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Role of spatial planning and environmental planning in the innovation biography of wind energy in Germany

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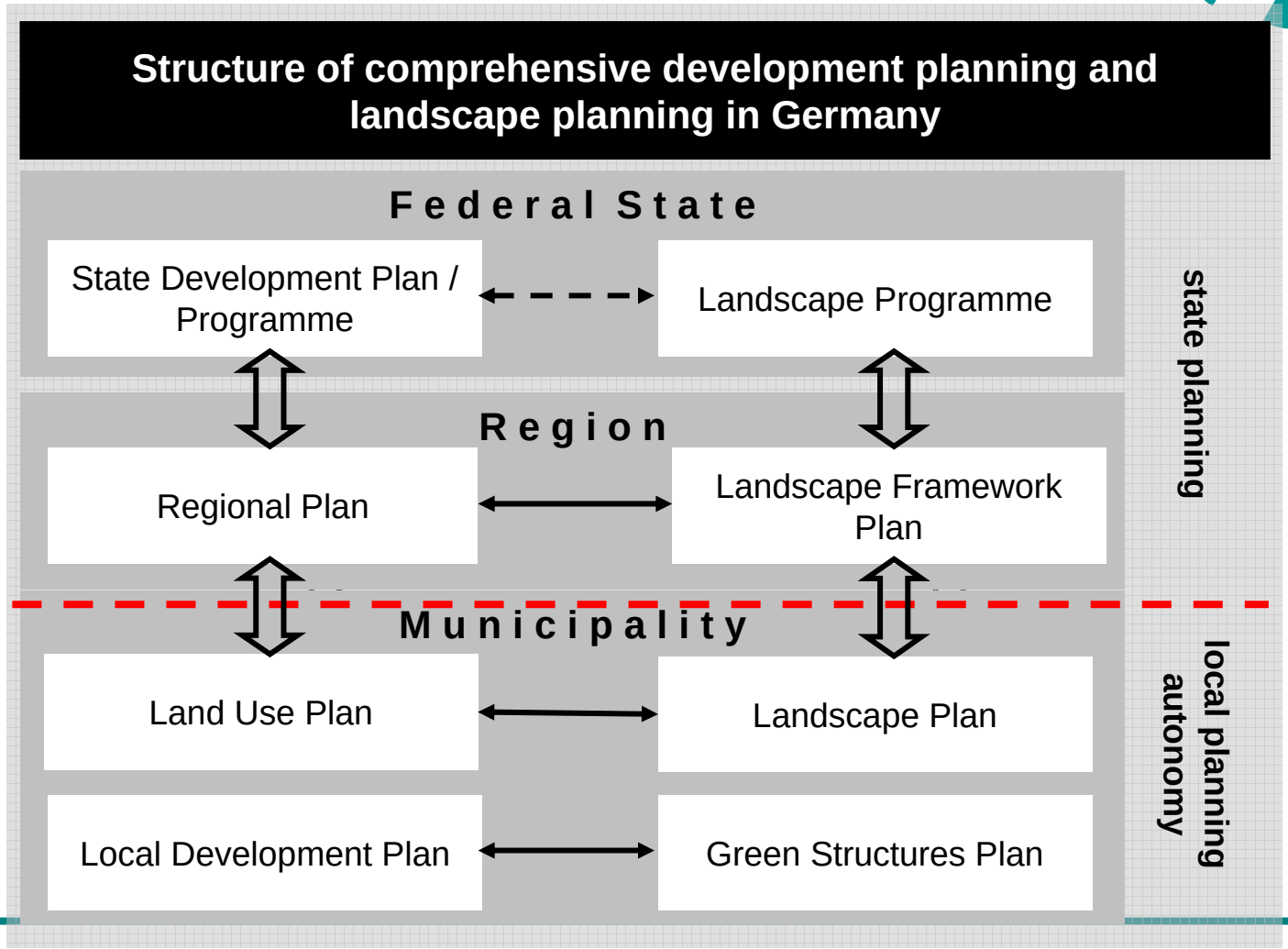
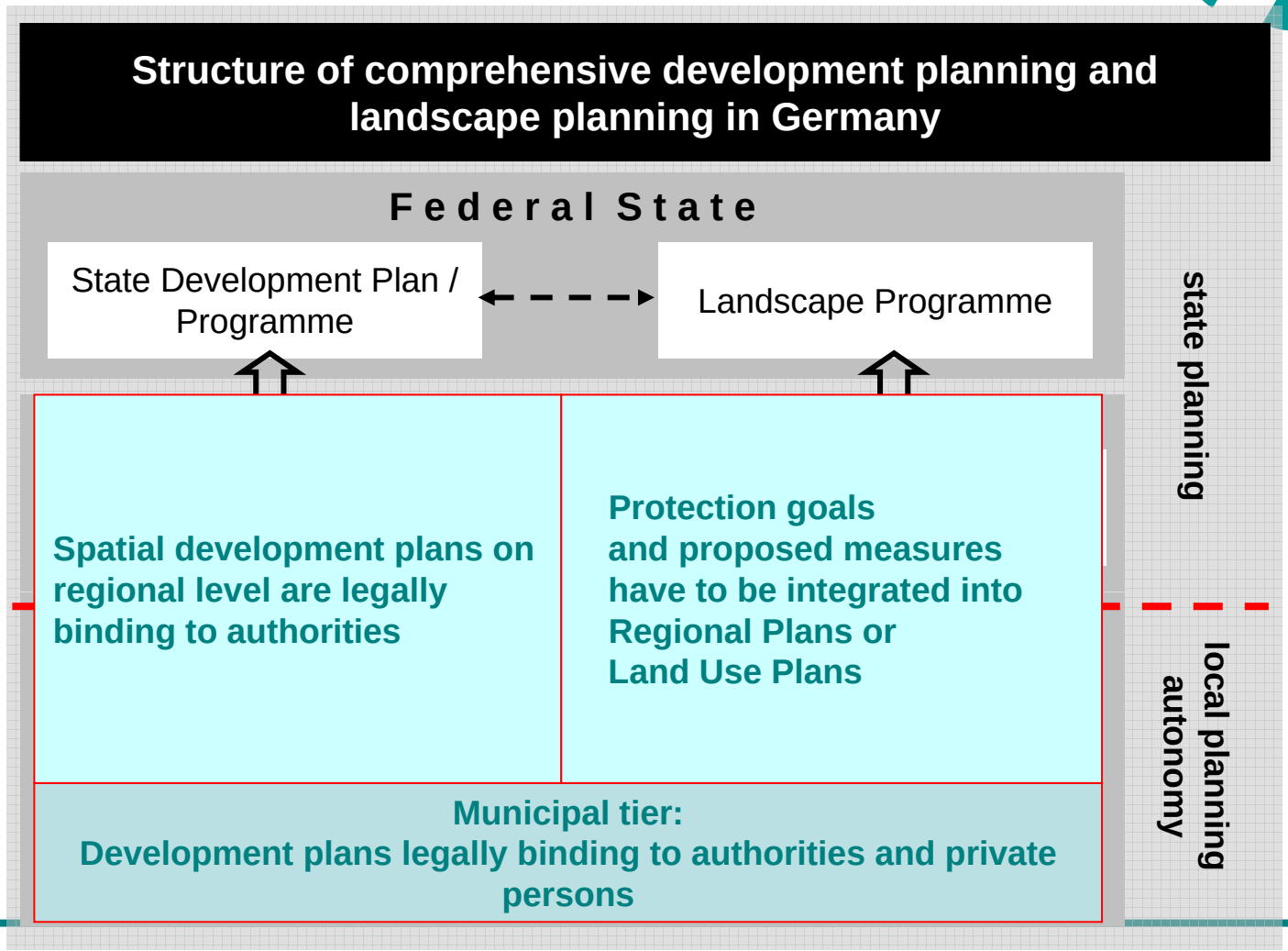
Starting point

- The diffusion of wind energy, namely its integration into the existing land use patterns, needs regulative spatial planning instruments.

Multitier system of spatial planning



Multitier system of spatial planning



Spatial Planning and Energy Production

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- Conventional wind energy production was/is not a subject of comprehensive spatial planning.
- Wind energy production was at hands of a fast growing '*private* energy sector'.

➔ Both, subject and stakeholders, were uncommon to comprehensive spatial planning in the early 90ies

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Role of spatial planning in the innovation course with respect to the phases of deployment

Phases 1 and 2

- initial establishment (70ies -1990/91)

- Absence of specified criteria for spatial localisation and licensing
- Incremental decision making prevails
- Implementation is left to municipalities (local tier)

➔ *Wind energy facilities are treated as singular phenomena.*

➔ *The local implementation tier is not an object of governmental recognition or impulses.*

➔ *Incongruousness with visual landscape is of main concern.*

Phases 3 and 4
- kick-off and boost in the early 90ies

- Permission applications jump up after Feed-in Law
- Race for best-suitable sites
- Private wind energy proponents generate pressure on authorities

➔*Governmental impulses (remuneration) and implementation level are not in line.*

➔*Municipalities in near coast regions are overrun; ambivalent reaction towards wind energy.*

Phases 3 and 4
- reaction on boost in the early 90ies

- Rising awareness of risks for human health and natural elements
- Enacting of wind energy decrees on state level to supplement federal legislation
- Clearance criteria established; they comprise also nature protection areas/ requirements

➔*Landscape and bird protection requirements become limiting factors for the deployment.*

➔*The conflict between goals of climate protection and ‚traditional' nature conservation becomes evident.*

Phase 5
- regression

- Restrictive licensing due to Federal Administrative Court judgement lead to a standstill.
- Growing demand for political decisions on legal framework, e.g. amendment of the Federal Building Act and Federal Planning Act.

§§

➔*Legal regulations play major role*

➔*Planning and licensing procedures aim at maintaining public and political recognition*

Network of Legal Issues

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Federal Building Act	➢Regulations for the planning permissibility of wind turbines in the sense of 'privileged' building projects
Federal Regional Planning Act (federal framework legislation)	➢National objectives, principles and basic conditions of 'Spatial Planning' in compliance with the global principle of a 'Sustainable Development' ➢Defining the spatial category of 'Suitable Areas'
Federal Immission Control Act	➢Regulations for the planning permissibility in the sense of 'immission relevant' projects
Federal Nature Conservation Act (federal framework legislation)	➢Regulations for the planning permissibility in the sense of 'nature relevant' projects ➢Definition of protected/restricted areas and compensatory measures
Federal Environmental Impact Assessment Act	➢Regulations for the planning permissibility in the sense of a risk prognosis of considerable impacts on defined subjects of protection

Modified according to Bookholdt n.d., online.
http://www.windtechknow.net/download/9/GERMANY%20NATIONAL%20STATUS%20OF%20WIND%20ENERGY.pdf

Phase 5
- second boost (1997-2002)

- Enacted federal regulations dissolve ‚congestion' of permissions
- Establishing spatial plans on regional and (partly) on municipal tier

➔ *Regional planning actors gain importance for the control of spatial distribution.*

➔ *Technical deployment is restricted by precautionally applied criteria concerning environmental impacts.*

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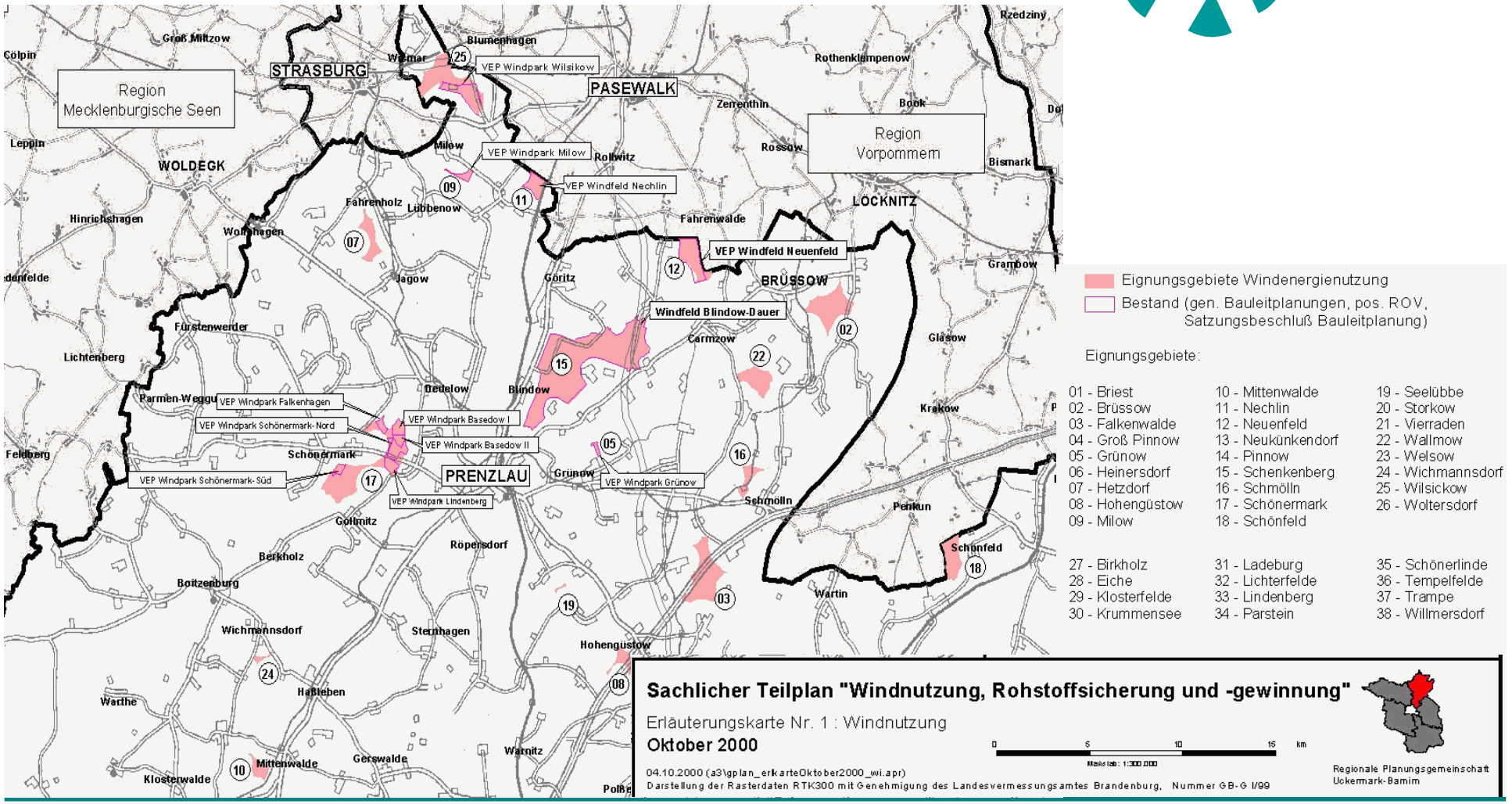
Regional planning
- Suitable areas



Regulative effects of regional planning

	Brandenburg (total)	Mecklenburg-Western Pomerania (total)
Share of suitable areas per planning region	ca. 1,3 %	0,45 %
Number of WPP outside suitable areas	ca. 320	315
Total number of installed WPP	2.033	1.135
Share of WPP outside of suitable areas in %	ca. 15,7 %	ca. 27,8 %

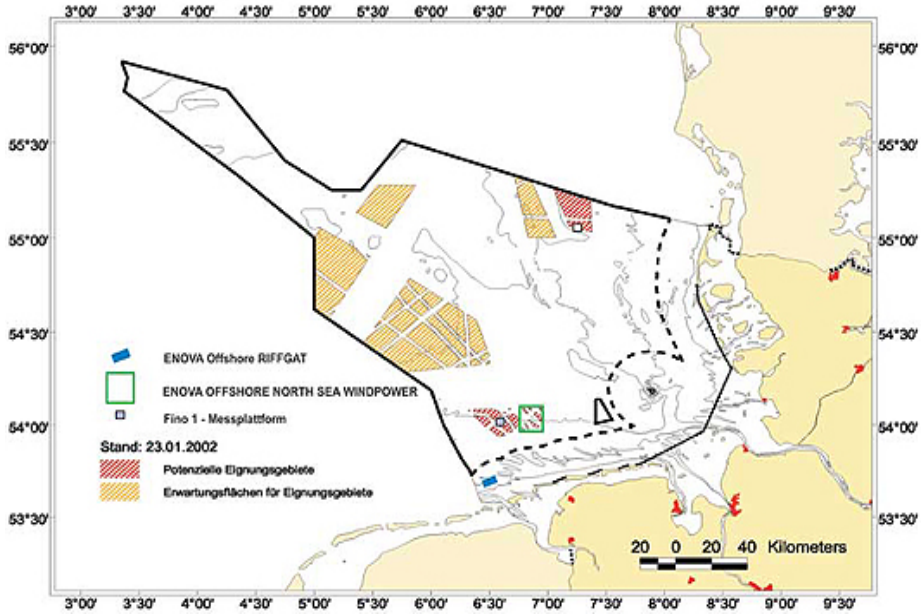
Phase 6 : from 2002 onwards
- shift to offshore development

onshore

- Scarcity of sites (‚saturation')

offshore

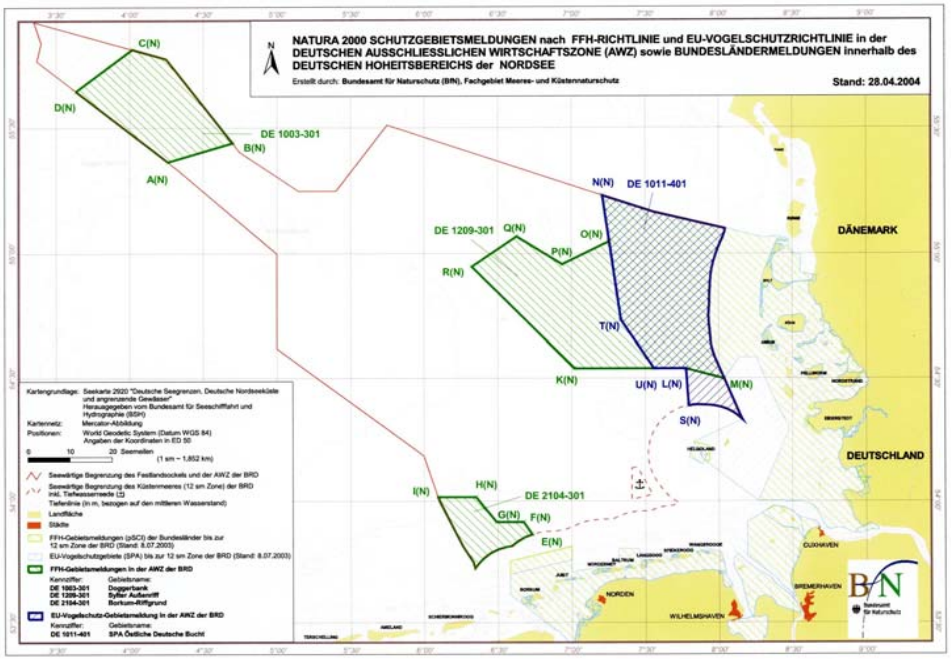
- Shifting large scale development to the EEZ
- Transfer of spatial planning approaches to marine areas



➔*New federal actors for planning and licensing in the EEZ appear;*

➔*Strong governmental (federal) influence on strategic development in the EEZ*

Phase 6: Offshore development
- Marine Protection Areas



➔ *Designation of NATURA 2000 sites (FFH and IBA) restrict selection of suitable offshore sites.*

Role of Planning

- Comprehensive spatial planning is applied to avoid unregulated growth and land use conflicts.
- The conflict between nature conservation or species protection and climate protection, can not be solved sufficiently.
- In the 90ies comprehensive spatial planning temporarily serves as a catalyser for deployment (planning and investment security).
- After delineated suitable areas are occupied, they turn to being restrictive due to the exclusion principle. This was intended.

Innovation and planning modes

Spatial planning enhances the application of innovative technologies by facilitating licensing procedures as long as it keeps up with the technological progression, in this case: dimensions of wind energy facilities.

Preliminary findings

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Implementation of technical innovations entailing space-relevant effects and environmental impacts need

- flanking conflict diminishing instruments
- instruments that provide synchronization
  - of strategic goals on all relevant planning tiers
  - adjustment of goals
  - of innovation and planning cycles.

Planning instruments contribute to fulfill these requirements, if planning cycles can be synchronized with the technical development.

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Thank you very much

for your attention!