**WOC 1 Triennial Report**

**2012-2015**

**STUDY GROUP 1.1**

**TECHNOLOGICAL ADVANCES IN THE EXPLORATION AND PRODUCTION OF NATURAL GAS**

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# TECHNOLOGICAL ADVANCES IN THE EXPLORATION AND PRODUCTION OF NATURAL GAS

## Executive Summary

Please write down a few paragraphs describing the job performed and its main conclusions.

## Introduction

Please write down a brief and attractive introduction that will encourage the reader to proceed.

### The natural gas industry

### Future gas outlook

#### Important issues in gas discovery and monetization

#### The emergence of gas technology

#### A technology response to the global gas outlook

## Recent advances in natural gas technology

### Gas discovery and production

#### Reservoir Characterization

Introduction – Definition & Process

Latest Technology

Challenges

Imaging Technology (Seismic/ Non-Seismic)

#### Drilling System

Introduction – Definition & Process

Latest Technology

Well Construction

Well Completion & Production Enhancement

#### Production systems

Introduction – Definition & Process.

Latest Technology (Conventional)

Down-hole Pumps

Compression Technology

#### Unconventional shale gas

Introduction – Definition & Process

Latest Technology

Fracking

Water Management

#### Unconventional methane hydrates

Introduction – Definition & Process

Latest Technology

### Gas monetization technology

#### Gas to liquids

Introduction – Definition & Process

Technology

Catalytic Conversion

#### Gas to power

Introduction – Definition & Process

Technology

#### Gas to chemicals

Introduction – Definition & Process

Technology

Catalytic

Membrane Technology for Separation

#### Gas to LNG/CNG

Introduction – Definition & Process

Technology

FLNG- Stranded Gas

Small Scale LNG/ Micro LNG

CNG

#### Power systems

Introduction – Definition & Process

Solar/ Tidal/ Wave/ Wind-to-Power

#### Carbon dioxide, nitrogen and gas contaminants

CO2 Management

Mercury

## References

Dieckel *et al.*, *Putting a Price on Energy: International Pricing Mechanisms for Oil and Gas*, Energy Charter Secretariat, 2007.

World Bank, Natural Gas Rents, <http://data.worldbank.org/indicator/NY.GDP.NGAS.RT.ZS>, 2012.

## Appendices

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