Ecological Modernization of Japan & Germany Overview, Approach and Focus

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Research Project

- „The Modernization Capacity of Advanced Industrial Countries: Japan and Germany“
- 2016 – Spring 2018
- Funded by Dokkyo University, Tokyo

Objectives of the Project

- Finding out and comparing the Ecological Modernization Capacity/Capability (EMC) of Japan and Germany
- Which factors could explain the EMC and the differences between both countries:
  - Governance
  - Capacities (Capacity Building Approach)
  - Political Culture
  - Path Dependency **(Historical Institutionalism)**

Focus On Four Policy Areas

- Transport
- Renewable Energy
- Nuclear Energy (incl. Waste Management, Demolition of Nuclear Power Plants)
- Rare Earth
- ⟹ all areas are highly relevant for ecological & economic prosperity / outstanding problem areas / highly interrelated / strong influence on other policy areas (e.g. Climate)

Research questions for Policy Areas

Modernisation Capacity / Policy Area	Weak BAU Business As Usual	Middel Innovation	Strong Structural Change
Transport	Reduction of exhaust gases by catalytic converter etc.	Alternative drive systems and components: Hybrid, Electrical drive engineering	New transport concepts
Renewable Energy Sources	RE as niche technology	Energiewende (Energy Transition)	100% RE supply Zero Emission
Nuclear Energy & NW Management & Disposal	Higher security Temporary storage of spent fuel in pools	Stepwise phase-out No reprocessing Temporary dry storage	Phased-out NPPs socially accepted final disposal of NW
Rare Earths	Increment of production capacities for raw materials	Recycling Recycling friendly products	Alternative raw materials

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Theoretical-Analytical Approach is Made up by a Combination of:

- Policy Analysis
- Ecological Modernization („mainstream version“ à la M. Jänicke et al.“)
- Capacity Building
- Path Dependence

Path Dependence / Historical Institutionalism (1)

- „History matters“: historic developments shape contemporary policies
- Past developments/institutional choices can have long-lasting effects on institutional arrangements/policies for various reasons: *increasing returns, sunk costs, vested interests, networks, interrelatedness, adaptation, reverse of winner-loser constellation etc.*
- Specific trajectory of development (path),

Path Dependence (2)

- The option range for change is highly dependent on choices made in previous times (rather than simply on current conditions of technology, preferences, etc.)
- ***No Determinism:*** Incremental or fundamental change (critical juncture) is possible: by strategic actors, elite dissent, crisis, windows of opportunity, „loser compensation“ etc.
- ***Important:*** Identification of „mechanism“, factors and context promoting a specific path

Nuclear Energy Policy Germany and Japan

The Puzzle (1)

- Experiment of Thought (after John Rawls, *Veil of Ignorance*)

Imagine, people who do not know nothing
about actual proliferation of nuclear energy
were given the following facts:

- Country A: hit by nuclear bombs; prone to (sometimes very heavy) earth- & seaquakes
- Country B: a seismological stable country

…and then they were asked: Which country will be stronger bound to nuclear energy?

Certainly, Country B (*Germany)* will be chosen.

How to explain these paradoxes?

The Puzzle (2)

- Distance Fukushima --- Berlin 8,750 km
- Distance Fukushima --- Tokyo 240 km

Paradoxically, the larger the distance the stronger the „political fallout“: Fukushima Catastrophe had much more effects on German nuclear energy policy than on Japan‘s

Path Dependence
The Case of Nuclear Power in Japan and Germany

- Both Countries shared many similarities (political, institutional, economic, scientific) in NEP for a long time before their policies developed in highly different directions:
- GERMANY: paradigm shift, phasing out; Energiewende
- JAPAN: strives at renaissance of nuclear energy only some years after „Fukushima“

HOW TO EXPLAIN THESE TOTALLY DIFFERENT TRAJECTORIES?

Capacity Approach

Capacities Relevant for Governance of a Society‘s Way of Modernization

economic / technical / political-institutional / cognitive-informational capacities:

- both countries have high capacities giving them potentially a multitude of choices with respect to the energy system.
- However, large differences exist with respect to *cognitive-strategic capacity* to fundamentally change the path of national energy policy.

Context: Major Similarities in Nuclear Energy Policy (NEP) (1)

For a rather long period core elements of the NEP regime had highly similar features:

- Share of nuclear power in electricity production
- Government driven policy
- Closed shop of nuclear proponents: *genshiryoku mura (nuclear village)/Atomstaat (nuclear state)*
- *Biased scientists and oversight organisations (pro nuclear)*

Major Differences of Relevance for Nuclear Energy Policy (1)

- Type of power plant (and: own/foreign product)
- Stricter safety regulations in Germany
- Stronger (global) climate engagement/more demanding reduction standards in Germany without close linking to nuclear energy
- Federalistic (Germany)vs centralistic politico-administrative system (Japan)

Major Differences (2)

- Political election system of Germany provides more chances for „newcomers“
- Financial support (incl. tax reductions) of non-profit organisations and new political parties is stronger in Germany
- Politicisation of formally listed non-profit organisations is easier in Germany
- (Independence of public media perhaps stronger in Germany)

Capacities Relevant for Governance Towards Ecological Modernization

- Economic/Technical/Political-Institutional/
  and Cognitive-Informational/STRATEGIC Capacities:
- Both countries have rather high capacities for a multitude of choices regarding the energy system and its transition.

However, large differences exist with respect to *cognitive- informational/STRATEGIC capacity (*to fundamentally change the path of national energy policy), especially with regard to the non-governmental and anti-nuclear energy actor groups.

Cognitive-Strategic Capacities of Proponents of a new Energy Path (1)

- Definition: Capacities/Capabilities of actors/movements to
- correctly analyze the political arena
- assess the power of veto groups/opponents
- relate this information to own power resources in order to
- assess realistically their chances for changing the current path and

Cognitive-Strategic Cap. (2)

- develop/realize a political strategy and tactics to achieve (in a long-term perspective) their goals.
- This includes the capability of using (even creating) „opportunity windows“ and enhancing supporting capacities.

Strategic „Will & Skill“ of Proponents of a new Path/Power Equilibrium

German Anti-Nuclear Acors:

Cognitive-Strategic Capacity and Politicization of the Energy Path (1)

- Interlocking of various movements: environmental, anti-nuclear, feminist
- Penetration of the environmental/anti-nuclear movement by „leftist“ actors (with high strategic-tactical capabilities)
- „march into the (established) institutions“, incl. the politico-administrative system at all levels
- Alternating: Conflict *and* Co-operation (also with businesses, administration, trade unions)

German Anti-Nuc. Actors (2)

- Bottom-up foundation of „green parties“ (local to national level)
- Foundation of independent research & policy-developing organizations (later on widely acknowledged as experts, also by „mainstream experts“ (Öko-Institute,Freiburg, 1977 etc.)
- Adopting a positive/pragmatic green vision (which got broad acceptance): *Ecological Modernization (*bogeyman: „Atomstaat“)

German Anti-Nuc. Actors (3)

- Foundation of a left-liberal, ecological-oriented *national* newspaper „TAZ“ (Tageszeitung)
- Integration of experts dissenting from the established nuclear energy regime („elite dissent“)
- Fierce blockades of waste disposal transports
- Well-organized long-term resistance against nuclear power and related projects like Gorleben, Wackersdorf; mobilization of the local „Normalbürger“ (plain citizen)

German Anti-Nuc. Actors (4)

- Effective organization of mass demonstrations with huge numbers of participants
- Building strong networks with sympathizing scientists in universities etc.
- Addressing successfully the „educational-cultural“ system/institutions

Japan-Germany
Summing Up (1)

- Some of the institutional etc. (context-)factors in Germany are more favorable than this is the case in Japan: e.g. federalism, public financing of political parties and (politically active) non-profit organizations etc.
- However, without strategical, long-term oriented use of these factors their potential for altering the nuclear path dependence probably would have not been realized.

Summing Up (2)

- It was no easy way to success in Germany: It took almost 50 years (half a century!) until the probably irreversible phasing-out process (after „Fukushima“) happened.

  (see Max Weber: Politics as a process of drilling hard wood with sound judgement and patience)

Thank You !

- Positive "path dependency": A mutually reinforcing set of technological, ideational and other capacities, capabilities, norms, and events impedes drastic policy change
    - Early (since the 1970s), complex and relatively successful air pollution control policy (including energy saving)
    - The precautionary principle! ("risk avoidance")
    - Altogether positive (political, social, economic) expierences with progressive environmental policy
    - Broad public skepticism towards business' counterarguments
    - International diffusion of German standards/approaches
    - Broad acceptance of the idea/concept of ecological modernization (not to be confused with "sustainable development", see Martin Jänicke)
    - Broad and institutionalized network of proponents of progressive CCP (incl. green businesses, political parties, media, NGOs, scientific community, relevant societal organizations)
    - The image of being a PIONEER in CCP has become a positive "national label" almost all relevant actor groups are keen to use.

A mutually reinforcing set of technological etc. and ideational capacities and capabilities, norms and events

- Early, complex and relatively successful air pollution control policy
- Precautionary Principle
- Positive experiences overall
- Massive conflicts between political, economic and scientific actors led to broad scepticism towards established institutions
- International diffusion of German standards/approach
- Air pollution and energy-related issues have continuously played an important part in the public debate since the 1970s

Issues	Sustain. Develop.	Ecological Modernization
Justice/ Equity: •Intergenerational •global	Both are core constituents	Neither is an objective as such
"Slogan"	Think globally – act locally	Think locally – act globally
Known in German	Low/Medium	Medium
South-North aspects	Strong	Low
Geograph. scope	Global	National/ internat.
Main potential policy effect	Redistributive: "North to South"	Distributive/ win-win
Main clientele	Humankind, esp. "the poor"	Environm.Groups / Green Business
Main objective	Global welfare/ poverty mitigation	Environmental improvements / increasing national welfare
Concept's posit-ion in Germany	High rhetoric importance	Dominating and of ↑ importance

Similarities (2)

- Intransparent check&control systems
- Restrictive/manipulated public information
- Manipulation of critical data
- Mopping/criminalization of opponents
- High dependence on foreign fuel supply
- Heavily hit by oil price crisis/oil shokku
- Selling nuclear energy as clean, infinite and climate friendly

Similarities (3)

- Unsolved nuclear waste disposal
- Various accidents in powerplants, partly related with „scandals“
- Oligopolistic structure of the sector
- Deliberate ignorance of renewable energy
- Relatively strong public acceptance over a long period: nuclear energy as clean, safe, cheap & a feature of a modern society

Cognitive-Strategic Cap. (3)

- It is mainly due to the differences in cognitive-strategic capacity that the path dependence of Japanese (nuclear) energy policy is much stronger than in Germany
- Massive external events (like oil shokku, Chernobyl, Fukushima) provided an extra opportunity for altering a given path. However, effectively *politicization* of these events depends on cognitive-strategic capacity