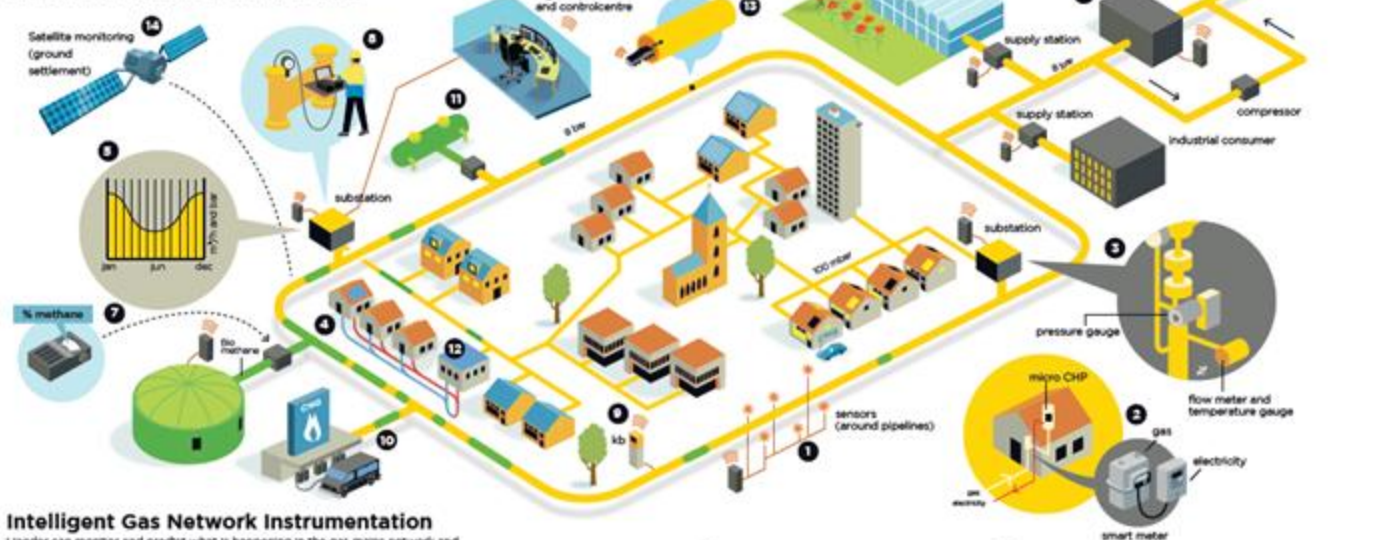


Smart Gas Grid

Liander is building a safe and flexible gas grid.



Intelligent Gas Network Instrumentation

Liander can monitor and predict what is happening in the gas mains network and intervene in timegrid using remote measuring and control equipment.

1 Gas Grid Monitoring

Sensors measure ground vibrations, traffic loads, ground settlement, gas leakages, etc. around gas mains 24/7.

2 Smart Metering

Gas meters record gas consumption profile and make this data available in digital format.

3 Measurements in stations

Remote monitoring of gas inlet and outlet pressures, volumes and temperatures.

4 Gas Diffusion

Sensors and computer models measure and predict gas flow diffusion and mixing.

8 Dynamic Pressure Management

Varying the gas pressure depending on demand and supply.

6 City Gate

Real-time GTS (Gasunie) data for gas outlet pressures, volumes, temperatures and quality.

7 Monitoring Gas Quality

The quality of bio methane added to the grid is monitored 24/7.

8 Station Diagnostics

Periodical diagnostics are run to ensure control systems are working properly.

9 Cathodic Protection

Remote diagnostics and monitoring of the polymer coating around steel pipelines.

10 Gas for mobility

Filling stations for gas used as vehicle fuel on the road and on the water.

11 Local Storage

Storage of overcapacity of bio methane.

12 Energyhub in residential area

CHP analog gas driven heat pump for district heating and electricity.

13 Inspection Robots

Internal pipeline inspection.

14 Satellite Monitoring

Monitoring ground settlement at a street and neighbourhood level.