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REQUIREMENTS OF FUTURE GAS DISTRIBUTION SYSTEMS

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Aim

- **To define the requirements (technical, economic, regulative) of future gas distribution systems**

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2



Approach



- Literature review
- Brain-storm sessions (interactive, computer-supported sessions) of a large number of stakeholders (energy companies, other utilities, telecom and ICT companies, universities, research institutes, contractors, etc.)

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Brain-storm sessions

Three main questions were explored :

- Which developments will affect gas supply and distribution in the coming decades ?
- Which requirements will be important for future gas networks ?
- What are the priorities in these requirements ?



Most important foreseen developments

- Liberalisation > independent network operator > value-added services
- Availability of gas will become more insecure
- Geographic and demographic developments > changing needs of customers
- Societal developments > changing perception of safety and security



Most important foreseen developments (II)

- **Introduction of renewable gases > biogas, SNG, hydrogen**
- **Technological developments > “smart” networks and convergence of gas and electricity networks**



Characteristics of future gas distribution networks

- **Flexibility in supply and demand**
- **Safety and reliability**
- **Robustness (not vulnerable to incidents)**
- **Distribution of renewable gases**
- **Very efficient**
- **Integrated/coupled with other energy sources**
- **Intelligent (integrated sensors, “smart” networks)**



Complexity of challenges

Opinion of stakeholders on the complexity of the transition to future gas distribution networks :

- **Many technological challenges needed, but feasible**
- **Requirements from a management/regulative perspective are considered to be the most complex**



Follow-up

- **Designing and evaluating various concepts of potential future gas distribution networks**

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