# Research, Development, and Innovation Committee

## Introduction

In a rapidly changing world innovation is key for successful business operation. Especially against a backdrop of worries over climate change and changing international relations, the current strong position of the gas industry is not a given for the longer term. International cooperation in the field of Research, Development, and Innovation will strengthen the position of gas in relation to competing technologies as well as its societal relevance.

The area of attention of the Research, Development, and Innovation (RDI) Committee spans the entire gas value chain. As such, its primary role is supportive of the vertically oriented Committees that cover a specific sector. The RDI Committee is therefore focused on gathering information from these specific Committees and transform that into gas industry challenge-oriented studies. The RDI Committee seeks to achieve this through close interaction with the other Committees, amongst others by establishing liaisons with each of them.

An important vehicle for dissemination of cutting edge knowledge within the global gas industry is the triennial International Gas Research Conference. The RDI Committee plays an important role in the organization of the Conference, acting as a Program Committee and bringing its extensive experience in organizing this flagship IGU conference to support the National Organization Committee.

Whereas originally the work of the RDI Committee has been organized in reflection of the vertical segmentation of the gas industry, for the next Triennium there will be a more thematic approach. This is to reflect its role as an integrating Committee that undertakes to bring solution-oriented studies, interacting strongly with the other Committees and Task Forces. The work will be structured according to the following areas:

## Study Group 1: Responsibly Sources Gas

Natural gas has proven that it can serve to bring energy reliability, doing so in a sustainable and affordable way. For it to retain this position, as well as to serve new markets and new applications, it is important that the industry it can responsibly source gas. This entails both social as well as environmental aspects. Both require innovative ways of doing business and in some cases research and development into new technologies. The Study Group will specifically focus on:

* Reduction of methane emissions and reducing environmental impact of gas use, including efficiency improvements and efficient use of waste heat,
* Reduction of the footprint of energy production through water efficiency, effective land use, and improvement in air quality,
* Natural Gas use as a means of decarbonization through replacement of high carbon fuels, and carbon capture, usage, and storage (CC(U)S),
* Innovative business models that further the implementation of Environmental Social Governance and the use of Responsible Sourced Gasses .

## Study Group 2: Decarbonatization technologies in the gas value chain

Climate change is one of the major challenges in the next decades. This provides opportunities for the gas sector, if it takes the lead towards a net zero emission energy system. It can be done, as gas has low and potentially zero emissions. However by many natural gas is simply seen as one of the fossil fuels, that have to be phased out. From this, an R&D and Innovation agenda arises that provides for:

* Research, development and innovations of existing and new ways of producing bio-based methane and biogas,
* Supporting the development of a hydrogen value chain, building on the existing gas infrastructure. This requires further developments in all aspects of the value chain, from production down to consumption technologies, such as fuel cells and hybrid systems,
* A safe and reliable gas system that can cope with increasing changes in gas quality standards due to supply diversification and the admixing of new gasses (biomethane, biogas, and hydrogen).

## Study Group 3: Digitalization

Digital innovation may foster sustainable gas industry. The natural gas sector may play a pivotal role in an ever increasing integration of the energy system, but this will require new tooling. Furthermore, digital transformations in the gas system itself will be of great importance in realizing the ambitions of a sustainable, reliable, and affordable system. It is the ambition to bring together and enhance knowledge in the fields of:

* Energy system modelling for the support of integration and optimization,
* Development of digital and digitized tools for the design, planning, operation, and maintenance in the gas industry,
* The use and design of digital tools for training and attraction new human resources as well as fact-based public outreach,
* Digital transformation trends in the gas industry.

## Task Force: Innovator engagement

Innovation is key in creating new business opportunities. Much of the innovations come from smaller start-up companies, which in many cases are spin-offs or spin-outs from founder companies. Traditionally, connecting these new companies to the platform that is provided by the International Gas Research Conference has been hard. It is the ambition of the RD&I Committee to develop a framework in which an effective connection can be made at the next IGRC in Banff, Canada, through:

* Development of a clear engagement strategy for innovator companies and founders,
* Creation of an innovation award with clear value added for the contestants,
* Use of (an enhancement of) the Natural Gas Innovation Fund special that provides companies the opportunity to illustrate their innovation in a real life situation.