



COAL MINE METHANE – NEW SOLUTIONS FOR USE OF CMM – REDUCTION OF GHG EMISSIONS





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The EU FP7 project CoMeth was launched in November 2008 in the framework of activity 6 Clean Coal Technologies of the energy theme.

Why do we do it?

The overall objective of the project is to contribute to reducing greenhouse gas emissions caused by the uncontrolled release of coal mine methane to the atmosphere and to the identification of suitable, economically promising schemes for energetic utilisation of coal mine methane (CMM).

Methane is the main greenhouse gas that is related to coal production. It is produced from underground and surface mines, and as a result of post-mining activities including coal processing, storage, and transportation. Globally, coal mine methane (CMM) accounts for 6 percent of total methane emissions caused by human activities. With a greenhouse potential (GHP) being 21 times higher than that of carbon dioxide, CMM emissions were estimated to be in the range of 400 million metric tons of carbon dioxide equivalent (MMT_{CO2E}) in 2005. The energetic utilisation of CMM e.g. by electric power generation in CHP, co-firing in boilers, contributes to the conservation of fossil fuels, to the diversification of energy resources, and to the reduction of climate-relevant emissions. However, today CMM is used only to a very small extent. This applies especially to the new EU member states and to developing countries.

Particular objectives:

- the development of comprehensive decision guidelines for optimum use of CMM under various conditions;
- an analysis and comparison of the current legal and administrative background in countries with large coal deposits (Poland, Czech Republic, Russia, Ukraine, Romania, Kazakhstan and United Kingdom);
- the development, construction and testing of trial units for new technologies for CMM gases;
- the analysis of GHG emission decrease resulting from CMM utilisation.



PHOTO 1 AND 2

Source: MEV

The structure

CoMeth is structured into 8 technical work packages.

In work package 1 (WP1) legal and administrative conditions in seven European countries with major coal deposits (PL, CZ, RU, UA, RO, KZ and UK) will be analysed and compared against each other.

WP2 deals with the identification, analysis and critical comparison of already available CMM utilisation technologies.

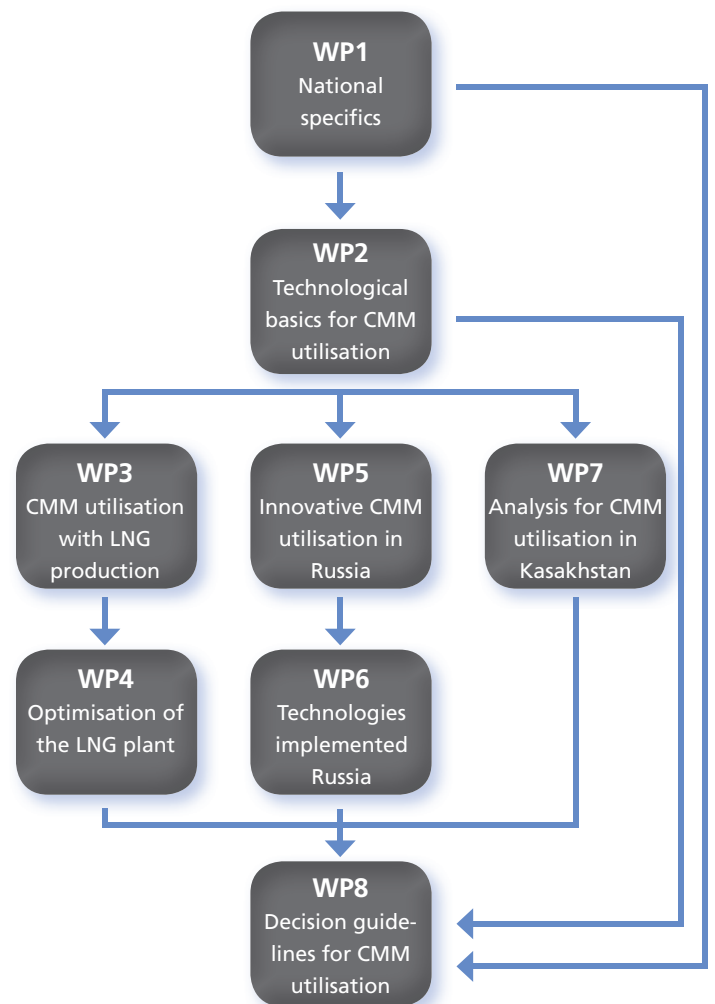
WP3 and WP4 concentrate on the development and testing of an innovative utilisation of CMM gases with a high methane content for LNG production as a vehicle fuel. Therefore, WP3 includes the design of a demonstration plant. WP3 comprises not only the technical design of the test rig, but also all administrative and economic procedures needed.

WP5 and WP6 focus on the elaboration of an innovative utilisation method of low-methane CMM gases including design and testing at a site in Russia. Thus, a specific firing system will be developed allowing the utilisation of low methane containing gases.

WP7 aims at the identification of CMM utilisation potential as well as the development of concepts for the energetic use of CMM in Kazakhstan, including technical and economic topics. Besides the evaluation and analysis of available statistical data on CMM, the package comprises the installation of a mobile test sucking station at one or two promising locations.

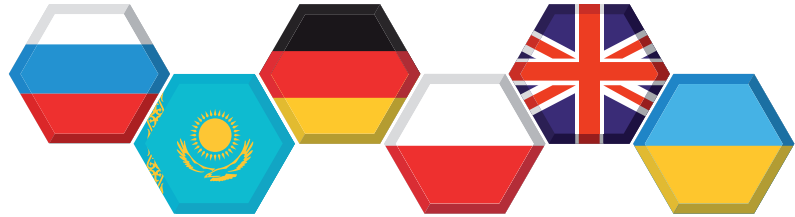
WP8 summarises all information to formulate decision guidelines for CMM utilisation. These decision guidelines are to support potential investors in identifying the optimum solution for CMM utilisation under given technical, legal and economic conditions.

The 9th work package is dedicated to dissemination activities, and the 10th comprises the project management.



The Partners

The CoMeth consortium brings together researchers from 6 countries (Germany, Poland, Russia, Ukraine, Kazakhstan and the United Kingdom) collaborating for a period of 3 years.



Project Developers:

- Fraunhofer UMSICHT | Germany | www.umsicht.fraunhofer.de
- NOVEN | Russia | www.noven.ru
- Joint Stock Company »Ugletmetan Service« | Russia | www.ugletmetan.ru
- Eco-Alliance, LLC | Ukraine | ecoalliance@ukr.net
- Kar-Methane, Limited | Kazakhstan
- Alkane Energy plc | Great Britain | www.alkane.co.uk

Technology Providers:

- LNG-Silesia | Poland | www.lngsilesia.pl
- Fraunhofer UMSICHT | Germany | www.umsicht.fraunhofer.de
- Alkane Energy plc | Great Britain | www.alkane.co.uk

Coal Industry and Owners of CMM Licenses:

- Alkane Energy plc | Great Britain | www.alkane.co.uk
- Siberian Coal and Energy OJSC | Russia | www.suek.ru

Duration

October 2008 – October 2011

Contract number

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