THE LEGAL FRAMEWORK OF BLOCKCHAIN IN THE ENERGY INDUSTRY

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BOUTIQUE FIRM FOR ENERGY LAW

- **AP is a boutique Law Firm** for Energy Law
  - Based in Munich and Berlin
  - Team of 4 specialised lawyers

- **AP’s services for the Energy Industry** (selection):
  - General Energy Law: Grid connection & access
  - Energy Contract Law: Electricity Supply Agreements
  - Energy Tax Law: Electricity & Energy Tax Act
  - Renewable Energies: Support pursuant to the German Renewable Energies Act (EEG) or the Combined Heat and Power Act (KWKG)
  - Legal implementation of innovative business concepts (Power-to-X, Virtual Power Plants, concepts of decentralized power supply)
  - Energy Litigation & Arbitration: Claim enforcement

- **Clients** based in whole Germany and the neighboring countries representing the **value chain of the energy industry** (i.a. power utilities, grid operators, investors, project developers)
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A. INTRODUCTION
ONE LEGAL FRAMEWORK?

- **No general legal framework governing Blockchain**
  - Different settings: public/private Blockchain
  - Technology too young and versatile
  - No technological standards yet
  - Blockchain has to operate under the normal regulatory framework

- **Multiple specific “legal frameworks”**
  - Specific legal challenges depending on use case
  - Challenges vary depending on specific law
  - Unforeseeable legal questions
B. BLOCKCHAIN AS A RADICAL IDEA
REVOLUTION VS. REGULATION

- **Blockchain originally a radical idea**
  - Pure and open P2P network without hierarchy
  - Exclusion of all intermediaries
  - Self-sustaining system based on algorithm

- **Revolution vs. regulation:** regulation conceptually impossible
  - Excluding intermediaries means no state interference
  - Core idea excludes regulation (origins: philosophical anarchism)

- **Conclusion**
  - Use cases of public blockchain only outside or in less regulated “pockets” of energy system
  - Private Blockchain more feasible (from a legal standpoint)
C. LEGAL REFERENCE POINTS
KEY CHARACTERISTICS OF BLOCKCHAIN

- Efficient
- Decentral
- Digital
- Transparent
- Secure
C. LEGAL REFERENCE POINTS
KEY CHARACTERISTICS OF BLOCKCHAIN

1. Decentral (P2P-trading, micro-grids)
   – Different legal goals → distribution of rights, duties and obligations
   – Fixed roles of participants in the energy system
   – Legal responsibilities under Energy Industry Act (“EnWG”), i.a.
     ▪ § 41 EnWG: contents and formalities of energy supply contracts
     ▪ §§ 40, 41 EnWG: formalities for invoices

2. Digital (metering, M2M)
   – Digitalisation of energy transition is legislative goal
   – Core: Metering Act
     ▪ Specific technical standards (however, law is neutral)
     ▪ Limited right to use of data
C. LEGAL REFERENCE POINTS
KEY CHARACTERISTICS OF BLOCKCHAIN

3. **Efficient** (clearing, internet of energy things)
   - Economic efficiency and efficient use of energy
   - § 1 EnWG: efficiency is one of the regulatory goals
   - EU-Winter package: tilt towards efficiency

4. **Transparent and secure** (certificates)
   - “Right to be forgotten” = Right to erasure
     - Now regulated in Art. 17 General Data Protection Regulation (EU) 2016/679
     - Data in Blockchain = personal data?
   - “Privacy by design”
     - Privacy as part of engineering
     - Metering Act follows “privacy by design” principle
     - Blockchain partly implements “privacy by design”-principle
D. ETHEREUM AND SMART CONTRACTS
"BLOCKCHAIN ON STEROIDS"

- **Ethereum** = smart contract-compatible, public Blockchain
- **Smart contract** = translation of contractual clauses into code
- **Ethereum + smart contract** → **DAO** (decentralised autonomous organisation)
- **DAOs are legally challenging**: Is code law?
  - **Contract Law**, esp. conclusion of a contract (§§ 145 ff. BGB):
    - Smart contract = contract in a legal sense?
    - Translation of code to “plain English” necessary? (information gap, GTC)
    - Consent: Extend of intention to be legally bound
    - Formalities (esp. written form)
  - **Corporate Law**: Legal form of DAO?
  - **Private Law**: esp. legal liability (§§ 241 ff. BGB)
    - Law’s currency is rights, duties and ultimately personal liability
    - Who do you sue if the code has a bug?
  - **Consumer protection**, esp. law on GTC (§§ 305 ff. BGB)
E. RECAP
SUMMARY AND OUTLOOK

- **Summary**
  - Public vs. private and “dumb” vs. “smart” Blockchains
  - Multitude of legal “frameworks”
    - Legal implementation in less regulated areas easier
    - Legal implementation B2B easier
  - Autonomous regimes: Competition between law and code

- **Outlook**
  - Regulatory sandboxes possible
    - Exemptions from regulation
    - FinTech: used in Singapore and in the legislative process in Switzerland
    - Known legal mechanism in German Energy Law (SINTEG exceptions)
  - Energy 5.0 (smart contract + AI)
    - Smart contracts not yet “legally smart”
    - AI can implement legal principles → real legal automation
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