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Interim report dated 24/11/2023

EWG-INTERPLAY

«Digitalisation in the electricity sector put to the test: To the interplay of energy regulation, competition law and data protection»

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Zusammenfassung

"INTERPLAY" bezeichnet, analysiert und bewertet die Rechtsgrundlagen des (zukünftigen) Einsatzes digitaler Plattformen im Strommarkt. Im Fokus steht die Entwicklung einer ganzheitlichen Sichtweise auf die Regulierung (Stromnetze), den Strommarkt (Wettbewerbsrecht) und das Datenschutzrecht. INTERPLAY zeigt Chancen und Risiken, aber auch rechtliche Grenzen und möglichen Regulierungsbedarf auf. Darüber hinaus soll ein Vergleich mit der Entwicklung in der Europäischen Union helfen, die Ergebnisse (indirekt) zu überprüfen und zu weiteren Erkenntnissen zu gelangen. INTERPLAY zielt darauf ab, den rechtlichen Rahmen für Anbieter digitaler Plattformen, Energieversorger und Verbraucher (bzw. Prosumenten) auszuleuchten und den möglichen politischen Handlungsbedarf zu identifizieren.

In Working Package (WP A) werden der inhaltliche und rechtliche Rahmen des Projekts abgesteckt. Im Vordergrund stehen die Charakteristika von Digitalplattformen, ihre Einsatzmöglichkeiten sowie die vielfältigen sektoriellen Rechtsgrundlagen und die allgemeinen datenschutzrechtlichen Grundlagen.

Résumé

"INTERPLAY" désigne, analyse et évalue les bases juridiques de l'utilisation des (futures) plateformes digitales sur le marché de l'électricité. Au centre de l'attention se trouve le développement d'une vision globale de la régulation (réseaux électriques), du marché de l'électricité (droit de la concurrence) et du droit de la protection des données. INTERPLAY met en évidence les opportunités et les risques, mais aussi les limites juridiques et les éventuels besoins de régulation. En outre, une comparaison avec l'évolution au sein de l'Union européenne doit permettre de vérifier (indirectement) les résultats et d'en tirer d'autres enseignements. INTERPLAY vise à éclairer le cadre juridique pour les prestataires de plateformes digitales, les distributeurs d'énergie et les consommateurs (ou prosommateurs) et à identifier les éventuels besoins d'action politique.

Le premier paquet de travail (WP A) permet de définir le contenu et le cadre juridique du projet. L'accent est mis sur les caractéristiques des plateformes digitales, leurs applications possibles ainsi que les diverses bases juridiques sectorielles et les principes généraux de la loi sur la protection des données.

Summary

"INTERPLAY" analyses, classifies and assesses legality of the (future) use of digital platforms in the electricity market, developing a holistic view of regulation (electricity grids), the electricity market (competition law) and data protection law on the matter. In doing so, INTERPLAY highlights opportunities and risks, but also legal limits and possible needs for specific regulation. Furthermore, a comparison with the development in the EU will help to (indirectly) verify the results and will perhaps lead to new insights. Thereby, INTERPLAY aims at clarifying the legal framework for digital platform providers, energy utilities and consumers (or prosumers) and identifying the possible need for political action.

In the first Working Package (WP A), the content and legal framework of the project is defined. The focus lies on the characteristics of digital platforms, their possible applications as well as the diverse sectoral legal bases and the general principles of data protection law.

Contents

Abbreviations

ABL	Abteilung Business Law
Abs.	Paragraph
Art.	Article
BFE/SFOE	Bundesamt für Energie/ Swiss Federal Office of Energy
BGV	Bilanzgruppenvertrag (balance group contract)
CEE	Center for Energy and the Environment
CSS	Center for Social Sciences
EU	European Union
OTC	Over the counter
SDL	Systemdienstleistungen (system services)
SML	School of Management and Law
SR	Systematische Rechtssammlung (Bundesrecht) (systematic collection of federal laws)
TSO	Transmission System Operator
VNB	Verteilnetzbetreiberin (distribution grid operator)
WP	Working Package
ZHAW	Zürcher Hochschule für angewandte Wissenschaften
ZOW	Zentrum für öffentliches Wirtschaftsrecht
ZRW	Zentrum für Regulierung und Wettbewerb

Laws and decrees

BGMB	Bundesgesetz über den Binnenmarkt vom 6. Oktober 1995 (SR 943.02)
BÖB	Bundesgesetz über das öffentliche Beschaffungswesen vom 21. Juni 2019 (SR 172.056.1)
DSG	Bundesgesetz über den Datenschutz vom 25. September 2020 (SR 235.1)
EleG	Bundesgesetz betreffend die elektrischen Schwach- und Starkstromanlagen vom 24. Juni 1902 (SR 734.0)
EnG	Energiegesetz vom 30. September 2016 (SR 730.0) inklusive noch nicht in Kraft getretener «Mantelerlass»
FMG	Fernmeldegesetz vom 30. April 1997 (SR 784.10)
ISG	Bundesgesetz über die Informationssicherheit beim Bund vom 18. Dezember 2020 (SR 128)
KG	Bundesgesetz über Kartelle und andere Wettbewerbsbeschränkungen vom 6. Oktober 1995 (SR 251)
LVG	Bundesgesetz über die wirtschaftliche Landesversorgung vom 17. Juni 2016 (SR 531)
MessG	Bundesgesetz über das Messwesen vom 17. Juni 2011 (SR 941.20)
OR	Bundesgesetz betreffend die Ergänzung des Schweizerischen Zivilgesetzbuches (Fünfter Teil: Obligationenrecht) vom 30. März 1911 (SR 220)
PüG	Preisüberwachungsgesetz vom 20. Dezember 1985 (SR 942.20)
StromVG	Bundesgesetz über die Stromversorgung vom 23. März 2007 (SR 734.7)
UWG	Bundesgesetz gegen den unlauteren Wettbewerb vom 19. Dezember 1986 (SR 241)

1 Introduction

1.1 Background information and current situation

The decentralisation of electricity production advances, the use of local energy storage (*e.g.* batteries) emerges. A further liberalisation of the electricity market in Switzerland was rejected by Parliament in 2023, but seems technically feasible (*e.g.*, by “digital support”). A large potential for digital platforms is identified in services for decentralised generation, metering/measurement services, management of interconnections for energy consumption or microgrids as well as energy management solutions for municipalities and industrial companies. The European Union (EU) has launched a consultation on an action plan "digitalising the energy sector".

A closer interaction between supply and demand promises to lead to greater efficiency in the electricity sector (both economically and in terms of power flows). Flexibility might become more important, while economics of scale may lose importance. Platform technologies will influence and coordinate both consumer and producer behaviour by collecting, evaluating and making available information. This applies to electricity consumption in general (and thus energy efficiency), to the bundling and steering of demand with regard to specific products (and thus the "electricity mix"), and ultimately also to the stability of the electricity supply and the relevance of system services. In the ideal case, digital solutions will contribute to substituting "energy bands" or even system services. In a worst-case-scenario however, digitalisation will distort markets and disrupt supply. Either way, the use of digital platforms will have significant effects. In both cases, they can factually influence the market liberalisation as well as energy transition. The resulting legal issues are cross-sectoral and extend beyond the current regulation.

In addition to general issues, specific questions can arise. In particular for integrated electricity providers, digitalisation may lead to market power and to abuse market power (as far as competition law applies). It is also important to clarify to what extent a (stronger?) bundling of consumers (or consumption sites) is possible on the demand side. Furthermore, digitisation could help coordinate consumption profiles or provide for balancing measures within certain connection areas (similar to the balancing groups at transmission grid level). In addition, the use of digital platforms will result in a massive collection, evaluation and use of data. Therefore, legal certainty must also be established with regard to the relevant data protection legislation. Legal limits and the scope for the use of data must be clarified with regard to any application in digital platforms. The interplay of three domains – regulation in the energy sector, competition law and data protection – is of crucial relevance for the use of digital technology. Possible - positive - regulatory needs or - negative - legal hurdles need to be identified, which will provide a solid basis for decisions by the legislator, courts, the administration and other decision makers or market players.

Digitalisation or "platformisation" may be challenging both for the existing power supply system, which is divided into hierarchical grid levels (both with output and – rising – input), as well as for the current legal framework.

1.2 Purpose of the project

The project aims to analyse and assess legality of current and conceivable future digital platforms in the field of electricity supply. It considers the (possible) importance of platforms for the electricity market on one hand as well as data protection requirements for energy supply utilities and providers of digital solutions on the other hand.

Furthermore, the project will identify possible hurdles and propose solutions (*e.g.,* regulatory needs or leeway for self-regulation). In particular, it will provide answers to questions on the digitalisation of the energy market.

In doing so, the project will enable progress beyond state-of-the-art as it raises problem awareness and makes hurdles visible, provides possible answers to the problems identified.

1.3 Objectives

The project addresses the following research questions:

<u>“Disruptive“ effect of further digitalisation?</u>

- What is the relationship between the use of digital platforms and the regulatory separation of electricity grids (electricity supply law) and the energy market (competition law)?
  - What kind of digital platforms will fall within the scope of the StromVG?
  - Which platforms would be assigned to the market sector (such as apps for purchasing electricity by final consumers or from prosumers)?
  - Is there any leeway for "self-regulation"?
- What does the use of digital platforms mean for the existing (regulated) grid level structure?
- To what extent can the use of digital platforms simplify the increasingly complex interactions in the electricity grid systems (input via production plants or from local storage facilities)? Where are the limits to inadmissible cross-subsidisation?
- The "cost plus" model applies to grid tariffs. Do digital platforms make a change to alternative regulation models (such as incentive regulation) necessary – or just not?
- Is demand-side use of digital platforms permissible in the basic provision (bound consumers)? Or do digital platforms basically require or foster a complete opening of the market?
- What is the relationship between the use of digital platforms and the provision of system services?
- What regulatory needs result from the interaction of digital platforms with a "data hub"?

<u>Market power</u>

- How should the market for digital platforms be defined?
- How would market power (and competition) be defined in terms of competition law?
- How would an abuse of market power be described?

<u>Data protection</u>

- Who is responsible for collecting and processing data and what applies with regard to the exchange and security of data?
- May personal data be collected, stored (for how long?) and be used for other purposes? What would the consequences be if there was “profiling”?
- What data processing roles can be defined within such platforms and do they change with/adapt to the scope and type of platform concerned?
- To what extent are data processing rules for cloud computing applicable to digital energy platforms?
- Can general rules of best practise be defined for data processing within digital energy platforms?
- In what fields do the provisions on smart metering and metrology (not) apply?
- Where do consumer protection provisions apply?
- What are the implications of the EC digital single market strategy?

Special challenges

- What does a shift from "physical" supply units to "sales of services" (IEA) mean?
- Who can claim trade secrets - and in what way?
- How are digital platforms to be protected against cyber-crime or attacks? Who is responsible?
- How should developments in Switzerland be assessed in comparison to the EU?

2 Procedures and methodology

The work is carried as planned in the full proposal.

The project combines the fields of electricity supply law, competition law and data protection law with respect to digitalisation and the energy transition. The main research methods applied include legal analysis.

The identification of the relevant legal aspects and evaluation of the different relevant legal bases and principles (administrative and legal framework) for the use of digital platform technology in the electricity market have begun and its interpretation has started. This is the basis for internal dialogues as well as for dialogues with the Advisory Committee.

3 Activities and results

Within the first Working Package (WP A, as described in the full proposal), a joint working space has been created, literature (focus on Switzerland and Europe), materials (Switzerland and European Union) and jurisdiction (Swiss Federal Court and Swiss Federal Administrative Court) were found, a working paper was produced to approach the concept of a digital platform and to develop its characteristics (*see* 4 evaluation of the results to date). In parallel, a legal overview ("map") of the possible use of digital platform technology in the electricity sector was developed (*see* next page). It deals with possible applications on the supply and demand side in the areas of the electricity grid, distribution, electricity storage, electricity provision (energy), electricity production, energy trading and system services. Starting from this, the existing "regulations" applicable were derived. Both serve as a thought support and mental "gymnastics apparatus" for the whole project. The functionalities of platforms and corresponding technologies should be projected onto the regulatory level.

Based on primary findings and theses of the research team, a meeting has been held with the Advisory Committee. In particular, the term of digital platform and the overview "map" were discussed and amended later. It became apparent that distribution is important and that there is a close connection between the provision of platforms and the provision of actual services. The small size of Switzerland and the frequent lack of competition were emphasised as possible obstacles to the use of digital platform technologies. SFOE supplemented references to previous research.

In WP A, the general basics for the other WP are developed. A publication on opportunities and risks of the use of digital platform technologies in the electricity market (in general) is under way (deliverable A, scheduled for 4Q 2023).

"Map" as an overview for the use of digital platform technology

Preliminary remarks: The "map" is intended to provide an overview of the scope of application of federal law and to simplify a complex area of legislation. Federal law refers to both the formal laws (mentioned below) and the associated regulations (these are usually not explicitly mentioned below). The overview does not yet provide any solutions or propositions. Some aspects can overlap.

Acts (formal federal laws with key word; in alphabetical order)	**Reason for consideration** ("trigger" – simplified)
– *BGMB* (national single market)	▪ Free access to markets ▪ Public procurement ▪ Prohibitions of discrimination (also under international law)
– *BÖB* (public procurement)	▪ Procurement of contracts by public authorities
– *DSG* (data protection)	▪ Processing of personal data of natural persons by private persons ▪ Federal level ▪ Implementation of fundamental rights obligations
– *EleG* (electricity)	▪ low and high voltage electrical installations ▪ technical safety law
– *EnG* (energy in general)	▪ Goals of energy policy ▪ Principles of the "market" ▪ Subsidy measures ▪ Consumption communities ▪ Legal definitions
– *FMG* (telecommunications)	▪ Transmission of information by telecommunications ▪ Registration obligations
– *ISG* (information protection; including amendments that have not yet entered into force)	▪ Processing of personal data (by authorities and organisations under corresponding obligation) ▪ Protection measures against cyber threats ▪ Special provisions for companies operating in the areas of energy supply in accordance with Art. 6 para. 1 EnG (EnA), energy trading, energy measurement or energy control
– *KG* (antitrust)	▪ Prevention of economically or socially harmful effects of cartels and other restrictions of competition (in particular with regard to agreements on competition, the exercise of market power and mergers of companies) ▪ Promotion of a free market economy
– *LVG* (national supply)	▪ Management of goods and services in strategic shortage situations ▪ Preventive measures
– *MessG* (metrology)	▪ Legal measurement units and their use ▪ Placing on the market and control of measuring equipment
– *OR* (Obligations)	▪ Contracts (in general) ▪ Liability (contractual and non-contractual)

– *PüG*
(price monitoring)

- Prices of goods and services
- Agreements to restrict competition and market power
- Prevention or elimination of abusive price increases and maintenance of (high) prices

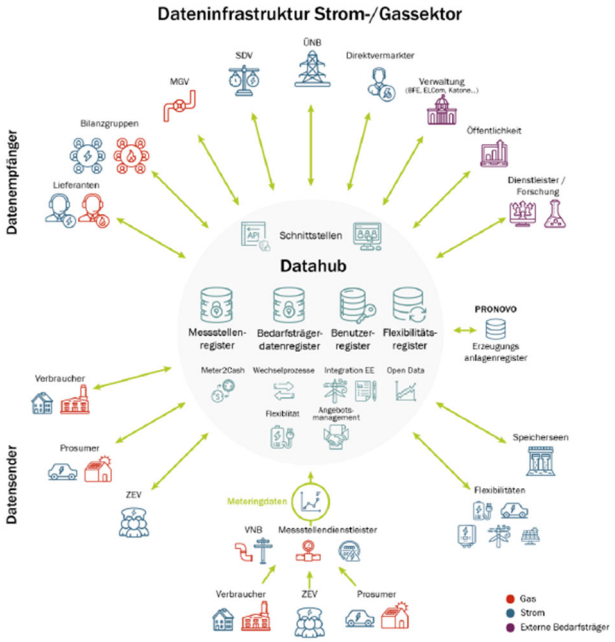
– *StromVG*
(electricity supply)

- Regulation of the grid sector
- Special rules on metering
- Regulation of basic supply
- Market entry hurdle
- Subdivision of players through legal definitions

– *UWG*
(unfair competition)

- Prevention of unfair or unlawful competition (behaviour or business conduct that is deceptive or otherwise contrary to the principle of good faith and influences the relationship between competitors or between suppliers and customers)

As to the data infrastructure in general, **SFOE's Datahub report** dated on 31 August 2021 provides a helpful overview → →



Domain/topic	Energy production/supply side Possibilities/Opportunities	Possible regulation	Energy demand side Possibilities/Opportunities	Possible regulation
ELECTRICITY GRID (NETZTEIL)				
– **Operation** (of distribution grids)	– Smart Metering in general – Optimising grids, *e.g.* ○ grid monitoring (real time) ○ running a grid (real time) ○ grid efficiency (*e.g.*, costs) ○ grid planning – Obligation to innovate by digitalisation? – Handling of load profiles (large final consumers and/or specific customer groups) – Procurement (fulfilling public duties)	– StromVG – DSG – ISG – LVG – BÖB – EleG? – FMG – MessG	– Different types of connection (*e.g.*, more grids within the grid?) – Bundling of customers (technically)? – Optimisation of grid usage fee? (*e.g.*, by virtual shift and "upgrade" of the grid level?) – Creating pressure for individualisation of tariffs (vs. solidarity within the grid levels)?	– StromVG – EleG?
– **Distribution**	– Billing – Collection of customer data – Creating customer profiles (*e.g.*, for different tariff groups)?	– DSG – StromVG	– Virtual grids (consumption communities)? – Pooling within the grid (virtually)?	– StromVG – EnG – DSG
– **Electricity Storage**	– Creation of virtual storages (as part of the distribution grid)? – Use of consumer/user hardware by platform technology?	– StromVG	– Creating more or different prosumers – Enabling market entries (even SDL?)	– EnG (instruments) – StromVG (not LVG)? – Energy stock exchanges
ENERGY PROCUREMENT (ENERGIETEIL)				
– **In general**	– Data processing (possibly profiling) – Accessibility (*e.g.*, visualisation) of consumption data of final consumers? – Outsourcing (grid operators to third parties)?	– StromVG – DSG – ISG? – UWG	– Collecting/bundling of consumer profiles by intermediaries? – Tradability of consumer profiles? – Right to access to markets/to innovation?	– StromVG – EnG – DSG – KG (relevant market) – ISG (for others than grid operators)?
– **Basic supply**	– Adjusting conditions for energy consumption of final consumers?	– StromVG – PüG	– Virtual bundling (outside Energy communities) within basic supply?	– StromVG – EnG
– **Electricity market**	– Need to amend contracts? – Bundling of supply (new providers, B2B)	– DSG – UWG – EU single market	– Expansion of bundling of consumers? – Virtual market entries (*e.g.*, prosumers)? – Allocation of liability?	– KG (demand power in specific markets?) – OR

ELECTRICITY PRODUCTION				
– **In general**	– Bundling of decentralised supply (*e.g.,* PV)? – Bundling of knowledge (supply side of certain markets)? – Procurement (fulfilling public duties)?	– EnG (Mantelerlass) – KG – UWG – EU single market – LVG? – BGMB/BÖB?	Not applicable (so far), because – demand = distribution grid operators (power injection) – demand = Markets/market segments – demand = Energy Stock exchanges?	– StromVG
– **Renewable energies**	– Enhancing of specific commercialisation models (stock exchanges, market segments)?	– EnG (Mantelerlass) – KG – UWG – FMG	Not applicable (so far), because – demand = distribution grid operators – demand = Markets/market segments	– EnG (Mantelerlass) – StromVG
ENERGY TRADE				
	– Differentiation of the offering through virtual bundling? – Creation of different (virtual) energy exchanges (vs. OTC)? – Significance of balancing groups? – Importance of (verification of) proofs of origin and balancing energy?	– StromVG – EnG – UWG	– Duties of distribution grid operators (when purchasing)? – Conditions for final consumers? – Right to access to markets/to innovation?	– StromVG – EnG (Consumption communities) – KG
SYSTEM SERVICES				
	– Enhancing number of suppliers and types of energy – Bundling within markets (*e.g.,* balancing energy) – Bundling = arrangement (antitrust)?	– KG – BGMB? – EU single market – Industry recommendation[1] – BGV Anhang 4 (Regelpooling)[2]	– TSO as a “natural” customer – Specific system services for distribution grid operators or balancing groups? – Negative energy by final consumers (heat pumps, etc.)?	– StromVG – OR – UWG

[1] «Anbindung von Regelpools an den Schweizer SDL-Markt»

[2] https://www.swissgrid.ch/dam/swissgrid/customers/topics/legal-system/balance-group/1/04-Appendix-4-Balancing-Pooling-V1-0-DE.pdf

4 Evaluation of results to date

The work carried out shows that *data* is gaining importance: So far metering data (from smart meters and smart grids) are part of existing federal legislation as well as further studies (use of transmission or distribution grid). The availability, analysis, collection and further use (perhaps even trading) of data as such on several sides, energy production (conversion), energy distribution or energy demand (consumption) can lead to greater dynamism and new or change of markets through digital platforms (beyond the grid sector). In the EU, a common "European Energy Data Space" is to be created by 2024. Indirectly, this is intended to make markets more flexible and achieve sustainability goals (an EU action plan predicts participation of more than 580 GW of [installed] flexible energy resources fully utilising digital solutions by 2050). Energy production, transmission or distribution and consumption could be reconnected differently.

In the area of *digital platforms*, the focus lies on the four characteristics of intermediation (connection/exchange), network quality, possibility of cost reduction and data collection. Platforms of this kind could become systemically important. They are increasingly becoming the subject of specific platform regulation (for example in the EU). The use and processing of data in platforms can bring together different consumer or user groups and facilitate their interaction. The intermediation function is closely related to specific customer or user needs. This can create greater efficiency in balancing needs on both the supply and demand side. But it could also create market power (lock-in effects) and enable the “reuse” of data (multi-homing). Accordingly, it seems useful to analyse markets functionally (rather than geographically). Relevant markets can result from the selection of consumers or users. Questions can also arise regarding both the segregation of markets (exclusivity) and (at various levels) market access.

The first part (A) of the project shows the complexity and the many interactions in the use of digital platforms or platform technology in fields of regulation that are either complex in itself (*e.g.*, electricity supply), rather broad (*e.g.*, data protection or antitrust), little developed (*e.g.*, data security) or of general nature (procurement, unfair competition).

Electricity supply law and *energy law* is characterised by a strong schematisation with simultaneous incompleteness of regulation. Schematization particularly means, that actors are divided into final consumers with market access and final consumers without market access, power plants, distribution grid operators or transmission system operator. Primary energy sources are renewable or non-renewable. If they are considered to be renewable, special regulatory framework conditions apply. For individual renewable energy generation plants, the framework conditions also depend on which primary energy source is involved (PV, wind, geothermal, small hydropower, etc.). A regulatory «role assignment» and legal consequences (rights and obligations) also depend on categorisations. Incompleteness means that regulatory concepts are often not strictly implemented (compared to other countries). Full unbundling only applies to the transmission system operator – for the distribution grid operators it only applies in part. Regulation can follow categories of actors (*e.g.,* grid operators) or it can follow the fulfilment of public duties (*e.g.,* commitment to fundamental rights and procurement law for state-owned enterprises) or it can follow a technology (*e.g.,* use of frequencies) – such regulation then it is also applicable to the use of digital platforms or technologies. Conversely, the use of platforms could put the existing regulation under pressure (in the sense of changing the status of actors). So far, existing categorisations are bypassed with the creation of new categories of actors (*e.g.,* the "interconnection for self-consumption" can make final consumers in the basic supply “marketable”).

The use of platform technology seems conceivable in almost all fields: in the grid area, for distribution and billing, in the area of production, in the area of storage as well as for optimising on the demand-side. In particular, digital platforms could exploit decentralised energy data sources and mobilise the

data they contain for various purposes. This may lead to the emergence of new (or different) customer groups, new producers, the establishment of virtual energy storage facilities and the additional provision of system services or new services per se. Risks can arise in the weakening of the public service, the appearance of free riders or the formation of imbalances (literally as well as in the grid systems).

The processing of data generally opens the scope of *data protection legislation* and the general principles thereof. The current national data protection law already provides an essential general legal framework for data processing (lawfulness, good faith, proportionality, purpose limitation, destruction and anonymisation, data accuracy, consent to data processing). General data protection legislation becomes all the more significant the less the data processing is related to the "classic" energy supply. Moreover, data protection legislation can become relevant not only on the supply or distribution side but also on the demand side. The collection of consumption data and matching of supply and demand via platforms may lead to new intermediaries. Even in fields the regulation does not envisage intermediaries so far. Depending on the market segment (relevant markets), competition law issues may arise.

The legal situation appears even more delicate regarding the special guarantee of *data security*. In some cases, it will also be necessary to test smart metering systems in practice before they are used. For energy suppliers with their own electricity grid, the provisions of the Information Protection Act will be applicable (ISG). Depending on the type of data communication, telecommunications law will also be relevant.

The development in the area of "interconnection for self-consumption" seems to be particularly interesting. This could enable approaches to digitalisation according to the bottom-up approach.

5 Next steps

Next steps will follow as planned according to the full proposal.

The first publication (deliverable A) is planned to be proposed to a legal journal.

It is also being examined whether a "standard operating model" should be used (software, hardware, networks, users or consumers). This can be used to deal with architecture, roles and types of data processing.

In 2024, the project will focus on regulations and markets and deals with the implementation of digital platforms depending on their use or field of application (WP B). It aims to analyse mainly legal hurdles that digital platforms could be facing in their use in the future electricity market(s) on both supply and demand side.

6 Cooperation

National cooperation with advisory committee as planned.

7 Publications

Not yet applicable.