



HYACINTH

FCH JU 621228

Hydrogen Acceptance in the Transition Phase

SAMT Workshop

Madrid, España

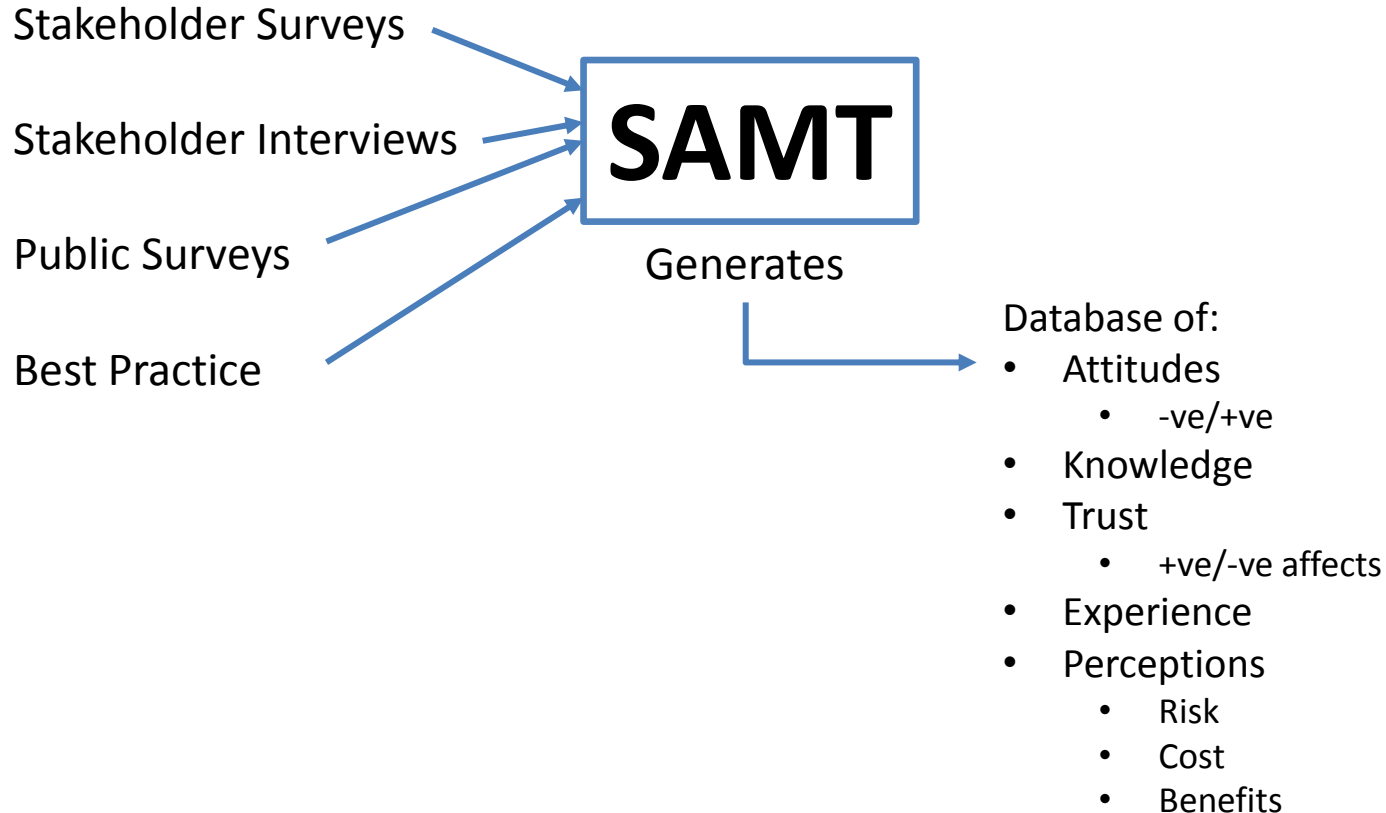
09/05/2017



SOCIAL ACCEPTANCE MANAGEMENT TOOLBOX



Inputs from research



Inputs from research

Stakeholder Surveys

Stakeholder Interviews

Public Surveys

Best Practice

SAMT

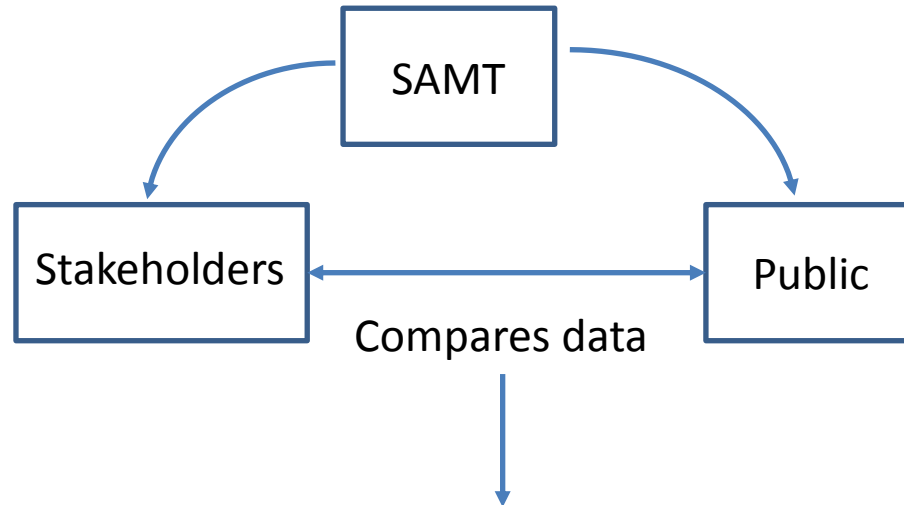
Generates

Database of:

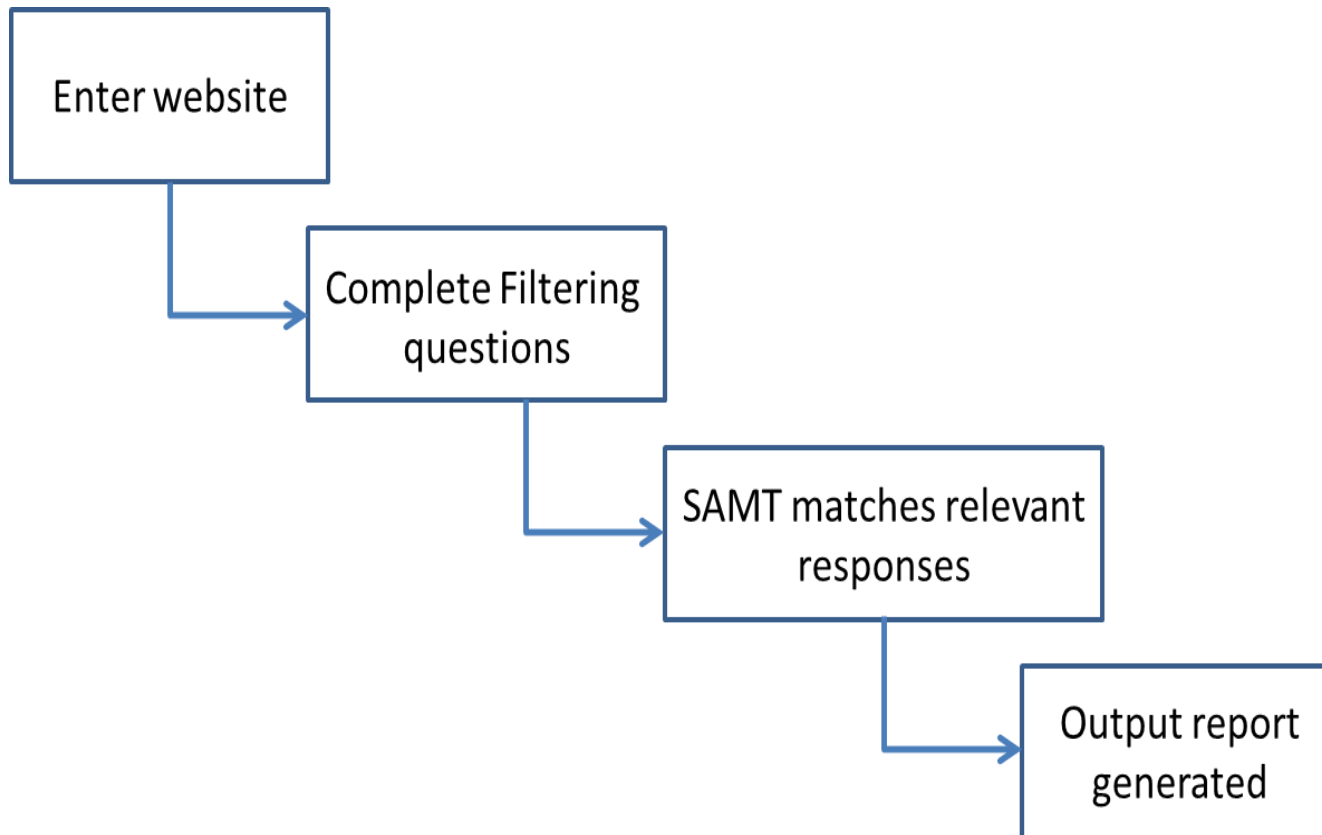
- Attitudes
 - -ve/+ve
- Experiences
- Beliefs
- Funding Climate
- Political Support

Developer Interrogation

- Web based
- Interface:
 - Application
 - Stationary/mobile
 - Target user
 - Location
 - Where will this be installed/operated
- Etc.



- +/+ Both parties agree situation positive
- +/- Public think situation is better than Stakeholders do
- /+ Stakeholders believe situation more positive than public
- /- Both parties agree situation is negative





SAMT WORKSHOP



Hydrogen Technology Acceptance Tool

[Home](#)

Welcome to the HYACINTH - Social Acceptance Management Toolbox (SAMT) for hydrogen and fuel cell technologies (HFC). This project has received funding from the Fuel Cells and Hydrogen Joint Undertaking (FCH-JU) under grant agreement No. 621228.

The SAMT has been designed to provide practical advice to developers and/or sponsors of HFC technologies that they now intend to progress from a completed demonstration project or phase to full market acceptance and wide public adoption. This so called transition phase is often difficult to navigate and this tool contains information regarding the knowledge of and attitude to HFCs from 7000 members of the public throughout the EU and over 250 industrial and governmental stakeholders. This information is designed to help the developer to understand the concerns of the public who will be the target market for any proposed technologies and will, where appropriate offer advice from key players in the industry.

First you will be asked some questions about the type of technology you are interested in. You will then be given the opportunity to filter the results according to certain demographic data.

The results will be presented according to the key themes in the Technology Acceptance Framework (Ref). Areas of concern will be highlighted in RED and, where the relevant information and research exists, text will be provided which could explain how to improve acceptance levels in these areas.

[Get started »](#)

Hyacinth Project Partners



Hyacinth

Hydrogen Technology Acceptance Tool

Home

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SAMT developed by AMAP, University of Sunderland | © Hyacinth Project 2016 | hyacint@project.eu

Click on this link to begin your SAMT journey.



SAMT WORKSHOP



Hydrogen Technology Acceptance Tool

[Home](#) » Filtering Questions

F1: Which technology are you interested in?

Stationary Applications

Transport Applications

Both Stationary and Transport Applications

F2: Whose opinions are you interested in?

General Public

Industry

Both

NEXT

Hydrogen Technology Acceptance Tool

Home > Filtering Questions

F3: Are you interested in the opinions of

Males Females **Both**

F4: Which age range are you interested in (results will be shown inclusive of specified ages)?

Youngest: Oldest:

F5: Which country do you want the general public responses from?

United Kingdom

F5.1: Which region do you want the general public responses from?

All Regions

F6: Are you interested in energy awareness?

Yes No

F7: Are you interested in lifestyle activities?

Yes No

F8: What type of housing are you interested in (tick all that apply)?

Detached House Semidetached house
 Terrace house Flat / apartment

F9: What tenancy are you interested in (tick all that apply)?

Home owners Rented
 Other

F10: What existing heating systems are you interested in (tick all that apply)?

Natural Gas National Grid Electric
 Other

F11: Which respondent transport usage are you interested in (tick all that apply)?

	Everyday / nearly everyday	2-5 days per week	Once a week	1-3 times per month	Less than once per month	Never
Car	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Public Transport	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bicycle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[TOP ALL / NONE](#)

F12: Which country do you want the industry responses from?

Belgium France Germany Norway Slovenia Spain **United Kingdom** All

F13: Which organisations are you interested in the views of (tick all that apply)?

Private Public
 Government Organisation Educational Organisation
 Other non-profit organisation

F14: How much experience do you want respondents to have?

No Involvement Less than 5 years 5-10 years 11-20 years 20+ years **All**

F15: Which field of work do you want respondents to be involved in (tick all that apply)?

Research on HFC Fuel cell developer or manufacturer
 Hydrogen production Professional services provider
 Policy development and program administration Car manufacturer / OEM
 Systems integrator Education, safety and training
 Fuel cell user Hydrogen storage
 Service station operator Supplier to developer or manufacturer
 Commercialisation support Fuel cell distributor or agent
 Hydrogen Distribution

F16: Which Hydrogen related application do you want respondents to be involved in (tick all that apply)?

Not involved in specific application Small stationary (50kw or less)
 Large Stationary (more than 50 kw) Portable (including micro)
 Mobile Auxiliary power Hydrogen production and fuelling infrastructure
 Mobile primary power and drive train

F17: How professionally familiar do you want respondents to be with HFC stationary applications?

Not at all familiar Slightly familiar Familiar Very familiar **All**

F18: How professionally familiar do you want respondents to be with HFC Electric Vehicles?

Not at all familiar Slightly familiar Familiar Very familiar **All**

[FILTER RESULTS](#)

F8: What type of housing are you interested in (tick all that apply)?

- Detached House
- Terrace house
- Semidetached house
- Flat / apartment

F9: What tenancy are you interested in (tick all that apply)?

- Home owners
- Other
- Rented

F10: What existing heating systems are you interested in (tick all that apply)?

- Natural Gas
- Other
- National Grid Electric

F11: Which respondent transport usage are you interested in (tick all that apply)?

	Everyday / nearly everyday	2-5 days per week	Once a week	1-3 times per month	Less than once per month	Never
Car	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Public Transport	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bicycle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Allows you to select/deselect all of the options

TICK ALL / NONE

F12: Which country do you want the industry responses from?

- Belgium
- France
- Germany
- Norway
- Slovenia
- Spain
- United Kingdom
- All

F13: Which organisations are you interested in the views of (tick all that apply)?

- Private
- Government Organisation
- Other non-profit organisation
- Public
- Educational Organisation

F14: How much experience do you want respondents to have?

- No Involvement
- Less than 5 years
- 5-10 years
- 11-20 years
- 20+ years
- All

F15: Which field of work do you want respondents to be involved in (tick all that apply)?

- Research on HFC
- Hydrogen production
- Policy development and program administration
- Systems integrator
- Fuel cell user
- Service station operator
- Commercialisation support
- Hydrogen Distribution
- Fuel cell developer or manufacturer
- Professional services provider
- Car manufacturer / OEM
- Education, safety and training
- Hydrogen storage
- Supplier to developer or manufacturer
- Fuel cell distributor or agent

Allows you to select all of the options

F16: Which Hydrogen related application do you want respondents to be involved in (tick all that apply)?

- Not involved in specific application
- Large Stationary (more than 50 kw)
- Mobile Auxiliary power
- Mobile primary power and drive train
- Small stationary (50kw or less)
- Portable (including micro)
- Hydrogen production and fuelling infrastructure

F17: How professionally familiar do you want respondents to be with HFC stationary applications?

- Not at all familiar
- Slightly familiar
- Familiar
- Very familiar
- All

F18: How professionally familiar do you want respondents to be with HFC Electric Vehicles?

- Not at all familiar
- Slightly familiar
- Familiar
- Very familiar
- All

FILTER RESULTS

- The SAMT then shows the user:
 - What the current state of public opinion is,
 - What the views of industry and other stakeholders are.
- By comparing these it is possible to make inferences regarding the likelihood of social acceptance.
- The tool looks for four situations.

- Positive/Positive: here both the public and the stakeholders agree that the situation is positive, i.e. good.
- Positive/ Negative: here the public think that the situation is good while stakeholders are less optimistic.
- Negative/Positive: here the public have concerns while stakeholders do not see any reason for concern.
- Negative/Negative: here both parties believe the situation is generally poor.

← Increasing Negativity

→ Increasing Positivity

	Increasing Negativity			Increasing Positivity		
	Strong -ve	Medium -ve	Weak -ve	Weak +ve	Medium +ve	Strong +ve
	1	2	3	4	5	6
Positive/Positive agreement					● △	
Negative/Negative Agreement	● △					
Positive/Negative Disagreement		△			●	
Negative/Positive Disagreement		●			△	

Stakeholder View

Public View



- The SAMT provides outputs based around 51 questions grouped over eight themes. The themes are:
 - **Theme One: Knowledge & Experience**
 - **Theme Two : Trust**
 - **Theme Three ; Positive and Negative Affects**
 - **Theme Four ; Perceived Effects – Costs, Risks and Benefits**
 - **Theme Five : Perceived Consequences**
 - **Theme Six : Attitude**
 - **Theme Seven : Initial Acceptance**
 - **Theme Eight : Acceptance**



SAMT WORKSHOP



Hydrogen Technology Acceptance Tool

[Home](#) » [Filtering Questions](#) » [Output](#)

As a result of the filters you selected, 752 out of 7,148 public responses and 7 out of 333 industry responses are included.

Responses have been mapped onto a model - the Technology Acceptance Framework - which provides several themes:

1. [Knowledge and Experience](#)
2. [Trust](#)
3. [Positive and Negative Affects](#)
4. [Perceived Effects - Costs, Risks and Benefits](#)
5. [Perceived Consequences](#)
6. [Attitude](#)
7. [Initial Acceptance](#)
8. [Acceptance](#)



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- Our example is based on a fictitious developer of a hydrogen transport application.
- After filtering this message appears:

Hyacinth - Hydrogen Technology Acceptance Tool Output

As a result of the filters you selected, 2,723 out of 7,148 public responses and 90 out of 333 industry responses are included.

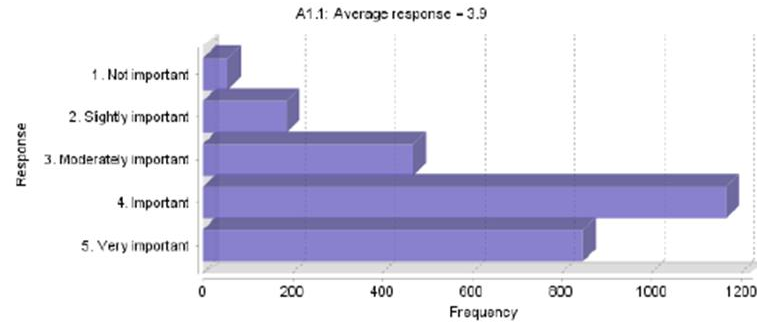
Responses have been mapped onto a model - the Technology Acceptance Framework - which provides several themes:

1. Knowledge and Experience
2. Trust
3. Positive and Negative Affects
4. Perceived Effects - Costs, Risks and Benefits
5. Perceived Consequences
6. Attitude
7. Initial Acceptance
8. Acceptance

Theme One: Knowledge and Experience

A1: How would you rate the following problems in terms of importance for your country?

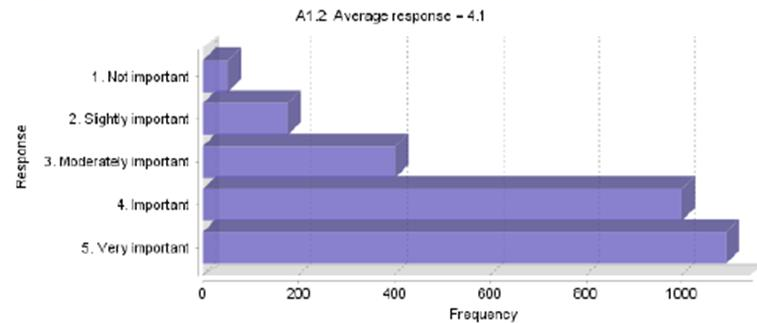
A1.1: The need to improve energy security by being less dependent on fuel imports from other countries



Industry mapping » Public's level of awareness of HFC technologies

There is a disagreement between stakeholders and the public. Members of the public believe that the situation is more positive than stakeholders. Attention should be paid to discovering the reasons why the public believe the situation is good or acceptable while stakeholders are more pessimistic. This may reduce significant amounts of needless work or highlight major gaps in the knowledge and understanding within the general public.

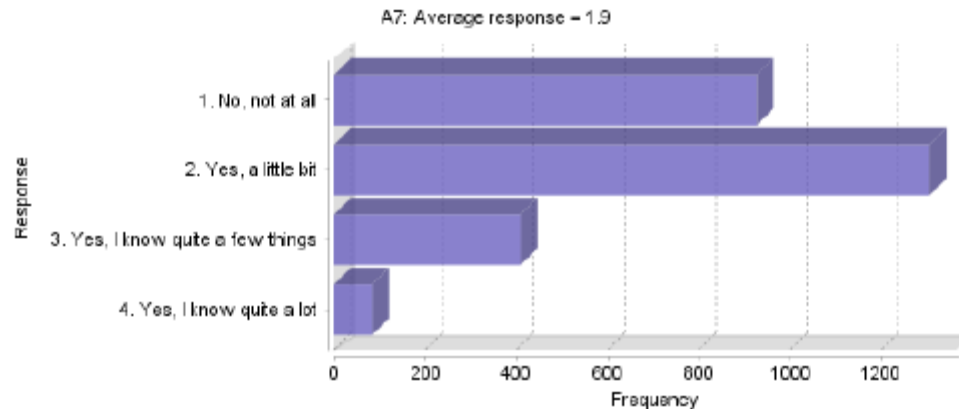
A1.2: The need to reduce the greenhouse gas emissions that cause climate change



Industry mapping » Public's level of awareness of HFC technologies

There is a disagreement between stakeholders and the public. Members of the public believe that the situation is more positive than stakeholders. Attention should be paid to discovering the reasons why the public believe the situation is good or acceptable while stakeholders are more pessimistic. This may reduce significant amounts of needless work or highlight major gaps in the knowledge and understanding within the general public.

A7: Had you ever heard (before this questionnaire) of hydrogen fuel cell vehicles?



Industry mapping » Public's level of awareness of HFC technologies

There is a strong agreement between you and the public respondents that the situation is negative. It should however be recognised that these views may not be held for the same reasons and care should be taken when proposing ways to address this. In general however, it is possible that this sort of situation will arise due to external influences such as government policy. Alternatively it may be due to reliability or convenience issues that are recognised as product deficiencies. Whilst this may mean that managing the situation will be tricky, it is also an opportunity to differentiate your product from your competition and gain an advantage over your rivals by entering the market earlier with a better product.



- Interpreting the results:
 - Each section is accompanied by some advisory text which is designed to suggest typical ways in which to address particular problems.
 - However, before using any of these it will be prudent to try to understand what is actually happening.

Theme One: Knowledge and Experience

The following is some advice on ways to tackle this issue. This advice is not intended to be used in its entirety. Rather it is intended as a set of prompts to suggest different ways in which a situation may be managed. Thus they may be viewed individually or used in sets depending upon the situation.

- Recruit and train early adopters as peer educators
- Increase the use of social media to raise profile and promote positive messages
- Increase faith in products with “try outs” or “test drives”
- Use mainstream media, advertising and stories to boost credibility
- Focus on promoting social norms rather than just product benefits, e.g. who else is using your product.
- Avoid categorising the public as NIMBYs and seeing your product as the only way (TINA: There Is No Alternative)
- Do not overload your customers with information. Rather review what is needed, when and determine the most effective channels to use.

“ As hydrogen technology might be too abstract and difficult to assess for laypeople, because it is not part of their everyday reality (Sherry-Brennan, Devine-Wright, & Devine-Wright, 2010), another way could be to give the public some hands-on experience, the chance to get in contact with the novel technology using demonstrators, living labs, or even playful public participation using “serious” games (Poplin, 2012). By this, information would also be delivered, but, at the same time, people with strong concerns are given the chance to gain experience which might also help to increase trust.”

- Answers to questions posed in this section (A9, 10, 11 & 13) indicate that the industry and other stakeholders are experienced in this field and so their views will be based upon an in depth knowledge of the sector and thus may be trusted as an indicator of prevailing opinion within the stakeholder community.
- As anticipated by stakeholders the public's knowledge of this field is limited. Most have never had the opportunity to experience the technology first hand which opens up the potential of utilising hands on sessions, test drives, etc. (Questions A8.1 & A8.2).
- Stakeholders believe that levels of knowledge are at a lower level than the public, who believe they have quite a good general understanding of the technology's benefits (A2 & A3).
- As stakeholders believe communications are poor (A6), the message is not coming from them so this needs investigating.
- Additional efforts need to be made to ensure that a positive message is disseminated via conventional media as well as social media and there is no opportunity for a communications vacuum that might be filled with misinformation.
- The public are very keen to see such technologies succeed due to the perceived environmental and societal benefits (A1.1 to 1.4). Some form of social media campaign may be in order here as well as publicising high profile role models that are using/adopting the technology.

- The tool may be found at the following address:

<https://hyacinth.sunderland.ac.uk>



SAMT WORKSHOP



- Questions?
- Contact: adrian.morris@sunderland.ac.uk