Role of DVGW in the context of the legal framework in Germany

Detlef Jagodzinski/Hiltrud Schülken
DVGW, Bonn 2014-04-09
1. DVGW role in the context of legislation

2. DVGW role in technical safety

3. DVGW – a competent partner for the authorities

4. DVGW – co-operation on national and European level
Conception of the energy policy in Germany -

- Energy supply is generally the task of the private economy sector;
- Companies are ownership;
- Companies are structured according to European directives for the common gas respectively electricity market (2009/73/EC, 2009/74/EC and related Regulations);
- Companies are acting on their own responsibility;
- Energy is a key factor of economic and social life, therefore state supervision and clear legislation to be followed.
Conception of the German gas market

Gas Network Operator

17 Transmission Network Operators (TSO)

~ 30 Regional Network Operators (TSO/DSO)

~ 700 local Network Operators (DSO)

Network User

Producer
Importer
Trader
Exporter
Storage Operator
Industrial Customer
End Customer
Conception of the authority supervision in Germany related to energy

Federal Ministry of economy and technology (BMWi)

Energy authority on state level + federal level (16)

Technical Safety

Energy regulatory authority (BNetzA)

Regulation of the energy market

➢ Responsibilities allocated by German Energy Act (2005)
Legal framework in general

**European Directives**
- Individual national implementation

**European Regulations**
- 1:1 national implementation

- **Laws**
  - Bindingness
  - Degree of details

- **Ordinances**

- **Standards**
  - **Codes of practice**
  - **Consortium standards**
  - **Internal company rules**

- **State responsibility**

- **Publically available**

- **Self-responsibility of the industry**

- **Not public**

- **Flexibility**
Legal framework for gas in Germany

European Directive for the common gas market (2009/73/EC) and others

German Energy Industry Act (2005)
Specific law for the distribution of gas and electricity

German Ordinances for/on:
- high pressure gas piping (GasHDrLGV)
- gas network access (GasNZV)
- tariffs for the Access to Gas Networks (GasNEV)
- incentive regulation (ARegV)
- connection to customer gas installations (NDAV)
- ......
Legislation and technical rules and standards

German Energy Industry Act
Specific law for the distribution of gas and electricity

Relevant Ordinances

DVGW / DIN NAGas
Technical rules

Product standardisation
DIN-Standards
EN-Standards

Functional standardisation
EN-Standards
Codes of practice
Technical guidelines
Recommendations
The DVGW has been mandated by German legislation to set down technical standards. Therefore, it must be an autonomous body.
§ 1
- safe
- economic
- environmentally friendly

§ 4
Requirement profile for official supply permit

§ 19
Technical minimum requirements for interoperability of the network
Ensurance of technical safety

§ 49
Technical rules for construction and operation
Presumption of compliance with generally acknowledged technical rules, if DVGW rules are applied.

§ 49
Official supervision for ensurance of the technical safety of gas facilities (in reasonable individual case)
Role of DVGW in legal framework

German Energy Industry Act, July 2005
Gesetz über die Elektrizitäts- und Gasversorgung (Energiewirtschaftsgesetz – EnWG),

§ 49 Requirements for power plants

Compliance with the generally recognised codes of practice is assumed if, in the case of plants for the generation, transmission and delivery

1. of electricity, the technical regulations of the Verband der Elektrotechnik Elektronik Informationstechnik e.V. (Association for Electrical, Electronic and Information Technologies)
2. of gas, the technical regulations of the Deutscher Vereinigung des Gas- und Wasserfaches e.V. (German Technical and Scientific Association for Gas and Water)

have been complied with.
Industries‘ self-regulation by standards and technical rules

– DIN (EN) standards and acknowledged technical rules (DVGW, VDI) relieve the state in setting laws. For fulfillment of legal requirements the government can refer to them;

– Legislation create a legal framework and stipulates (safety) objectives;

– Standards and acknowledged technical rules substantiate the state of the art and offer high flexibility for continuous adaptations.

– Examples: Building industry, health and environment protection,
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The DVGW stands for technical safety!
DVGW Technical Safety Management is a branch specific technical safety management tool for gastechnical and legal compliance:

Guidelines and audits related to

- all related legislation/regulation
- all related technical rules and standards
to be respected by the company.
DVGW Technical Safety Management – Implementation of gastechnical framework
Statistics on infrastructure and safety - DVGW G 410

Pipework, service lines and plants

Pipework and service lines
- Accidental release
- Accidental release
  - Damage to persons, Deflagration, Explosion, Fire, Off-gas toxication

Plants
- Fire, Explosion, Flying debris, Release with damage to persons, Other occurrence with public attention

Incident which must be reported

Yearly data collection

Immediate Notification

Accident and incident report
Rotational reporting

to DVGW and authority
Incidents at Gas piping – all pipes – related to cause

Number of damages per km *10^-3

- Mechanical third party impact
- Thermal third party impact
- Soil movement
- Corrosion
- Lead joint socket
- Other pipe connections, construction elements
- Deficits at pipe or equipment
Accidents at gas pipes

Accident / 1000 km pipeline length

- 89%
Accidents at company-owned and customers’ facilities (total)

- Customer
- Gas sales
- Accidents

- Lenght of pipework including service lines

Number customers: $10^5$
Gas sales: $10^{10}$ kW
Accidents in total
Pipework length: $10^4$ km

Since 1991 unified Germany

Since 1981
Major causes for incidents and accidents - Development

- Accidents by manipulation
- Accidents by non-competent working
- Accidents by mechanical third party impact (digger)
- Incidents by mechanical third party impact (damage/km)
Gas flow valve in gas installation

Protection against third party impact

Quelle: Mertik Maxitrol GmbH & Co. KG
Training in damage demonstration facilities

Positive regional experiences with practical qualification conception
Bundesweite Arbeitsgemeinschaft der Leitungs- betreiber zur Schadensminimierung im Bau
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Conception of the authority supervision in Germany related to energy

Federal Ministry of economy and technology (BMWi)

Energy authority on state level + federal level (16) ➔ Technical Safety

Energy regulatory authority (BNetzA) ➔ Regulation of the energy market

➢ Responsibilities dedicated by German Energy Act (2005)
DVGW – a competent partner for the authorities here: Energy Authority

- On the basis of the DVGW incident and accident statistics (since 1980), DVGW demonstrates the high level of safety and due diligence towards the energy authorities;

- Due to cause analyses and expertise, safety situation can be evaluated, solutions developed, and safety continuously improved;

- DVGW in continuous exchange with energy authority; additionally regular reporting in Committee meetings of the energy authorities (state/federal).
Co-peration regulatory authority BNetzA with DVGW:

DVGW is „first contact“ in gastechnical questions

BNetzA is guest in choose DVGW technical committees, such as:
- Biogas
- Gas quality
- Gas metering of household customers
- Q-Element in incentive regulation

This means:
- Early information about setting and revision of technical rules;
- First informal reflections/communication by BNetzA to the Committee members;
- No voting decision rights on the final content of technical rules.
Role and significance of DVGW work from the authorities point of view

The Gas network as energy storage – challenge for DVGW and BNetzA

• Virtual power generation, biogas, wind and solar power
• Synthetic methan from hydrogen and CO₂
• Gas network as power transport channel (key word „DESERTEC“)
• Gas storage as power storage
Establishment of central data collector for load flow data

- Collektor since 01.10.2012 in operation
- DVGW Committee defines technical format and communication path
- Data belongs to individual TSO
- Regulatory authority (BNetzA) has reading rights
- DVGW S&C operates collector as service company
Unbundling shivers responsibilities for security of supply – Technical aspects

- Integrated Companies had central access to all relevant areas of the gas chain.
- These companies had the overall responsibility of security of gas supply.

- The overall responsibility is disintegrated.
- Regulatory and economic unbundling leads to
  - new ownership structures, neuen Eigentumsstrukturen,
  - new segmentation of the resources relevant for security of supply and
  - divergent interests of the different market roles
The German Energy Concept fosters the transition of the energy system based on renewable energies!

Preconditions:

- integration of biogas, wind energy and photovoltaic;
- decoupling of energy demand and production needs – grid optimization and energy storage;
- Reduction of overall energy consumption by building insulation and increase of efficiency.
…. with gas into the future
The DVGW project "Into the future with gas innovations" develops solutions for:

1. the integration of renewable gaseous energy sources
2. innovation in the use of gas, including further development of natural gas technologies, gas plus technologies and combined heat and power
3. The use of the gas infrastructure for energy storage.
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Co-operation in setting technical rules for energy systems

- **Power grid**
  - Energy facility: Hydrogen, Electrolyses, Synthetic natural gas
  - Co-operation: DVGW, VDE/FNN, DWV, BEE, BWE...

- **Storage of excess electricity as gas**
  - Energy facility: DVGW, VDE/FNN, AGFW

- **Gas grid, -storage**
  - Energy facility: Biogas
  - Co-operation: DVGW, DWA, FvB, ...

- **Heat grid**
  - Energy facility: Power/Heat production
  - Co-operation: DVGW, AGFW, B.KWK, ...

- **Production of lacking electricity from gas by CHP, using lost heat**
  - Energy facility: household, commerce, industry
  - Co-operation: DVGW, FIGAWA, VDMA, BHKS, BWP, ZVSHK, ZIV, ...

- **Energy facility Information and communication technology**
  - Co-operation: DVGW, VDE/DKE/FNN, AGFW, DWA, BDEW

- **Water industry**
  - Protection of resources, quality monitoring of raw and drinking water,
  - Adaptation of treatment technology,
  - Energy production from raw and drinking water

Co-operation in setting technical rules for energy systems
European Organisations for the common Gas Market

- **CEER**
  - Europäische Vereinigung nationaler Regulierer

- **ACER**
  - Agency of European Regulators

- **ENTSOG**
  - European Network of TSO Gas

- **Madrid Forum**
  - Forum of EU COM, ACER, ENTSOG and all stakeholders

- **UNECE**
  - Guidance for authorities of EU and non-EU countries – partly technical

- **EH!**
  - Association of European Heating Industry

- **EuroGas**
  - All economic aspects

- **EASEE-gas**
  - CBPs on economic aspects/data exchange

- **GIE**
  - Gas infrastructure aspects

- **GEODE**
  - Energy distribution aspects

- **Others**

- **R&D**
  - DVGW

- **Standardisation**
  - DVGW

- **All technical aspects**
  - DVGW
Role of DVGW, a technical and scientific association

A conclusion

- Bundling expertise enables one solution for the whole sector;
- With open and transparent exchange in the association, objective positions can be developed which support the companies and strengthen the reputation of gas in general;
- Objective expertise makes DVGW to a competent address for relevant authorities and stakeholder;
- Joint action by the sector saves human and financial resources for the individual companies;
- The network, both nationally and internationally, leads to much faster solutions.
Thanks for your attention!

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Internet: www.dvgw.de
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Rechtliche Rahmenbedingungen – Anforderungen des EnWG an Energieanlagen

Die gesetzliche Vermutungswirkung des § 49 Absatz 2 EnWG kann bei Einhaltung des DVGW-Regelwerks

- eine Entlastung des technisch Verantwortlichen vom Vorwurf der Fahrlässigkeit sowie

- durch das Technische Sicherheitsmanagement eine Entlastung der Geschäftsführung, z.B. nach dem Gesetz zur Kontrolle und Transparenz im Unternehmensbereich (KonTraG), vom Vorwurf des Organisationsverschuldens und damit

Rechtssicherheit bewirken.
### Energiemarkt Deutschland: vollständige Entflechtung Handel-Transport-Speicher

<table>
<thead>
<tr>
<th>Marktsegment</th>
<th>Anzahl Unternehmen</th>
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<tbody>
<tr>
<td>Stromerzeuger (&gt; 100 MW)</td>
<td>rd. 300</td>
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<tr>
<td>Stromnetzbetreiber</td>
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<tr>
<td>Stromhändler</td>
<td>rd. 130</td>
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<tr>
<td>Stromlieferanten</td>
<td>rd. 1170</td>
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**Gasbranche**

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<tr>
<th>Marktsegment</th>
<th>Anzahl Unternehmen</th>
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<td>Gasspeichergesellschaften</td>
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<tr>
<td>Fernwärmelieferanten</td>
<td>rd. 580</td>
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</tbody>
</table>

Quelle: BDEW (Stand: 04/2013)

* Addition nicht möglich, da viele der Unternehmen in mehreren Sparten und auf mehreren Wertschöpfungsstufen tätig sind und somit mehrfach erfasst wurden; teilweise gerundet.*