

International German Hydrogen Energy Congress 2004

11.-12. February 2004, Essen



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AcceptH2

Public Perception of Hydrogen Buses in Five Countries



L-B-Systemtechnik GmbH
Ottobrunn



- ① **Project AcceptH2**
 - Objectives
 - Partners
 - Methodology

- ② **Existing studies in the field**

- ③ **Preliminary ex-ante results AcceptH2 surveys**
 - Knowledge about H₂
 - Attitudes towards H₂
 - Support for introduction of H₂ vehicles
 - Willingness to pay

- ④ **Conclusions**



- **Timeline:** JAN 2003 – JUN 2005

- **Locations:**

- Berlin/Germany
- London/UK
- Luxembourg
- Oakland/USA
- Perth/Australia

- The European part is financed by the **European Commission**



- Assessment of **knowledge, perceptions, values and use** of hydrogen buses and hydrogen in general. How do these vary **across different population segments** within each city?
- Ditto, **across the populations** of the five cities
- Estimation of the **perceived economic value** of environmental benefits of hydrogen buses
- Development of **recommendations** for future demonstration and commercial projects
- **Dissemination** of results

Project AcceptH2

Partners



LONDON

- AcceptH2 partner(s):
Imperial College, London, UK
- Bus operator: **Transport for London (CUTE)**
- Start of bus operation: **01/2004**



TfL

BERLIN

- AcceptH2 partner(s):
L-B-Systemtechnik, Munich, Germany
Universität des Saarlandes, Saarbrücken, Germany
- Bus operator: **Berliner Verkehrsbetriebe – BVG**
- Start of bus operation: **Mid 2004**

OAKLAND

- AcceptH2 partner(s):
University of California, Davis, USA
- Bus operator: **AC Transit, Oakland, CA/USA**
- Start of bus operation: **2005**

LUXEMBOURG

- AcceptH2 partner(s):
Universität des Saarlandes, Saarbrücken
L-B-Systemtechnik, Munich, Germany
- Bus operator: **Ville de Luxembourg (CUTE)**
- Start of bus operation: **10/2003**



Ville de Luxembourg

PERTH

- AcceptH2 partner(s):
Murdoch University, Australia
Western Australian Department for Planning and Infrastructure
- Bus operator: **Path Transit (STEP), Perth**
- Start of bus operation: **End 2004**

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- Surveys are undertaken **before** and **after** the introduction of the buses
- Ex-ante survey is administered **by telephone** except in Oakland (ex-post survey approach has yet to be decided)
- **Bus users** and **non bus users** are interviewed (in Luxembourg and Berlin only bus users)
- A set of **largely identical questions** is applied
- Interviews consist of **four parts**
 - Use of buses
 - Hydrogen attitudes and knowledge
 - Socio-economic characteristics
 - Environmental attitudes and knowledge



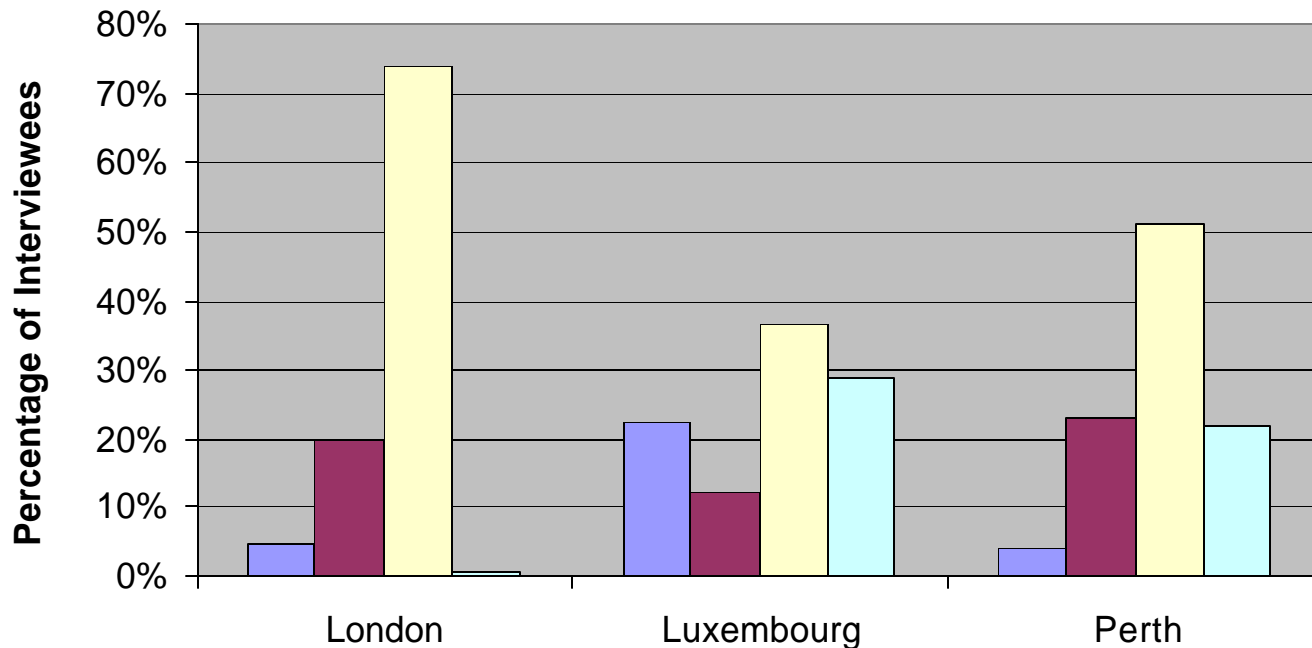
- **24 papers reviewed**
- **Thematic scope**
 - 13 about electric vehicles
 - 5 about H₂ based transport
 - 6 either about generic alternative fuel vehicles or preferences for different vehicle attributes in general
- **Results**
 - Alternative vehicles and fuels are perceived as being ,clean'
 - Environmental concerns are of very low importance for vehicle choice
 - Willingness to pay for environmental benefit is low



- **7 studies reviewed**
- **Geographical scope**
 - 6 Germany
 - 1 Great Britain
- **Results**
 - Hydrogen is widely perceived as being environmentally benign
 - Experiences with hydrogen in every-day life supports acceptance and adoption of hydrogen technology

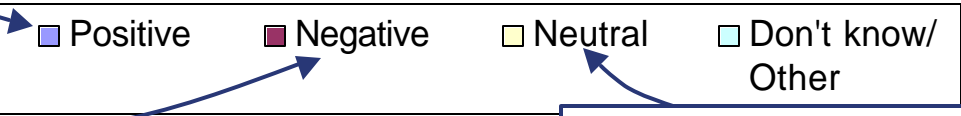


Free associations with 'hydrogen'



environment, clean etc.

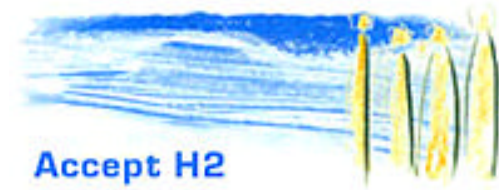
bomb, explosive etc.



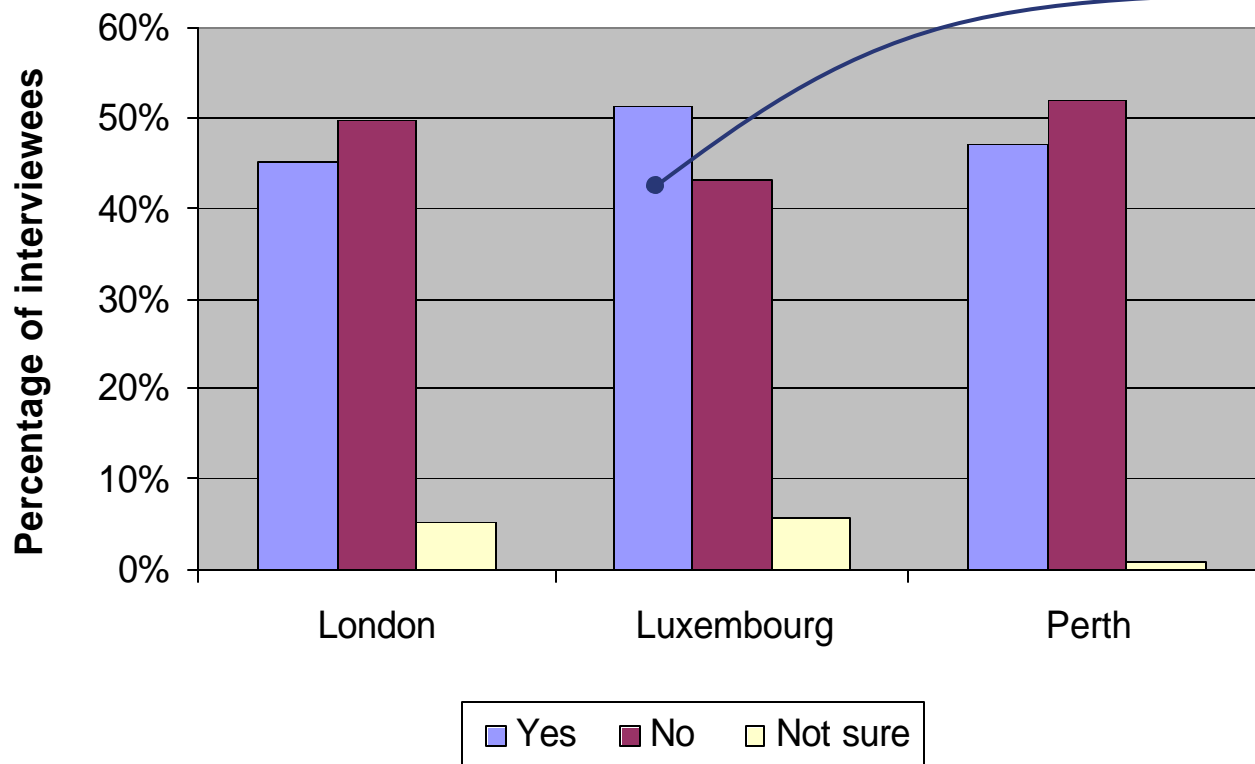
physical properties etc.

Preliminary ex-ante results AcceptH2

Knowledge about hydrogen



“Did you know that car companies are developing hydrogen powered vehicles?”



**71% of all male,
40% of all female
respondents
stated 'YES'**

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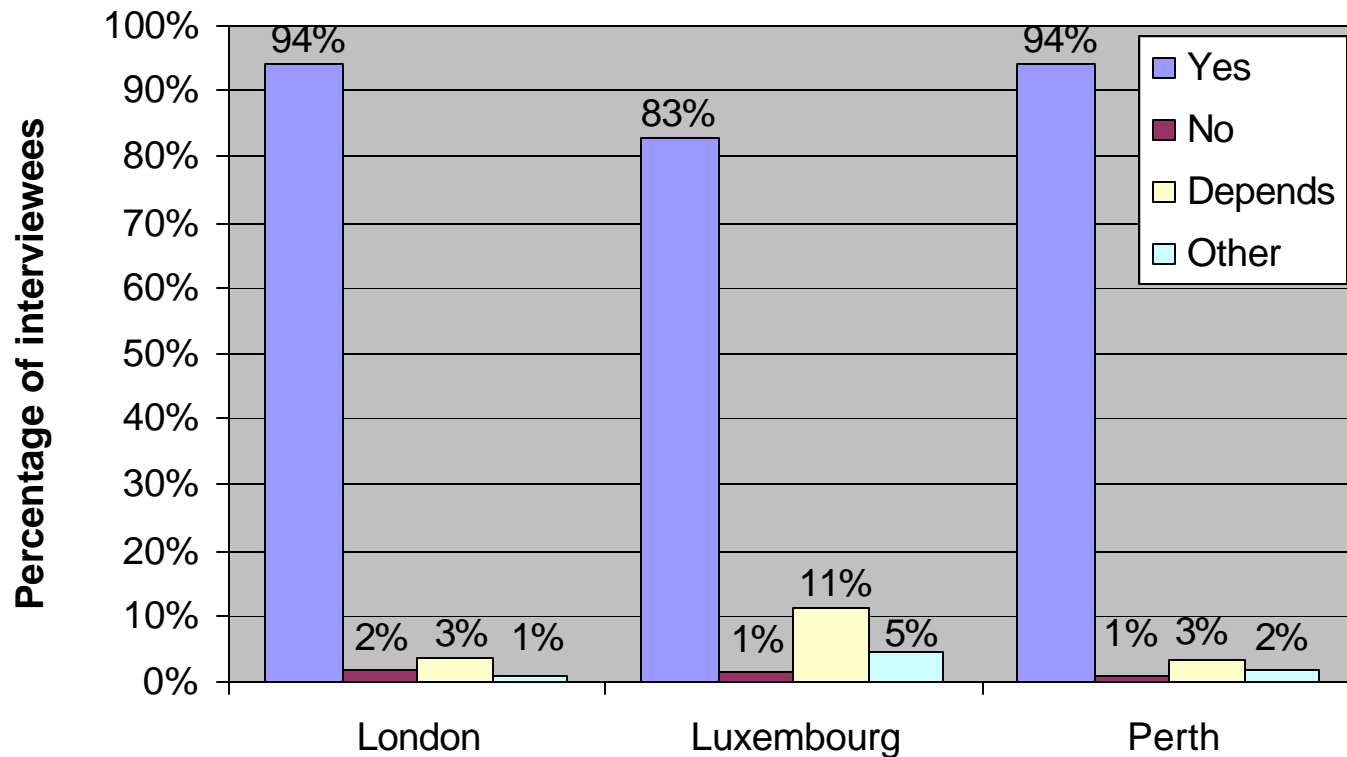
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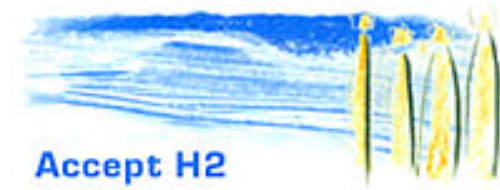


“Do you think that it is a good idea that London/Luxembourg/Perth is trialing Hydrogen fuel cell buses?”

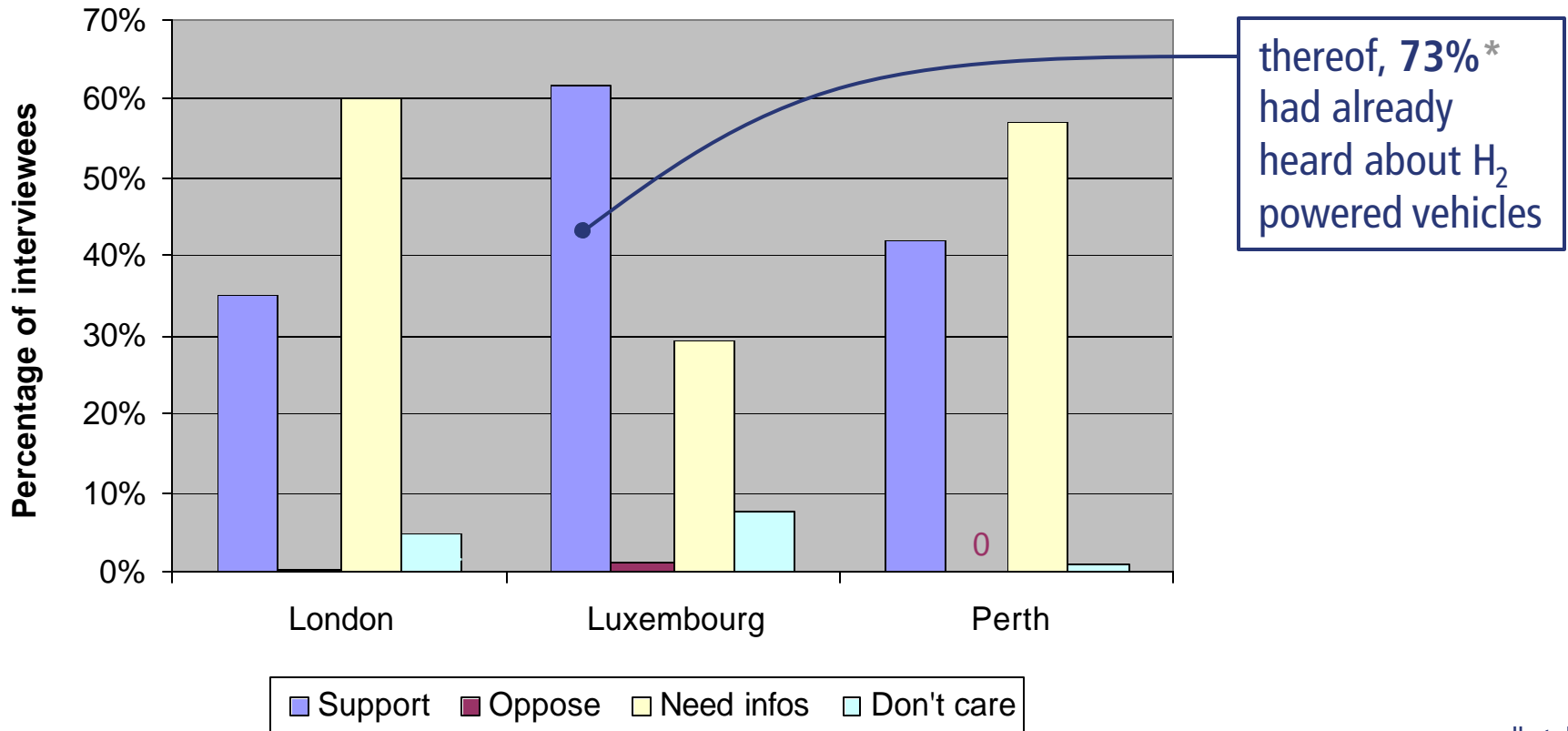


Preliminary ex-ante results AcceptH2

Support for introduction of hydrogen vehicles



“How would you feel about hydrogen powered vehicles being introduced in London/Luxembourg/Perth?”



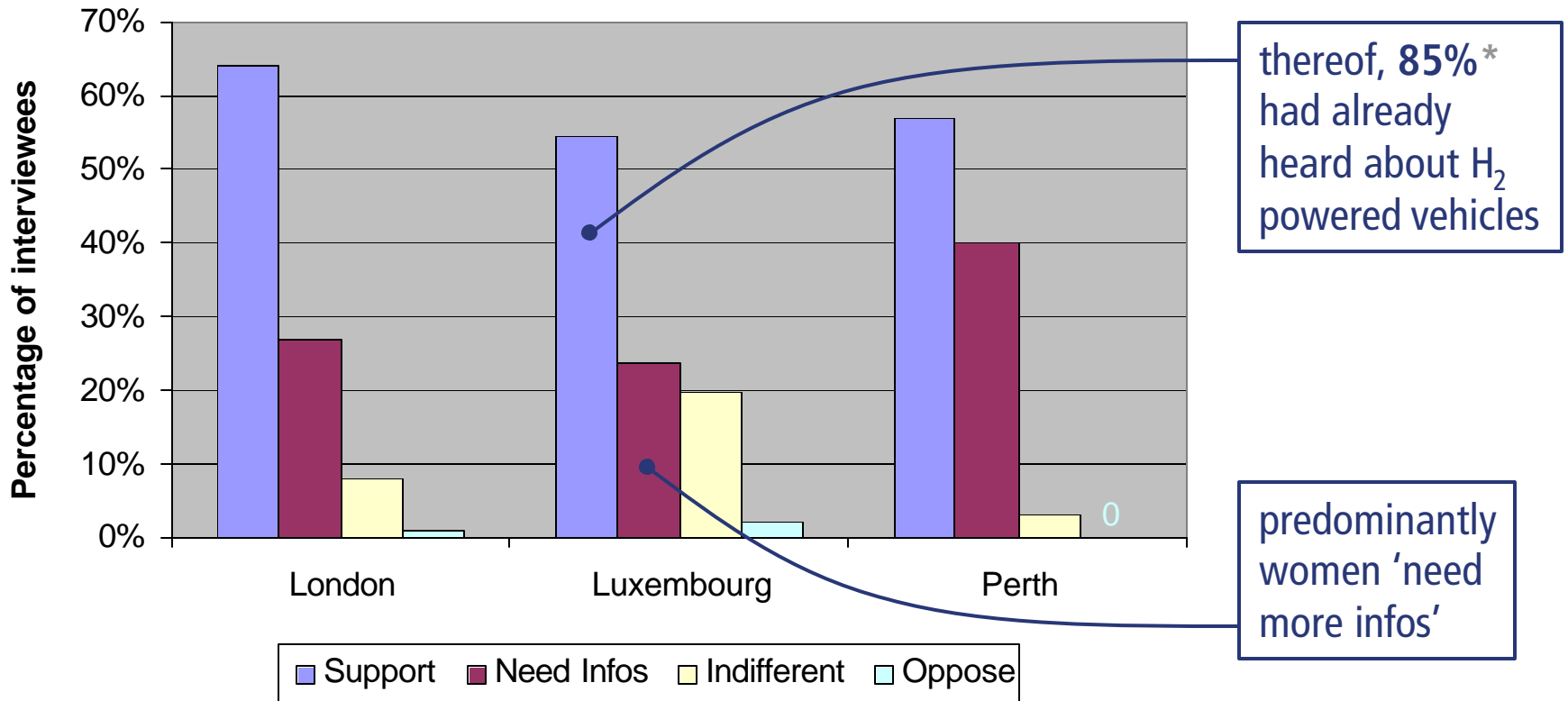
* revised figure

Preliminary ex-ante results AcceptH2

Attitudes towards hydrogen



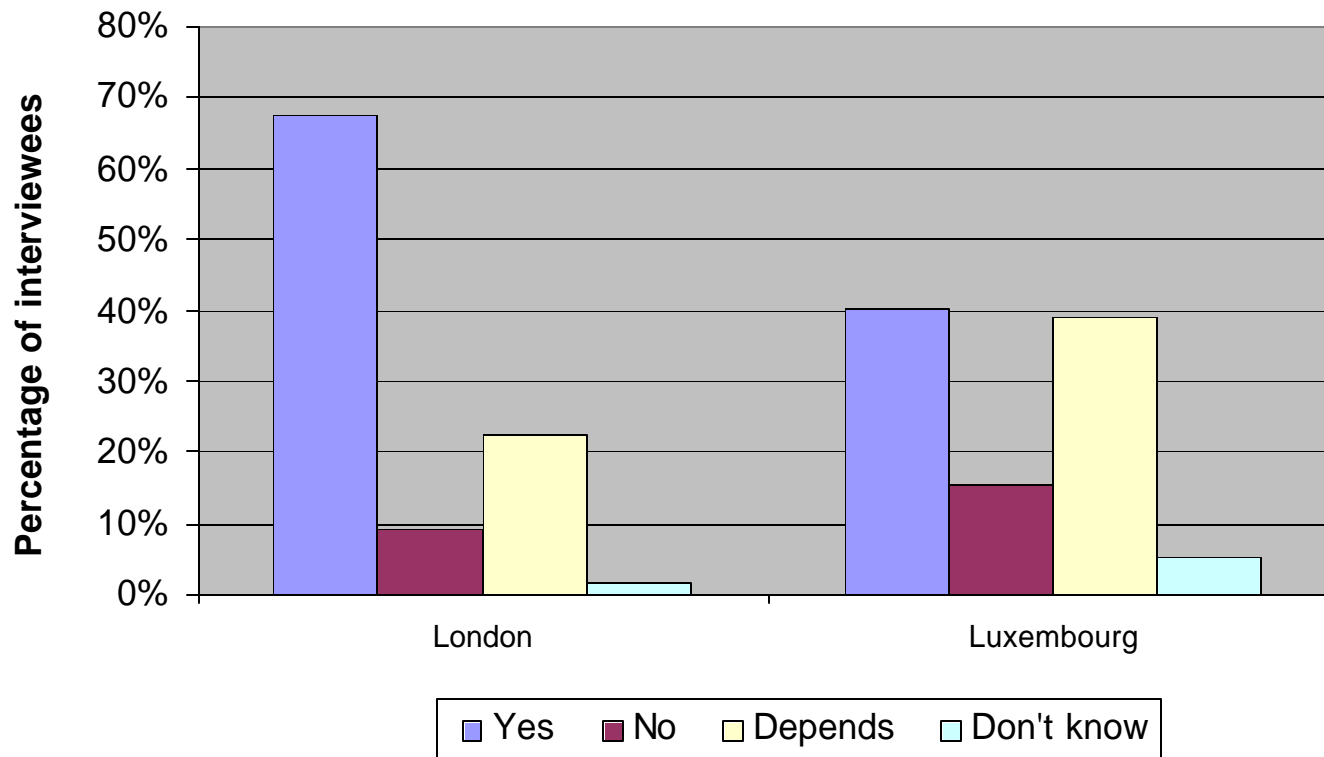
“How would you feel about hydrogen stored and included as a fuel option at your local petrol station?”

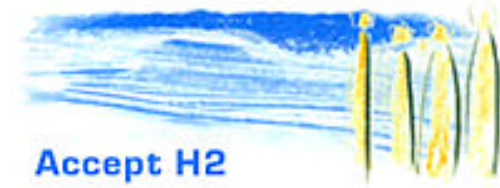


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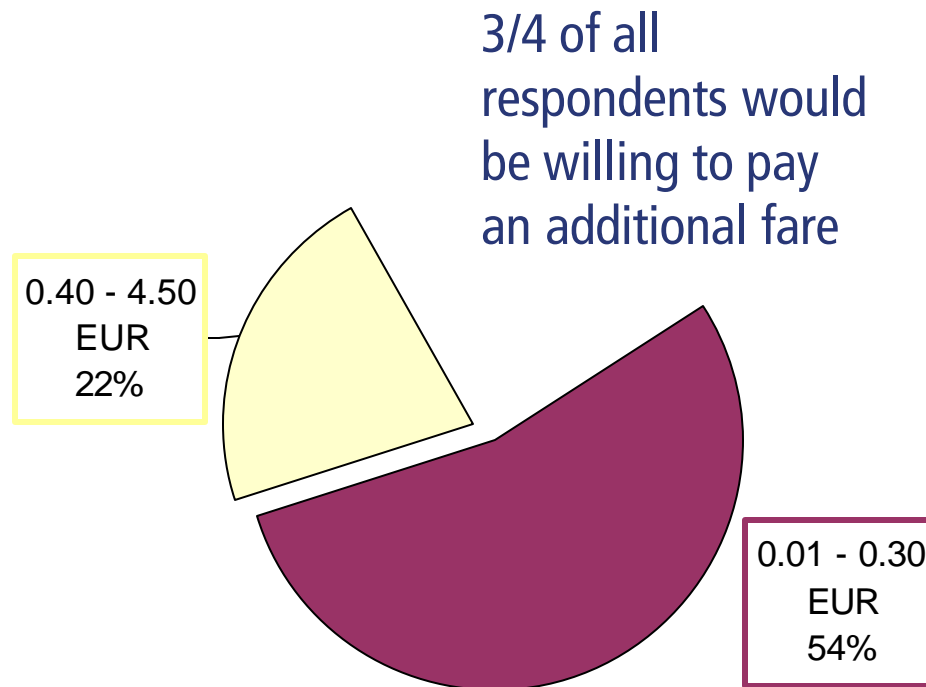


“Would you support the introduction of hydrogen fuel cell buses in London/Luxemburg bus routes if that meant a small increase in bus fares?”





"How much more would you be willing to pay per fare to have fuel cell buses introduced in Luxembourg?"



Fare price today: 1.20 EUR
100% = all respondents (n=287)

Conclusions

Preliminary ex-ante data from London/Luxembourg/Perth



- ➔ The preliminary results are in **general accord**ance with former acceptance studies in the field
- ➔ People strongly **support the introduction of hydrogen powered buses**
- ➔ 3/4 of all respondents would be **willing to pay an extra charge** if this is initially required
- ➔ Negative and neutral associations as well as ‘don't know’ statements generally **outnumber positive associations** by far
- ➔ A significant group of people **need more information** or state that their support would **depend** on certain conditions

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Thank you for your attention!

For upcoming information please visit

www.AcceptH2.com