Prof. Dr. iur. Jens Lowitzsch **WiSe 2015/16**
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Financing of the Energy Transition and Property Rights – The law and economics of decentralised energy production

- Energy Transition: The transition from fossil to renewable energy sources
- Facilitating the reallocation of property rights through the design of new finance contracts
- Financing decentralized energy production with the Consumer Stock Ownership Plan (CSOP)

Compact course / Blockseminar:

5/6/9 ECTS / MES modules: ZB Wirtschaft, ZB Politik, ZB Recht, WPM 1, WPM 6 // IBA modules: S-Module (old SPO also E-Module); Faculty of Law: Master of German and Polish Law (Module 3); SPB 5 (European Law) (without ECTS)

Dates / Termine:
Introduction Tue. 20. October, 14-16h, HG 104
1st part Fri./Sat. 6 & 7 Nov., 11h00-13h30 & 14h30-17h30, Room PG 271
2nd part Fri./Sat. 27 & 28 Nov., 11h00-13h30 & 14h30-17h30, Room PG 271;
3rd part (Presentation of results) Fri. 4 Dec., 11h00-13h30 & 14h30-17h30, Room PG 271.

This course is held in English language; an introductory session at the beginning of the semester will give an overview to the topic.

Background: Reorganisation of energy production – The transition from fossil to renewable energy sources

This seminar discusses propoals for a contractual solution to the problem of financing decentralised renewable energy production. The reorganisation of energy production, esp. the transition from fossil to renewable energy sources ("Energy Transition") is currently acknowledged as a permanent and evolving process. Recognized as one of the main problems in this transition is enabling finance mechanisms that would cover these renewable energy projects in an uncertain and oligopolistic market. This raises the question of whether citizen's co-ownership in RES that emerged over the past 25 years in some countries is a transitory phenomenon or a condition for the "Energy Transition" and if the latter is the case, how to further develop financial participation mechanisms in the RES sector.

Institutional economics: Theories of property rights, transaction costs and incomplete contracts

The analysis is based on the theories of property rights, transaction costs and incomplete contracts, which provide a rationale for decentralised energy production. According to standard literature, the traditional market for energy production based on fossils, which generally requires great sums of capital, has allocated property rights in the form of very large organisations, which benefit from economies of scale and are efficiently recouping this capital. That is, large organisations have formed through vertical integration based on transaction costs efficiency and second-best investment incentives. Thus, it is assumed that these technologies are and will be the most economically efficient. However, this interpretation of the energy market assumes that the development of technology is independent from the allocation of property rights.

To improve this standard view and to account for the path dependency of organisations becoming inefficient under changed circumstances and the inability of potentially competitive forms of organisation to emerge it is necessary to include technology as an endogenous factor. Consequently, technology runs a two-way causality with property rights. That is, if new forms of property rights are to be enabled (i.e., ownership and control of decentralised

production) this would, in turn, enable alternative forms of technology (i.e., renewables).

Designing new finance contracts: Consumer Stock Ownership Plans (CSOPs)

Key to facilitate this reallocation of property rights is the design of new finance contracts. We use the example of the "Consumer Stock Ownership Plan" (CSOP) as the necessary contract providing a financing mechanism. We focus on wind and photovoltaic power which have two pronounced structural differences to fossils: (1) they depend on weather and thus are volatile in their power production scheme and (2) they have a marginal cost of production close to zero. CSOPs enable consumers of energy utilities without savings or access to capital credit to acquire productive property, i.e., renewable energy plants while at the same time creating a system of incentives for asset formation. Responding to supply flexibility they tap the potential for demand-side flexibility facilitating smart grids.

We analyse how CSOPs can contribute to financing renewable technologies and what particular advantages their dispersed ownership structure has. As a result we show the economic viability of CSOPs contributing to the reorganisation of energy production.

Literature

RAP (2014): „Power Market Operations and System Reliability: A contribution to the market design debate in the Pentalateral Energy Forum". Study on behalf of Agora Energiewende.

Lowitzsch, J. / Yildiz, Ö. / Lambais, G. (2015) "Property rights and the financing of renewable energy technologies – How Consumer Stock Ownership Plans contribute to the Energy Transition", WINIR Working paper

Lowitzsch, J. / Goebel, K. (2013) „Vom Verbraucher zum Energieproduzenten. Finanzierung dezentraler Energieproduktion unter Beteiligung von Bürgern als Konsumenten mittels Consumer Stock Ownership Plans (CSOPs)", ZNER 3/2013

Registration until 24 October 2014 at kelso-professorship@europa-uni.de.

Performance test and credits: ECTS: 6/9. Regular attendance; term paper; oral presentation; first draft of the term paper by 1 December 2014, finalized term paper by the end of the semester.