

HIPS-NET – Organisational Aspects

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DBI Gas- und Umwelttechnik GmbH

5th HIPS-NET Workshop

Brussels, 14th June 2018



AGENDA

- ◆ Review Working Plan Year 5
- ◆ Working Plan Year 6
- ◆ HIPS-NET Status (Partner, Core Topics, Status Report)
- ◆ Project Proposals
- ◆ Partner Feedback



REVIEW WORKING PLAN YEAR 5





Mandatory scope based on HIPS-NET agreement

- ◆ Issuing quarterly newsletter (1 out of 4) - running - (✓)
- ◆ Annual workshop ✓
- ◆ Addressing open R&D subjects and communication e.g. to the EC ✓
- ◆ Preparing a short status report - running - (✓)

Additional scope (providing additional budget):

- ◆ Maintaining HIPS-NET website ✓
- ◆ Maintaining contact to CEN/CENELEC ✓
- ◆ Updating Power-to-Gas map

WORKING PLAN YEAR 6





Mandatory scope based on HIPS-NET agreement

- ◆ Issuing quarterly newsletter
- ◆ Annual workshop – 5th/6th June vs. 26th/27th June?
- ◆ Addressing open R&D subjects and communication e.g. to the EC
- ◆ Preparing a short status report

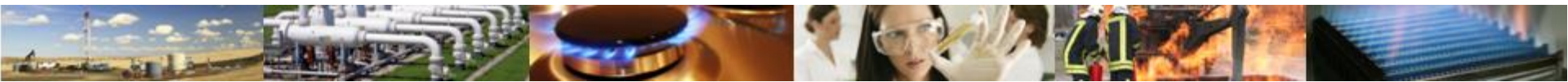
Additional scope (depending on available budget)

- ◆ Maintaining HIPS-NET website
- ◆ Updating Power-to-Gas map
- ◆ Maintaining the cooperation with SFEM WG Hydrogen/TC6

Do you have requests / ideas for additional activities?

HIPS-NET STATUS

HIPS-NET Partners





- ◆ The network initially had the target to attract 30 partners.
- ◆ The number of HIPS-NET paying partners increased to **36 organisations** in the 5th year.
- ◆ TIGF (France) joined the group in 2017.
- ◆ Uniper Energy Storage will merge its membership with Uniper Technology next year.

→ **Moderate, growing base for the network is ensured.**

HIPS-NET Status

HIPS-NET Partners | June 2018



1	Alliander, Netherlands
2	AREVA H ₂ Gen, France + Germany
3	DEA Deutsche Erdoel, Germany
4	DGC, Denmark
5	DNV GL, United Kingdom
6	Enagás, Spain
7	Enbridge, Canada
8	Energinet.dk, Denmark
9	ENGIE, Germany
10	EWE Netz, Germany
11	Gas Natural Fenosa, Spain
12	Gasum OY, Finland
13	Gasunie, Netherlands
14	GRTgaz, France
15	grzi e.V. (figawa), Germany
16	INERIS, France
17	Infraserv Höchst, Germany
18	Innogy SE, Germany

19	ITM Power, United Kingdom
20	Joint Research Centre (JRC), EC
21	KOGAS, South Korea
22	NAFTA, Slovakia
23	ONTRAS (Germany)
24	Open Grid Europe, Germany
25	ÖVGW, Austria
26	RAG Rohöl-Aufsuchung, Austria
27	Shell, Netherlands
28	Solar Turbines Europe, Belgium
29	Storengy, France
30	SVGW, Switzerland
31	Synergrid, Belgium
32	TIGF, France
33	Uniper Energy Storage, Germany
34	Uniper Technologies, U.K.
35	VCI, Germany
36	Volkswagen, Germany

HIPS-NET Status

HIPS-NET Partners | June 2018



AREVA H₂Gen



DGC



Gasum



storengy



TIGF



VOLKSWAGEN
AKTIENGESELLSCHAFT



- Aim is a growing network with well selected and active partners
- Partner target for project year 6 is 38
- DBI will try to attract new partner by using its network and is in contact with
 - Cadent ;o)
 - Total (France)
 - Net4Gas (Czech Republic)
 - ...

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

HIPS-NET STATUS

Status Report Year 4 (2016/17)





HIPS-NET - Overview of Budget Spending *Including Outlook*

Category	Item	2013/14	2014/15	2015/16	2016/17	running 2017/18	planned 2018/19
Income	Partner [No.]	30	30	32	35	36	38
	Membership Fee	2.000 €	2.000 €	2.000 €	2.000 €	2.000 €	2.000 €
	Annual Budget	60.000 €	60.000 €	64.000 €	70.000 €	72.000 €	76.000 €
Expenses							
Administration	Total	9.094 €	6.465 €	3.705 €	2.635 €	2.125 €	1.550 €
Promotion	Total	4.400 €	4.480 €	4.560 €	4.640 €	4.800 €	4.880 €
Website	Total	- €	- €	11.120 €	2.900 €	3.000 €	3.050 €
Editorial Work	Total	45.100 €	45.920 €	46.740 €	47.560 €	49.200 €	50.020 €
Workshop	Total	13.077 €	13.072 €	12.315 €	13.111 €	14.000 €	14.195 €
Final Report	Total	1.650 €	1.680 €	570 €	580 €	600 €	610 €
Subcontracting	Total	14.480 €	10.437 €	- €	- €	- €	- €
Total	(Expenses)	87.801 €	82.053 €	79.010 €	71.426 €	73.725 €	74.305 €
Result	(Income - Expenses)	-27.801 €	-22.053 €	-15.010 €	-1.426 €	-1.725 €	1.695 €

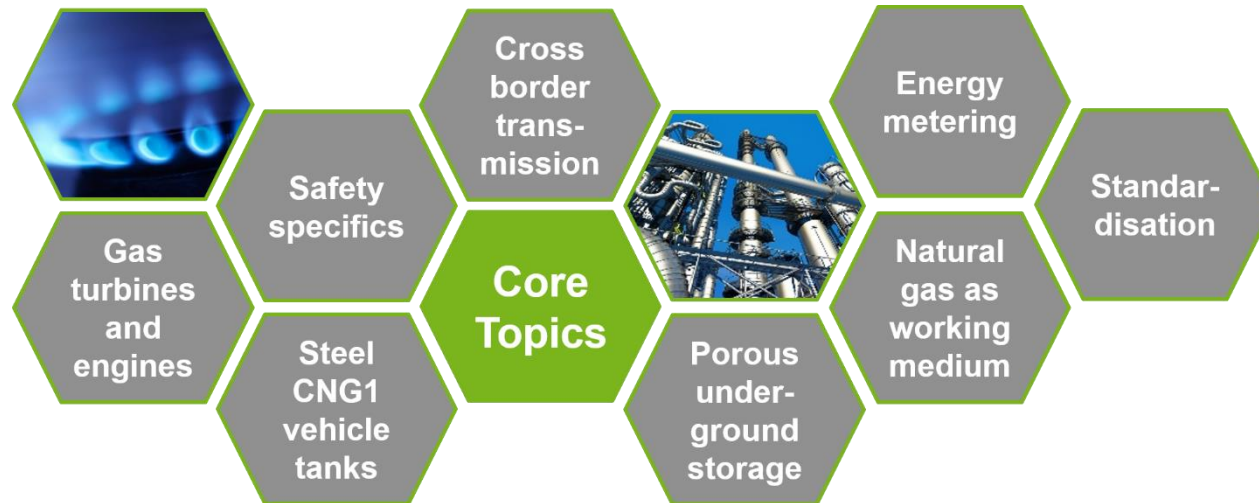
HIPS-NET STATUS

HIPS-NET 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.
 - ◆ Power-to-X or electricity based gases

HIPS-NET PROJECT PROPOSALS

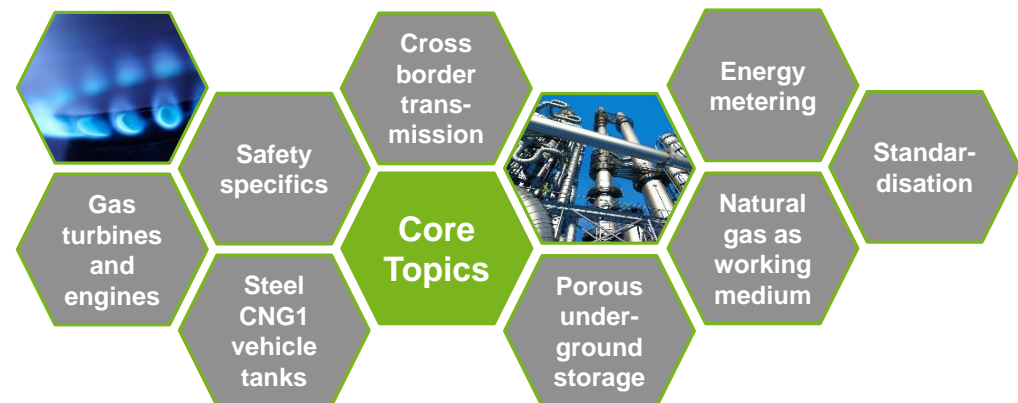
The idea: We want to initiate projects within the frame of HIPS-NET with the support of GERG.





◆ Project proposals 2016/17:

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





- ◆ 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 bring in topics and ideas into GERG calls or via other possible routes e.g. FCHJU, EC etc.
- ◆ We keep, of course, the network open to ideas and are happy to support ideas/proposal but would focus on our main scope “Addressing open R&D subjects and communication e.g. to the EC”

PARTNER FEEDBACK

Do you have further questions?

Do you have additional wishes concerning HIPS-NET?

Do you know companies who might be interested?

Do you have general feedback?



Thank you for your attention!

Contact

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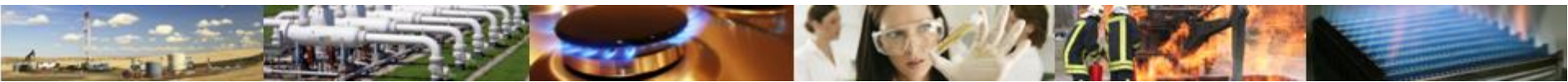
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BACK UP



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 smart 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 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 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 H₂ 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:**   ,  with  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 H₂:
 - 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?*

