

Standardization & Certification WP4

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WP4

The main goal is to:

- **evaluate the current certification and standardization framework for residential & commercial gas appliances** with respect to the use of H2/NG blends;
- **elaborate test programs/conditions** allowing to assess new gas appliances properly on satisfying the applicable essential requirements with respect to the use of H2/NG blends.

The expected deliverables are:

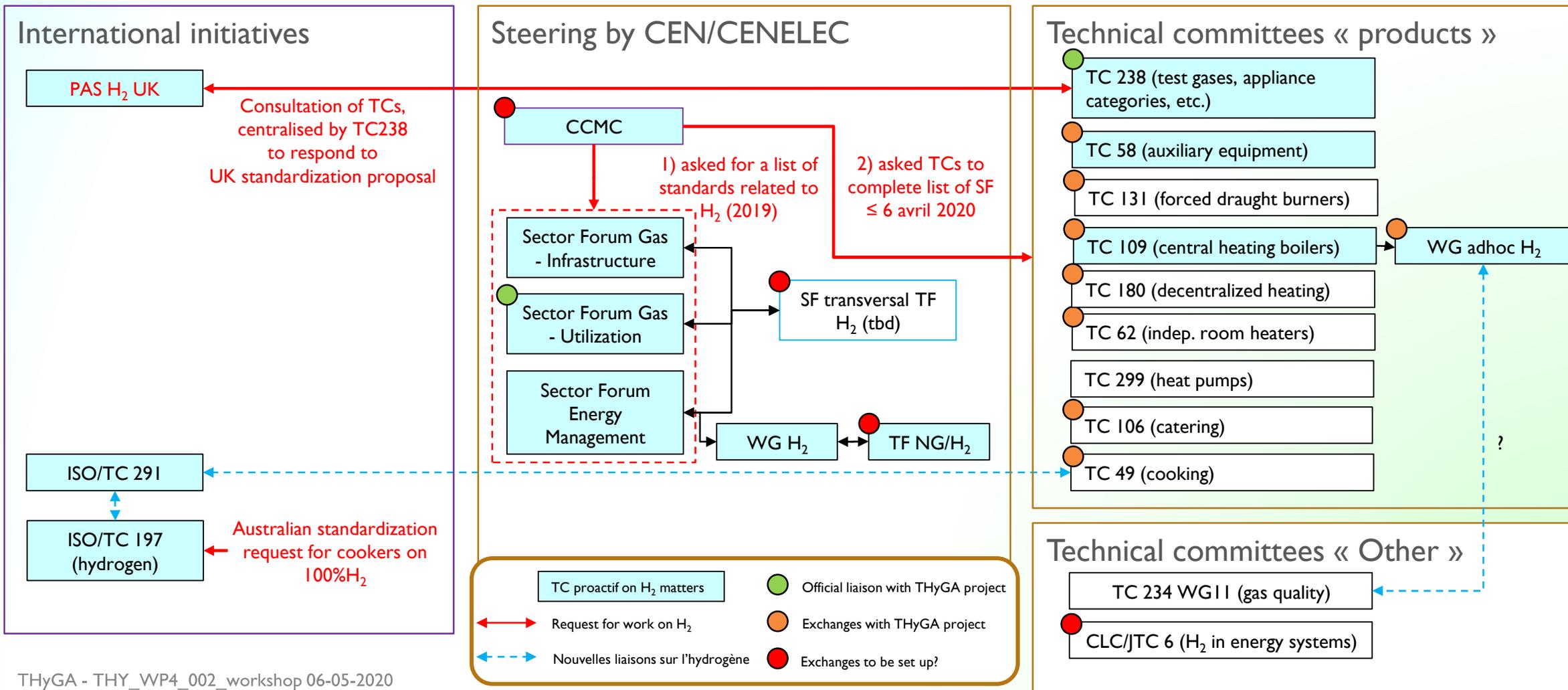
D4.1	overview of the current standardization/certification framework and description of the identified issues	M6
D4.2	overview of relevant existing testing/certification experience	M12
D4.3	description and justification of the proposed test procedure	M18
D4.4	overview of the results of the application of the proposed test procedure	M36

TASK 4.1

Overview of current EU certification/standardisation framework and identification of issues with respect to H₂ addition

- **different European directives/regulations** apply to residential & commercial gas appliances;
- **many (harmonised) product standards** describing how to assess satisfaction to essential requirements;
- addition of **hydrogen requires adapted risk evaluation** with respect to certain essential requirements;
- besides H₂ **concentration** also its possible **fluctuation** to be considered;
- issue identification based on putting outcome of WP2 next to applicable essential requirements;
- **crucial role** in certification framework is played by **EN 437** defining test gases, test pressures and appliance categories
⇒ a **liaison with CEN/TC 238** is to be **established**;
- **product standards** are obviously very relevant too ⇒ **exchange with concerned CEN/TCs** is to be set up.

INTERACTION WITH STANDARDIZATION



IMPACTED ESSENTIAL REQUIREMENTS (approach of analysis - tbc)

GAR 2016/426		RISK CHANGE	IMPACTS			
Essential requirement		DUE TO H2 ADDITION TO NG	GAR certification		Harmonized standards	
N°	Requirement		Essential requirements	Existing certification	Requirements	Test procedures/ conditions
1 GENERAL REQUIREMENTS						
1.1	Appliances shall be so designed and constructed as to operate safely and present no danger to persons, domestic animals or property, when normally used.	<i>Wider ignition/explosion limits.</i>	N	Y	N	Y
		<i>More powerful explosion characteristics.</i>	N	Y	N	N
	Fittings shall be so designed and constructed as to fulfil correctly their intended purpose when incorporated into an appliance or assembled to constitute an appliance.	<i>Easier gas leakage.</i>	N	Y	Y	Y
1.2	The manufacturer is under an obligation to analyse the risks in order to identify those which apply to his appliance or fitting. He shall then design and construct it taking into account its risk assessment.	<i>See risk changes above and below.</i>	N	Y	N	N
2 MATERIALS						
	Materials for appliances or fittings shall be appropriate for their intended purpose and shall withstand the mechanical, chemical and thermal conditions to which they will foreseeably be subjected.	<i>Any chemical impact of the presence of H2?</i>	N	tbc	tbc	tbc
3 DESIGN AND CONSTRUCTION						
	The obligations arising for appliances from the essential requirements set out in this point apply also to fittings, as far as relevant.					
3.1 General						
3.1.1	Appliances shall be so designed and constructed that, when normally used, no instability, distortion, breakage or wear likely to impair their safety may occur.	<i>Higher burner surface temperature due to higher flame speed and eventually flashback.</i>	N	Y	N	Y