

Hydrogen and Fuel Cell Futures  
Conference 12th - 15th September 2004

# Public Perception and Economic Preferences towards the use of H<sub>2</sub>FC buses in Perth.

Lisa Garrity



**Acknowledgments:** P. Jennings & P. Newman (Murdoch University); S. Whitehouse (WA Department for Planning and Infrastructure); M. Altmann, P. Schmidt & R. Wurster (L-B-Systemtechnik GmbH); S. Mourato, T. O'Garra & D. Hart (Imperial College); C. Graesel & A. Beerenwinkel (Universität des Saarlandes).

# Overview

- Importance of Public Perception
- AcceptH2 Project
  - Partners
  - Objectives
  - Methodology
  - Preliminary Results Perth
    - Acceptance of Hydrogen
    - Perception towards Hydrogen
    - Knowledge about Hydrogen
    - Willingness to Pay for Hydrogen
- Individual Protesters
- Conclusions

# Importance of Public Perception

- BP Ethanol, Queensland

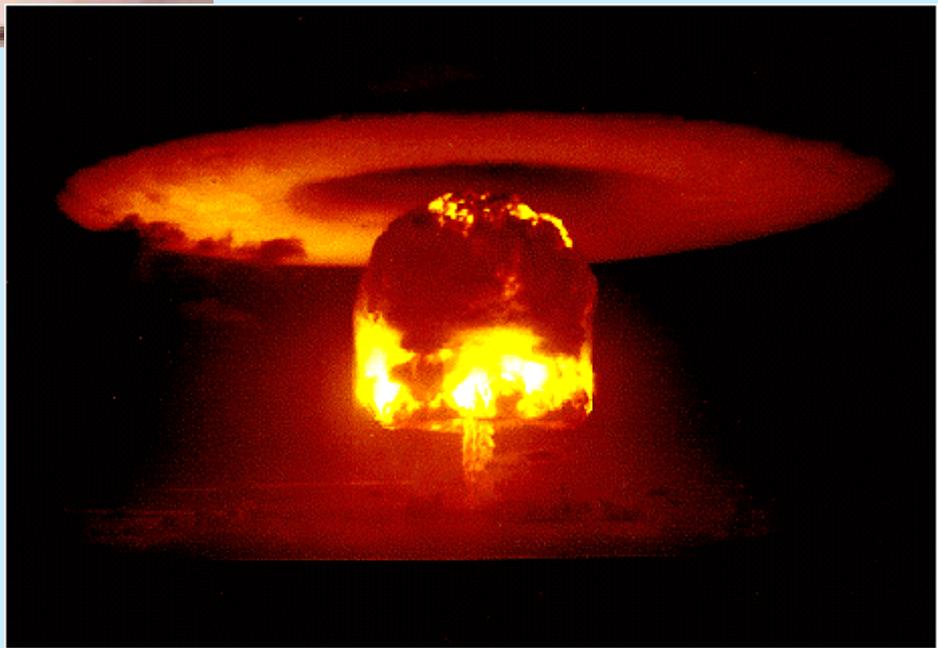
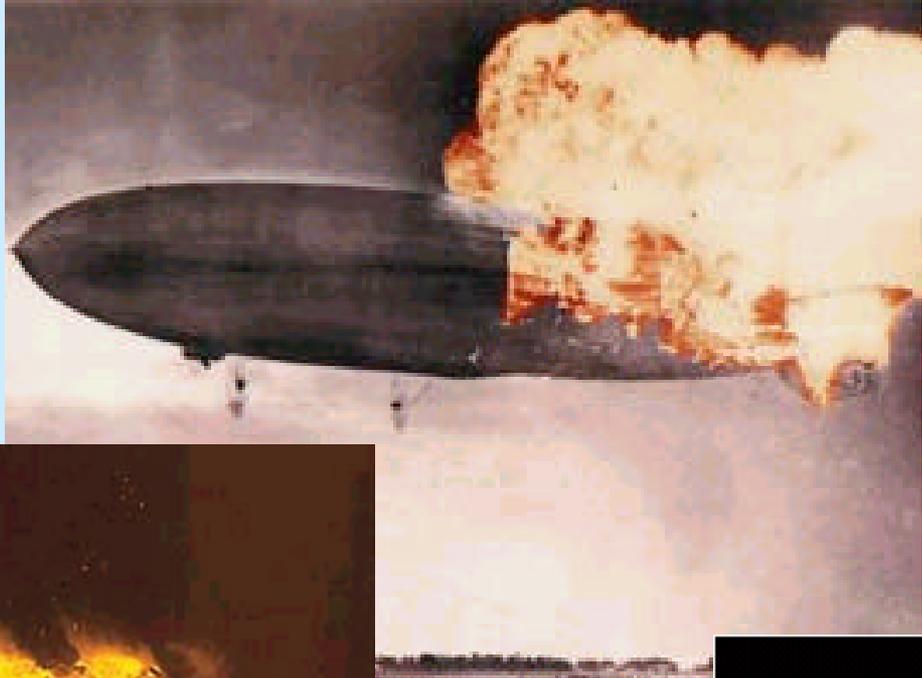
"While BP's ethanol-blended petrol is a high-quality product which poses no threat to car engines, it makes little sense to offer customers a product when they are telling us they don't want it." *BP spokesman Peter MacCuspie*

"Public confidence in ethanol as a safe alternative fuel has been undermined by a scare campaign, but there is no reason why ethanol blends can't be a success when properly marketed as the safe, clean fuels they are." *Australian Biofuels Association Executive Director Bob Gordon.*

The Courier Mail 19 Feb 03

- GM Foods

- Nuclear Energy



## **Hindenburg, 1937**

Vidicom Media Productions

[www.vidicom-tv.com/tohiburg.htm](http://www.vidicom-tv.com/tohiburg.htm)

## **H-Bomb**

<http://www.bilderberg.org/hbomb.htm>

# Public Perception

## Need to know:

- perceptions, attitudes
- what is influencing perceptions
  - particular values
  - knowledge
  - demographic factors

⇒

- appropriately targeted information campaigns etc.
- modification to the product

⇒

Smooth/Efficient introduction of technology

# AcceptH2

## **Aim:**

- to determine the public perception and economic preferences towards the use of hydrogen fuel cell buses across five cities: Berlin (Germany), London (UK), Luxembourg (Luxembourg), Oakland (California, US), Perth (Australia).

## **Partners:**

- Imperial College, London, UK
- L-B-Systemtechnik, Munich, Germany
- Saarland University, Saarland, Germany
- University of California, Davis, US
- AC Transit, Oakland, California, US
- Murdoch University, Perth, Australia

# Objectives

## **Objectives:**

- Assess public knowledge, perceptions, values and attitudes concerning hydrogen and fuel cell bus technology

## **Outcomes:**

- Identification and analysis of barriers to the introduction of H<sub>2</sub> fuel cell buses
- Comparison of knowledge and perceptions before and after trial
- Analysis of Willingness To Pay for H<sub>2</sub> fuel cell buses
- Recommendations for information campaigns

# Methodology

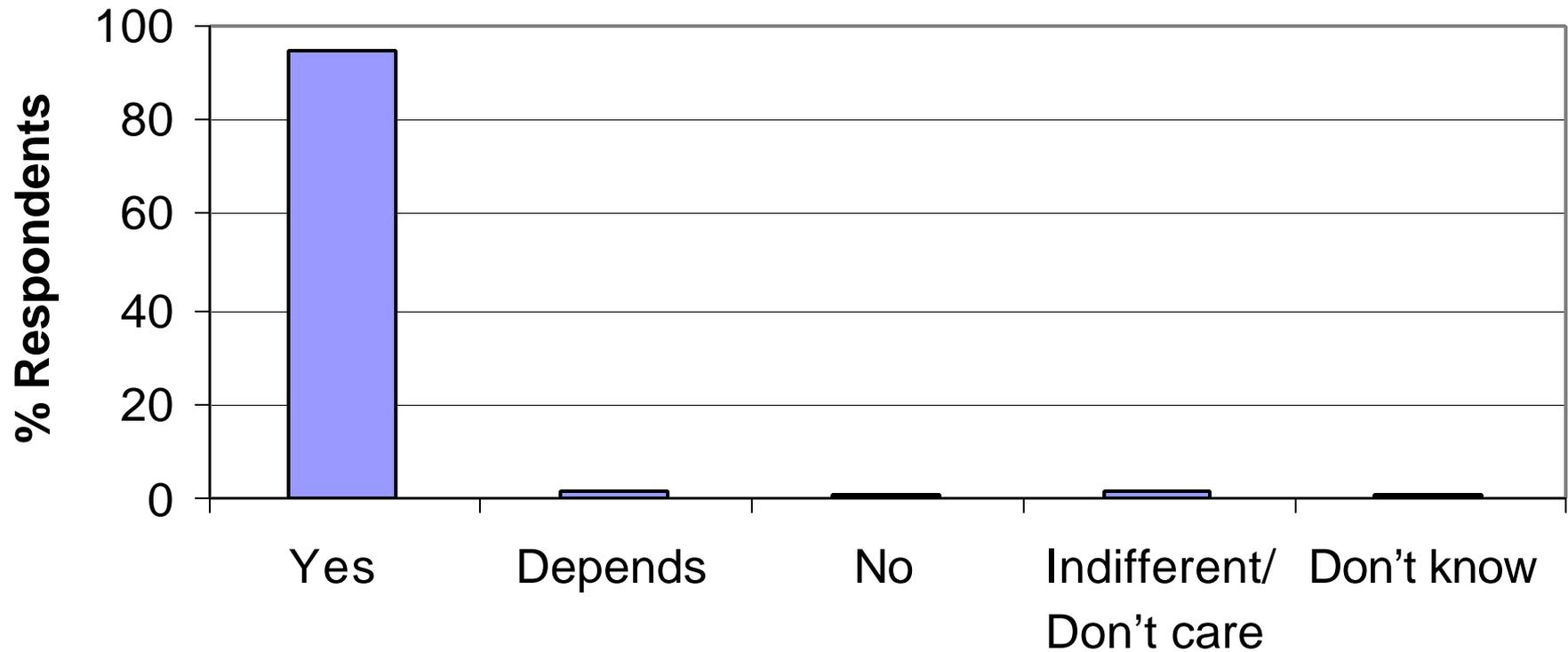
- 300 Perth residents surveyed before fuel cell bus trial.
- 154 bus users and 146 non-bus users.
- 15 minute telephone interview.
- 300 Perth residents to be surveyed a few months into the fuel cell bus trial

Respondents asked questions about their:

- perceptions of current Transperth bus features;
- perceptions, awareness and attitudes towards hydrogen and fuel cell vehicle technology;
- willingness to pay for hydrogen fuel cell buses and;
- current environmental awareness, knowledge and associated behaviour.

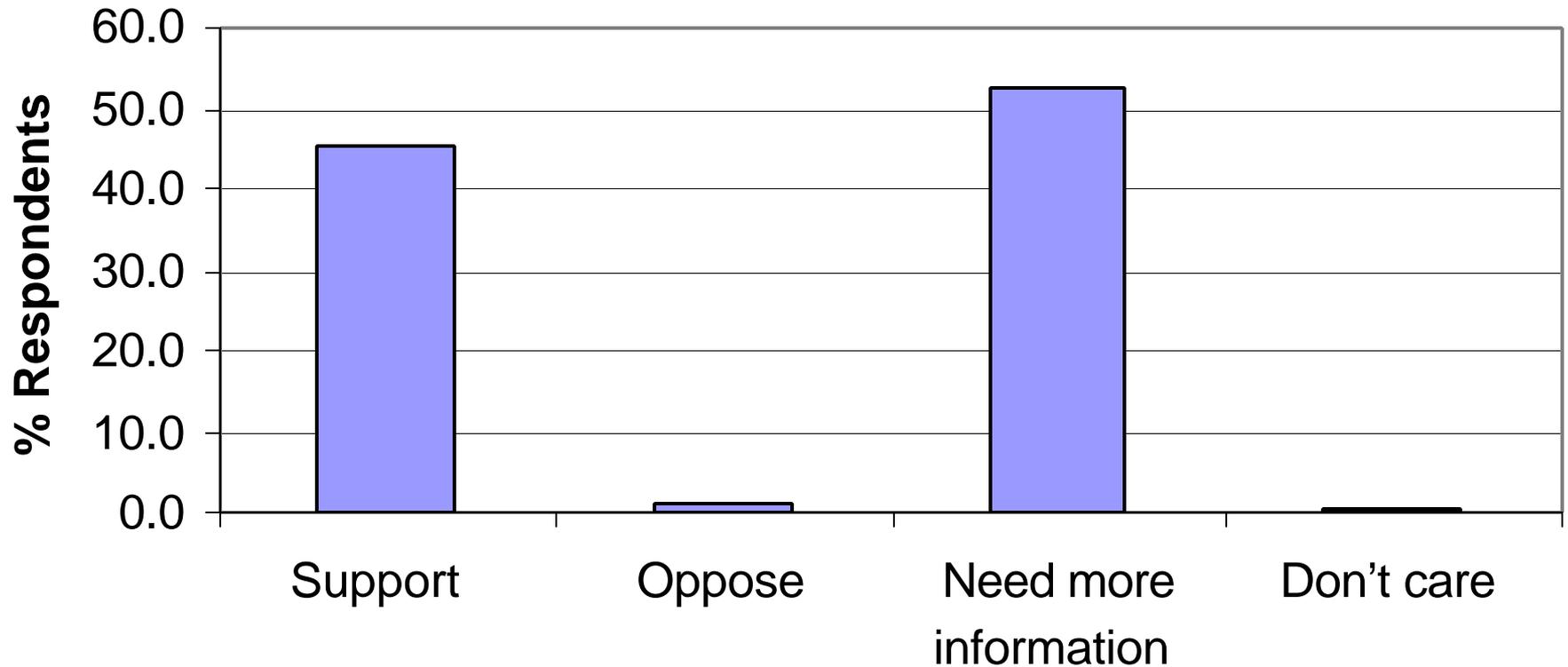
# Acceptance

**Do you think that it is a good idea that Perth is trialing hydrogen fuel cell buses?**



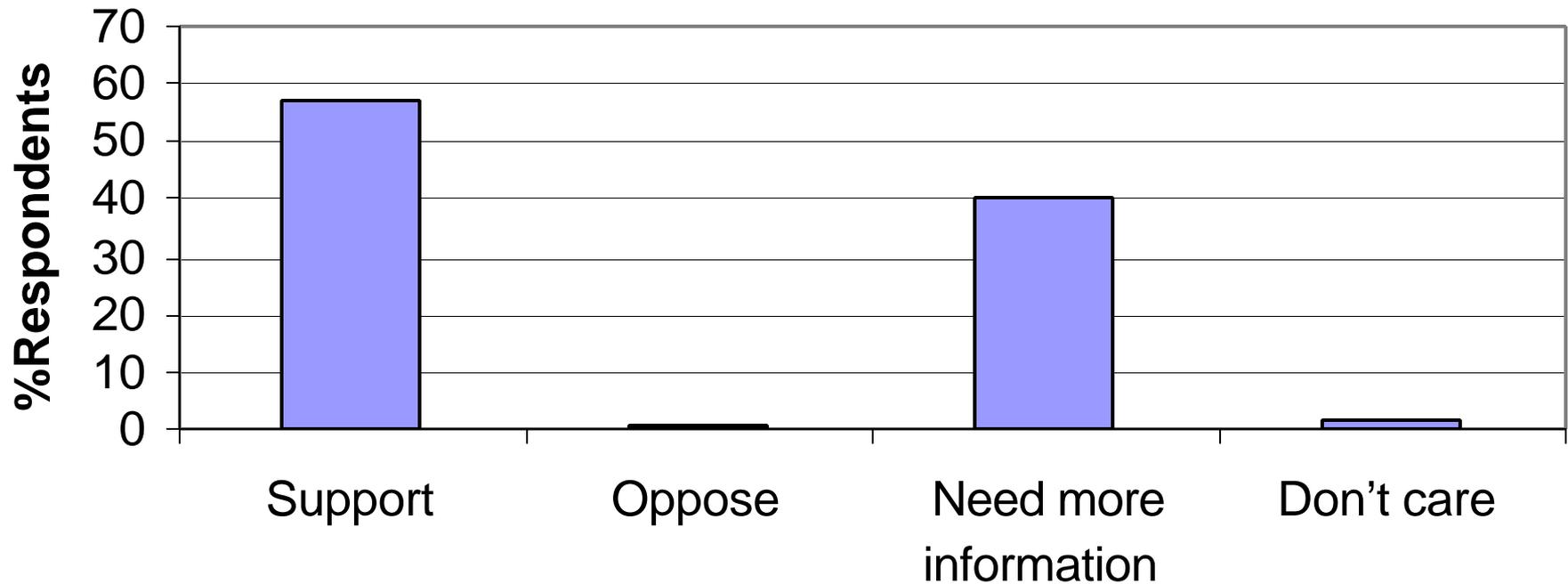
# Acceptance

How would you feel about H2-powered vehicles being introduced in Perth?



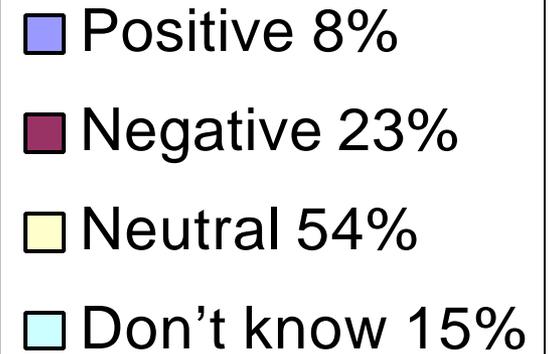
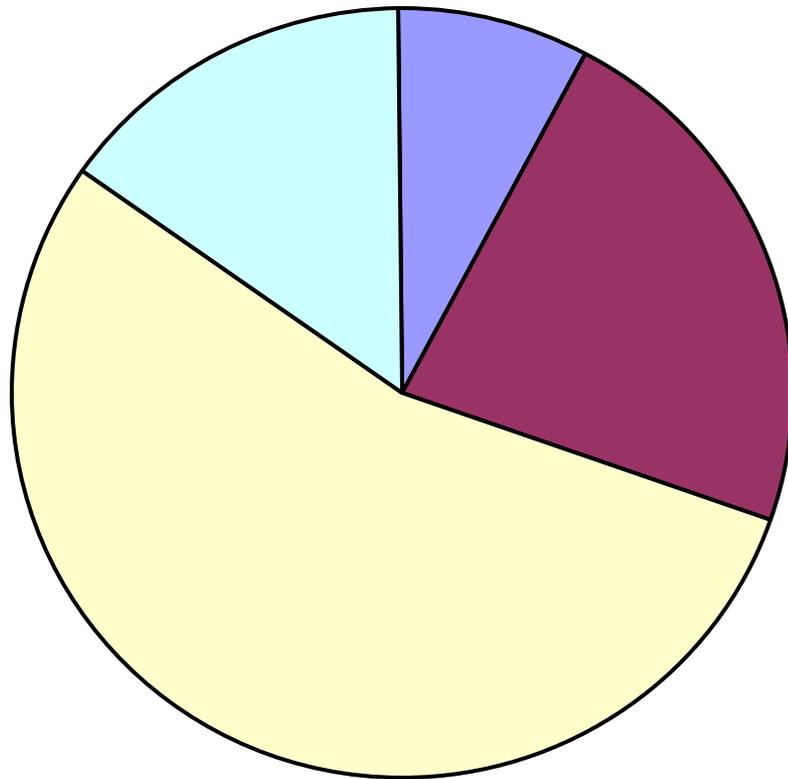
# Acceptance

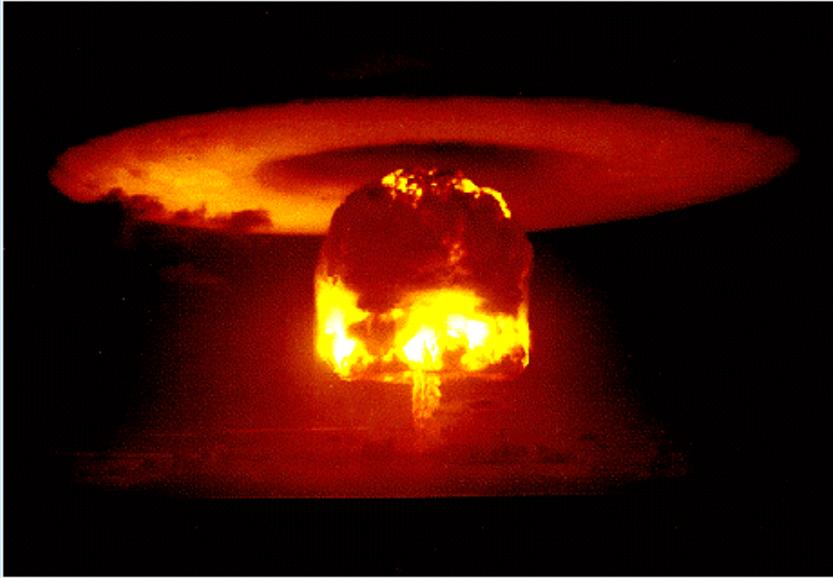
**How would you feel about having hydrogen stored and included as a fuel option at your local petrol station?**



# Perception

## Associations with the word 'hydrogen'.





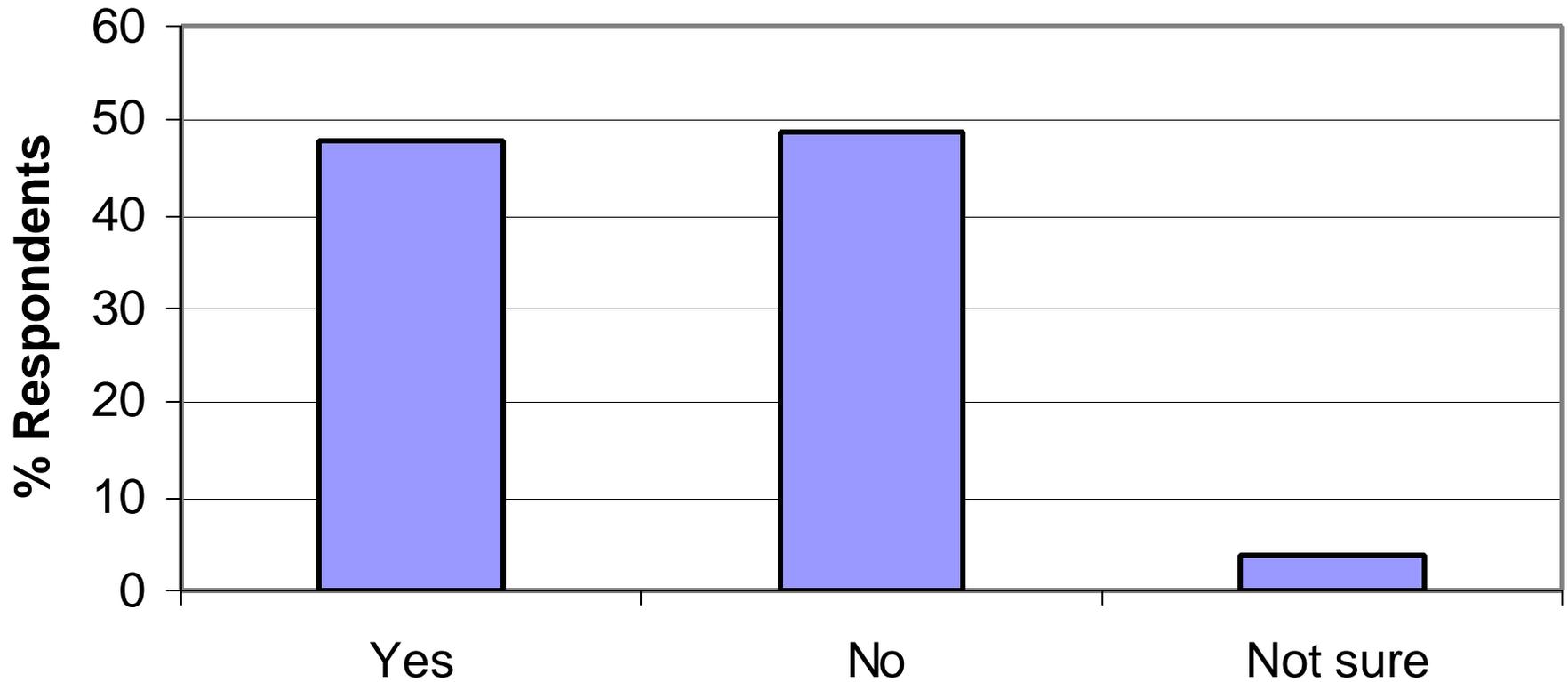
17% of all respondents associated 'bomb' or 'hydrogen bomb' with the word hydrogen



2% of all respondents associated the Hindenburg with the word hydrogen

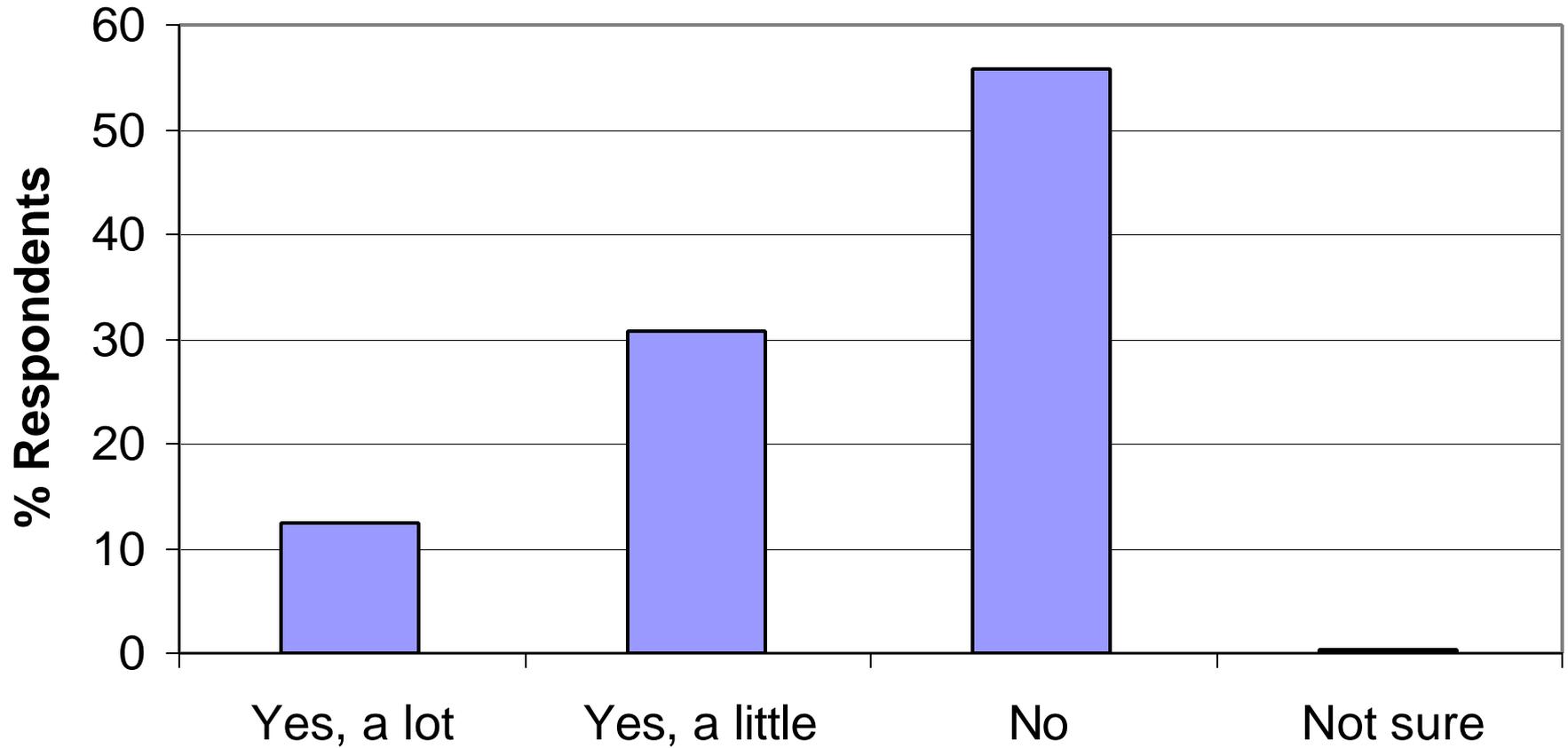
# Knowledge

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



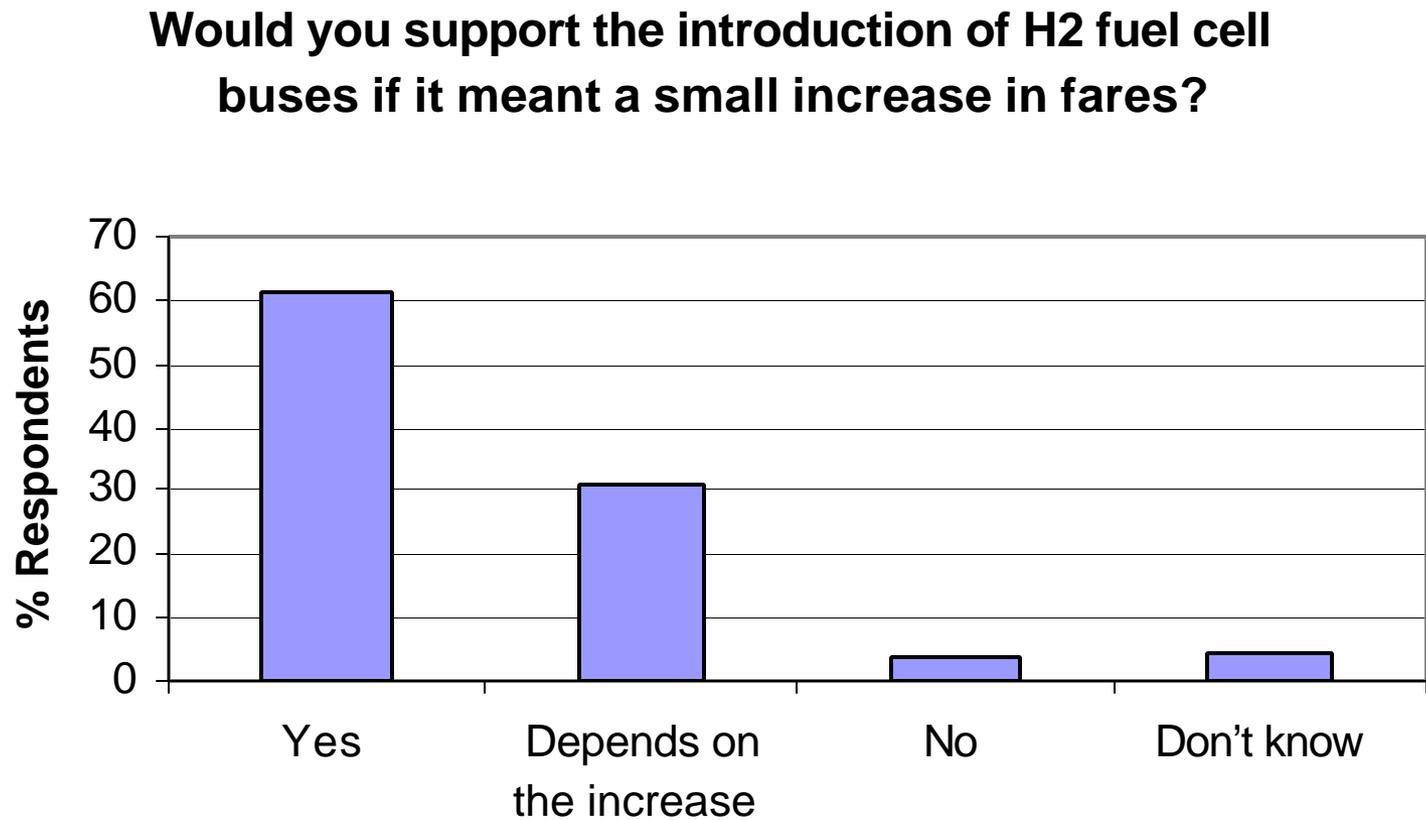
# Knowledge

Have you heard of fuel cell vehicles?



# Willingness to Pay

- 90% of respondents Willing To Pay extra per bus fare
- 50% of respondents Willing To Pay \$0.50 or more per fare
- 50% of respondents Willing To Pay \$20 or more through taxes p/a



# Results Summary

- **Acceptance**

- Overall positive

- **Knowledge**

- Limited

- **Perception**

- Associations with hydrogen mostly neutral.
- Negative associations much higher than positive associations.
- 'Hindenburg' is not a widespread issue.
- Association with 'Hydrogen Bomb' is significant.

- **Willingness To Pay**

- Majority of people willing to pay extra for introduction of H<sub>2</sub> fuel cell buses
- Environmental sensibility influences WTP and perception

# Individual Protesters

## Perth

- “Time-Bomb Alert on Hydrogen Depot”

The West Australian June 2004 page 12.

- “Plan Fuels Debate: City to reconsider hydrogen base”

Eastern Suburbs Community Reporter March 16 2004 page 1.

- “Hydrogen Station Fuels Row”

Eastern Suburbs Community Reporter June 8 2004 page 3.

## London

- “ ...we don’t know much about it at all, other than we used to make bombs out of this stuff.” *Local Hornchurch resident, Mike Dyer*

Romford Recorder May 2003.

- “My feelings are rather strong on this, I think it must be dangerous.” *Local Hornchurch resident, Stephen Kelly*

Romford Recorder May 2003.

# Conclusions

- AcceptH2 - Comprehensive investigation into public perception of hydrogen and fuel cell technology around the world.
- Widespread support for the introduction of hydrogen fuel cell buses, although many people would like to be better informed.
- Support derived from perceived environmental benefits - greenhouse gas and air pollution reduction.
- Results encouraging, although enough warnings to demonstrate the importance of a communication strategy as well as a technical strategy for the introduction of hydrogen and fuel cell technology.
- Political leadership still required despite strong support.

*Thankyou for your attention*

**Lisa Garrity**

*AcceptH2: [www.acceptH2.com](http://www.acceptH2.com)*

