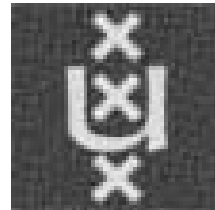


Social Acceptance:
Institutional Conditions for Wind Power,
from Onshore to Offshore Schemes

Les énergies marines renouvelables :
enjeux économiques et juridiques / Merific
Brest
10 / 11 Octobre 2012

Maarten Wolsink

***Department of Geography,
Planning & International
Development Studies
University of Amsterdam***



1985 Durgerdam Former seacoast, now lakeshore; 120 kW

Village council: "Why not in the IJ-meer (lake)"

E-company: "We offer lower e-price"

Villagers: "Don't try to bribe us"



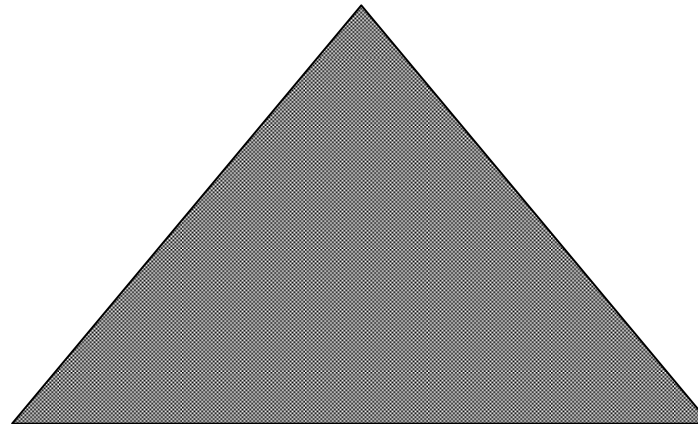
Some state-of-the-art fundamentals

- Social Acceptance \neq Public Acceptance
- Acceptance wind energy
 \neq Acceptance Wind energy projects
- Barriers to deployment NOT primarily related to local opposition (community acceptance)
- Basics acceptance onshore-offshore similar;
Societal actors and their interests different

Social Acceptance Energy Innovation:
Issue mainly is: **acceptance in all layers and sectors of society**
of necessary **institutional changes**

Socio-political acceptance

- Of technologies and policies
- By the public
- By key stakeholders
- By policy makers



Community acceptance

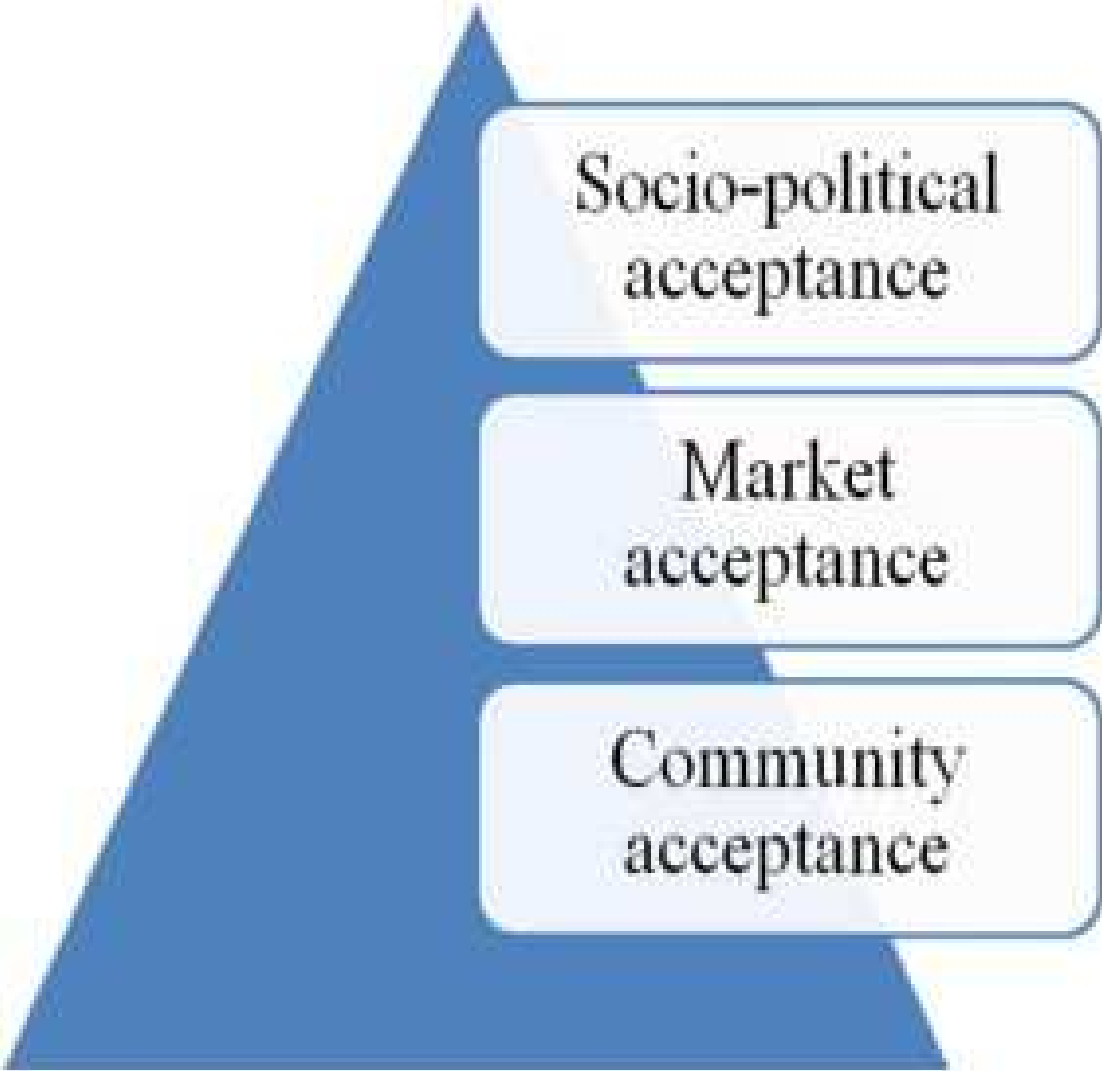
- Procedural justice
- Distributional justice
- Trust

Market acceptance

- Consumers
- Investors
- Intra-firm

Elaboration 3 acceptance dimensions

Sovacool & Lakshmi Ratan, 2012. *Ren Sust Energy Reviews* 16, 5268 - 5279



Socio-political acceptance

Socio-political acceptance is the broadest and the most general, and it concerns the ability for regulators, policymakers, and other key stakeholders to craft effective policies or frameworks that create and foster community and market acceptance below

Market acceptance

Market acceptance operates at a meso level between national politics and local communities, involving consumers (that must adopt a technology) and investors (that want to support its manufacturing and use)

Community acceptance

Community acceptance is the most specific, and it involves the extent that projects are undertaken or invested in by local stakeholders, how costs and benefit are shared, and how policymaking is conducted

Socio-Political Factors

- Strong institutional capacity
- Political commitment
- Favorable legal and regulatory frameworks

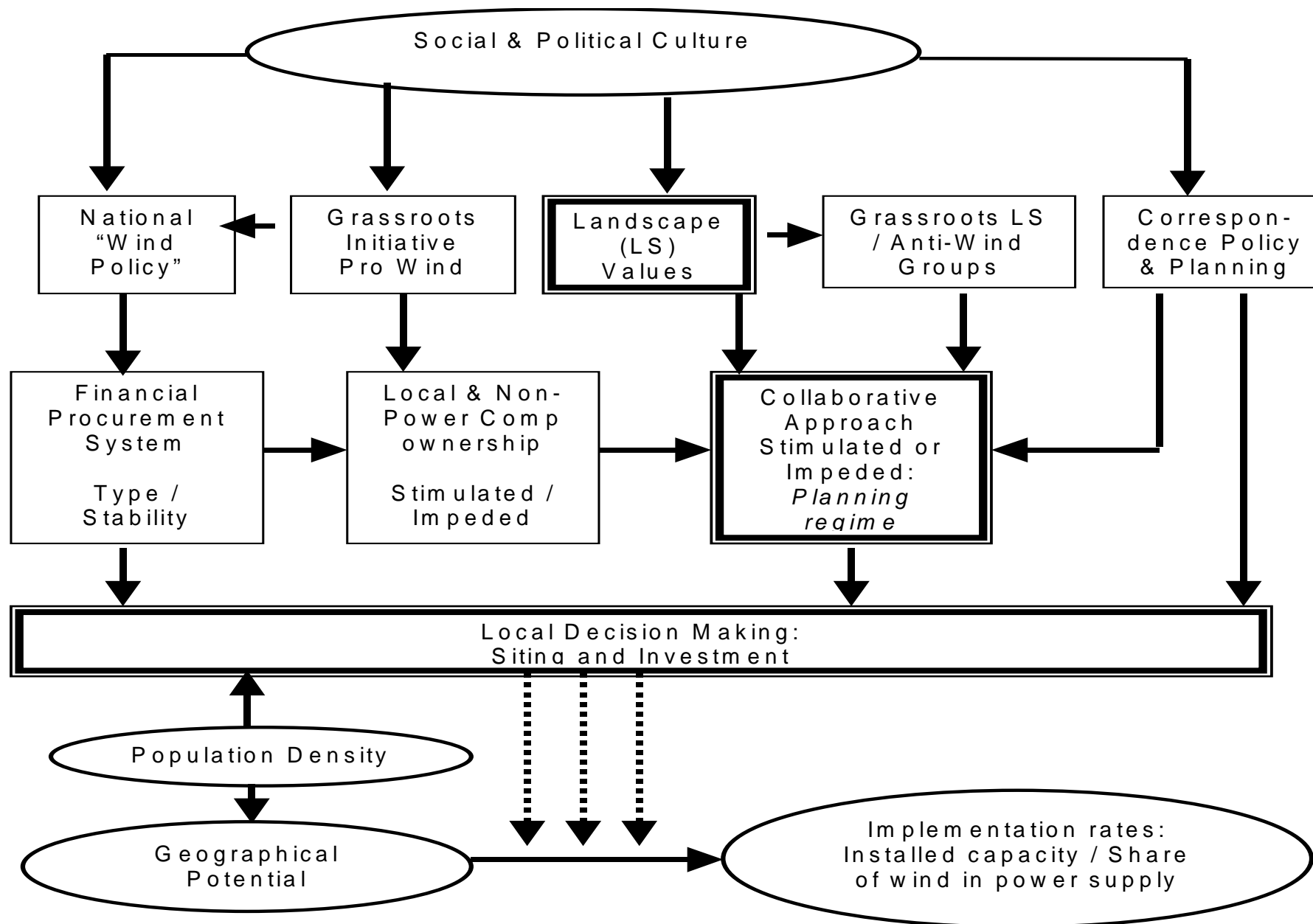
Market Factors

- Competitive installation/production costs
- Mechanisms for information and feedback
- Access to financing

Community Factors

- Prolific community/individual ownership and use
- Participatory project siting
- Recognition of externalities or positive public image

Acceptance



Renewable Energy Innovations: institutional change needed

- **Institutions:** the organizational structure in society shaped by "the rules of the game in society"

North D, 1991. *Instit, Inst Change and Econ Perform*. Cambridge University Press.

- → Fundamental question:
Which institutional changes needed to deploy smart grids with renewable distributed generation as much as possible?
- Who can, may, and will invest?
Who is allowed to invest, on what conditions?
Who has control? About generating capacity? About space?
About the grid, ...? Do the host communities benefit?
- No *principal* difference for offshore
- Thought that "*over the sea and far away*" will be accepted more easily is extremely naive.

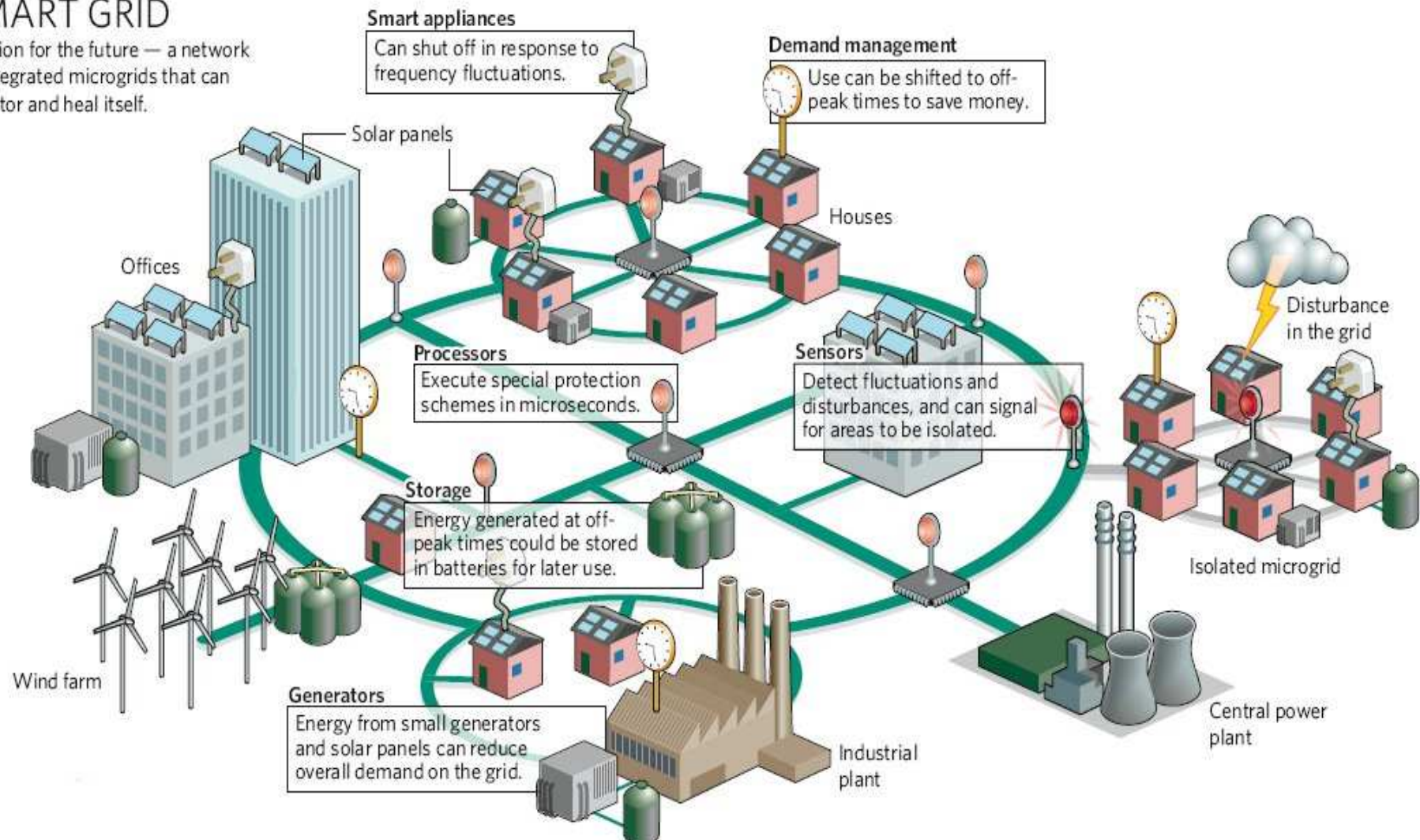
Haggett 2009 *J Env Pol Plan* 10, 289

‘Smart grid’: “...rescaling and distributed generation” ...
“integrated micro-grids that can monitor and heal itself”

Marris 2008, *Nature* 454, 570; Wolsink 2012 *Ren Sust Energy Reviews* 16, 825

SMART GRID

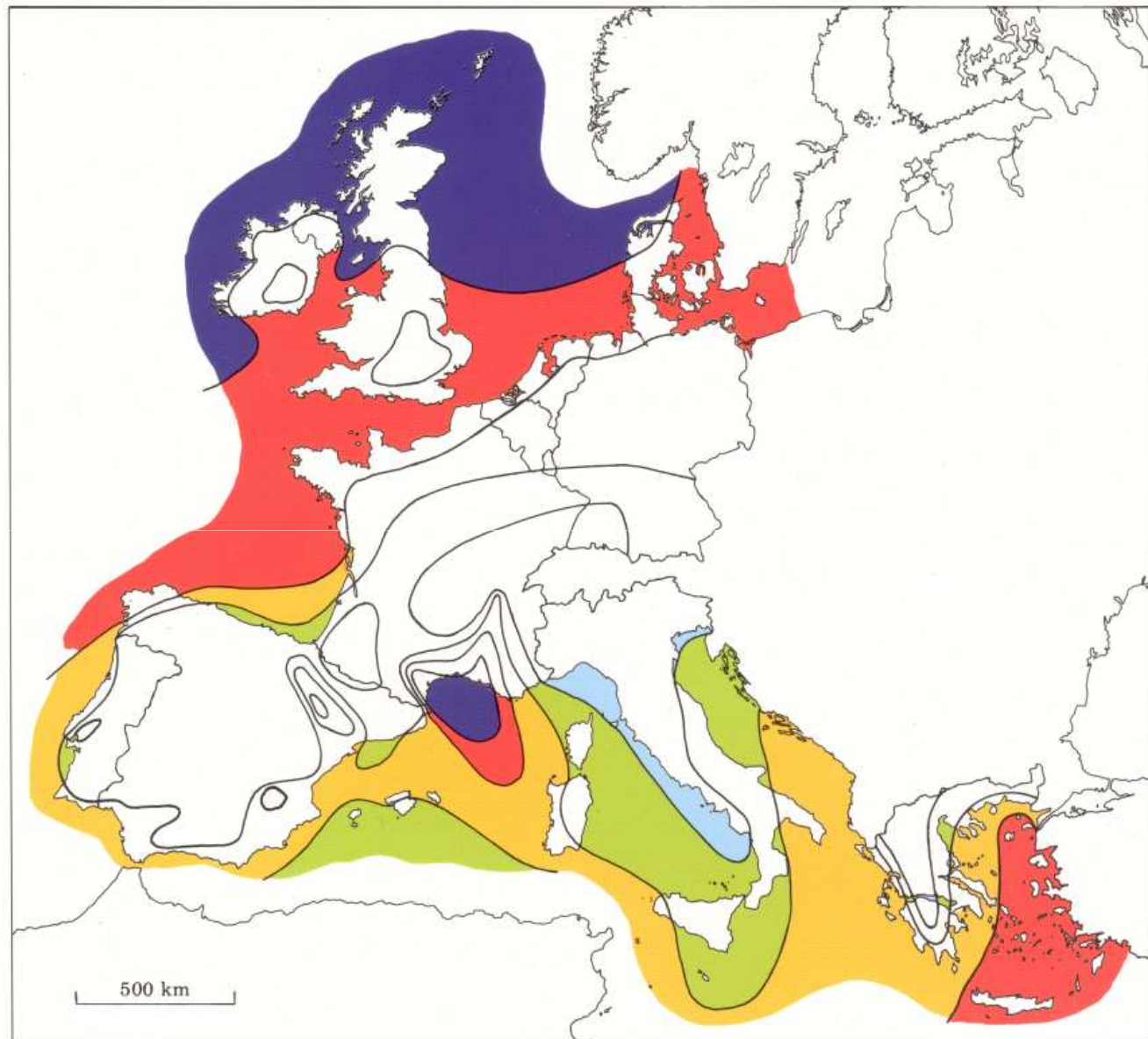
A vision for the future — a network of integrated microgrids that can monitor and heal itself.



Acceptance of **Distributed Generation**
= RES geographically dispersed in micro-grids)
Fit to *local identity* (both social and physical)
in the eyes of the community

- Identity: landscape AND social (cognitive/cultural)
- Fit to the landscape, determined mainly by the choice of the site
- ‘Objective landscape characteristics’ are affecting identity only after a process of PERCEPTION
- Identity as experienced by local community
- Embedding schemes in local economy
- Socio-economic benefits for community (employment, farming, tourism, fishery etc.)
- Fair decision making; *exclusion causes trouble*
- Local options for investments, from ownership or shareholding to symbolic ‘sense of ownership’

EUROPEAN OFFSHORE WIND RESOURCES



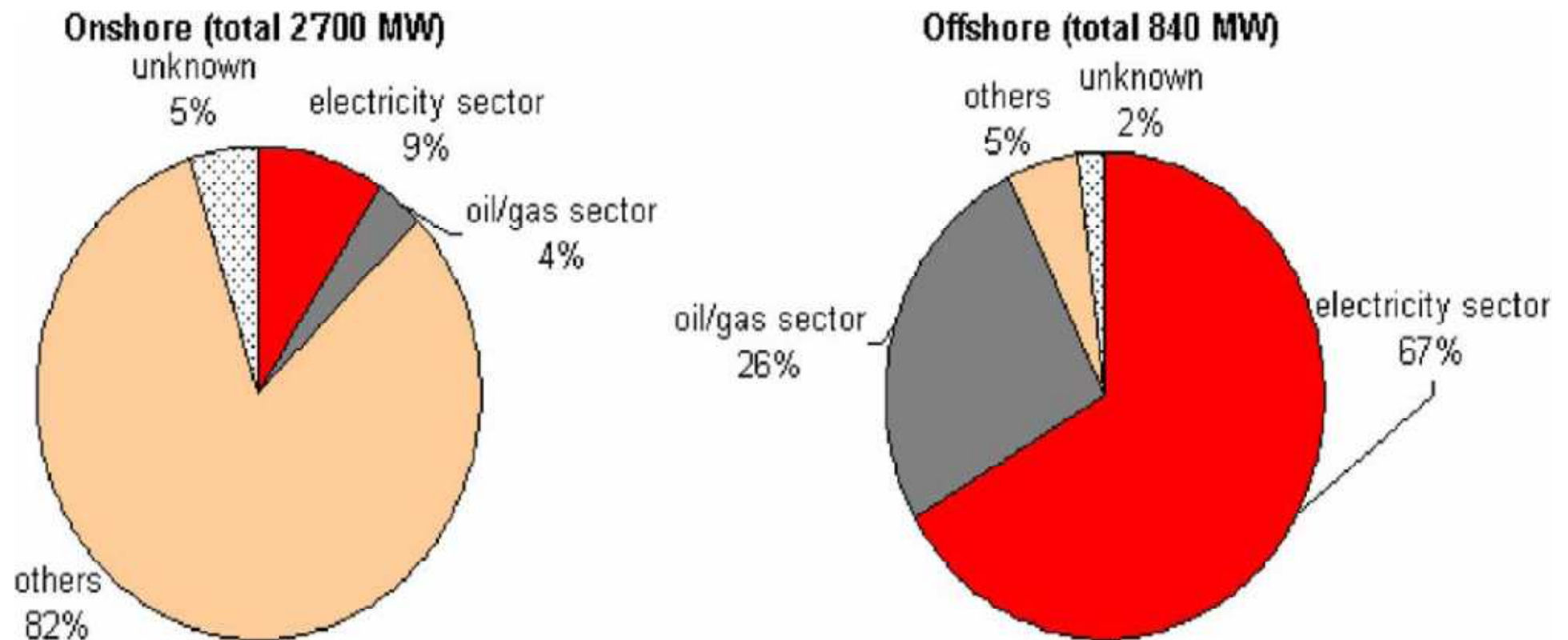
Troen & Petersen, Eur Wind Atlas 1989

Marine Spatial Planning

- “MSP is a public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological and social objectives **usually specified through a political process**” UNESCO workshop MSP 2007
- Current practice: National State Governments are taking the lead: focus on **ownership, market-thinking, large scale**
- Desirability of that trend is very questionable: **socio-political acceptance** empirically revealed to be the **main problematic issue** in renewable energy innovation

Ownership of on- and offshore wind power generation capacity in DK

Markard Petersen 2009 *Energ Pol* 37, 3551



Space formerly defined as physical 'place'
Moer competing claims → space 'socially constructed'

- Different actors/stakeholders
→ Different "notions of space"; hardly recognized
- **Example: states tend for planning by tendering WP locations**
- E-companies and other large investors tender
- Without substantial knowledge from the socially constructed notion of space at sea
- e.g shipping: 'space' based on heavy slowly moving objects
- "Rijkswaterstaat*" had no adequate nautical knowledge"
Jay 2012,p.93
- No collaborative planning

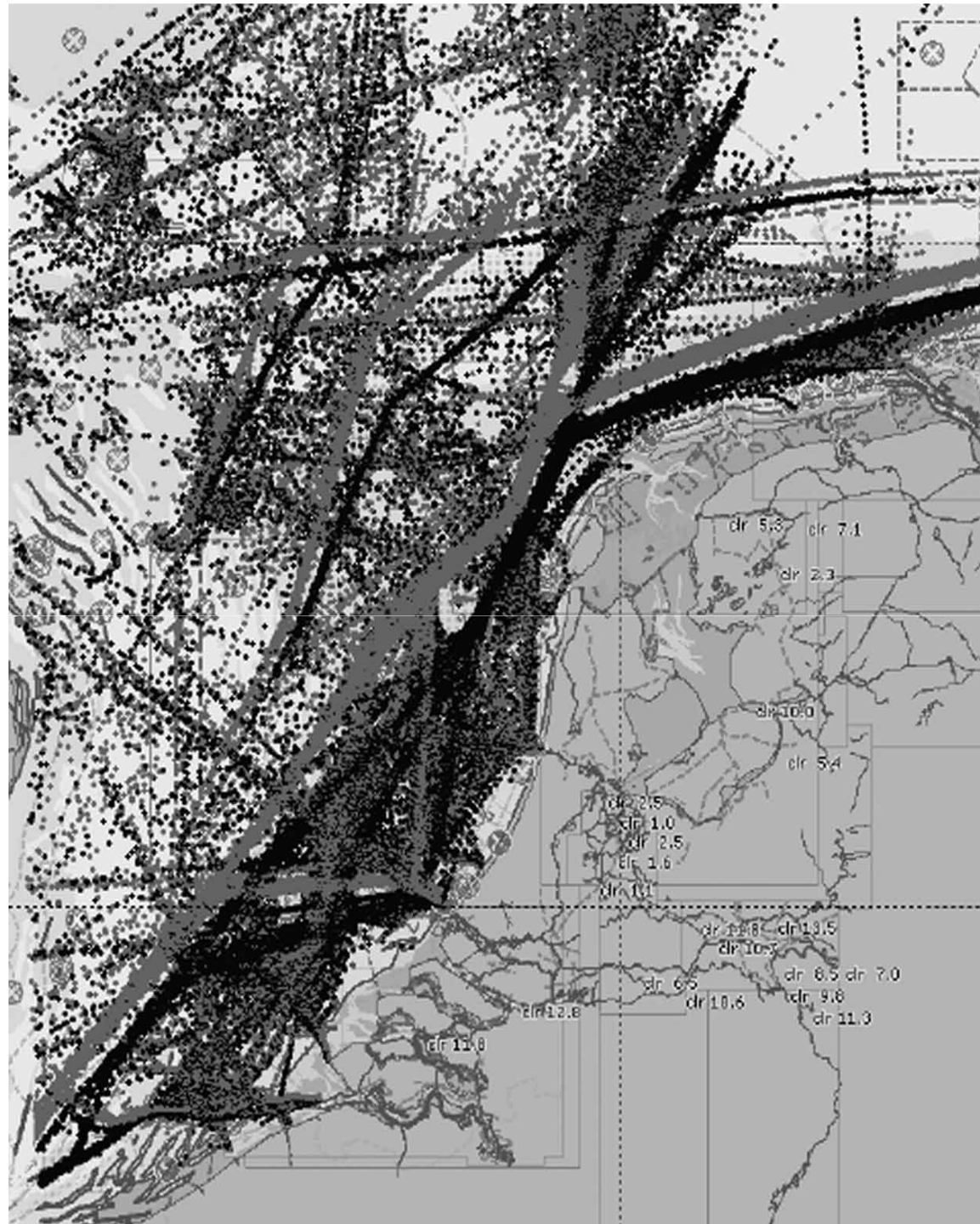
* government agency Ministry of Transport, Water Management and Infrastructure

South part continental shelf zone Netherlands

AIS shipping data

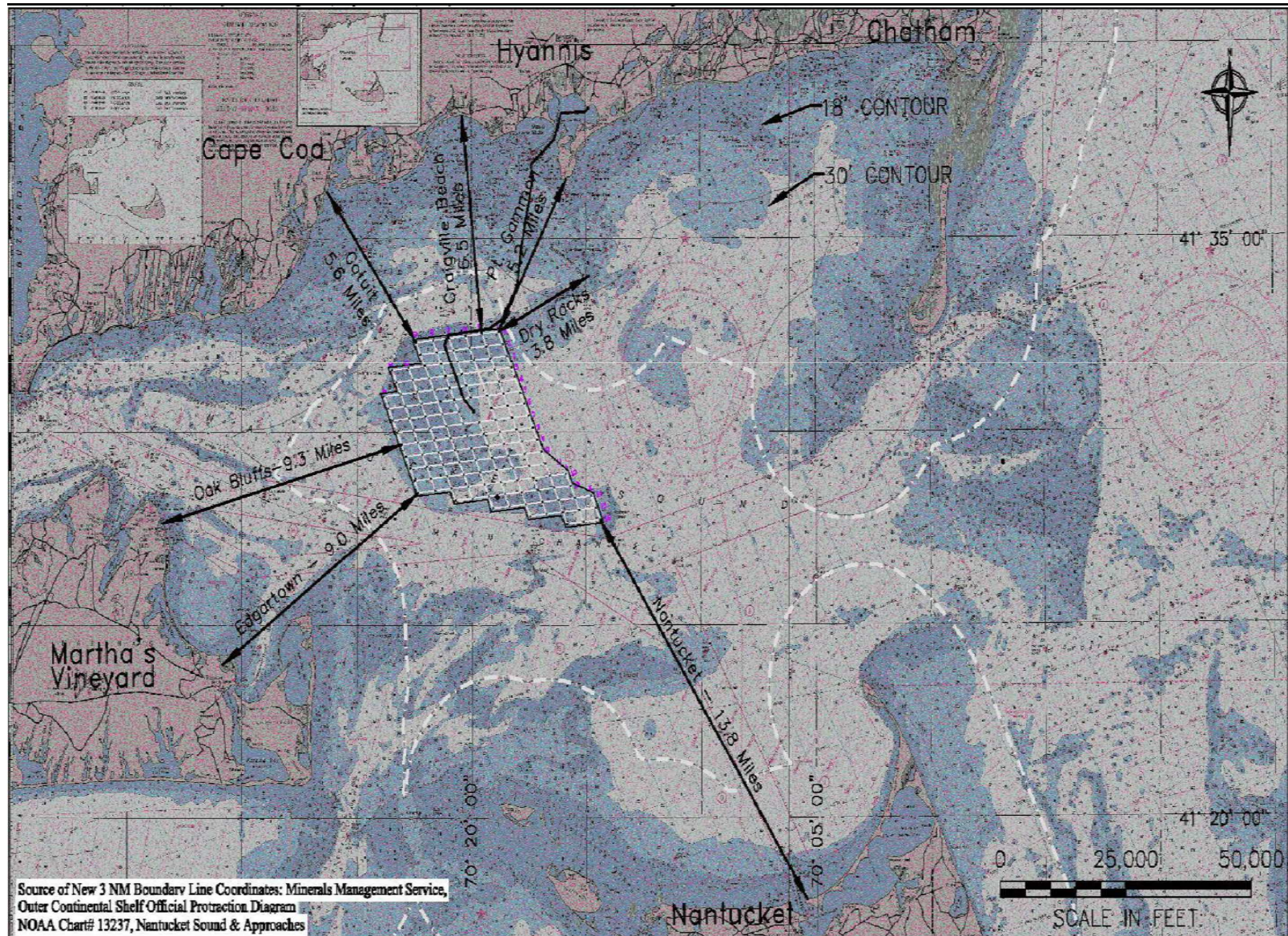
Location for off-shore wind
farms planned and
tendered without
collaboration and input
from shipping agencies, e.g.
port of Rotterdam

Jay 2012 *JEnvPolPlan* 14, p.91



Off-shore limited options; no grid; very expensive
→ Currently mostly near shore.

Example: 'Cape Wind' project at Nantucket sound



‘Rational’ planning; ‘objectivated’ visual impact (calculated viewsheds)
But different notions of space, landscape perception is values based
→ project failed, determining factors
landscape identity and place attachment

(a)



(b)



artist: Louis Guarnaccia
Phadke 2010 *Environ Politics* 19, 13

Similar example near-shore wind farm
Wadden Sea, ecologically sensitive, valuable landscape
Wetland, estuary, cultural heritage, tourism

- Protected: Internationally by Wadden treaty DK, D, NL
- EU: Habitat and bird directives; Natura2000 network
- NL: several nature protection zones
- Part of Ecological Main Structure
- PKB: Planning Core Decision (national planning instrument)
- *Main protection factor is a civil society organization:*
Wadden Union; national environmental organization
- Example of organization by developers and authorities *pejoratively labelled as selfish, ignorant* (to be neglected: NIMBY)

Foundation **Wadden Union** as opposition against infrastructure;
Occasion: diking project in 1964



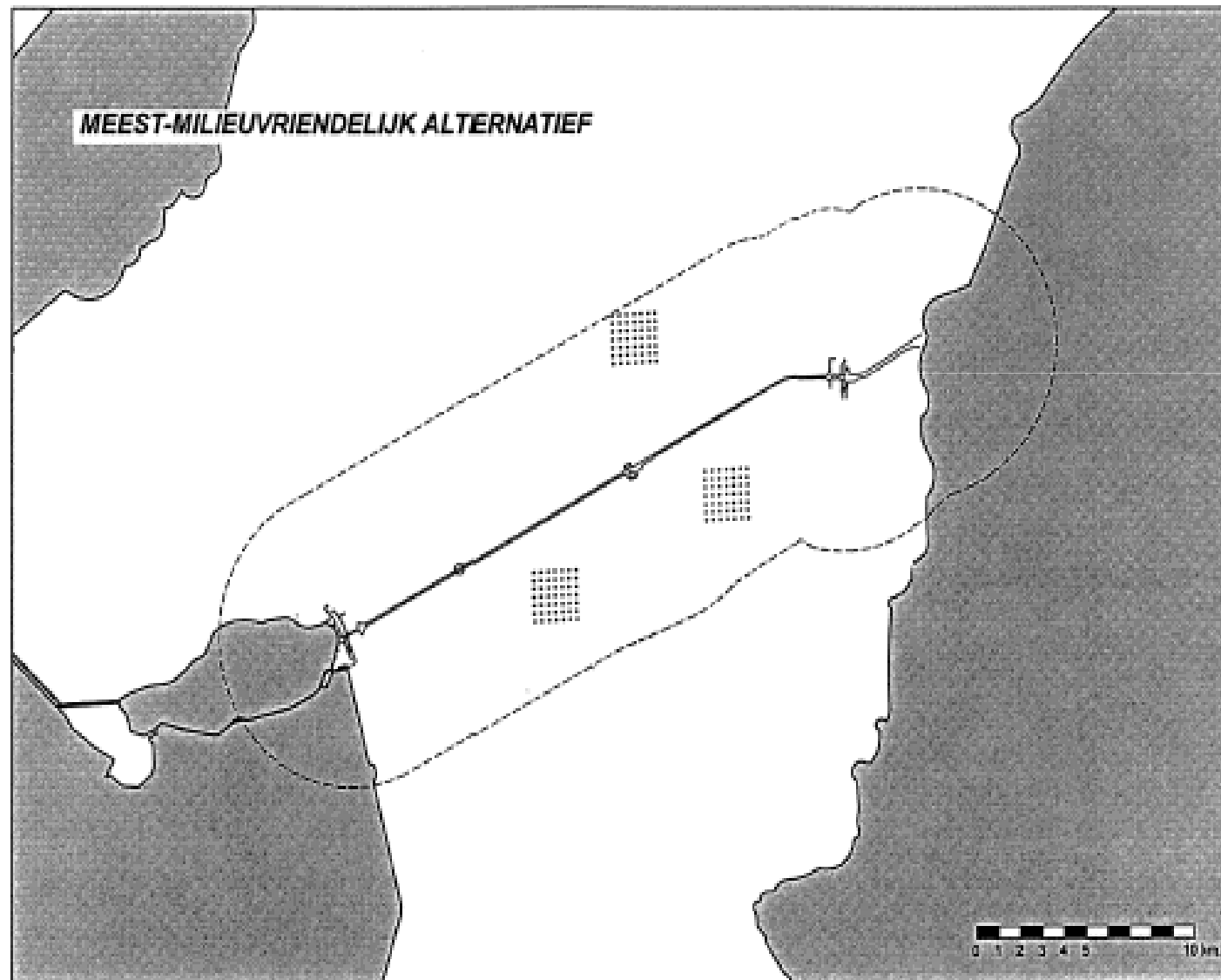
‘Afsluitdijk’ near-shore Wind Power development IPWA 2003

- 278 MW
- 2 provinces
- 4 municipalities
- Nuon (E-company; currently part of Vattenfall)
- National government: ministries of
 - * Economic Affairs
 - * Housing, Spatial Planning & Environment
 - * Agriculture and Nature
- **No further societal stakeholders,**
only an external ‘expert’ advisory committee

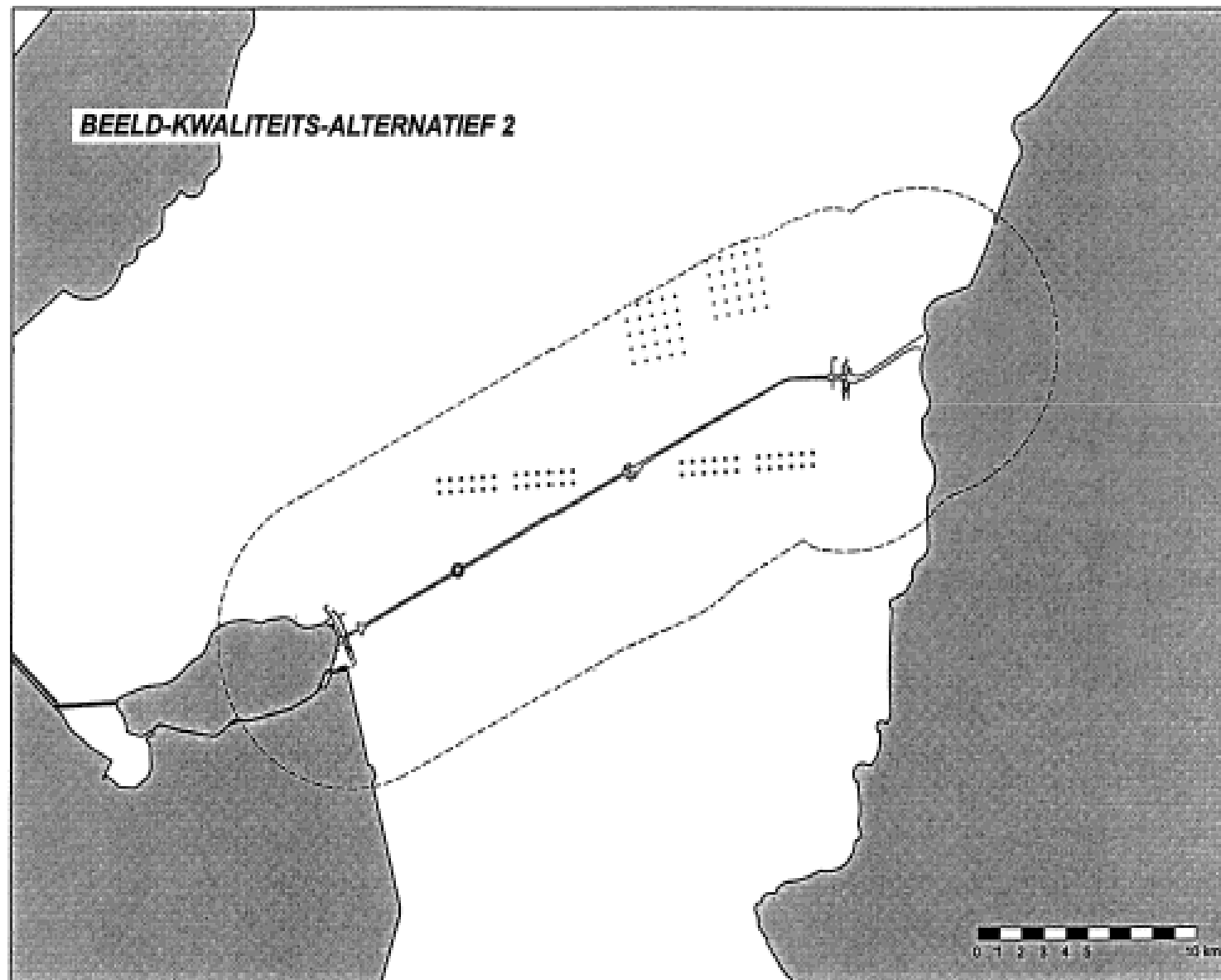
Decision process focused on EIA Location study

- From the start several zones excluded, e.g.
 - zones alongside the Afsluitdijk
 - wide zones at both ends of the dike
- Consequently: EIA alternatives with hardly any difference
- Project group could not make a choice
- Minister asked for advise 'landscape expert'
National Architect

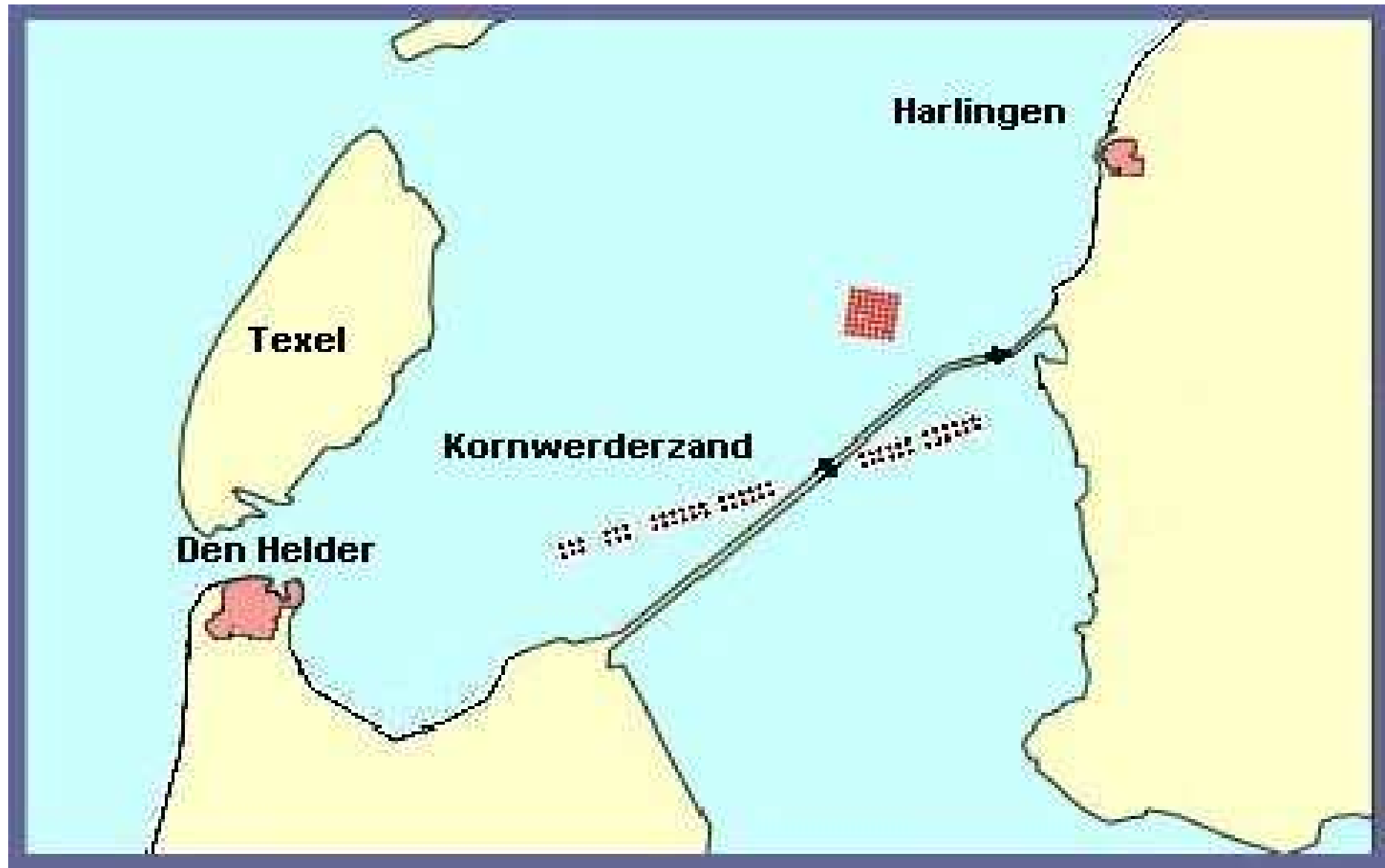
‘most environmentally sound’ alternative



'Image-quality' alternative 2



Alternative selected by “National Architect”

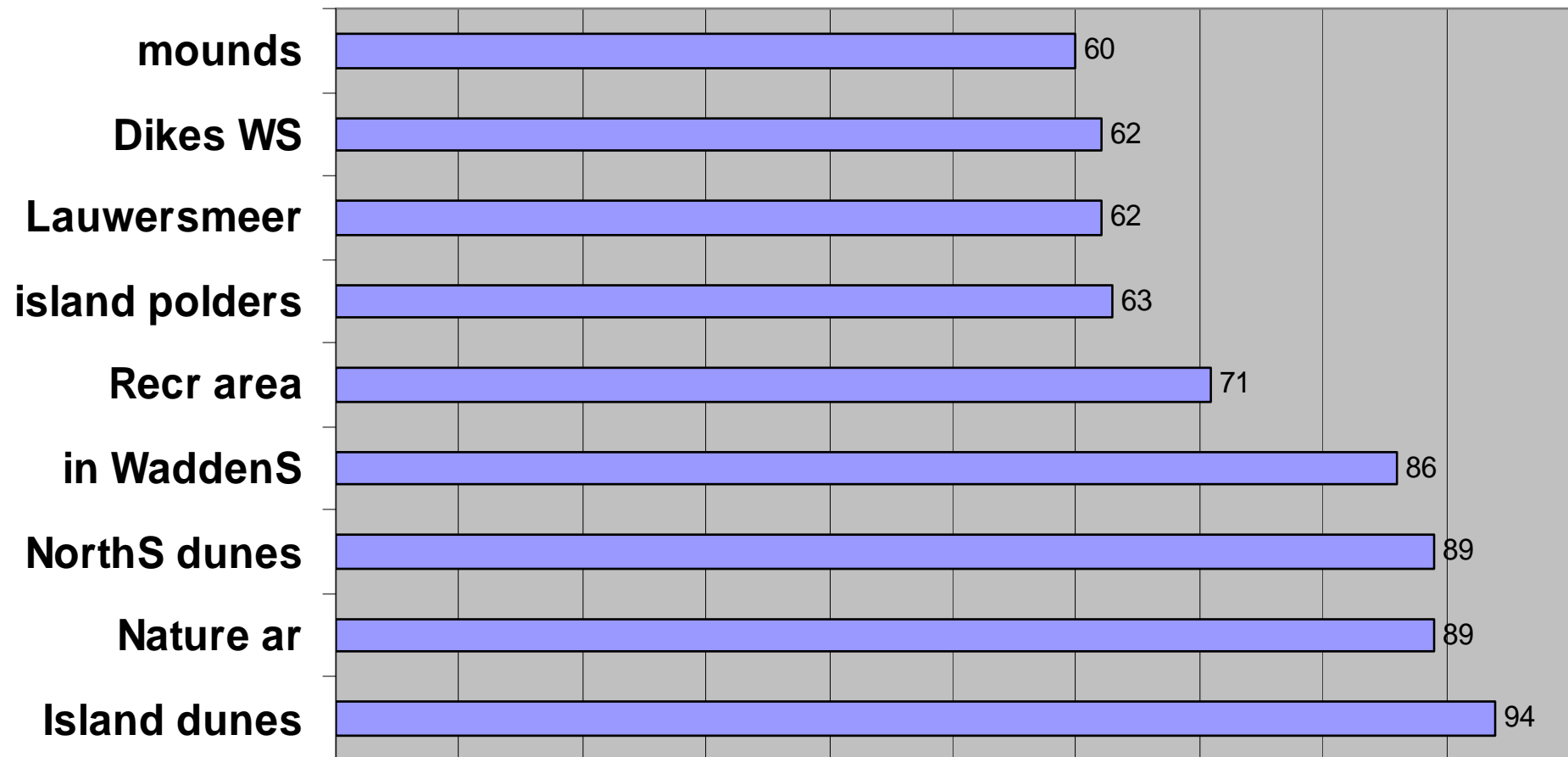


Acceptability WP scheme determined by landscape character

Acceptability as perceived by members 'Wadden Union'

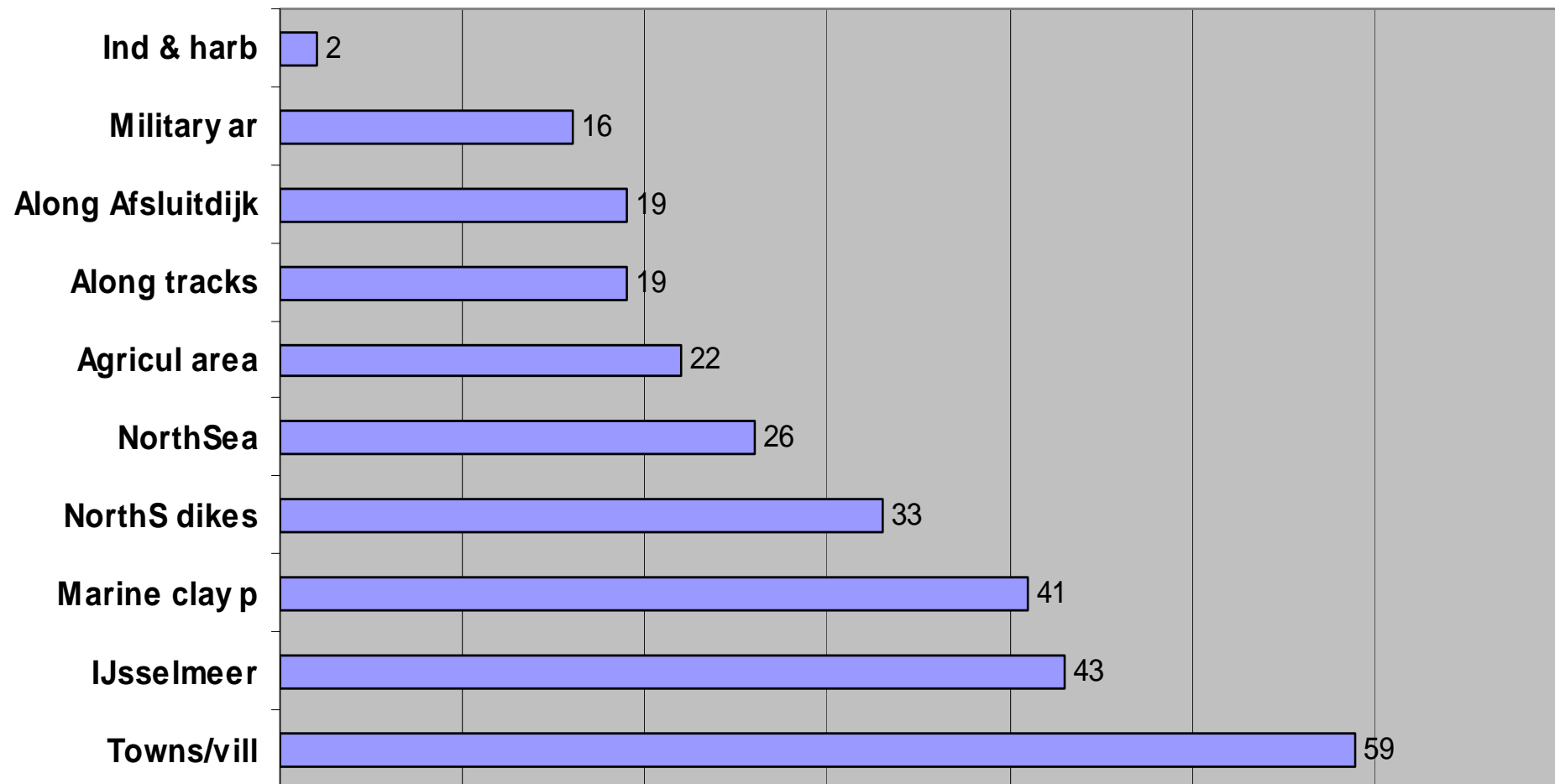
Wolsink 2010, Land Use Policy 27 (2) 195

% rejecting siting in landscape



Acceptability locations:
as perceived by members 'Wadden Union'

% not rejecting siting in landscape



IPWA project failed

- Technocratic 'rational' planning, only involving several tiers of government and principal investor
- No participation in project by the civil society
- In fact the most important stakeholder excluded
- Important alternatives excluded in EIA scoping phase
- Excluded alternative superior with regards acceptability
- Selection made by 'expert' (architect!) - technocratic landscape **assessment not related to any values of stakeholders**
- In deliberation 'Seascape' the determining factor
- Well known: WP project debates always about landscape at location
- Excluded actors started an effective lobby → failure
- Frustrated developers as usual insulting opponents: Wadden Union as NIMBY-ies

Support-rejection for wind power development; explained by
landscape type factors (wind farm design revealed irrelevant)

Wolsink 2007 Energ Pol/p.2698

- Standardized regression coefficients

Landscape I Econ appl (farm, industr..)	.45 +
Landscape II Nature	-.28 +
Landscape III Residential use	.06
Landscape IV Sea (Nothsea)	.03
Design I Large farms	.01
Design II Tall turbines	.01
Design III Small numbers	.04

N=535; R=.66; R^2 =.44.

High variability of acceptance depending on site and community

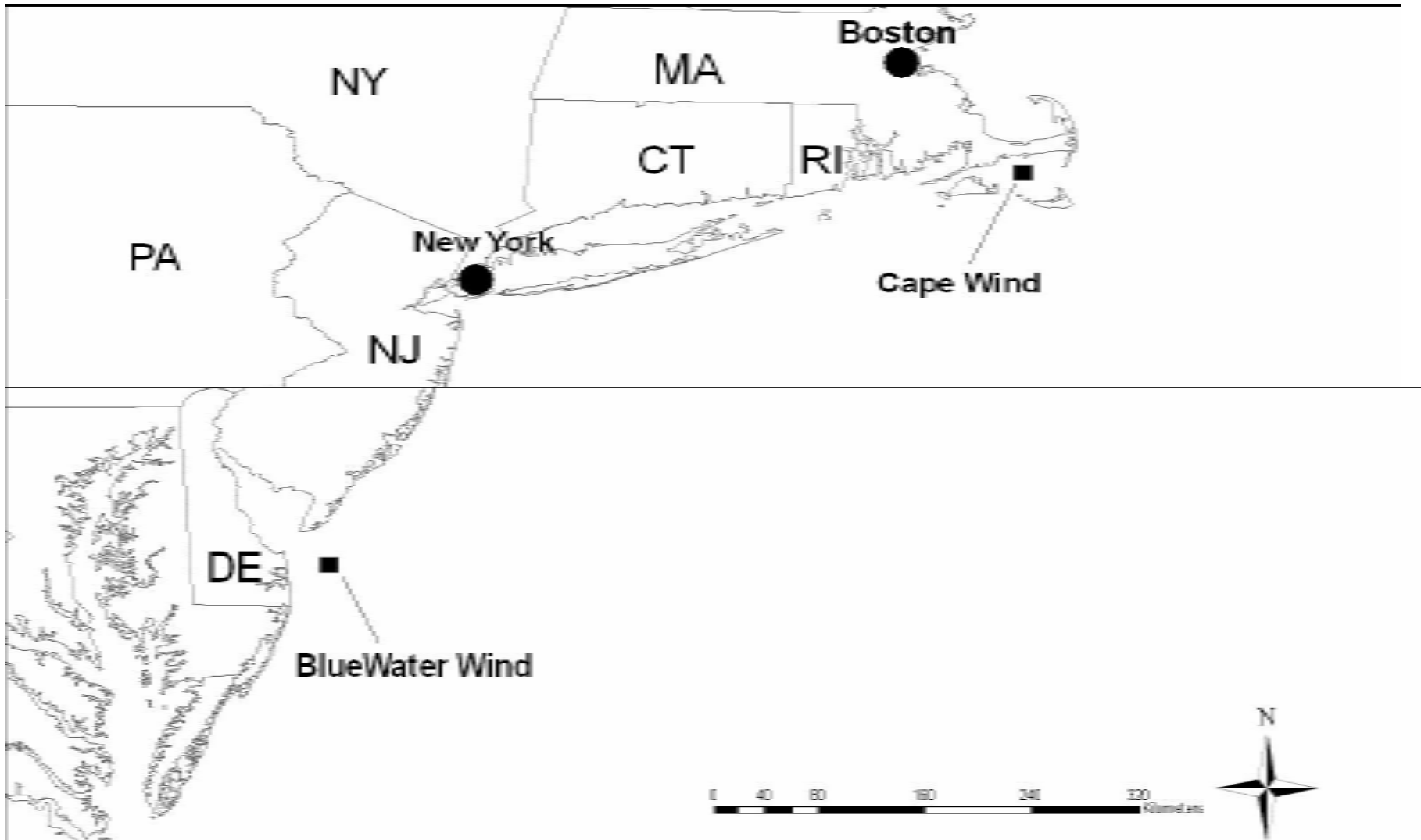


"There is strikingly higher public support for offshore wind development in the mid-Atlantic, and especially off Delaware.."

Firestone et al, 2009 *Wind Energy* 12, 102

Nearshore US: Nantucket Sound and Delaware Bay differences in acceptance

[Firestone, Kempton et al.](#)



Renewable energy is a Natural Resource
For all to use, but preferably in a sustainable way
Physical (man made and natural) system + socially organized system →
Socio-Technical Systems to use Common Pool Resources

Ostrom E, 1999. *Coping with tragedies of the commons*.
Ann Rev Polit Sci 2, 493

Contemporary, classic economist dominated, state oriented policy
view on

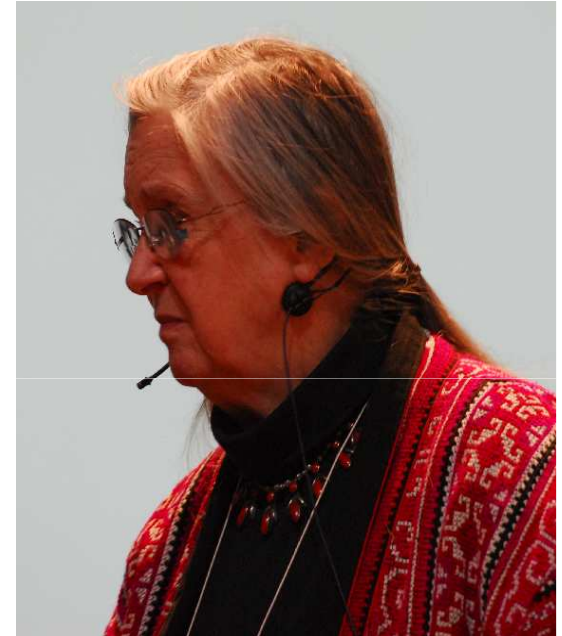
"the governance of **common-pool resources** is based on three
core assumptions:

(a) resource users are **norm-free maximizers of immediate gains**,
.....

(b) designing rules to **change incentives** of participants is a
relatively simple analytical task

(c) organization itself requires **central direction**"

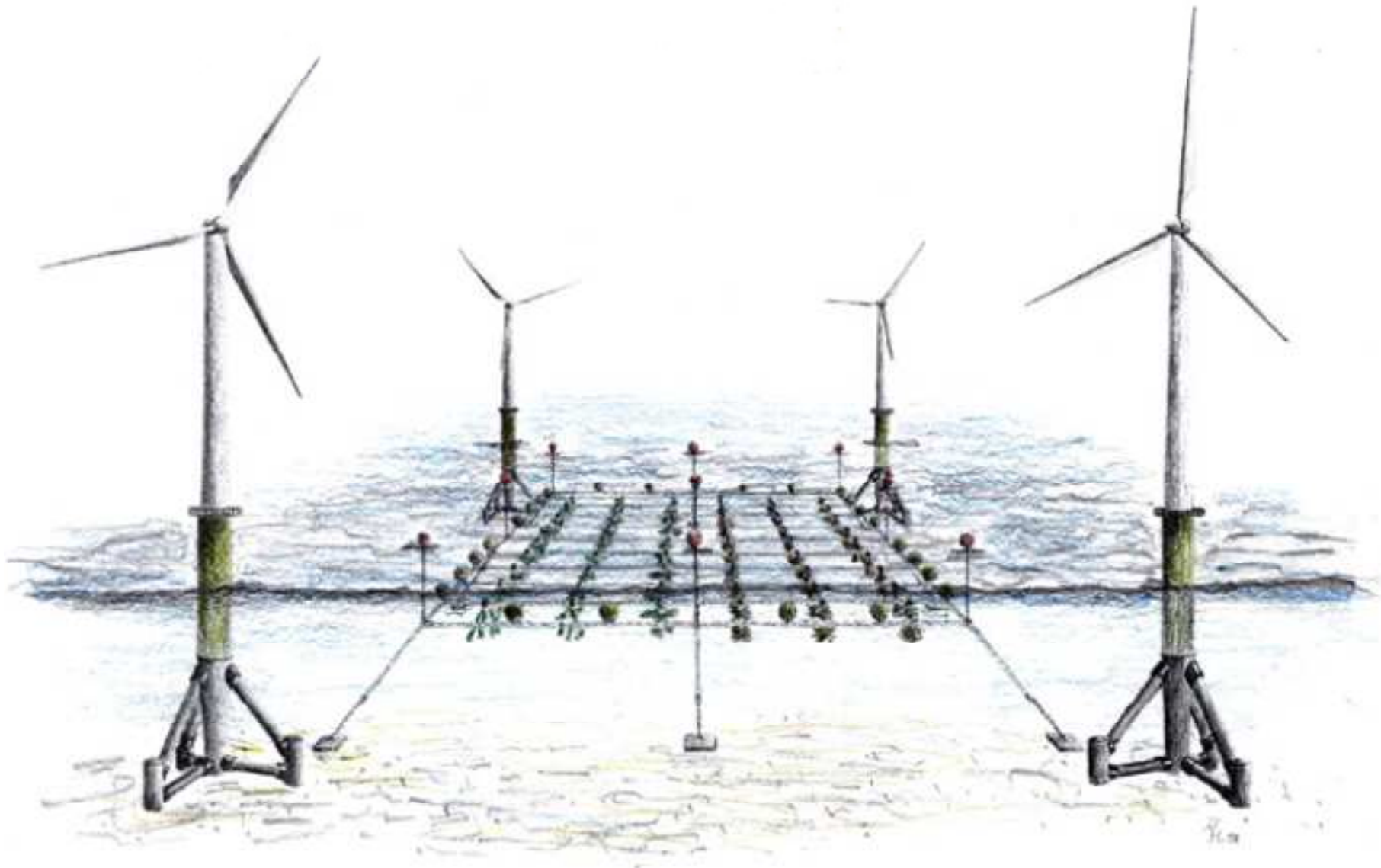
**"... all three assumptions are a poor
foundation for policy analysis."**



Examples of coalition building, collaborative planning

Input communities → Experimental design

Mariculture (mussels) combined with Wind Farm



Multiple-use options for coalitions

Lacroix, Pioch (2011) Aquat Living Resour 24, 129



General conclusion

RES on-shore, off-shore, integrated with other distributed generation sources and with local demand, requires CPR management

- Multi-layered, *polycentric* governance
- *Adaptive* governance
- *Trust building / Learning* processes
- Institutions furthering *Self-Governance*
- Non-hierarchical; **central direction** usually destructive for diffusion and acceptance