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Symposium of Task 28 in the German Federal Ministry for Economy and Energy (BMWi)

Local Involvement in the Energy Transition

Options for Financial Participation of Stakeholders

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Workgroup for Infrastructure Policy (WIP)**

This presentation is based on joint research activities with Prof. Dr. Thorsten Beckers, Daniel Weber, Johannes Heurich and Nils Bieschke (all WIP) as well as legal researchers Simon Schäfer-Stradowsky and Benjamin Boldt (both IKEM).

The presented (intermediary) results derive from the project “DZ-ES” funded by the BMBF.

Agenda

1) Introduction

1.1) Current Situation and Research Questions

1.2) Methodological Approach and System of Objectives

2) Technical System and Institutional Setting in Germany

3) Options for Financial Participation

3.1) Motives for Financial Participation and General Overview of Options

3.2) Overview of Options for Financial Participation

3.3) Analysis of Financial Participation via Contribution of Capital

4) National and International Examples

5) Conclusion and Outlook

Title and Content

- Dezentrale Beteiligung an der Planung und Finanzierung der Transformation des Energiesystems (DZ-ES)
Local involvement in the energy transition in the context of planning and financing
- Main Topics:
 1. Financing of distribution grids (regulation and takeovers)
 2. Financing and participation in RES-projects (in the context of acceptance, distributional effects and efficiency)

Additionally: empiric analysis on social preferences in terms of governance structures in the energy system and their effects on acceptance
- Interdisciplinary approach: legal, engineering, economic and social scientists

Research Partners

- TU Berlin, Workgroup for Infrastructure Policy (WIP)
Prof. Dr. Thorsten Beckers, Nils Bieschke, Johannes Heurich, Ralf Ott ...
- University of Greifswald, Professorship for Public Law, Finance and Tax
Prof. Dr. Michael Rodi, Benjamin Boldt ...
Sub contractors: Prof. Dr. Jürgen Kühling (Univ. Regensburg), law firm BBH
- German Research Institute for Public Administration Speyer (FÖV)
Prof. Dr. Oscar W. Gabriel, Dr. Silke Keil
- Becker Büttner Held Consulting AG
Peter Bergmann, Philipp Jahnke
- More than 15 industry partners
Financing institutes, municipalities, municipal utilities, associations...

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Current situation and research questions regarding RES-projects (PV and especially onshore wind)

Current situation and associated problems

- Germany has very ambitious RES-targets and plans to deploy especially onshore wind farms and photovoltaic (PV) power plants
- Local opposition against new RES-projects (mainly wind) due to negative external effects may lead to an increase of costs as well as the coordination between property owners and investors
- Questionable distribution of rents between locally affected people (residents), investors and property owners as well as consumers

Research questions

- Is a higher degree of public participation in RES-projects preferable and if so, which model(s)? How to implement them?
- How to reduce coordination costs and how to distribute project rents?

Classification of instruments for participation

	Planning	Financial
Mandatory		Focus of today
Voluntary		

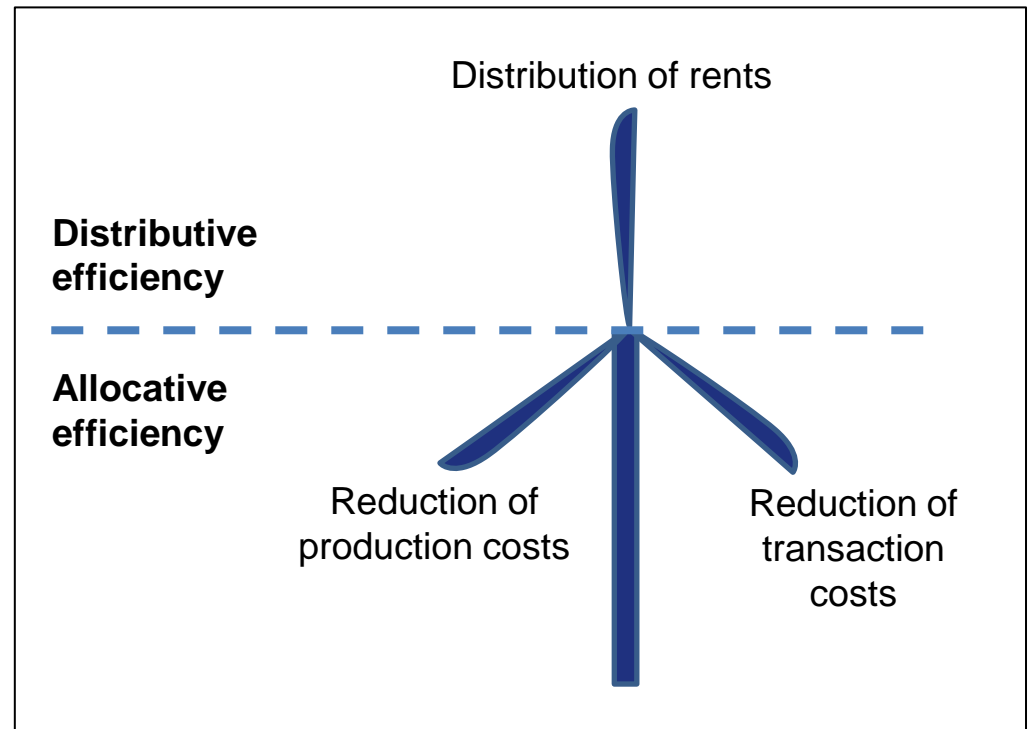
Methodological approach and system of objectives

Methodological approach

- New Institutional Economics (including the findings of legal, engineering and political sciences)
- (Welfare Economics, Industrial Organization)

System of objectives

- Effectivity (achievement of RES targets)
 - Cost efficiency
 - Consumer perspective
 - Welfare perspective
- Distributive and allocative dimensions



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Relevant Characteristics of Markets, Transactions and Actors for the Analysis and Classification of Participation Models

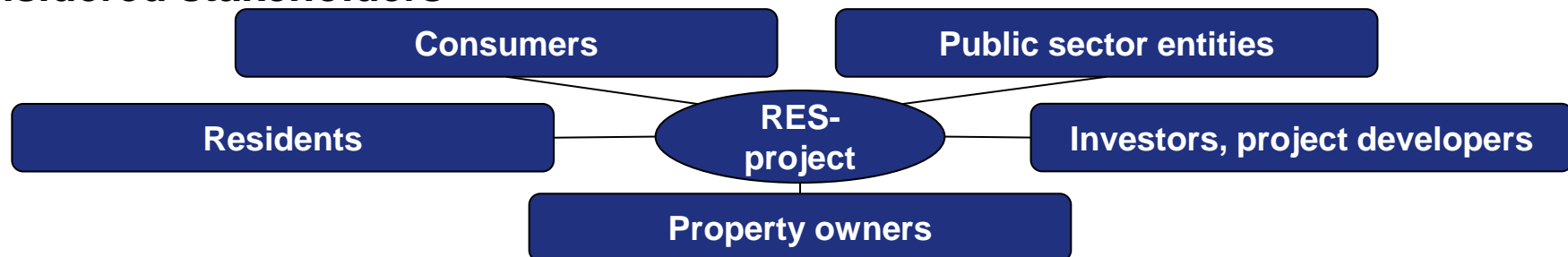
Technical system (onshore wind and PV)

- Intermittent RES, mostly smaller project structure with relatively high specific investments
- (Ground-mounted) PV installations: relatively low risk technology, marginal negative externalities
- Onshore wind energy projects: higher uncertainty due to project development issues and technology, relatively high negative externalities, many property owners and public entities involved

Institutional setting in Germany

- Capacity mechanism for refinancing RES-projects
 - Modified FIT (sliding market premium) ensuring predictable revenues - with possible excess return
 - Auction system for ground-mounted PV installations in place, implementation for wind being discussed
- Spatial planning system for suitable sites for RES-projects
 - Spatial planning by governmental bodies on different levels in order to identify and designate suitable sites
 - No mandatory coordination mechanisms between property owners and investors in place

Considered stakeholders



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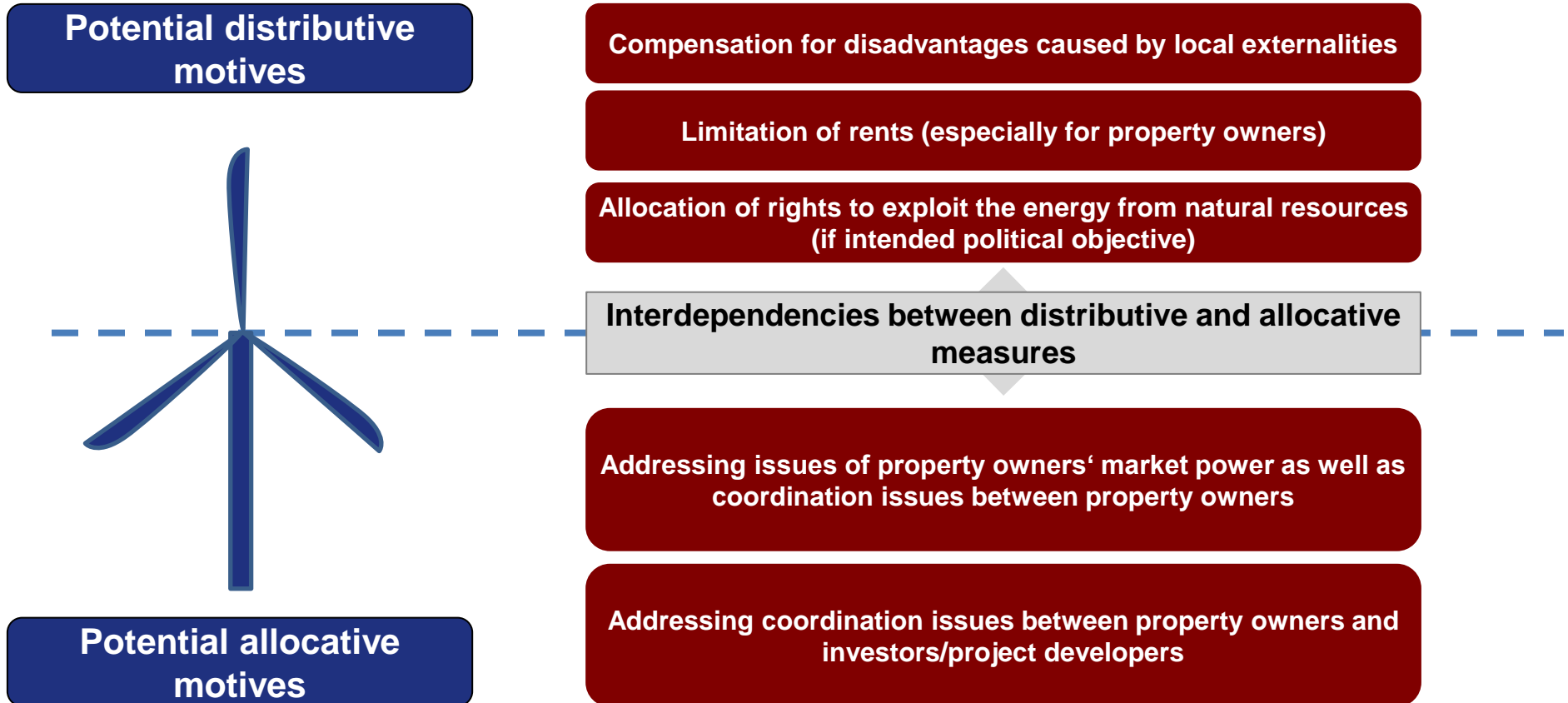
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Options for Financial Participation

Motives for Financial Participation



Options for Financial Participation

General Overview of Design Options

Design elements for financial participation

Type of participation:

- Contribution of capital
 - Right or Option
 - Public claim (concessions)
 - Public property as default
- Direct financial payments (or comparable benefits)
 - Direct payments
 - Subsidized loans/funds

Level of participation (depending on):

- Success of the project
 - Electricity yield
 - Revenues, profit
- Negative externalities, e.g.
 - Noise and visual nuisance
 - Loss of land
 - Generic: e.g. size of turbine

Temporal design of participation:

- Stage of project
- Lump-sum payment vs periodic

Entitled beneficiaries:

- Residents
- Public entities
- Property owners

Interdependencies between the design elements as well as between the system of refinancing

Possible rules for the coordination of the use of land

Disappropriation + compensation

Payment limitations

Coordination rules

Interdependencies between the design elements, the system of spatial planning in a multi-level governance and the refinancing system

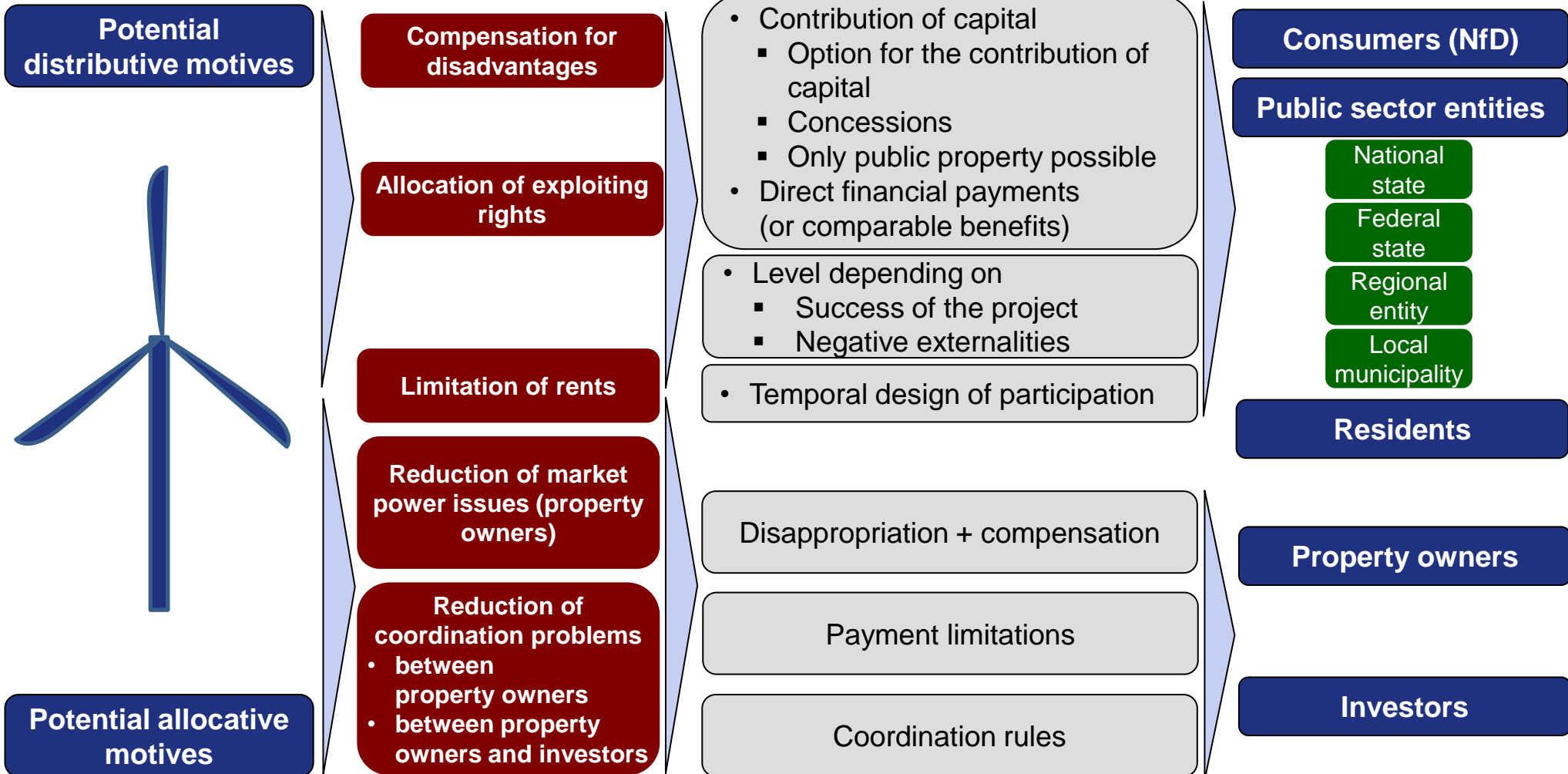
Options for Financial Participation

Overview of Motives, Options and Stakeholders

Motives

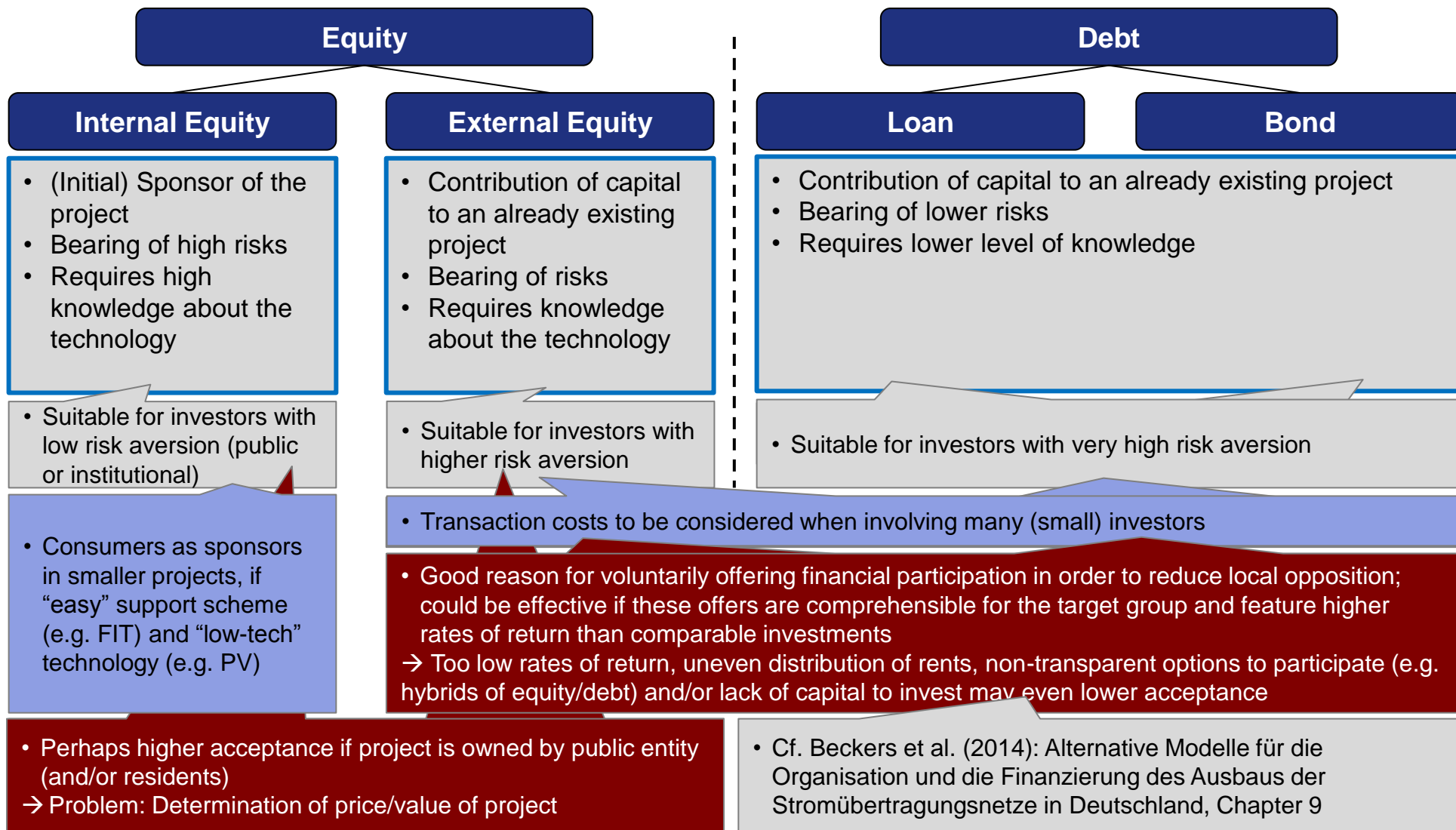
Design elements

Stakeholders/ Beneficiaries



Options for Financial Participation

Analysis of Financial Participation via Contribution of Capital



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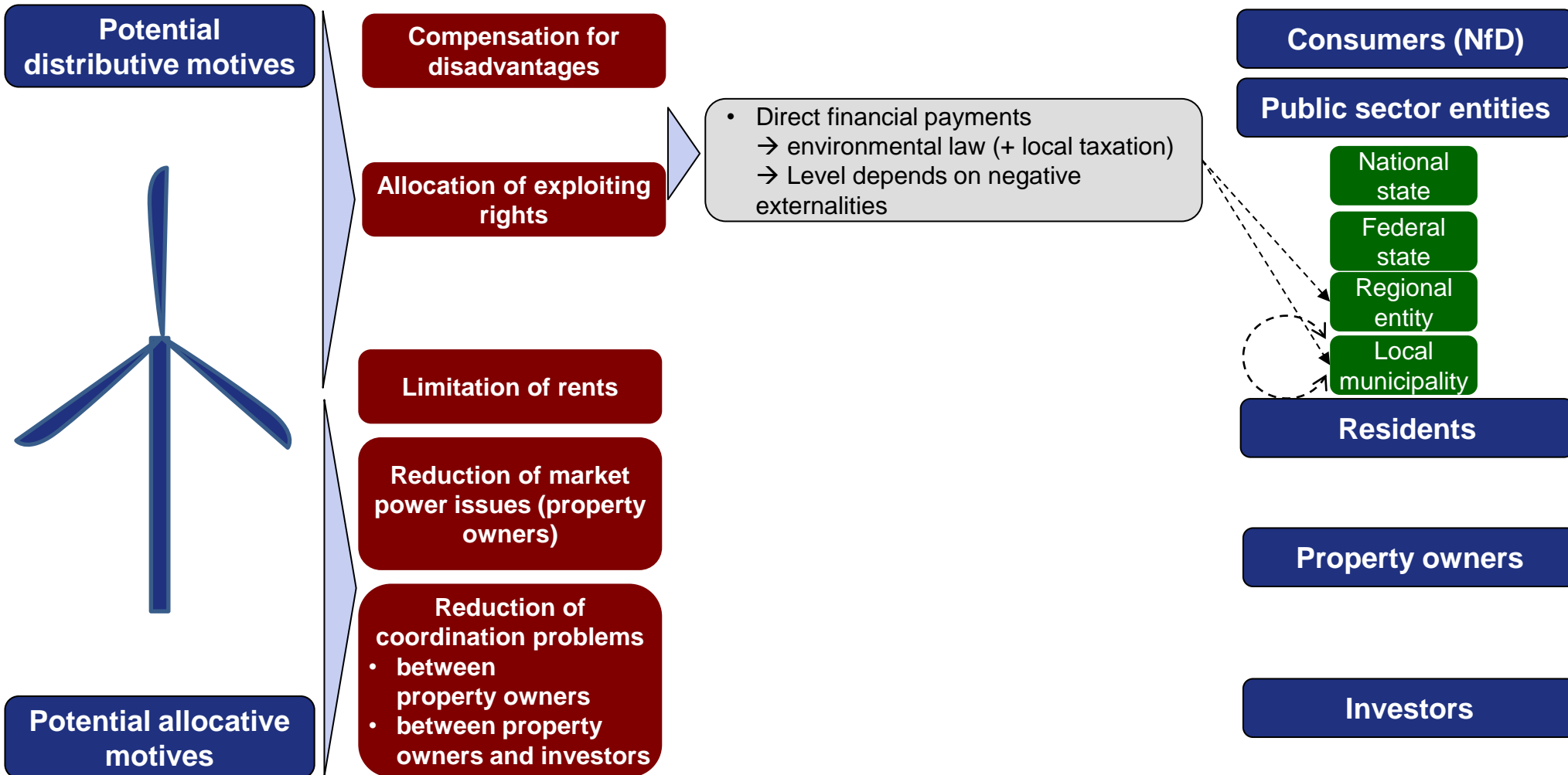
National and International Examples

Mandatory rules for Financial Participation in RES-projects in Germany

Motives

Design elements

Stakeholders/ Beneficiaries



National and International Examples

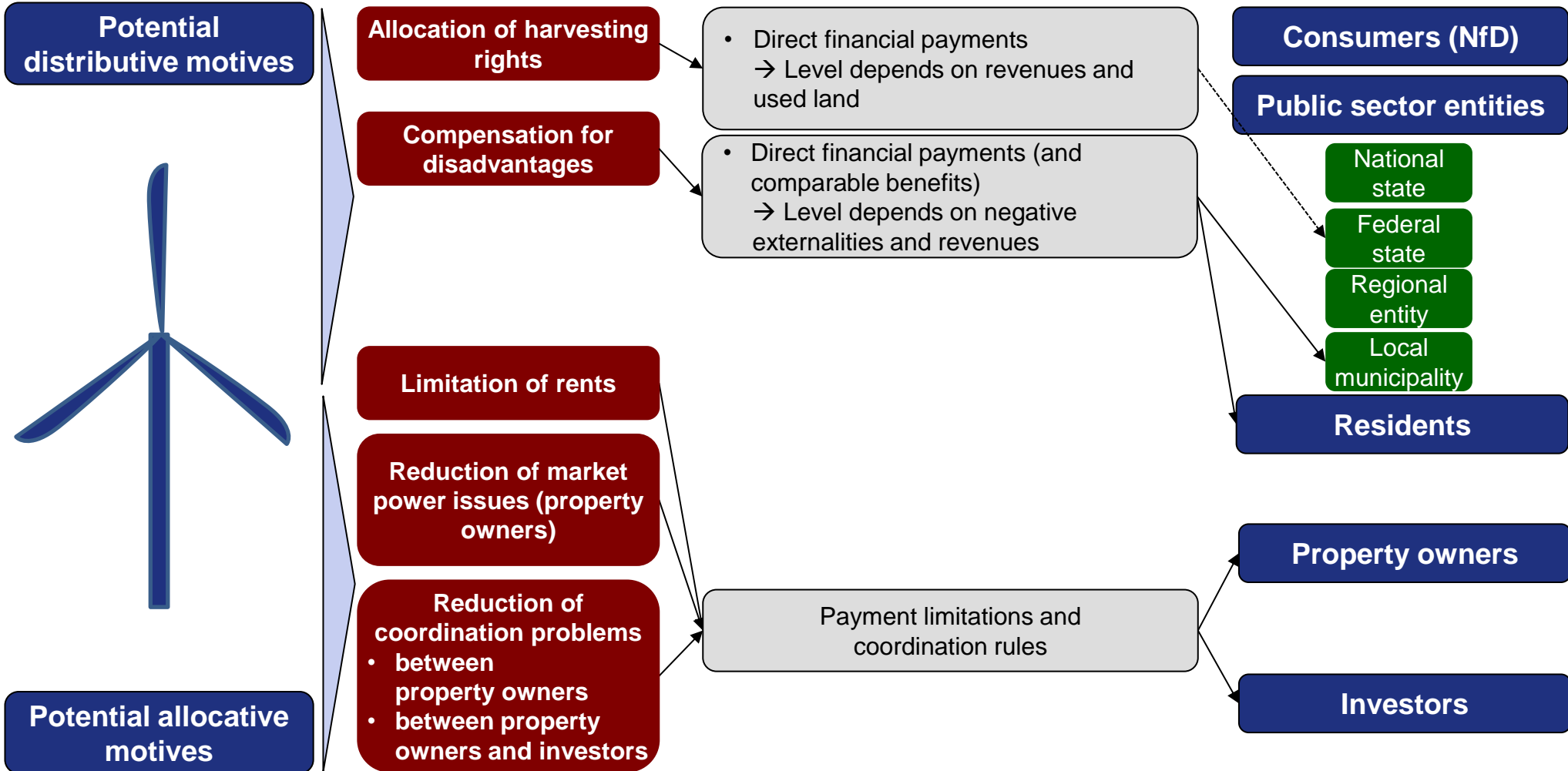
Mandatory rules in German Mining Law

BACK UP

Motives

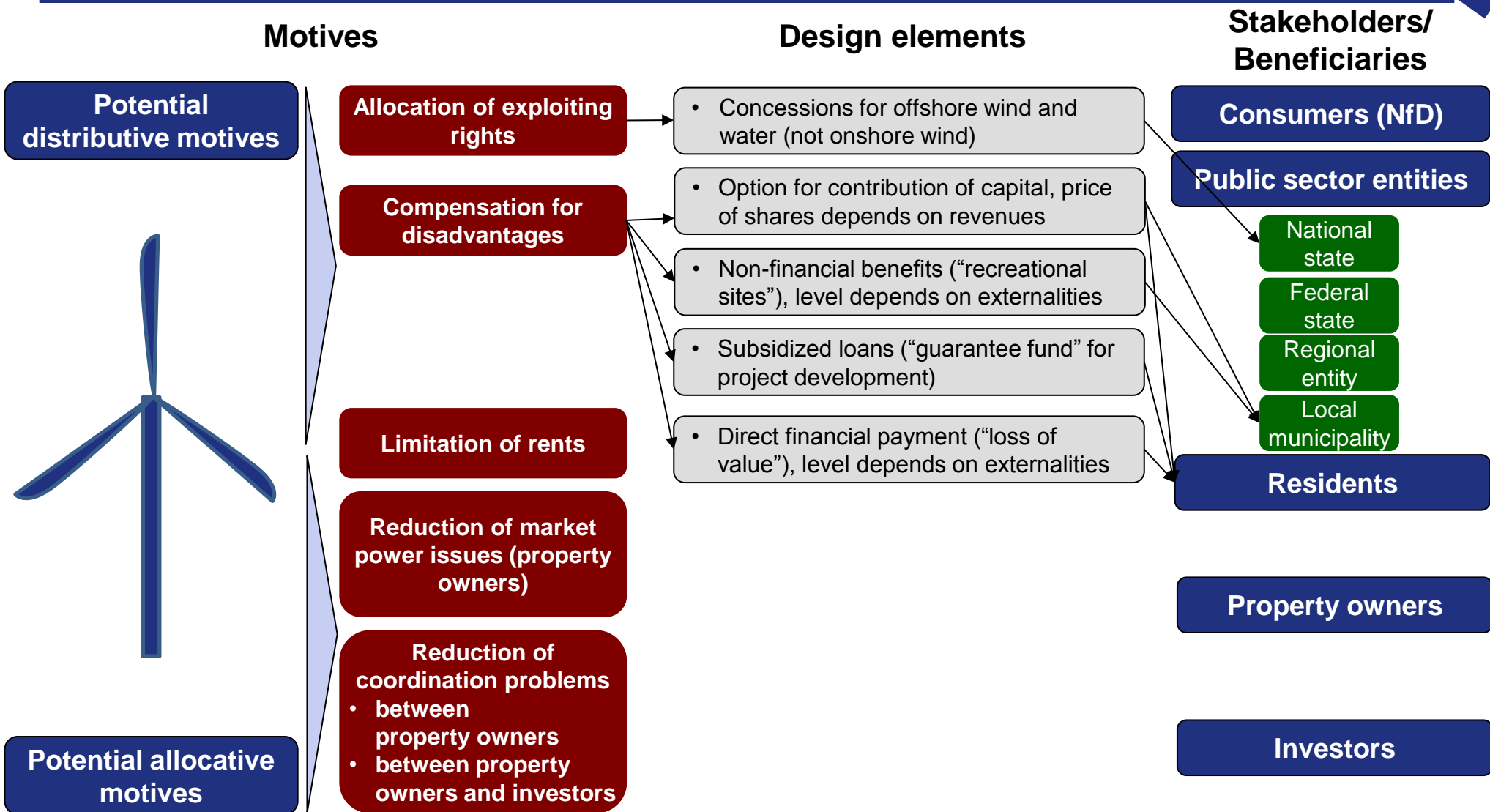
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National and International Examples

Mandatory rules in Danish Renewable Energy Act



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Conclusion and Outlook

- **Evaluation of financial participation options depends on the system of objectives.**
- **Many reasons for financial participation of residents and public entities from a distributive perspective.**
- **Financial participation of consumers by the contribution of capital is not always the best option from an allocative point of view. Other options may be very effective as well.**

- **Further research in 2015 and 2016:**
 - Detailed evaluation of existing instruments in other sectors on a national level and in RES-projects on an international level from a legal and economic perspective.
 - Detailed analysis of above-mentioned options of financial participation considering possible refinancing mechanisms and the spatial planning system in a multi-level governance.
 - Evaluation of the two empirical surveys in order to investigate the preferences of German citizens in the context of ownership and compensation for wind energy projects - on a national level and for residents living close to wind turbines.

Thank you for your attention!

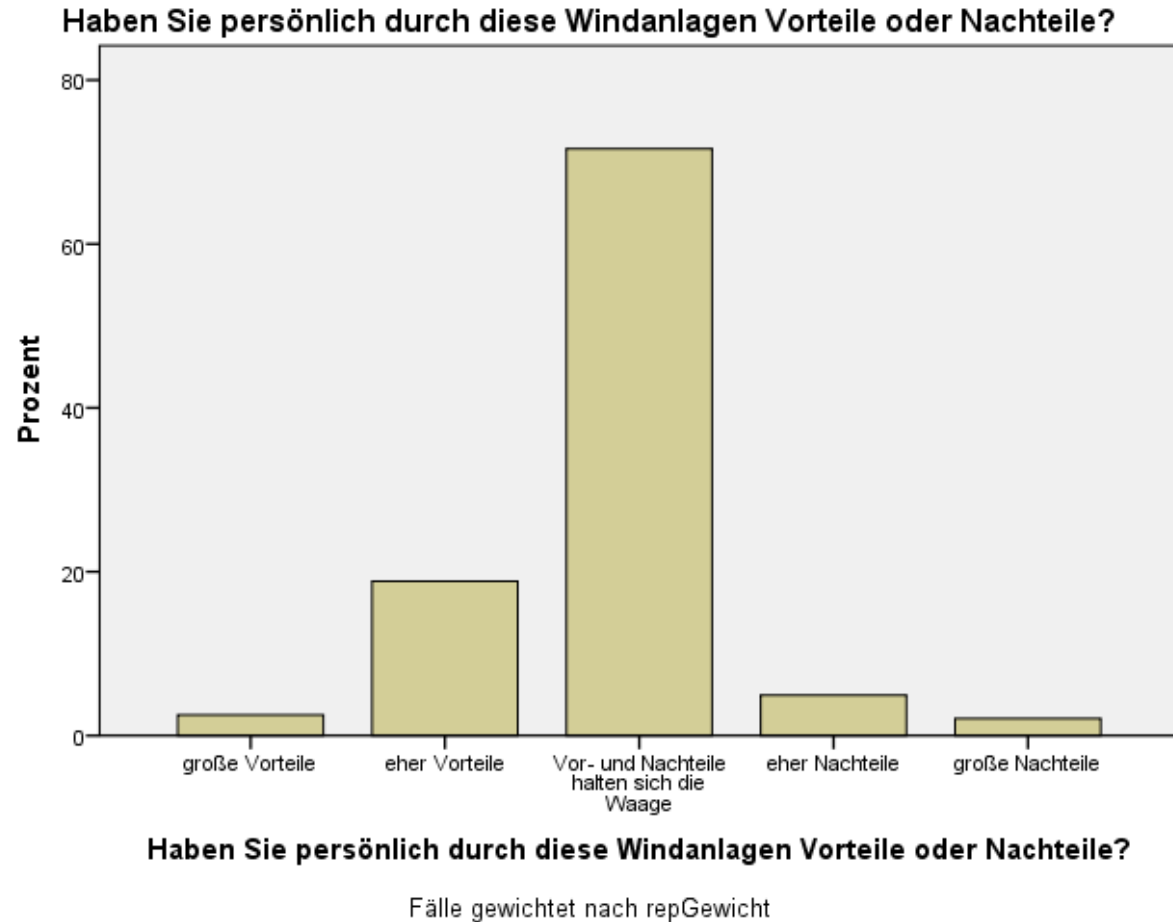
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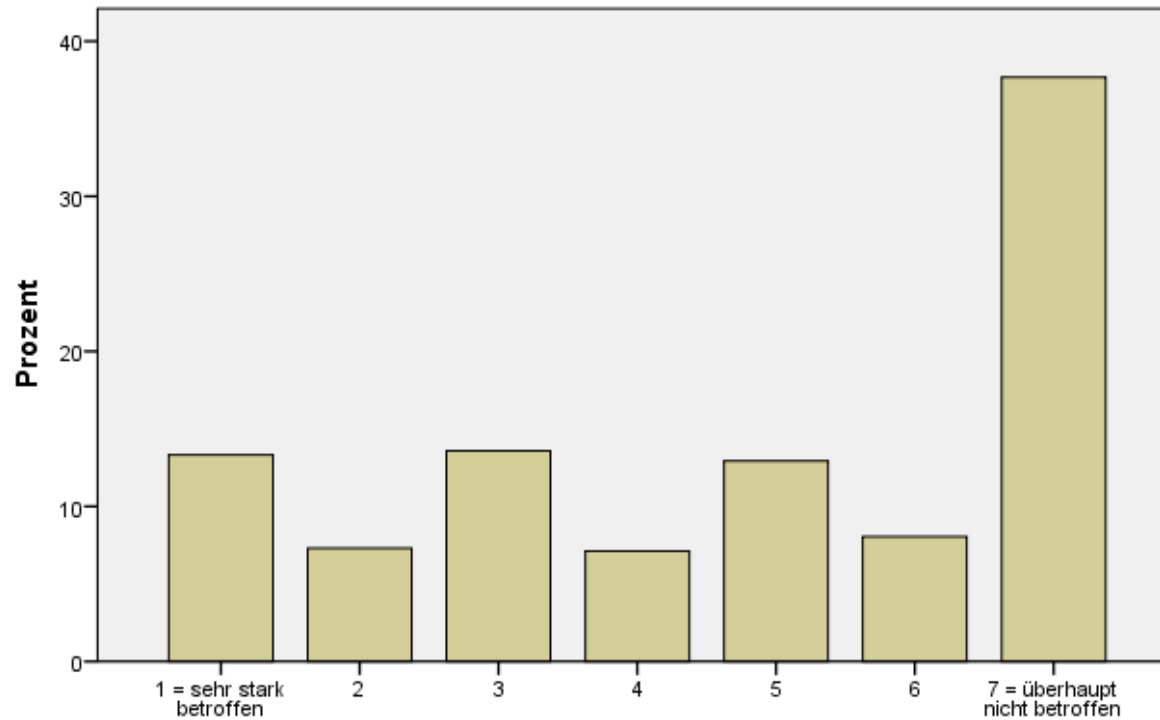
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Backup



Backup

Wodurch fühlen Sie sich von diesen Windanlagen betroffen? - Das Landschaftsbild hat sich verschlechtert.



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Fälle gewichtet nach repGewicht