Future and becoming as two heterogeneous and complementary modes of thinking on electrical grids

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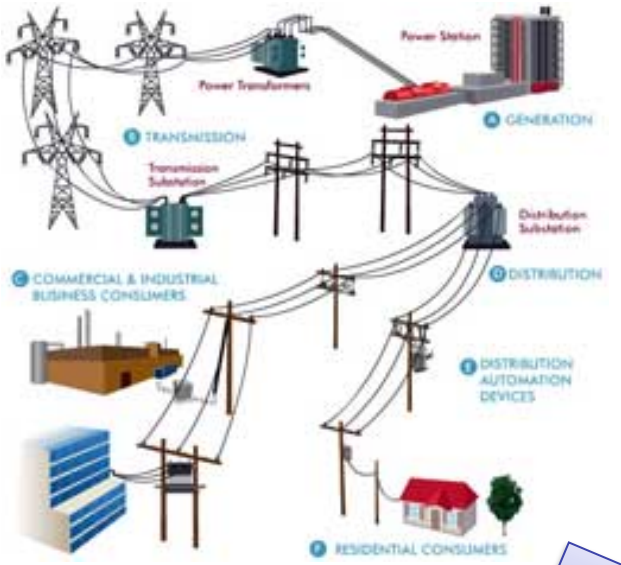
Anticipation 2015, Trento



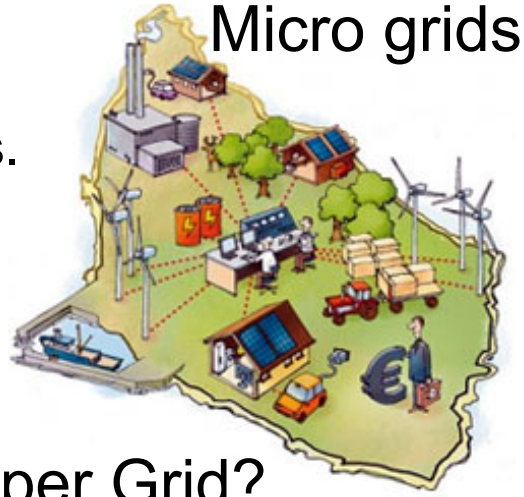
The becoming of the grid

Towards 100% renewables: variable power

New actors: decentralised production, ICT, aggregators.

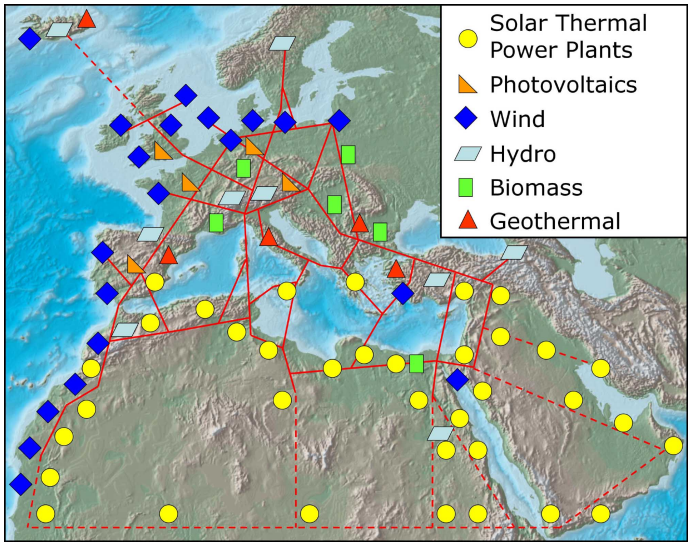
?

Micro grids?



Promise economy : smart meters, smart appliances, electrical vehicles, storage, energy service companies (ESCos), accurate meteorological forecasts, etc.

Super Grid?



How to capture diffuse value?
New markets: governed by information on productions and consumptions

Five electrical solidarities

- Solidarity:
  - Matter of fact, unity of action
  - Common interest: possibility to establish a total sum

- Technological: balance production/consumption
- Economic: market
- Territorial: expansion of the state
- Ecological: extension to sources
- Usages: coordination of practices

- Scenarios based on technology and markets. Demand is rarely questioned

→ Futures ressemble to what we know: need other ways of thinking

Modes of thinking futures

- Scenarios are structured along three categories (Marien, 2002; Dreborg, 2004; Börjeson et al., 2006):
  - Probable: *what will happen?* → predictive mode
  - Possible: *what can happen?* → explorative mode
  - Preferable: *How can a specific target be reached?* → normative mode

Modes of thinking futures

- Scenarios are structured along three categories (Marien, 2002; Dreborg, 2004; Börjeson et al., 2006):
  - Probable: predictive mode → looks like the present
  - Possible: explorative mode → what is impossible?
  - Preferable: normative mode → current values and conflicts
- Another point of view:
  - "There must be something else"
  - Research process
  - Exploring present virtualities
- Both modes are intertwined in experiences and practices, but can be analytically distinguished.

Two modes of thinking

- Two sides to scenario building:
  - Being part of the process
  - Text (and images) as a result
- Futures are fixed into paper, reified as objects. Ressemble to what we know.
- Futures are points of view on the present: becomingness.

Actual/virtual & Real/possible

- Deleuze (*Difference and Repetition*)
- Real >< possible.
  - Possible is already constituted: it will be realised without any change in its determination or in its nature. It lacks only reality.
  - Reification of the possible: without surprise nor event.
  - Existence as a sudden apparition, pure leap between nothing and all.
- Actual >< virtual.
  - Virtual: entanglement of tendencies of forces. The actualisation is the invention of a solution.
  - Virtual is as much real/present as actual (techniques, skills, memories).
  - Virtual: pure multiplicity without the concept of identity.
  - Dupuy (2002): virtual is in the ontology. Catastrophe is virtual: already present and happening.
- Real *resembles* to possible, while actual *responds* to virtual.

The nature of prospective propositions

- The problem of future contingents

  A. “Electricity will be 100% renewable in 2050”.

  Proposition: True or false? If true (or false), then future is determined.
- Aristotle:
  - A is neither true nor false: the bivalence principle is true
  - logic > ontology: ontology of propositions
  - Planning: make it true
- Becoming:
  - True under which conditions?
  - Complex propositions: do not obey to bivalence principle
  - Multiplicity of compossible propositions
  - The impossible becomes possible, the unthinkable thinkable
  - Deleuze: events actualise and give new meanings to propositions.

Two modes of thinking

Becomingness		**Futures**
Compossibility	Logic	Bivalence
Events & relations	ontology	Facts & substances
Virtual/actual: creation	Process	Possible/real: analogy
Problems & questions	Propositions	Solutions & statements
Events & wild cards	Looking forward	Trends & probability
Duration: present continuous with past and future	Time	Calendar and Newtonian: future looks like present
Imagination	Driver	Institution
Creation	Order	Selection

Back to grids: from stock to flux

The smart grid (singular) is conceived as the old one: energy is a stock, not really a flux.

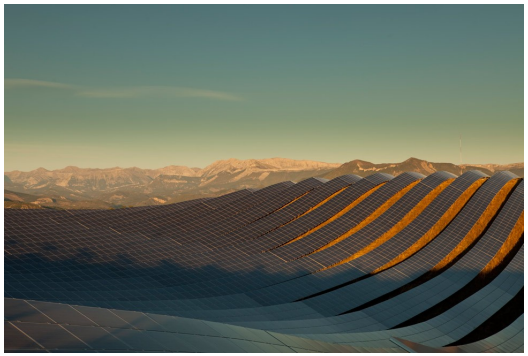
Inverse the perspective:

How to adapt our activities to available energy?

How to reduce energy demand?

Which new links between production and consumption?

How to actualise other solidarities?



Reconfiguring solidarities

- Territorial: microgrids escape from duties → conflicts with current actors
- Ecological:
  - learn how time and moments are important
  - speed of adaptation to available resources
  - decrease material and energy flows
  - need to accept another vision of time: not always the same situation

  → Another conception of time is required

Reconfiguring solidarities (2)

- Social:
  - usages are related, social rhythms. Blackout: grid appears in practices.
  - Event: creation of possibles. Emergence of new publics (Dewey).
  - Importance of local communities to appropriate the grid and create new becomingnesses.
  - Use of windows of opportunity. Kairos.
- The desire to change (production and consumption patterns) is related to the will to become something else.
  - Ready for another life, which might be thriftier and more peaceful.
  - Ready for some kind of revolution, ready to lose many things probably but to gain more sense of life, immanence and becomingness.

Conclusions

- Need to discern actual becoming of the grid beyond what is expected by dominant actors (who define the framework of the possible).
- Future and becoming are different modes of thinking about time and (im)possibility.
- They are both necessary for sustainable development: virtualization processes are as much important as realization ones.
- Grasp events to direct them to other futures.
- Sustainable development requires more virtualisation because constraints are increasing.

Thank you for your attention

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