



The contribution of Natural Gas

Towards a Sustainable Energy Future

Life cycle perspectives

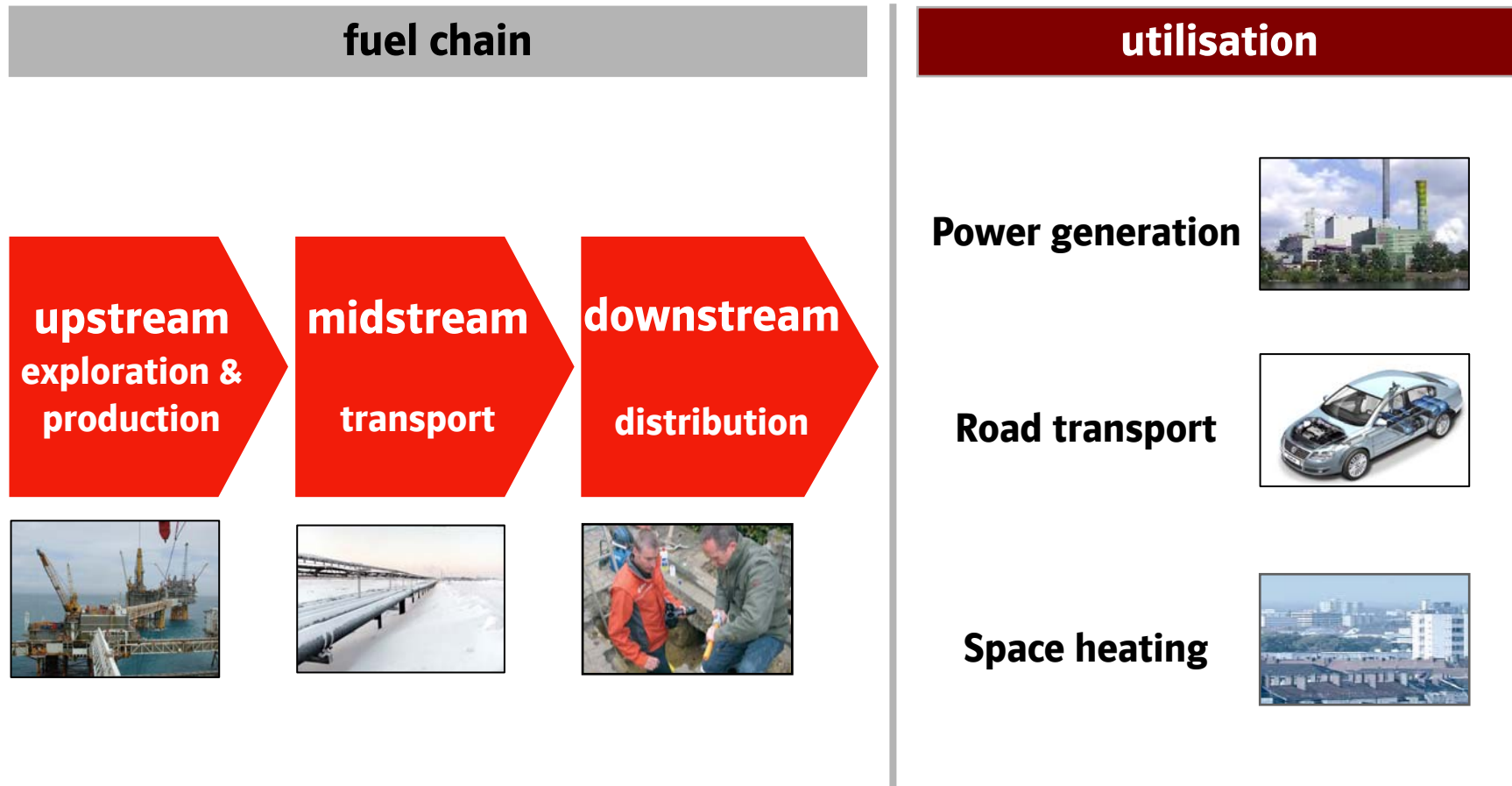
IGU COP 15 Gas Event

Sunday, 13th December, Copenhagen

Dr.-Ing. Stephan Ramesohl

E.ON Ruhrgas AG

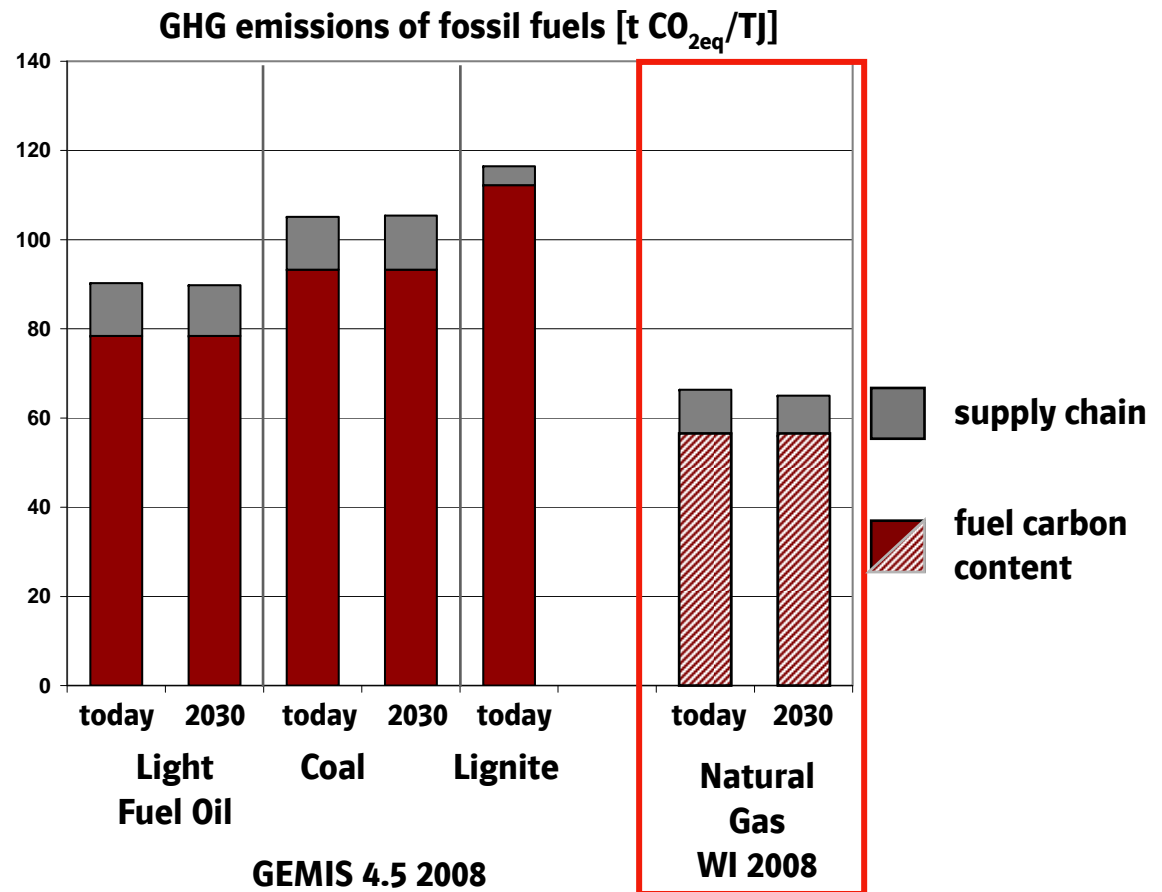
Sound assessment of GHG mitigation benefits requires full evaluation of natural gas process chain



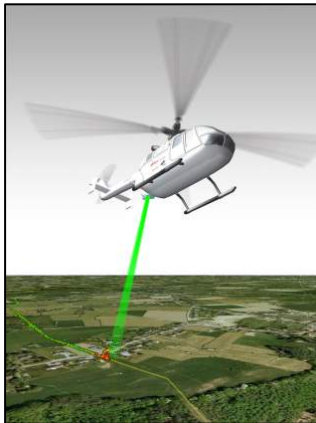
Natural gas fuel chain delivers significant carbon benefits - today and tomorrow!

Aspects to be considered

- **Prediction** of natural gas consumption
- Analysis of **future supply structures** incl. geographic spread of supply countries, gas sources, distances etc.
- Analysis of **full supply chain** incl. production, processing, transport, distribution
- Evaluation of **technical progress** and increase of system efficiency (e.g. efficient compressors)



Innovative CH₄ detection technologies confirm gas industry's engagement for GHG mitigation in the fuel chain



CHARM[®]

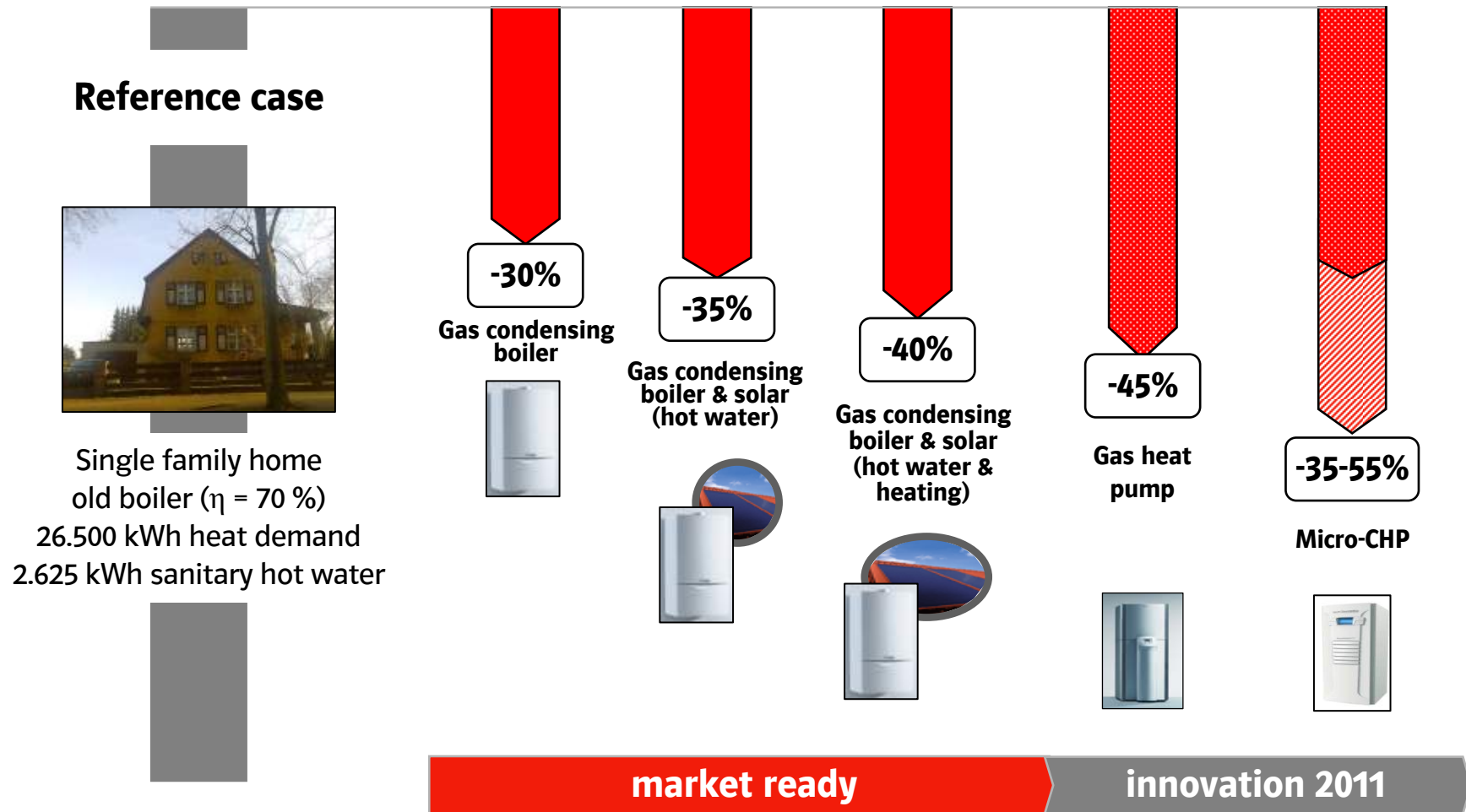
- Tightness check of underground pipelines
- Helicopter-based surveillance (altitudes of 80 to 120 meters)
- Travelling speeds of 30 to 50 knots
- Double-pulse infra red laser scan of pipeline corridor
- Identification of gas leakage via wave length absorption



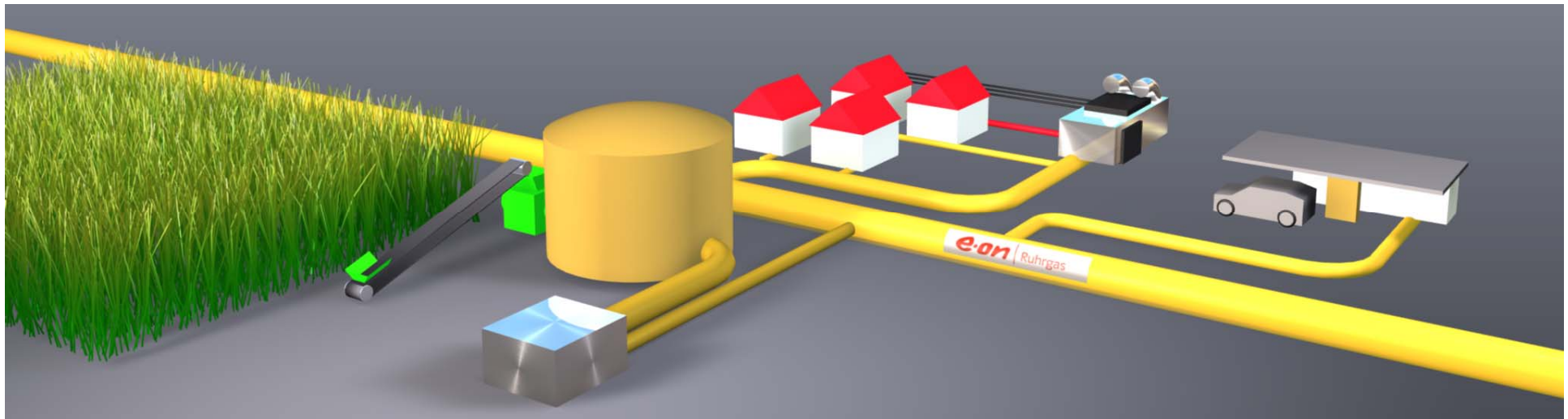
GasCam[®]

- Tightness check of gas installations
- Mobile imaging system for detecting methane plumes at distances up to 200m
- Use of IR-Spektroskopie

Gas technologies are cost-efficient short-term drivers for GHG emissions reductions – example of building retrofit



Biogas offers substantial GHG reduction potential



biogas from manure/bio waste

up to - **100 %**



biogas from energy crops

up to - **50-60 %**



Bio-SNG from wood gasification

up to - **60 %**

Natural gas is a powerful contribution to GHG mitigation

Power generation



~ **-50%** vs. *coal power plant*

Road transport



~ **-25%** vs. *gasoline vehicle*

Space heating



~ **-30** to **-50%** vs. *standard boiler*

Natural Gas

is part

of the

solution



Dr.-Ing Stephan Ramesohl

E.ON Ruhrgas AG

Forschung & Entwicklung / Research & Development

stephan.ramesohl@eon-ruhrgas.com