

PiReM | Systems



PiReM GAS



Use cost reduction potential – generate additional profits!

Asset management that increases efficiency helps energy suppliers counteract the difference between decreasing revenues and increasing maintenance costs. The Energy Industry Act's regulations are met through employing strategic concepts. They are executed by the policies of the special interest groups OVGW, DVGW and SVGW and ensure that the general public has a reliable supply of gas and electricity.

Security, quality and reliability of supply are the essential focal points of professional asset management in the gas pipeline network. Periodic inspections of the installation assure continual compliance to the technical standards in the pipeline network. Before the inspections, criteria are established which provide information concerning the actual state of the pipe network, prognoses of failure trends, as well as cost patterns for rehabilitation management. Quantifiable variables, such as interpretations of pipe age and material, failure rates and estimated potential risks, are integrated into calculations of risk and cost-oriented rehabilitation management for successful asset management.



Tougher competition in the energy market:

- Growing number of suppliers due to the deregulation of the markets
- Development of eco-friendly substitutes (solar, wind, biomass)
- Decreasing demand for heating resulting from new thermal insulation standards (EnEV 2002)
- Regulated caps on prices and revenues, with rising operating costs
- Constant rehabilitation need due to advanced pipe network age, with shrinking budgets

Expertise on rehabilitation management in the gas pipeline network



“The regulatory stipulations for gas pipeline operating companies call for increased improvement in efficiency, in order to prevent a reduction in network usage charges and consequently a reduction in revenues. Something must also be done, however, to counteract the decreased demand for heating.

The current situation and its trend, as a result of rehabilitation measures, can be forecasted with the aid of suitable software that displays key figures from the current network operation such as failure rates, average pipe network age, as well as other financial and technical key figures. The risk assessment of individual pipe sections is of particular importance, in order to estimate and reduce possible impacts on the surrounding environment as a consequence of interruptions.

From my point of view, the goal of a gas pipeline operating company should, therefore, be to efficiently plan the service and maintenance of the equipment (strategic asset management) in order to minimize supply interruptions and to take into account modified boundary conditions in the supply structure in rehabilitation management (replacement rehabilitation). By using suitable software products, the necessary transparency can be established in order to show long-term what the requirements for future investments in the mains operations and the quality of supply will be.” DI Dr. techn. Gerald Gangl, head of pipe network rehabilitation at RBS wave GmbH



Integrated risk management using PiReM

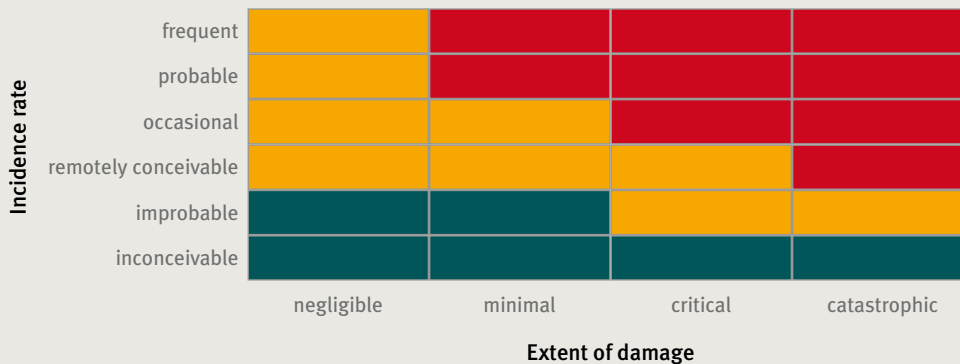
Science responds to increased demands for energy supply companies with state-of-the-art technology, concerning the systematic recognition, assessment and management of risks in the gas pipeline network in the form of the innovative software tool PiReM. Based on small amounts of GIS datasets, PiReM initially analyzes the actual state of the asset and shows a clear picture of the material and aging distribution in the pipe network. The development of network lengths, failure rates and rehabilitation demand forecasts support long-term rehabilitation management in the entire pipe network as well as mid-term management of the individual pipe segments.

- Does the annual rehabilitation rate within the pipe network suffice to attain sustainable security, quality and reliability of supply?
- Based on what information can an efficient financing plan for necessary investment measures in the pipe network be established long-term?

Security assessment in the gas distribution system

PiReM allows for an exact parameterization of the pipe network by entering client-specific pipe network criteria and integrating network-specific risk factors, thus providing in-depth scenario analyses which permit direct conclusions about risk factors and identify risk potentials. In doing so, both aspects – the incidence rate as well as the extent of damage – are assessed in the risk analysis. The quantification of the effect of risk is integrated into a three-step security assessment (SVGW G1001d/2004) and provides the basis for the risk-oriented rehabilitation management in the gas pipeline network.

Risk



Increase in efficiency in the gas distribution system

The age and material of the pipes, the long-term failure trends and security assessment are the significant influencing factors for the annual rehabilitation management with PiReM. By means of employing analysis of recorded failure data, PiReM calculates the ideal economical time period for rehabilitation and generates a priority list according to how urgent the rehabilitation need is on an individual pipe segment. In the scenario management, alternative comparative calculations can be made, the exogenous factor investment budget considered, and the different rehabilitation management scenarios compared. Thus, influences resulting from varying actions taken become apparent, the rehabilitation rate can be controlled through the available budget, and future investment costs become predictable.

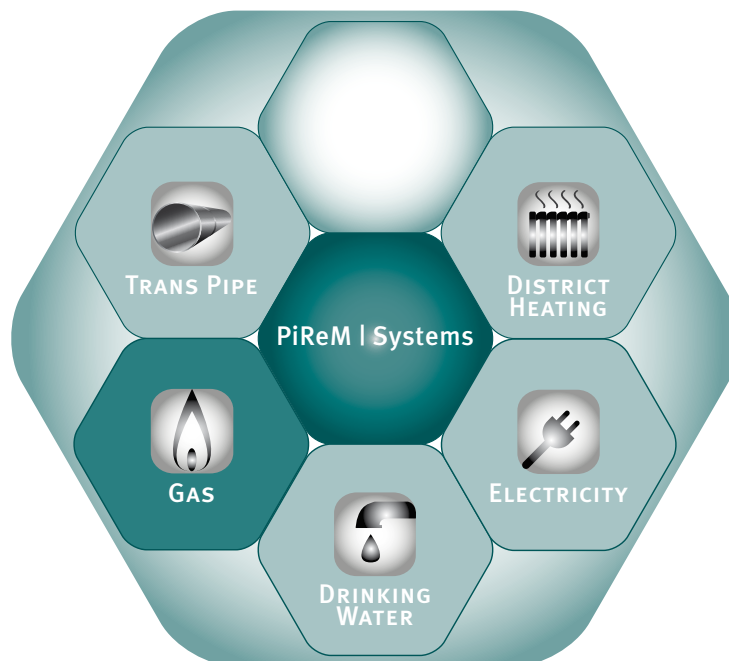


Decision support using PiReM – Pipe Rehabilitation Management

- Security assessment using risk analysis
- Rehabilitation at the ideal economical time
- Efficient rehabilitation management by way of cost projection
- Objectivity and transparency due to software-supported planning
- Security, quality and reliability of supply

Online demo at www.pirem.net

PiReM – Systems



Software



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