HIPS-NET – Organisational Aspekts

Gert Müller-Syring

DBI Gas- und Umwelttechnik GmbH

3rd HIPS-NET Workshop

Brussels, 23rd June 2016

AGENDA

- Review Working Plan Year 3
- HIPS-NET Status (Partner, Core Topics, Website, Flyer)
- Working Plan Year 4
- Project Proposals
- Partner Feedback

Review Working Plan Year 3

Working Plan Year 3 (10/2015-9/2016)

Mandatory scope based on HIPS-NET agreement

- Quarterly newsletter (2 out of 4) (✓)
- Annual workshop (22nd /23rd June 2016) ✓
- Project proposals ✓
- Preparing a short status report - open -

Additional scope:

- Launching HIPS-NET website ✓
- HIPS-NET flyer ✓
- Power-to-Gas map ✓

HIPS-NET STATUS

HIPS-NET Partners

HIPS-NET Status
HIPS-NET Partners | 2016-06-23

- The network initially had the target to attract 30 partners.
- The number of HIPS-NET paying partners increased from 30 organisations (1st and 2nd year) to **32 organisations** in the 3rd year.
- ETIC Canada terminated its membership.
- AREVA H_2Gen, JRC and Uniper Energy Storage GmbH joined HIPS-NET.

→ Stable, growing base for the network is ensured.

HIPS-NET Status
HIPS-NET Partners | 2016-06-23

1	Alliander AG, Netherlands
2	AREVA H_2Gen, France + Germany
3	DEA Deutsche Erdoel AG, Germany
4	DGC – Danish Gas Technology Centre, Denmark
5	DNV GL, United Kingdom
6	Enagás, Spain
7	Energiforsk, Sweden
8	Energinet.dk, Denmark
9	ENGIE, Germany
10	EWE AG, Germany
11	Gas Natural Fenosa, Spain
12	Gasum OY, Finland
13	Gasunie, Netherlands
14	GRTgaz, France
15	grzi e.V. (figawa), Germany
16	Infraserv GmbH & Co. Höchst KG, Germany
17	ITM Power, United Kingdom

18	Joint Research Centre (JRC), EC
19	KOGAS, South Korea
20	NAFTA a.s, Slovakia
21	Open Grid Europe GmbH, Germany
22	ÖVGW, Austria
23	RAG Rohöl-Aufsuchungs AG, Austria
24	RWE Deutschland, Germany
25	Shell, Netherlands
26	Solar Turbines Europe S.A., Belgium
27	SVGW, Switzerland
28	Synergrid, Belgium
29	Uniper Energy Storage GmbH, Germany
30	Uniper Technologies Limited, United Kingdom
31	VCI – Verband der Chemischen Industrie, Germany
32	Volkswagen AG, Germany

HIPS-NET Status
HIPS-NET Partners | 2016-06-23

HIPS-NET Status
HIPS-NET Partner Outlook

- Aim is a growing network with well selected and active partners
- Partner target for project year 4 is: 36
- DBI will try to attract new partner by using it‘s network

- **Euromot, Ineris (FR) Ontras (DE), … as well as Fluxys (BE) are (re)considering their membership**
- **Are there companies/institutions, we should try to attract?**

HIPS-NET Status

HIPS-NET Objectives and Core Topics

HIPS-NET Status
Objectives and Core Topics

- We gather and disseminate the latest available knowledge to improve the understanding of hydrogen/natural gas blends in pipeline systems with emphasis on the core topics:

- We additionally keep a minor focus on the general development of power-to-gas, hydrogen networks, and further topics around the utilisation of (renewable) hydrogen.
- Suggestions for further (core) topics:

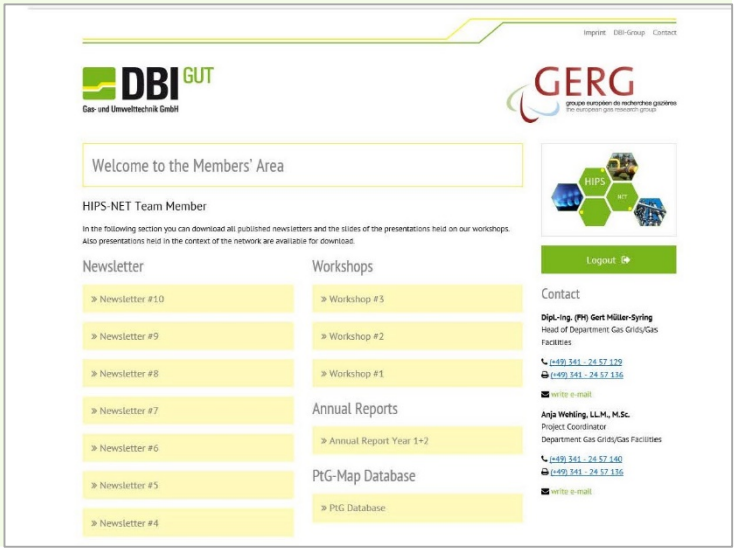
  1) Power-to-X or electricity based gases

HIPS-NET Status

HIPS-NET Website and Flyer

HIPS-NET Status
Website

- Launch of the HIPS-NET website
  - Landing page = public area
    - Presentation of the network and the partners
  - Members' area = secured area
    - Individual username and password for the partners
    - Newsletter, publications, annual report, presentations from the workshops, database PtG map
  - Integration into existing website DBI group
    - www.dbi-gruppe.de/hips-net.html



- HIPS-NET Flyer issued in June 2016

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June 2016

We are more than 30 partners

HIPS-NET

A pan-European understanding of admissible hydrogen concentration in the natural gas grid

GERG

DBI GUT Gas- und Umwelttechnik GmbH

Get to know HIPS-NET

Subject and Aim

- The network HIPS-NET (Hydrogen In Pipeline Systems) shares available information on the H_2 tolerance of the gas grid from both running and completed projects.
- Managed by DBI GUT, in close cooperation with GERG, the European Gas Research Group (www.gerg.eu).
- The network allows partners to maintain contact with other active players and institutions that are interested in establishing a common understanding of H_2 limits in the gas grid.
- HIPS-NET partners can also contribute with their knowledge and experience and, in so doing, influence the common understanding of the H_2 tolerance of the gas grid.

Core Topics

We gather and disseminate the latest available knowledge to improve the understanding of H_2/natural gas blends in pipeline systems with emphasis on these core topics:

We additionally keep a minor focus on the general development of power-to-gas and further topics around the utilisation of renewable hydrogen.

Activities & Benefits for Partners

Quarterly Newsletter

- Review of current projects, studies and conferences related to the core topics
- Information on the activities of the network
- Important upcoming events, workshops and conferences (associated with H_2 topics)

Annual Workshop

Excellent opportunity to meet network partners for information exchange and discussion on current areas of research and demonstration.

Website

- Public area: presentation of the network and the partners
- Secured area (login required): newsletters, annual reports, presentations from the workshops
- You find us on: www.gerg.eu and www.dbi-gruppe.de/hips-net.html

Join HIPS-NET for an annual fee of 2,000 Euro!

WORKING PLAN YEAR 4

Working Plan Year 4

Mandatory scope based on HIPS-NET agreement

- Quarterly newsletter
- Annual workshop – next date 21st /22nd June 2017?
- Addressing open R&D subjects and communication to the EC
- Preparing a short status report

Additional scope (depending on available budget):

- Maintaining HIPS-NET website
- Updating Power-to-Gas map
- Maintaining the cooperation with SFEM WG Hydrogen/TC6
- Establishing a closer information exchange with DG ENER

Do you have requests / ideas for additional activities?

HIPS-NET Project Proposals

The idea: We want to realise projects within the frame of HIPS-NET.

Project Proposals - Overview

- Project proposals:
  - Turbines and engines in the gas grid
  - Natural gas as working medium (DBI GTI and DBI GUT)
  - Safety Aspects (BAM and DBI GUT)

HIPS-NET PROJECT PROPOSALS

1st PROPOSAL:

Preparing an Inventory of Turbines and Engines in the gas grid

PROPOSAL: Inventory of Turbines and Engines

- Aim: Provide a basis to develop smoot and cost effective change strategies for gas turbines in the gas transmission infrastructur
- Content: Investigating the number and hydrogen tolerance of gas turbines in the gas transmission grid
- Time: 10 months
- Costs: 15,000 EUR
- Partners: DBI GUT as performing partner but supported by EU Turbines/ EUROMOT
- Benefit: Gaining knowledge for introduction of a cost effective strategy to adopt the existing infrastructure

HIPS-NET PROJECT PROPOSALS

2nd PROPOSAL:

Natural Gas as Working Medium

"Effects of hydrogen feeding to natural gas grid on sulfur removal"

PROPOSAL: Effects of hydrogen feeding to natural gas grid on sulfur removal

- Aim: Evaluation of effects of hydrogen feeding into the natural gas grid on processes in the chemical industry

  Hydrodesulphurization (HDS) catalysts tend to reduce in hydrogen enriched atmosphere

- Content: Evaluation of hydrogen impact on HDS process by literature research and thermodynamic calculations

  Experimental test of HDS catalysts under elevated hydrogen content in the feed gas

- Time: 12 months

- Costs: 80,000 €

- Funded by: HIPS-NET partner and DBI

PROPOSAL: Effects of hydrogen feeding to natural gas grid on sulfur removal

- Benefits:
  - Detailed knowledge of consequences of hydrogen feeding and acceptable hydrogen contents or more suitable catalysts
  - Prearrangement on upcoming changes in raw material base
  - Avoiding of unexpected effects on the processes

HIPS-NET Project Proposals

3rd PROPOSAL:

Safety Aspects

"Determination of properties related to safety technologies of gas mixtures with hydrogen at non-atmospheric conditions"

PROPOSAL: Determination of properties related to safety technologies of gas mixtures with hydrogen at non-atmospheric conditions

- Aim: Safety parameters of admixtures of H_2 with various natural gases (determination of safety related properties and calculation methods/models)
- Content: Relevant gas conditions will be identified with the help of public/private institutions and literature research

  Results of experimental studies will be used to examine computational models
- Time: 36 months
- Costs: 75,000 Euro (estimated for current scope of project)
- Funded by: BAM with DBI GUT as project partner

Who is interested to support as DBI partner technically and financially?

PROPOSAL: Determination of properties related to safety technologies of gas mixtures with hydrogen at non-atmospheric conditions

- Benefit:
  - Safety parameters of non-atmospheric admixtures of hydrogen with various natural gases
  - Determination of safety related properties of these mixtures (e.g. explosive range, ignition point, …) as a function of hydrogen share, temperature, pressure and oxidation medium
  - Investigation of necessary adaption with increasing share of H_2:
    - Explosion protection measures for avoidance of explosive mixtures
    - Avoidance of ignition sources
    - Constructive explosion protection measures
  - Development of reliable methods/models for the calculation of safety parameters as a function of hydrogen shares and process conditions

HIPS-NET Project Proposals

Do You have further questions?

Are you interested in one of the project proposals?

Do you want to become a project partner?

Partner Feedback

Do you have further questions?

Do you have additional wishes concerning HIPS-NET?

Do you know companies who might be interested?

Thank you for your attention!

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