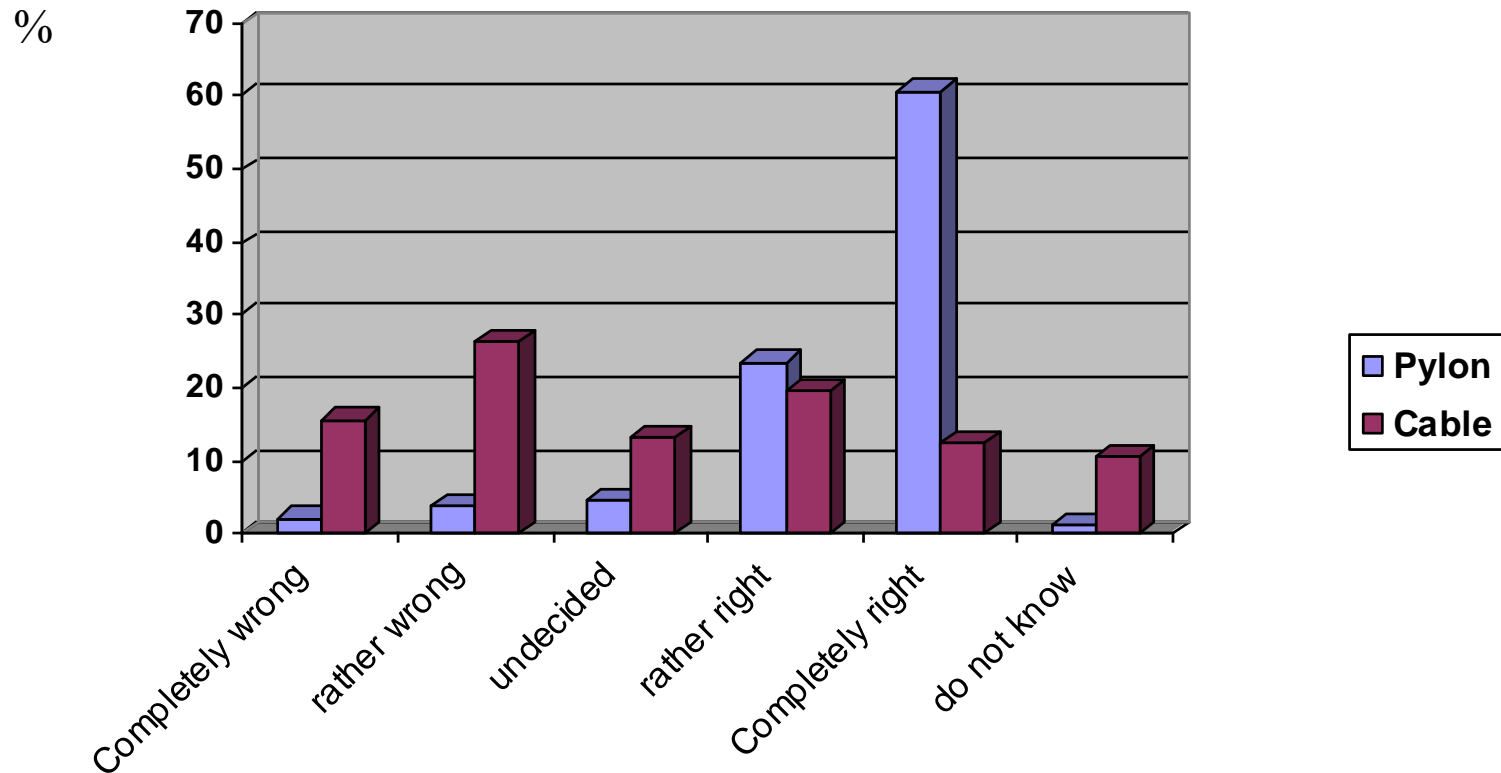
Pylons / cable change the character of the region significantly.





# Ecological impacts

Pylons / cables have a negative impact on the region's nature

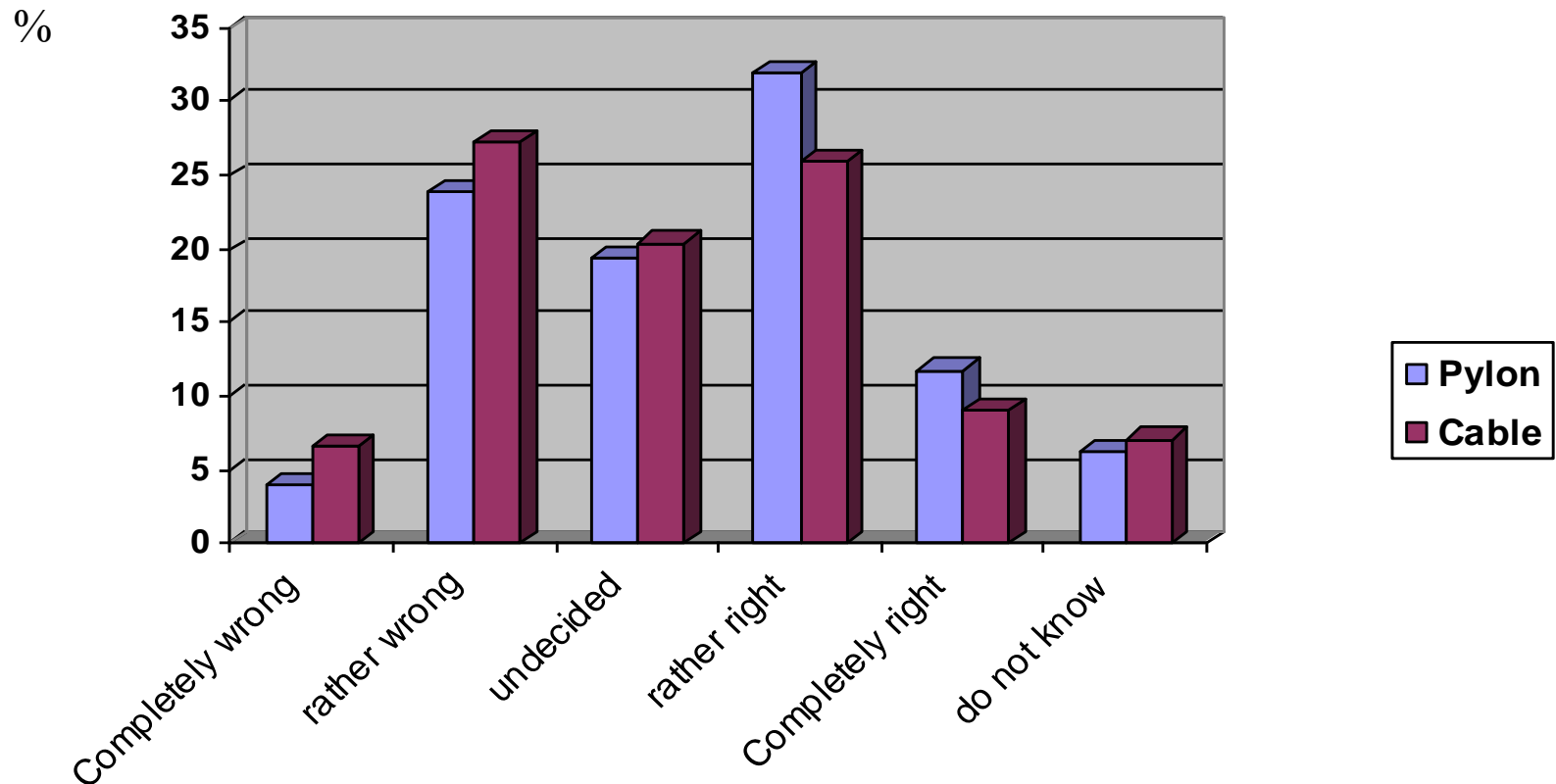






# Knowledge

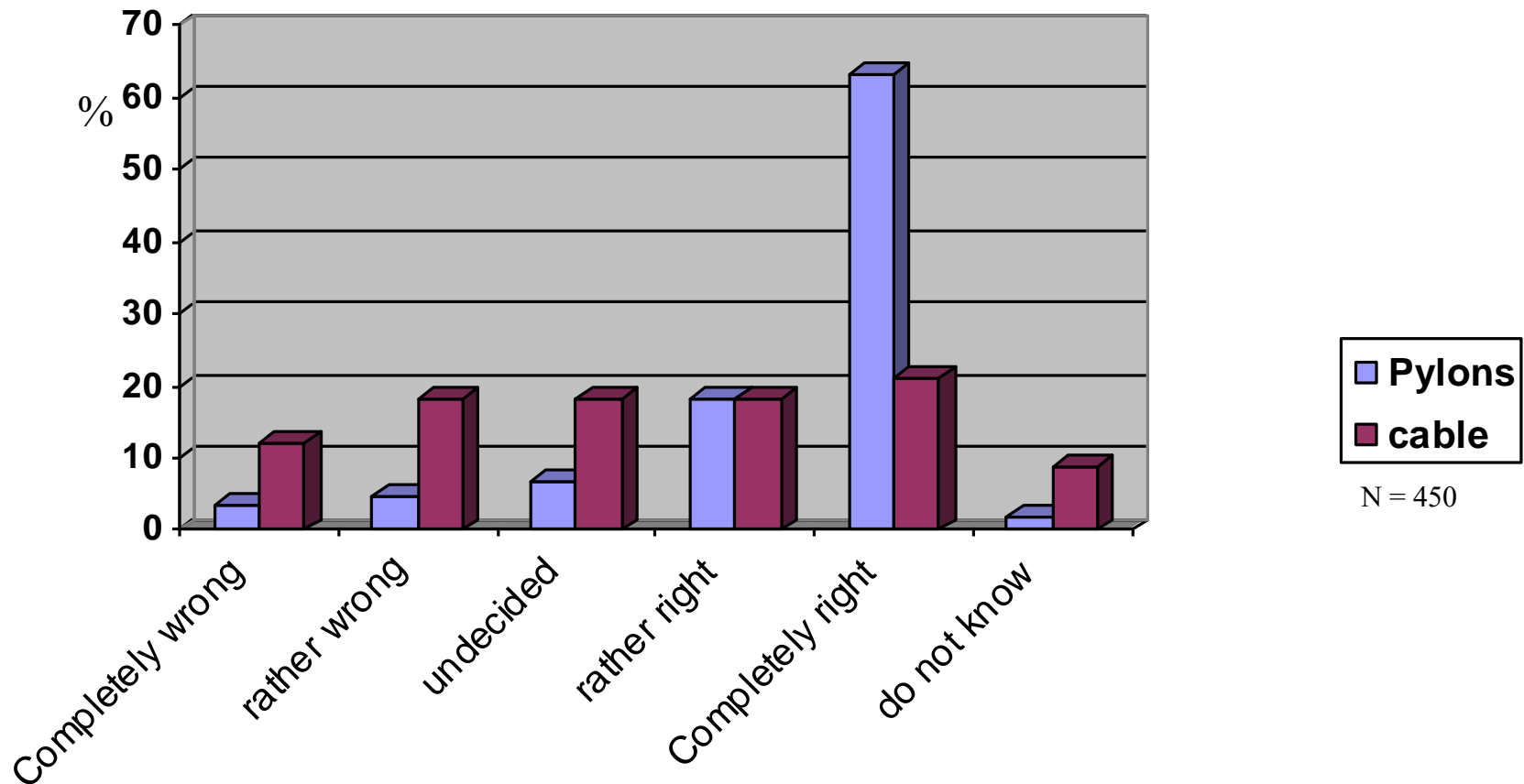
My knowledge about pylons/ cables is rather high.





# Health issues

I am afraid of negative impacts on my health if new transmission lines (pylons / cables) are built.

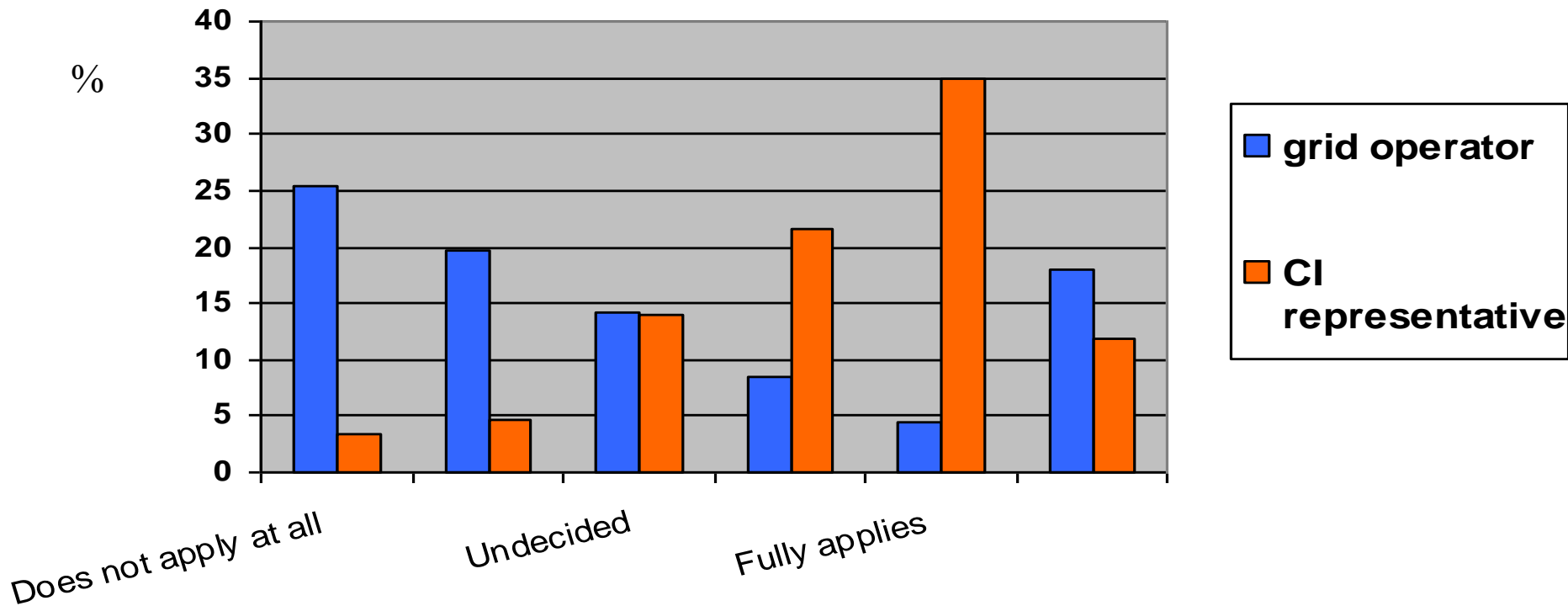


Zoellner & Rau, 2010



# Sincerity

The following persons are honest with me ....

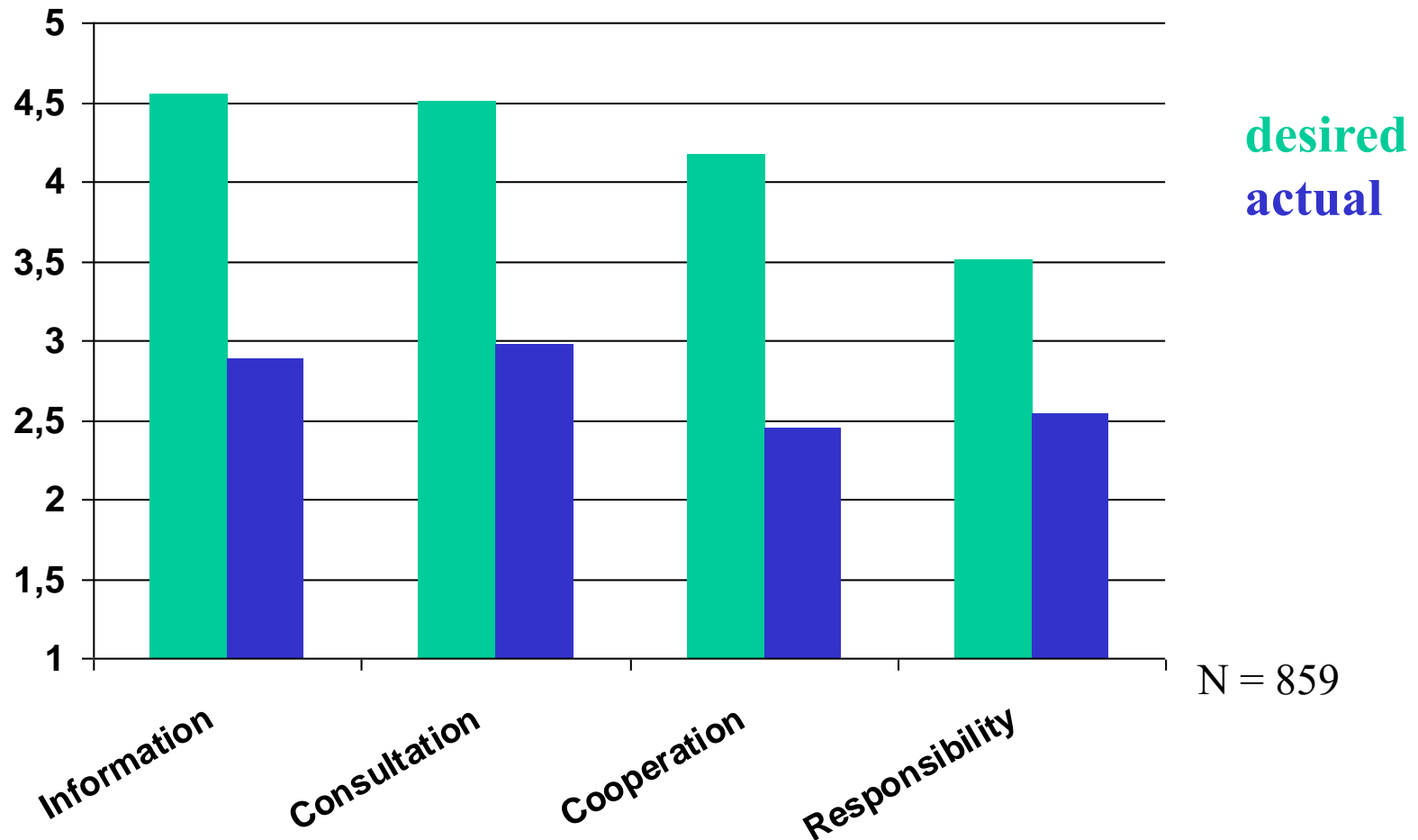


N = 450

Zoellner & Rau, 2010



# Participation needs: Desired vs. Actual Condition



Rau, Schweizer-Ries & Hildebrand, 2012



# Target of psychological research on acceptance

- NOT to **make acceptance** e.g. through persuasive communication etc.
- IT IS a method to **develop acceptable solutions** for all involved groups of actors
- 100%-acceptance is not a realistic target
- Conflict avoidance as well is not an (realistic) target, BUT **constructive conflict resolution**; conflicts offer possibilities to make planning better and support well-being
- **Target:** make psychological theories and methods of use for the development of acceptable solutions





# Citizens' participation in Planning and Approval Procedures



- Procedural and distributive justice (design and use)
- Activate „sleeping dogs“ vs. Open local potentials and resources for conflict resolution and better realisations
- Security in law with the integration of formal and informal processes for a better understanding and development

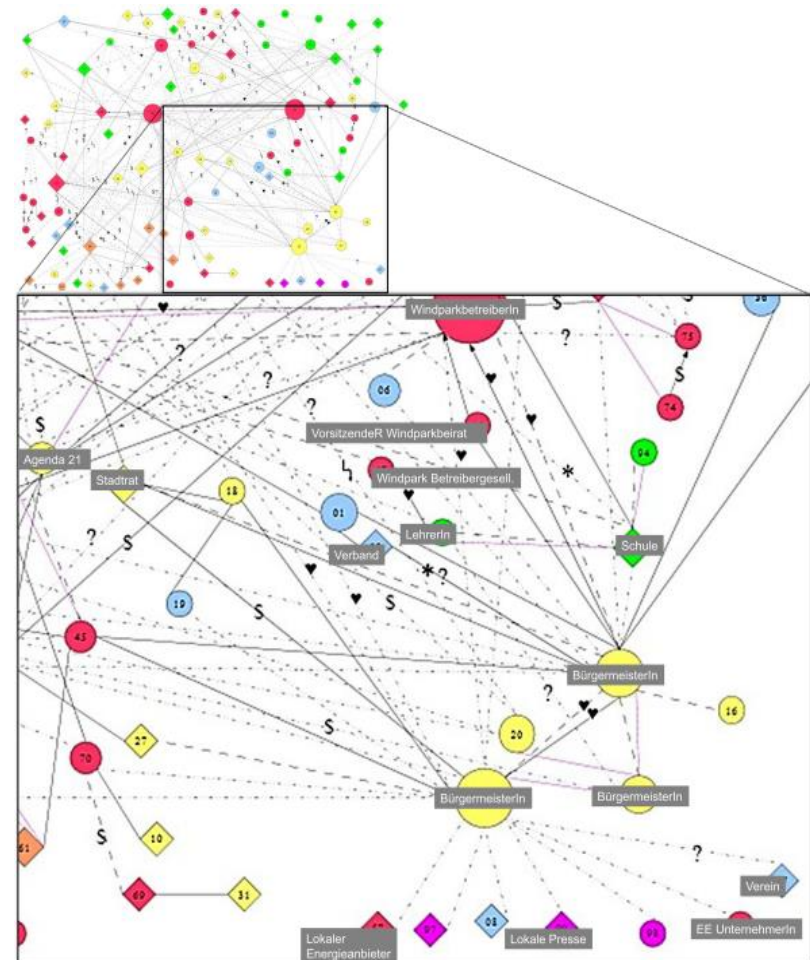


# Social Contexts

All of the topics we investigate are embedded in a social context - a system of many diverse actors

- implementation of a wind park
- energy saving behaviour in organisations
- installation of a community power plant
- ...

Important to take all the relevant actors into account





# Social Contexts

Important to take all the relevant actors into account



Image by Ontario Wind Resistance, 2014; source: <http://ontario-wind-resistance.org/2014/06/26/first-nation-returns-to-court-seeking-injunction-against-wind-farm/>

→ Actor Analysis



# Actors

- Several definitions for „actor“ / „stakeholder“

- „any group or individual who can affect or is affected by“ the decision/ intervention/ change/ process /action of interest  
(Freeman, 1984, p. 25)

## „Stakeholder“

- origin in business & management literature
- might set priorities to the ones affecting

-

## „Actor“

- embraces both directions:  
The ones affecting AND the ones being affected should be implied in the analysis and in the subsequent steps





## Participation Process in the „pumped storage power station“ Altdorf of the Schluchseewerk AG

**Actions:** individual talks,  
project presentations, working-  
groups, media work, presen-  
tations, discussion rounds,  
round tables, statements

**Positive effects of  
participation:** optimizing of  
projects, putting discussions  
back to facts, growing accep-  
tance, growing of competences,  
positive feedback



The main critical groups

- Residents
- CI (nature-/environmental-protection)





# Task, context and actor appropriate communication I

- transparency
- trust (source, expert/layperson)
  - in competence
  - in sincerity
- integration of as many affected actors as possible
  - joint realisation of the procedural design
  - joint decision making





# Task, context and actor appropriate communication II

- relationships between actors, mutual recognition and motive attribution
- conflict behaviour
- respect and appreciation
- cognitive und emotional level





# Disadvantageous communication between “experts” and laypersons (TSO and critical citizens)

- missing **trust**
- no interchange „on eye level“ (**asymmetric relationship**)
- existing „**deficit model**“ related to lay-knowledge
- deprivation of the arguments of sceptics, **disregard** (presumably) pure emotional valuations of citizens (=„lay persons“)
- Disadvantageous attribution patterns & social constructions between actor groups (see Walker et al, 2010)

\* Im Rahmen des Projektes der IZES gGmbH „Optimierte energetisch-stoffliche Nutzung biogener Abfälle in Deutschland – Potenzial, Technik und Wirtschaftlichkeit der Erzeugung und Einspeisung von Biogas aus der Vergärung von Bioabfällen. Hemmnisanalyse und Entwicklung einer akzeptanzfördernden Kommunikationsstrategie“, Laufzeit: 01.10.2012 – 30.09.2014 ; FKZ: 03KB070C

Gefördert durch:



Bundesministerium  
für Wirtschaft  
und Energie

aufgrund eines Beschlusses  
des Deutschen Bundestages



## Conclusion I

- Understanding of complexity of groups and interests, concerns and needs
- Heterogeneity of the stakeholder groups
- Regional differences and timeline influences
- Specific role of academia (need definition / impacts research)



## Conclusion II

- Some impacts (concerns and needs) have a general meaning, but the exact meaning (and connected solution) differs from case to case or from region to region
- Interdependencies of impacts: e.g. property values as a consequence of landscape issues
- Stakeholder groups can not only be described by their affectedness or local role, but also individual dispositions; socio-demographic parameters





# Thank you, for your attention!

I thank my research team, doing the work with me!  
Forschungsgruppe Umweltpsychologie



[www.fg-umwelt.de](http://www.fg-umwelt.de)



Thank you for your attention!





# Literature

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