Transitions in Energy Systems

A Dynamic Representation of the Multi-level Perspective on Transitions

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Matrix: Plausible Combinations of Hybrid Technologies

Transitions in Energy Systems
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Variability in Daily System Load Curves for NY

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Energy Storage System Ratings for Installed Systems

Rated Power (MW)

Discharge Time (h)

CAES  Compressed Air
EDLC  Dbl-Layer Capacitors
FW    Flywheels
L/A   Lead-Acid
Li-Ion Lithium-Ion
Na-S   Sodium-Sulfur
Ni-Cd  Nickel-Cadmium
Ni-MH  Nickel-Metal Hydride
PSH    Pumped Hydro
VR     Vanadium Redox
Zn-Br  Zinc Broming
Distributed Generation Shares in Total Electricity Production, 25 EU Countries
Transitions in Energy Systems

Dynamics in Socio-cognitive Technology Evolution

External environment (regime and landscape levels)

Regime Problems and discussions

Cultural (e.g. liberalization ideology)

Environmental (e.g. climate change)

Regime Problems and discussions

Formal rules, regulations, programmes

Cognitive rules (retention)

Normative roles, responsibilities, trust

Niche level (emerging field/community)

Social learning, drawing general lessons (selection)

Network of actors (emerging community)

Strategies, plans, imagination, rhetorics

Resource Provision

Enrolment of actors on basis of outcomes (network building)

Articulation of expectations (to provide direction to variation)

Interpretation of outcomes, experiences (selection)

Experimental pilot projects with concrete artefacts (variation)