

Smart Grid as Black Box

The Role of Consumer Trust in the Governance of Future Energy Systems

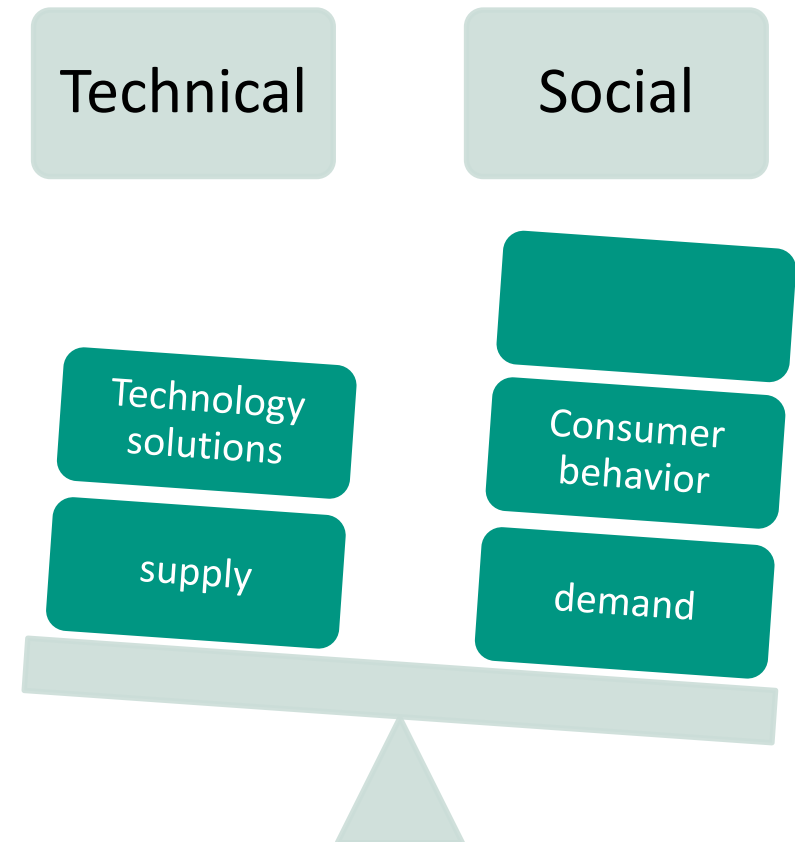
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Research Object | Complex Energy Systems

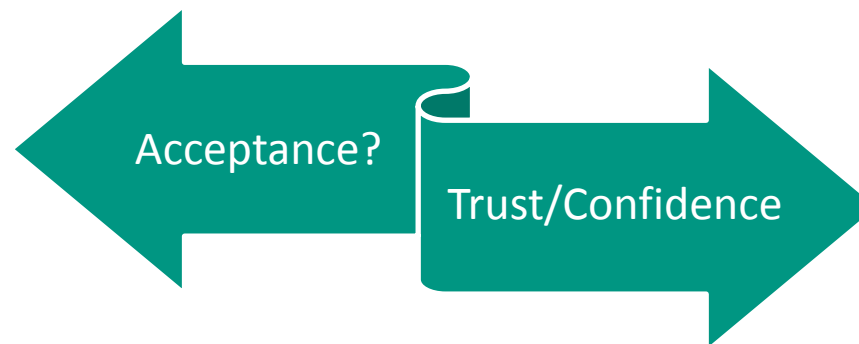
- **Interplay of social systems**
(organizations, households)
& **technical systems** (IT, electronics)
main challenge: compensation of
natural conditions (weather impact
with RES)
- **Frictions:** technical vs. social
innovations; twofold volatility,
equilibria & rationality requirements;
common social problem: *acceptance*



Transformation | Vision of the “Smart Grid”

- Demand-Side Management (esp. smart metering)
- Emergence of active Energy Prosumers (consumers active in electricity trade)
- Basically achieved by installation of novel, intelligent **ICT infrastructures**
- **Technology as Black Box:** automation vs. autonomy

Requirement: *Trust* in devices, markets, organizations; *confidence* in systems



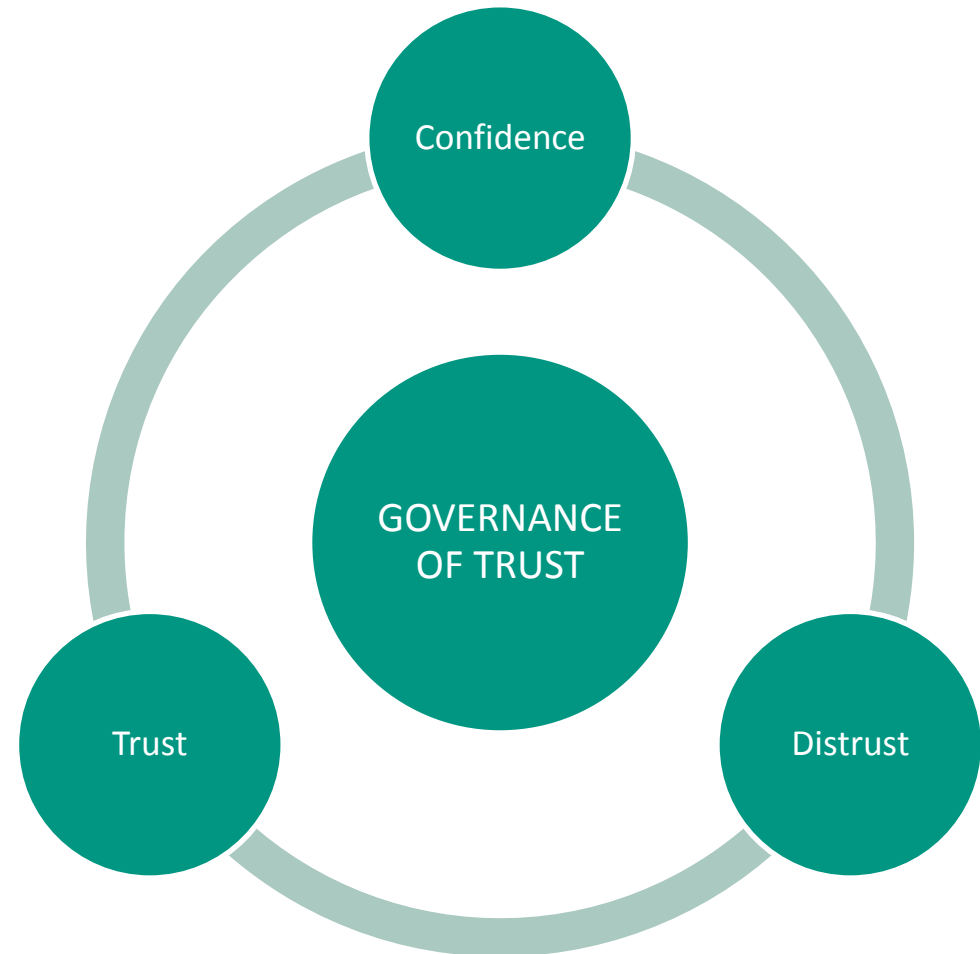
Research Problem | Acceptance, Trust, Confidence

- **Acceptance** as agreement - acceptance as toleration
 - **Trust** allows action under future uncertainty
- **Preliminary Conclusion:** The requirement of acceptance should be supplemented by requirements of trust and confidence as action enhancing mechanisms

Social mechanism / combined effect	Trust / Confidence	Distrust
Acceptance	Expected action probable	Expected action inhibited/re-directed
Refusal	Expected action potentially possible	Expected action improbable/re-directed

Energy Governance as Governance of Trust?

- **Governance of Trust** might, supplementing the promotion of acceptance, emerge as the greatest social challenge in energy transition processes; it should be systematically targeted → social innovation
- **Hypothesis:** work on symbols, e.g. triggering of trustworthy consumer perceptions by political and economic public relations on different levels, is likely to gain relevance



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THANK YOU VERY MUCH FOR YOUR ATTENTION!

