Optimization of the SG3.1 and SG3.3 subjects

BRATISLAVA, SLOVAKIA
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SG 3.1 : NEW TRANSMISSION PROJECTS

Scope and Purpose

Every new transport project is complex and unique because of special characteristics. In some cases, the new project involves laying high pressure gas pipelines along very long distances, across difficult land, densely populated areas. Some projects have a combination of these difficulties.

The purpose of this group is to gather information on new projects related to gas transport (pipeline and compressor plants), to analyse the solution used in each case and propose the Best Construction Practices (BCP) that can be applied by the industry in the future.

TRANSMISSION INFRASTRUCTURE:

- *To report strategic transmission infrastructure projects.*
- *To deal with the challenge of acceptance of technology and technical constructions.*
- *To study the feasibility of new pipelines with small distances to areas of high population density.*
- *To study improvements in the compression process, turbo machineries, performance optimization, emissions.*

SG 3.3 : PUBLIC ACCEPTANCE and NEW TECHNOLOGIES

Scope and Purpose

It is convenient to create the best public acceptance of the gas transmission systems for that reason this study group will analyze the growth of the gas industry in two key aspects of the production chain. On the one hand the legal requirements that the provision of new gas supply sources (shale and other indigenous sources of gas) requires, such as: environmental, economic and other aspects. On the other hand new technologies applied to the gas industry to transport larger quantities of gas, and its components, in a safe and reliable way.

PUBLIC ACCEPTANCE:

- *To ensure effective communication with the public.*
- *To show that the most convenient means of energy transportation is by pipelines.*
- *To report on different actions that the companies are taking for environmental footprint reduction.*

- **THE IMPACT OF THE NEW SOURCES ON TRANSMISSION SYSTEMS**:
  - *To summarize the new gas sources in the world.*
  - *To analyze and present possible topics like: cross country tolls, long haul tariffs, environmental regulations, regulations for open access with free flow of gas and hubs.*

- **NEW TECHNOLOGIES APPLIED TO TRANSMISSION SYSTEMS**
  - *To discuss new pipe materials.*
  - *To propose alternative uses of the pipeline (e.g. CO2).*

OPTIMIZED SUBJECTS : 3.1^3 > (3.1 + 3.3)

A | TRANSMISSION PROJECTS Subject owner: Ansgar BRAUER

fully covered by SG 3.1, data from templates will be provided to D

B | COMPRESSION PROCESS Subject owner: Peter TÓTH

fully covered by SG 3.1, data from questionnaire will be provided to E

C | IMPACT OF NEW SOURCES Subject owner: Alessandro MORETTI

fully covered by SG 3.3

D | PUBLIC ACCEPTANCE Subject owner:

common task SG 3.1^3

E | NEW TECHNOLOGIES Subject owner:

common task SG 3.1^3

SG 3.1 : A | TRANSMISSION PROJECTS; Owner: Ansgar BRAUER

Task: To report strategic transmission infrastructure projects.

- *To continue with information gathering started in the last triennium and to add **detailed information regarding compressor stations** to the projects which were reported during last triennium.*
- *To add a **high level guideline for the main trunk connections** between the main gas sources and consumers.*
- *To **collect the projects related to each trunk connection** and to provide information about the most important new elements.*
- *To include projects of **pipelines with small distances to areas of High Population Density (HPD)***
- *To connect the information related to **pipeline part (PP)** to the information regarding **compressor stations (CS)** of the particular solutions.*
- ***BCP1 = Interaction(PP & CS)***

Action points:

A.1 *High level guideline (HLG) for the main trunk connections –Vladimir Bychkov. Based on HLG the particular projects will be collected.*

A.2 *To gather the information regarding compressor stations for the new projects and the projects reported during previous triennium.*

A.3 *To prepare common template for project plans (both strategic and HPD) and technology acceptance - in progress.*

SG 3.1 : B | COMPRESSION PROCESS; Owner: Peter TÓTH

***Task:* To study improvements in the compression process, turbo machineries, performance optimization, emissions.**

- *To gather the information regarding emission limits (NOx and CO) in line with the **legislation requirements (LR)** for involved countries.*
- *To assess the **total power distribution (TPD)** of the compressor station (CS) to the particular units power (sizing) in order to cover the whole operational range of CS including **the backup philosophy**.*
- *To evaluate the current level of both the compressor and drive **efficiency (EF)** of machines installed during last years.*
- *To compare **electric drive vs. gas turbine drive** (pros and cons).*
- ***BCP4 = Interaction(LR & TPD & EF)***

Action points:

B.1 *The comparison electric drive vs. gas turbine drive. The first approach will be put by Henrik Rosenberg, the whole analysis to be collected by all SG3.1 members till 1.3.2013.*

B.2 *The questions in this field as a part of common questionnaire – done.*

B.3 *To prepare the short explanation related to the aim of the information gathered about compressor stations, efficiencies and investments – done.*

SG 3.3 : C| IMPACT OF NEW SOURCES; Owner: Alessandro MORETTI

***Task:* To analyze the impact of new sources on transmission systems.**

- *To summarize the new gas sources in the world.*
- *To analyze and present possible topics like: cross country tolls, long haul tariffs, environmental regulations, regulations for open access with free flow of gas and hubs.*

Action points:

C.1 *Regional infrastructure challenges to take gas to market (e.g lack of infrastructure, regulations etc).*

C.2 *Company strategies to cope with infrastructure requirements.*

C.3 *Government policy to promote infrastructure development.*

C.4 *Government regulation for free access and flow of gas.*

C.5 *Update of the regulatory review made by SG3.1 last triennium.*

Transversality with PGC-A, Unconventional gas:

- PGC A Study Group 4 will examine the environmental impact associated with shale gas and collect and document best practices.
- WOC3 Study Group 3.3 will summarize the new gas sources in the world and analyze gas industry growth also from the legal requirements surrounding the provision of new unconventional gas sources.

SG 3.1^3 : D | PUBLIC ACCEPTANCE; Owner:

Task: ***To deal with the challenge of public acceptance of technology and technical constructions.***

- *To show that the most convenient means of energy transportation is by pipelines.*
- *To report on different actions that the companies are taking for environmental footprint reduction.*
- *To ensure effective communication with the public and to enhance the **support of general public** to the technology and the **support of authorities, politicians to the specific projects**. To involve public at the planning stage to use the **advantage of the first impression** and to **engage early and handle well** with the local discussions against particular projects (e.g. at social networks).*
- *To **mitigate ASAP the possible protests** during construction phase in order to avoid delays, extra costs, change route or abandon project.*
- *To confirm or refute public acceptance as a **central uncertainty** of new gas transmission projects development.*

Action points:

D.1 *Government regulations on communications with the public.*

D.2 *Community awareness programs (emergency response, contractors, safety practices, social responsibility program, "One-call" center before digging).*

D.3 *Mitigation during and after pipeline construction.*

D.4 *Venting program because of community issues.*

D.5 *Insurance topic ---> Case study.*

SG 3.1^3 : E| NEW TECHNOLOGIES; Owner:

***Task:* To provide an overview of the new technologies and their application to the transmission systems.**

- *Technologies in the area of **Safety and Reliability** (TSR)*
- *Technologies in the area of **Environmental Footprint Reduction** (TEFR)*
- *Technologies in the area of **Pipelines / Compression process** (TPC)*

Action points:

E.1 ***TSR**: In line inspection; Inspection for long deep-water pipelines; Welding inspection technologies; Quality inspection technologies; Leak detection; Flow meters; Gas treatment plants.*

E.2 ***TEFR**: Treatment of exhaust gases; Technologies to reduce CO and NOx emission; Reduction of the methane emissions.*

E.3 ***TPC**: Energy efficiency in the compressor stations; Special applications of the compressor stations; Steel pipeline construction analysis; Pipelines material in extreme conditions (jungle/arctic, etc.); Welding technologies; Hot taps; Coatings; **Construction of pipelines in areas of high population density; Alternative use of pipelines - CO2/Hydrogen, etc.***

E.4 ***Contact PRCI for the pipeline technologies (Hector)***

E.5* *Contact PGCF - RD&Innovation committee to leverage information (Olga)

E.6* *Contact technologies suppliers/(possible attendance in WOC 3 meetings)

Transversality with PGC-A, Carbon capture and storage :

- The alternative utilization of the pipelines for CO_2 transportation in order to connect sinks and sources of CO_2

Thank you for your attention.