HIPS-NET – Organisational Aspekts

Gert Müller-Syring

DBI Gas- und Umwelttechnik GmbH

4th HIPS-NET Workshop

Brussels, 14th June 2017

AGENDA

- Review Working Plan Year 4
- Working Plan Year 5
- HIPS-NET Status (Partner, Core Topics, Status Report)
- Project Proposals
- Partner Feedback

Review Working Plan Year 4

Working Plan Year 4 (10/2016-9/2017)

Mandatory scope based on HIPS-NET agreement

- Quarterly newsletter (2 out of 4) (✓)
- Annual workshop ✓
- Project proposals ✓
- Preparing a short status report - open -

Additional scope:

- Maintaining HIPS-NET website ✓
- Updating Power-to-Gas map (✓)

WORKING PLAN YEAR 5

Working Plan Year 5

Mandatory scope based on HIPS-NET agreement

- Quarterly newsletter
- Annual workshop – next date … early June 2018?
- 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 STATUS

HIPS-NET Partners

HIPS-NET Status
HIPS-NET Partners | 2017-05-22

- 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 **34 organisations** in the 4th year.
- Energiforsk (Sweden) terminated its membership.
- ONTRAS (Germany), INERIS (France) and Storengy (France) joined HIPS-NET.

→ Stable, growing base for the network is ensured.

HIPS-NET Status
HIPS-NET Partners | 2017-05-22

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	Energinet.dk, Denmark
8	ENGIE, Germany
9	EWE AG, Germany
10	Gas Natural Fenosa, Spain
11	Gasum OY, Finland
12	Gasunie, Netherlands
13	GRTgaz, France
14	grzi e.V. (figawa), Germany
15	INERIS, France
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	ONTRAS (Germany)
22	Open Grid Europe GmbH, Germany
23	ÖVGW, Austria
24	RAG Rohöl-Aufsuchungs AG, Austria
25	RWE Deutschland, Germany
26	Shell, Netherlands
27	Storengy, France
28	Solar Turbines Europe S.A., Belgium
29	SVGW, Switzerland
30	Synergrid, Belgium
31	Uniper Energy Storage GmbH, Germany
32	Uniper Technologies Limited, United Kingdom
33	VCI – Verband der Chemischen Industrie, Germany
34	Volkswagen AG, Germany

HIPS-NET Status
HIPS-NET Partners | 2017-05-22

HIPS-NET Status
HIPS-NET Partner Outlook

- Aim is a growing network with well selected and active partners
- Partner target for project year 5 is 38
- DBI will try to attract new partner by using it‘s network and is in contact with
  - Enbride (Canada)
  - TIGF (France)
  - Total (France)
  - Net4Gas (Czech Republic)

Are there companies/institutions, we should try to attract?

HIPS-NET STATUS

Status Report Year 3

HIPS-NET - Overview of Budget Spending

Including Outlook

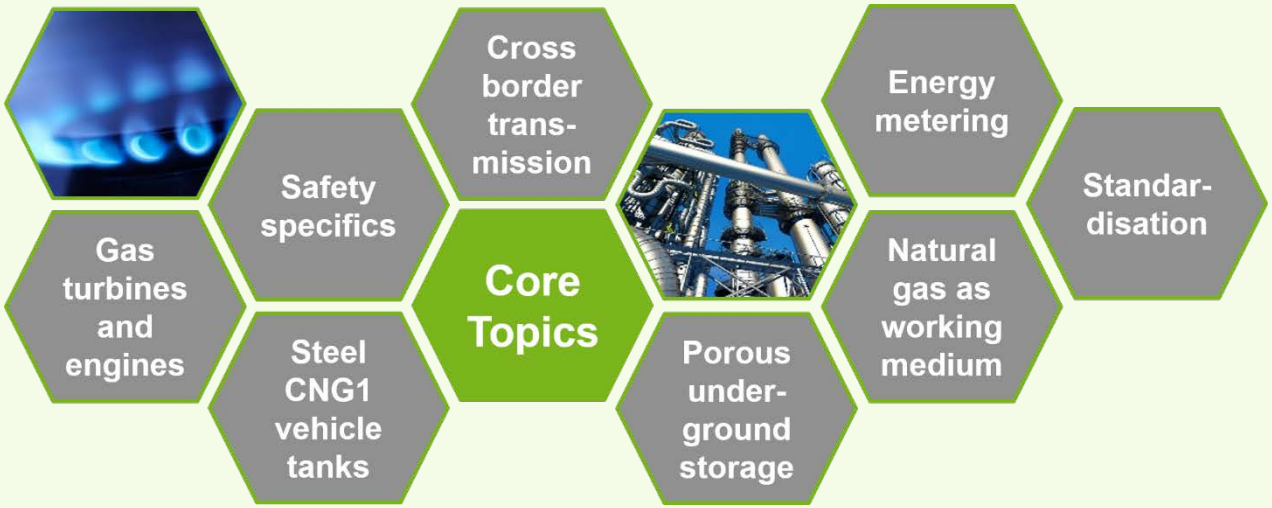
Category	Item	2013/14	2014/15	2015/16	*running* ***2016/17***	*planned* ***2017/18***
Income	Partner [No.]	30	30	32	*36*	*38*
	Membership Fee	2.000 €	2.000 €	2.000 €	*2.000 €*	*2.000 €*
	Annual Budget	**60.000 €**	**60.000 €**	**64.000 €**	***72.000 €***	***76.000 €***
Expenses						
Administration	**Total**	**9.094 €**	**6.465 €**	**3.705 €**	***2.635 €***	***1.825 €***
Promotion	**Total**	**4.400 €**	**4.480 €**	**4.560 €**	***4.640 €***	***4.800 €***
Website	**Total**	**- €**	**- €**	**11.120 €**	***2.900 €***	***3.000 €***
Editorial Work	**Total**	**45.100 €**	**45.920 €**	**46.740 €**	***47.560 €***	***49.200 €***
Workshop	**Total**	**13.077 €**	**13.072 €**	12.315 €	***13.610 €***	***14.000 €***
Final Report	**Total**	**1.650 €**	**1.680 €**	**570 €**	***580 €***	***600 €***
Subcontracting	**Total**	**14.480 €**	**10.437 €**	**- €**	***- €***	***- €***
Total	(Expenses)	**87.801 €**	**82.053 €**	**79.010 €**	***71.925 €***	***73.425 €***
Result	(Income - Expenses)	**-27.801 €**	**-22.053 €**	**-15.010 €**	***75 €***	***2.575 €***

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:



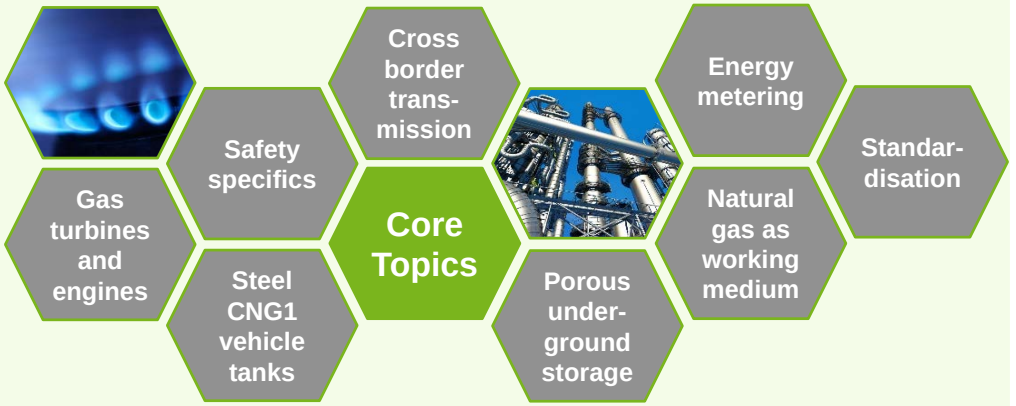
- We additionally keep a minor focus on the general development of power-to-gas, hydrogen networks, and further topics around the utilisation of (renewable) hydrogen.
- Suggestions for further (core) topics:
  1) Power-to-X or electricity based gases

HIPS-NET Project Proposals

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

Project Proposals – Overview
Recap 2016

- Project proposals 2016:
  - Turbines and engines in the gas grid
  - Natural gas as working medium (DBI GTI and DBI GUT)
  - Safety Aspects (BAM, INERIS and DBI GUT)



Project Proposals
Current situation/Way forward

- Non of the proposals got sufficient support for further development/project execution
- Several reasons seems to be probable. A major reason to our perception is that HIPS NET it not a typical platform for project initiation regarding it‘s aims and structure.
- Our suggestions is to further define the topics that are important for the group and to elaborate how we can initiate them e.g. with the help of:
  - GERG
  - DG ENER
  - SFEM
  - FCH JU
  - …

  Depending on the type/volume of the proposal

HIPS-NET Project Proposals – Recap/short update

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 infrastructure
- Content: Investigating the number and hydrogen tolerance of gas turbines in the European 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), further aspects as effect on sensors/ppe
- 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)
- Performed: BAM, INERIS with DBI GUT Gas- und Umwelttechnik GmbH as project partner

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

- Benefit:
  - Safety parameters (e.g. explosive range, ignition point, auto ignition temperature …) of non-atmospheric admixtures of hydrogen with various natural gases, temperature, pressure
  - 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
    - Adoption of protective personnel equipment
  - 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!

Contact

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