Distribution grids
- EU rules and public ownership

By

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Summary

- EU rules on electricity networks
- Examples:
- Reasons for public ownership/operation of grids

EU rules on ownership and operation of electricity networks

- EU energy directives from 1996 aim to end public sector monopoly and create 'markets' and 'competition'
  - Rules on unbundling and separation are key part of this neoliberal project
  - They may not help other objectives e.g. renewable energy, affordability
  - EU rules do not, and cannot, require private ownership or operation

- EU rules are set out in Directive 2009/72 (= the 3rd Energy Package) http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32009L0072

- There are 2 useful 2016 reports by the EU energy regulators council, CEER, on the status of implementation across Europe:

  - one on transmission grids http://www.ceer.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2016/C15-LTF-43-04_TSO-Unbundling_Status_Review-28-Apr-2016.pdf

  - one on distribution grids http://www.ceer.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2016/C15-LTF-43-03_DSO-Unbundling_Status_Review-1-Apr-2016.pdf

EU rules on transmission networks

- Directive 2009/72 says there are three ways for achieving this for transmission grids, and the actual status is described in the CEER 2016 report on transmission:

  - by ownership unbundling (OU), so that the owner of a transmission grid does not also own a supply or generation company. This separation of ownership is achieved in the UK for example, where National Grid does not own any supply or generation company, and this is certified by the regulator OFGEM. https://www.ofgem.gov.uk/ofgem-publications/59298/nget-certification-summary-pdf . Where there is OU (as in the UK), there is no additional requirement for the grid owner to appoint a separate company to operate a grid.

  - a company can remain vertically integrated (VIU), and thus own both transmission grid and supply or generation companies, but it must create a fully autonomous separate company to operate the transmission grid, ring-fenced from the supply and generation companies (known as an ITO), with "autonomous organisation, decision-making and exercise of the business" (CEER Transmission report p.30).

  - the company owning the grid may continue to be a VIU if it designates a separate company as an Independent System Operator (ISO) of the grid. The ISO can also be part of a VIU but must be ring-fenced from the supply/generation companies in the group. According to CEER, 5 countries chose this option: Spain, Latvia, Poland, Romania, Sweden. (CEER Transmission report p.31-2).

- so the need for independence of the operator from the owner only applies in those 5 countries – including Spain, but not the UK - which chose the ISO option.

EU rules on distribution networks

- Directive 2009/72 has weaker requirements for distribution grids

  - Article 26 says clearly that there is no ban on vertically integrated simultaneous ownership of a distribution grid and a supplier or generator, as long as there is a separate company running the grid: "Where the distribution system operator is part of a vertically integrated undertaking, it shall be independent at least in terms of its legal form, organisation and decision making from other activities not relating to distribution. Those rules shall not create an obligation to separate the ownership of assets of the distribution system operator from the vertically integrated undertaking." http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0072&from=EN

  - the rules also allow exemption of distribution grids serving less than 100,000 people, and Spain seems to have more of these than any other country in Europe except Germany: according to CEER "In Spain, electricity DSOs serving less than 100 000 connected costumers are exempted from the provisions regarding functional unbundling, but must meet the requirements of legal unbundling by 2016." CEER report on DSOs 2016 p.12-13 http://www.ceer.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2016/C15-LTF-43-03_DSOUnbundling_Status_Review-1-Apr-2016.pdf

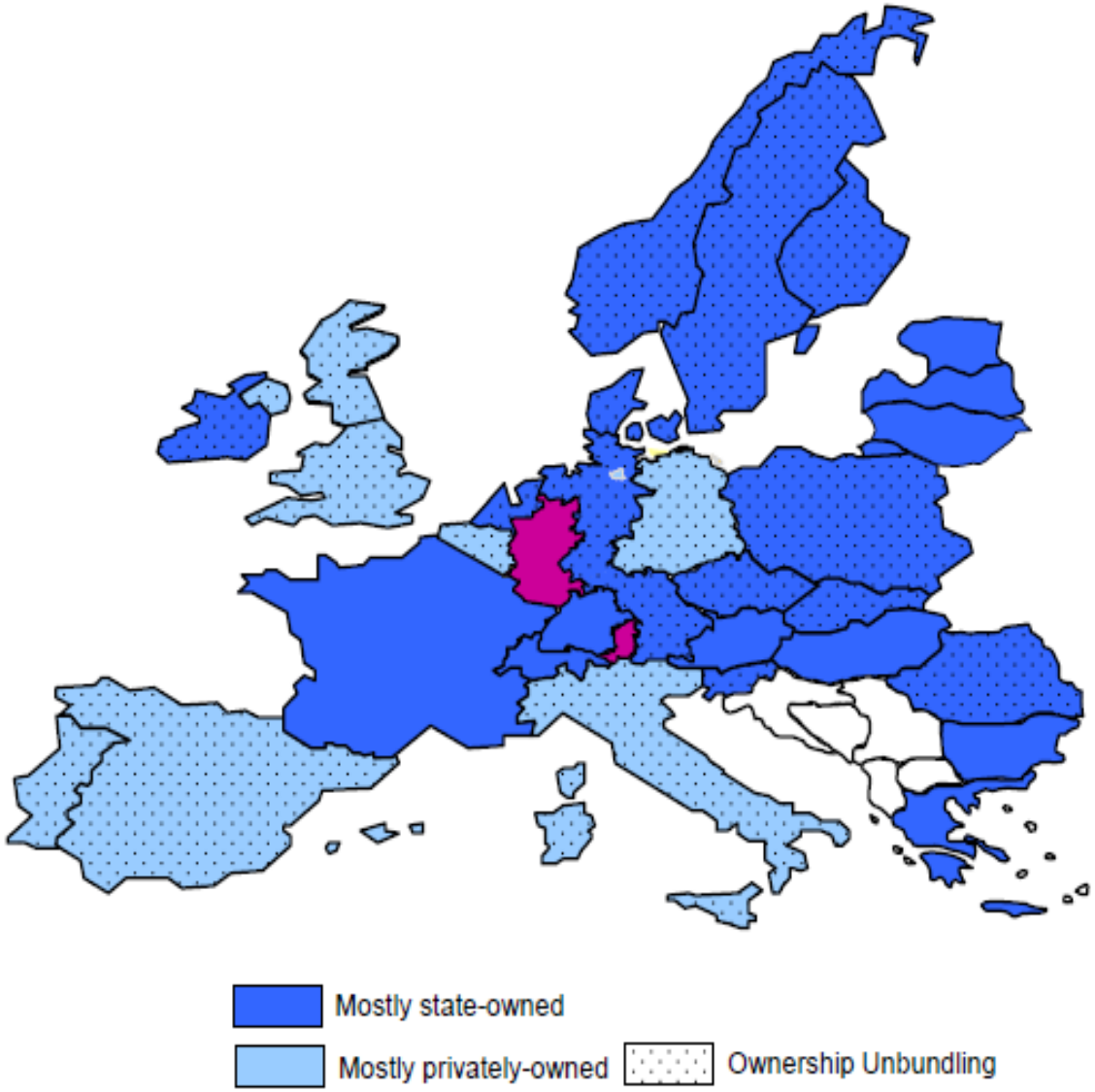
Designating DSOs for a period of time

- Article 24 of the 2009 directive very explicitly requires member states to designate DSOs 'for a period of time': "Member States shall designate or shall require undertakings thatown or are responsible for distribution systems to designate, for a period of time to be determined by Member States having regard to considerations of efficiency and economic balance, one or more distribution system operators." This seems to apply to all DSOs regardless of ownership or vertical integration.

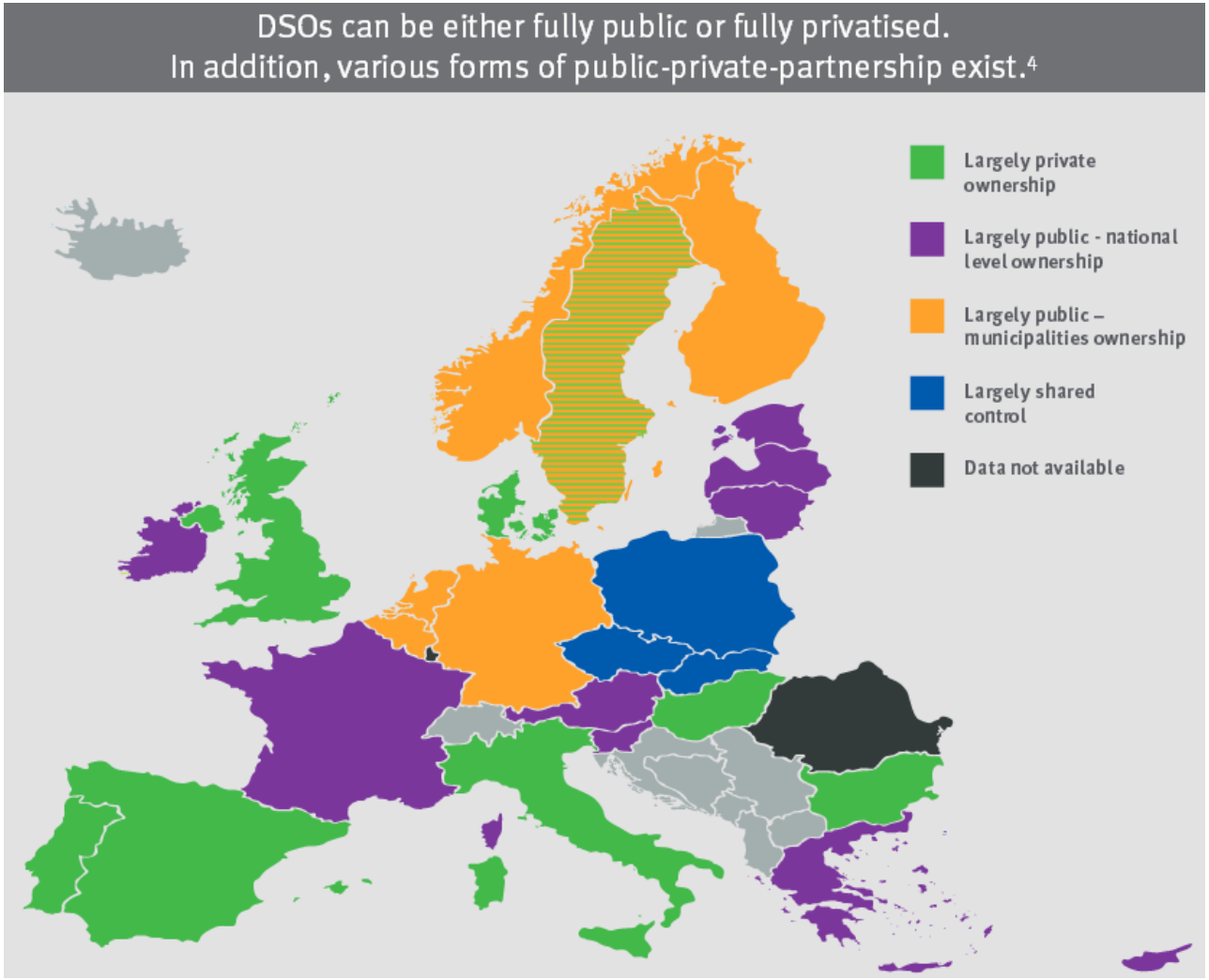
- The UK has given licences for indefinite periods, both for grid and distribution, because companies have the right to 25 years' notice:
  - the licence of National Grid: “3. This licence, unless revoked in accordance with Schedule 2, shall continue until determined by not less than 25 years' notice in writing given by the Authority to the licensee.” https://www.ofgem.gov.uk/ofgem-publications/53954/nget-rollover-special-conditions.pdf
  - electricity distributors e.g. Norweb: “3. This licence, unless revoked in accordance with the terms of Schedule 2, shall con□ nue un□ l determined by not less than 25 years’ no□ ce in wri□ ng given by the Authority to the licensee” http://secfilings.nyse.com/filing.php?ipage=2861045&DSEQ=&SEQ=424&SQDESC=SECTION_PAGE

- I do not know how the UK licenses can be reconciled with EU competition law, nor with article 24: 'infinity' cannot be considered to be 'a period of time

Transmission in Europe: great majority public



Ownership of electricity distribution in Europe



Most DSOs own the network and are granted an operation licence by local or national public authorities.

In some countries, like Germany, DSOs are granted concession contracts to operate the network for a certain amount of time while the public authorities remain the owner in the long term. In these cases, DSOs are in charge of operation and maintenance as well as capital investment.

Even privatised distributors are owned by companies based in the home country, except for the UK, Hungary and Bulgaria which are owned by multinationals

Eurelectric 2013 Power Distribution in Europe
http://www.eurelectric.org/media/113155/dso_report-web_final-2013-030-0764-01-e.pdf

For each country the percentage of each type of ownership was calculated by aggregating the kWh distributed by each type of company.

European example: Denmark

- Electricity distribution heavily decentralised
- around one hundred local distribution companies primarily cooperative and municipally owned)
- ten regional transmission networks (amalgamations of the 100 local cooperatives) So local cooperative and mutual forms of ownership dominate the electricity distribution system
- Gas distribution is also in the hands of either state-owned or municipal companies at the local level.
- innovative new forms of local public ownership since 2000, partnerships between municipal and publicly owned utility companies, partnerships between the municipal governments and residents' cooperatives e.g. the massive Mittlegrunden wind farm,
- (from Cumbers et al 2013 http://reidfoundation.org/wp-content/uploads/2013/10/Repossessing.pdf)

Table 4 Structure of the electricity power generation and distribution network in Denmark

	% share	Nature of ownership
Power generation		
Central generation plants	61	State: DONG, Swedish state subsidiary
Wind turbines	19	Co-ops, state, municipal and private
CHP/industrial		
auto-producers	20	Mix of private and public
Electricity distribution		
Joint stock companies	26	State owned under DONG Energy
Co-operative companies	55	Co-ops owned by consumers
Municipal companies	12	Co-ops or joint stock state owned
Other	7	

European example: Germany

- The distribution system in Germany is the most complex in Europe, with around 900 distribution system operators serving 20,000 municipalities. This includes the four large companies as well as about 700 Stadtwerke (municipally owned utilities) and a number of regional companies.
- The four large DSOs—RWE, EnBW, E.ON, and Vattenfall—operate a significant portion of the distribution grid through concession contracts with municipalities. Under these contracts, municipalities rent out their distribution franchise for up to 20 years.
- Under the Energy Industry Act, these concession agreements have to be renegotiated under non-discriminatory rules and can be cancelled.
- there is a movement today for Stadtwerke to take over their own grid operations as many concession contracts come up for review.

- From: Agora Energiewende Report on the German power system 2013 https://www.agora-energiewende.de/fileadmin/downloads/publikationen/CountryProfiles/Agora_CP_Germany_web.pdf

The Hollywood solution - a vertically integrated municipal power utility

- the only part of California to escape the blackouts of 2000 was the city of Los Angeles, which continued to be supplied by a vertically integrated public sector utility, the LADWP
- Long tradition of public power in USA
  - supplies 14% of electricity (and co-ops a further 13%) APPA American Public Power Association

Indonesia: unbundling is unconstitutional

- In 2016 the Indonesian Constitutional Court declared that:
  - "Article 10 Paragraph (2) of the Electricity Law…is conditionally unconstitutional and shall have no binding power if it is construed to allow electricity supply businesses to be run on a unbundled basis where there is no State control over the relevant unbundled services

Reasons for public ownership and operation of distribution grid

- Solidarity economics: abundance
  - Can deliver universal price with cross-subsidy
- Cheaper due to lower cost of capital (dividends, interest) (Hall 2016)
- Potential savings from vertical integration
  - Generation/distribution/supply integration reduces risk
- Lower transaction costs
  - No need for multiple arrangements, contracts, incentives
- Benefits of public control of 'smart grid'
  - Information on prices and feedback to public suppliers (Hall S. 2014

'Municipal values' in smart grid

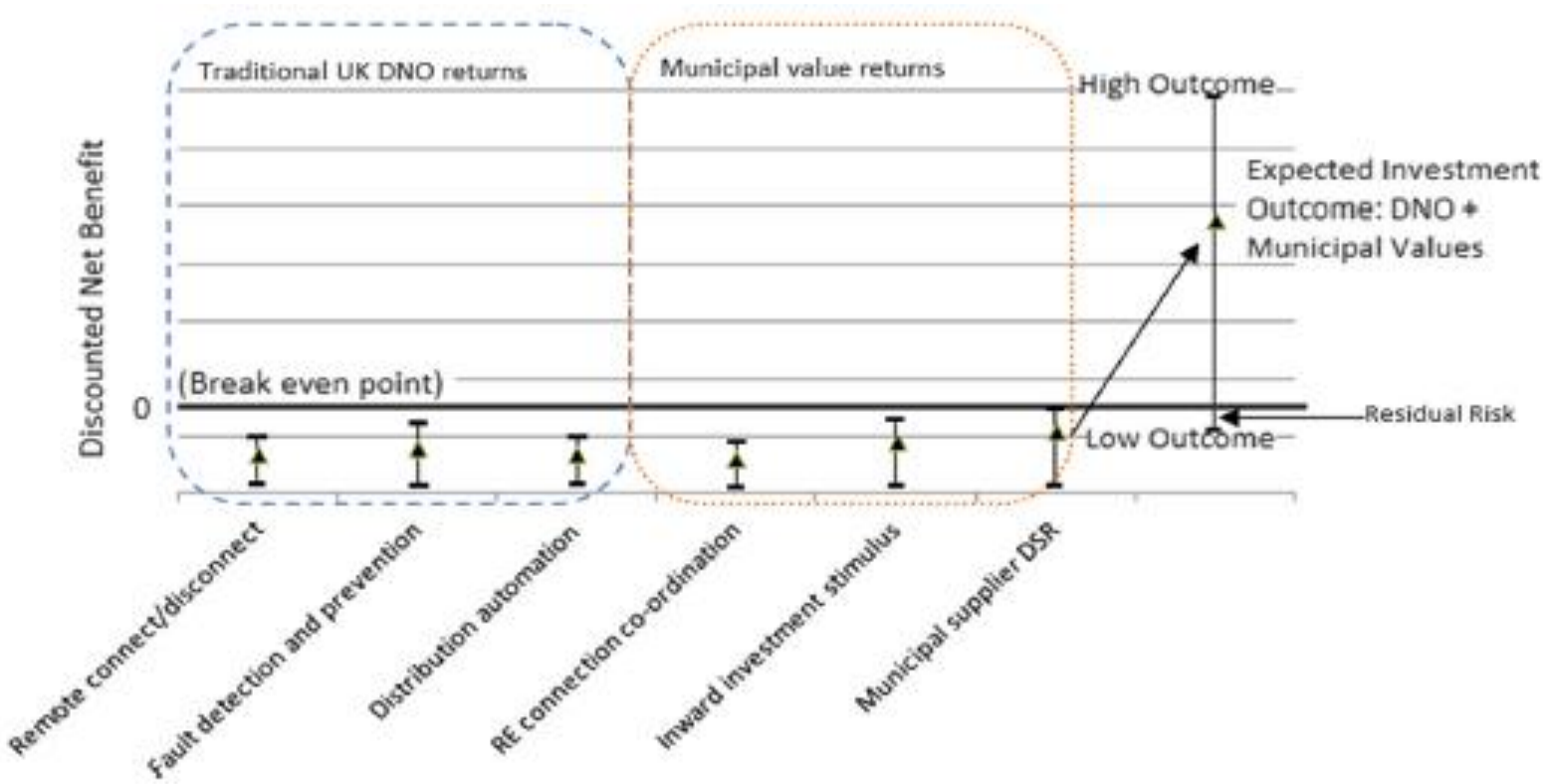
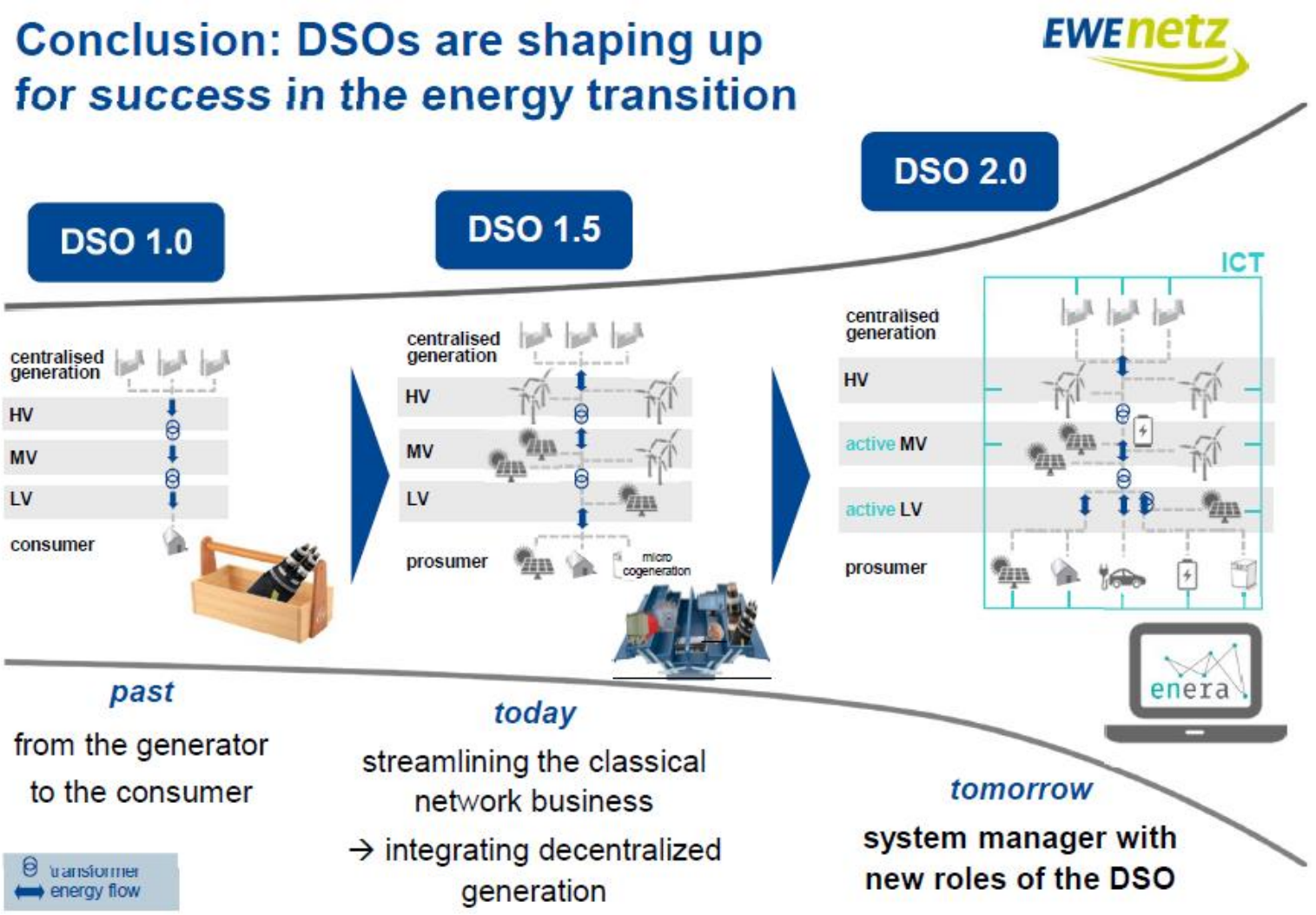


Fig. 2. The smart grid investment problem taking account of municipal economic value returns*.

- Capture public goods of: co-ordinating renewable energy; local economic development; information feedback to municipal supplier
- Hall S. and Foxon T. 2014 Values in the Smart Grid: The co-evolving political economy of smart distribution https://doi.org/10.1016/j.enpol.2014.08.018

Roles of DSOs: German view (EWE Netz)

https://www.cez.cz/edee/content/file-other/distribucni-sluzby/konference-2017/11_merkel_ewenetz_en.pdf



Objectives of public energy systems

	Public objectives
Environmental	Climate change and renewable energy
Social	Universal coverage
Political	Democratisation
Economic	Affordability and efficiency
	Strengthening local economy