



## Public Attitudes to Nuclear Power in Britain

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## Overview

- **National Public Perceptions of Nuclear Power**
- **Local 'Nuclear Communities'**
- **Post-Fukushima**
- **Concluding Comments**





## Formal vs. Lay Understandings of 'Risk'

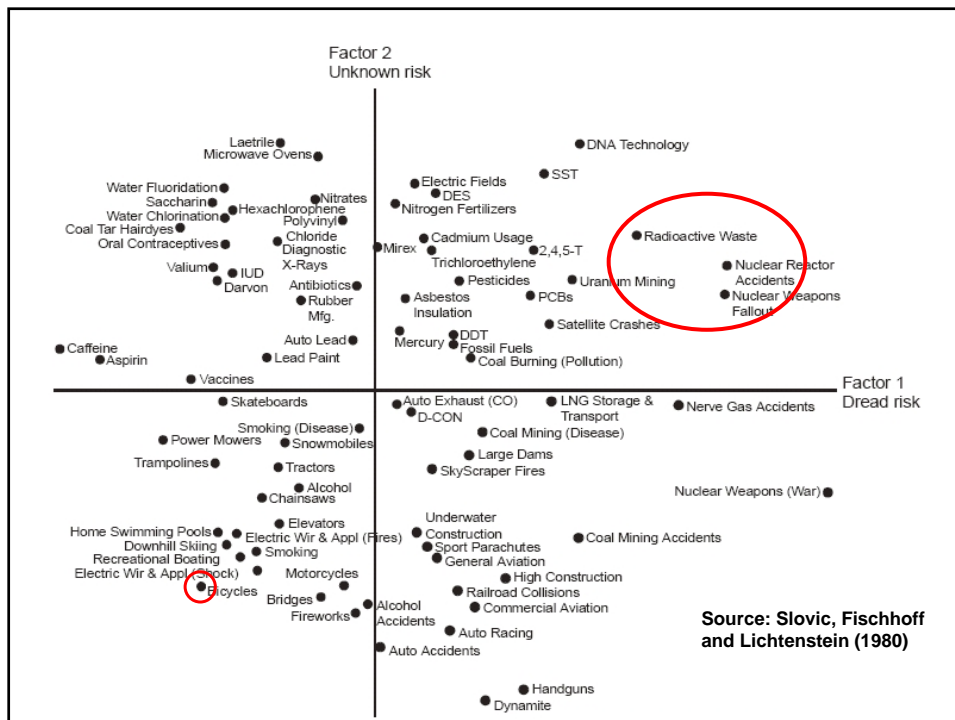
- **Engineering 'Risk' = Probability x Consequence**
- **Lay beliefs involve more than just 'risk'**
  - **Qualitative Risk Characteristics**
  - **Cultural or Political Orientations**
  - **Social Amplification Effects**
  - **Trust in Risk Managers / Science**
  - **Perceived Benefits also Matter!**

# Qualitative 'Risk' Factors

(e.g. Slovic, P. (2000) *The Perception of Risk*. London: Earthscan)

The following usually make novel or technological risks seem less acceptable:

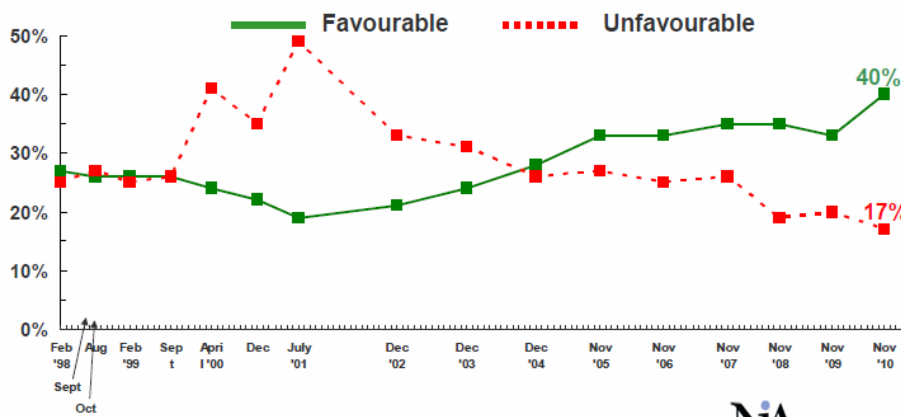
- Involuntariness
- Inequitable (distribution of risks and benefits)
- Inescapable / many exposed
- Unfamiliar / novel
- Man-made vs 'natural'
- Hidden / Irreversible
- Danger to children
- Particular 'dread' outcomes (e.g. cancer)
- Victims identifiable
- Appears poorly understood by science



# The National Picture (GB)



**Q How favourable or unfavourable are your overall opinions or impressions of the nuclear industry/nuclear energy?**



Ipsos MORI Base: All adults aged 16+ (1,980) November 2010



## Cardiff/UEA 2005 and 2010 'Energy and Climate Change' Surveys

- Both surveys by Ipsos MORI, in house, identical sampling
- October 2005, 1,491 (British adults 15+)
- January-March 2010, n= 1822 (British adults 15+)
- A range of items on nuclear power, other energy generation, climate change environmental values
- Identical tracker items to repeat key questions

Pidgeon et al (2008) *Global Env. Change*, 18, 69-85.

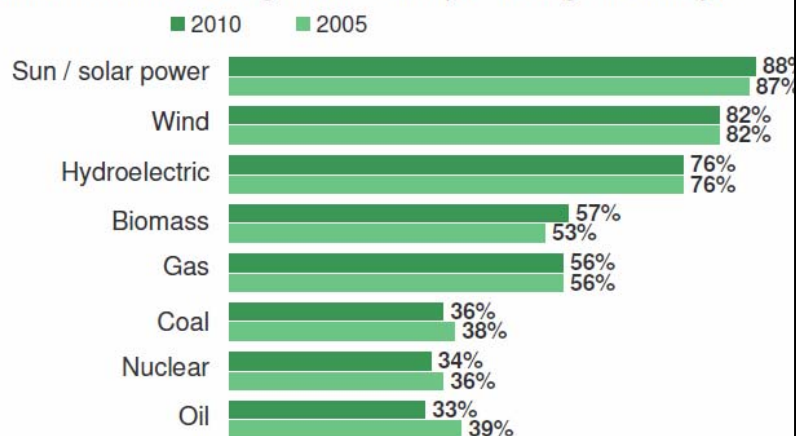
Spence et al, (2010) Understanding Risk Research Report.

Corner et al (2011) *Energy Policy*, forthcoming.



### People remain more favourable towards renewables than fossil fuels and nuclear

How favourable or unfavourable are your current overall opinions or impressions of the following sources for producing electricity...?



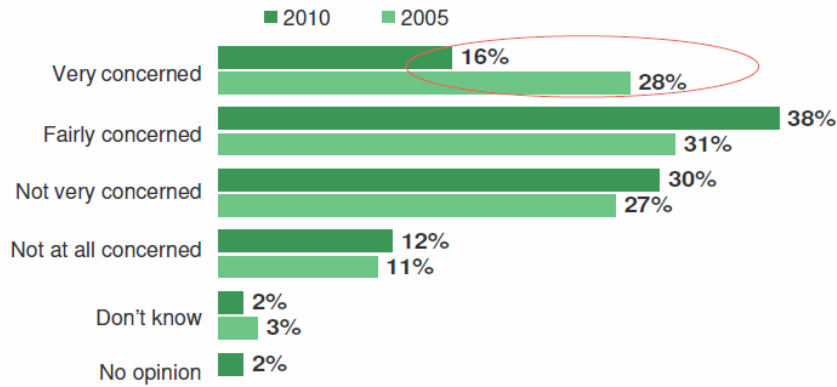
Base: 1,822 British adults, aged 15 and over, 6th January-26th March 2010;  
1,491 British adults, aged 15 and over, 1<sup>st</sup> October – 6<sup>th</sup> November 2005

Ipsos MORI

Source: Cardiff University / Ipsos MORI

## Nuclear Power: Less People are Very Concerned in 2010

How concerned, if at all, are you about nuclear power?



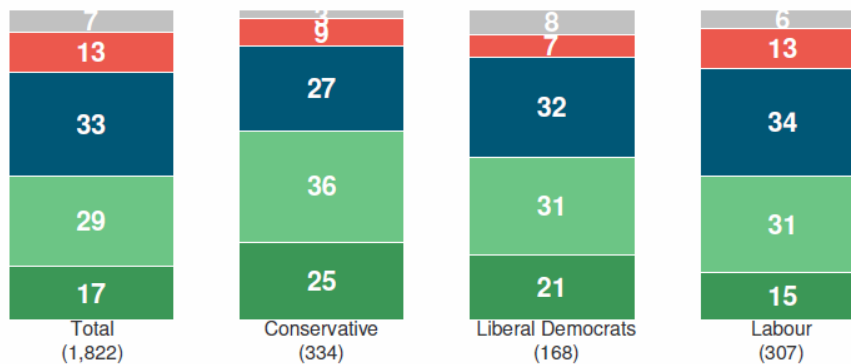
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Ipsos MORI

Source: Cardiff University / Ipsos MORI

Which, if any, of the following statements most closely describes your own opinion about nuclear power in Britain today?

- % We should increase the number of nuclear power stations
- % We should continue using the existing nuclear power stations, and replace them with new ones
- % We should continue using the existing power stations, but not replace them with new ones
- % We should shut down all existing nuclear power stations now, and not replace them with new ones
- % Don't know/none of these



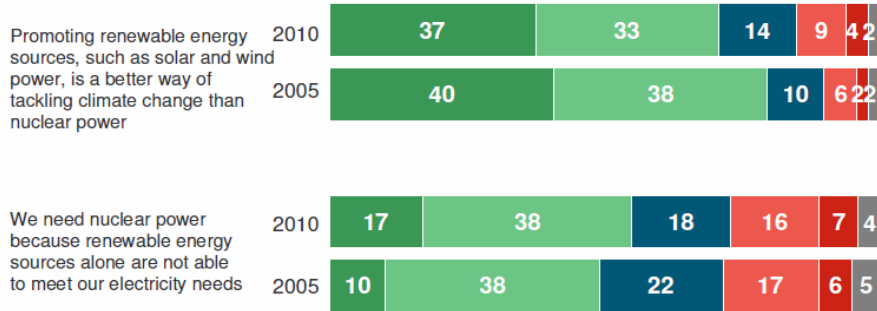
Ipsos MORI Base: 1,822 British adults, aged 15 and over, 6th January-26th March 2010;

Source: Cardiff University / Ipsos MORI

## Question 'Framing' Conditions

To what extent do you agree or disagree with the following statements?

■ % Strongly agree      ■ % Tend to agree      ■ % Neither / nor  
■ % Tend to disagree      ■ % Strongly disagree      ■ % Don't know / no opinion



Base: 1,822 British adults, aged 15 and over, 6th January-26th March 2010;  
1,491 British adults, aged 15 and over, 1<sup>st</sup> October – 6<sup>th</sup> November 2005

Ipsos MORI

Source: Cardiff University / Ipsos MORI

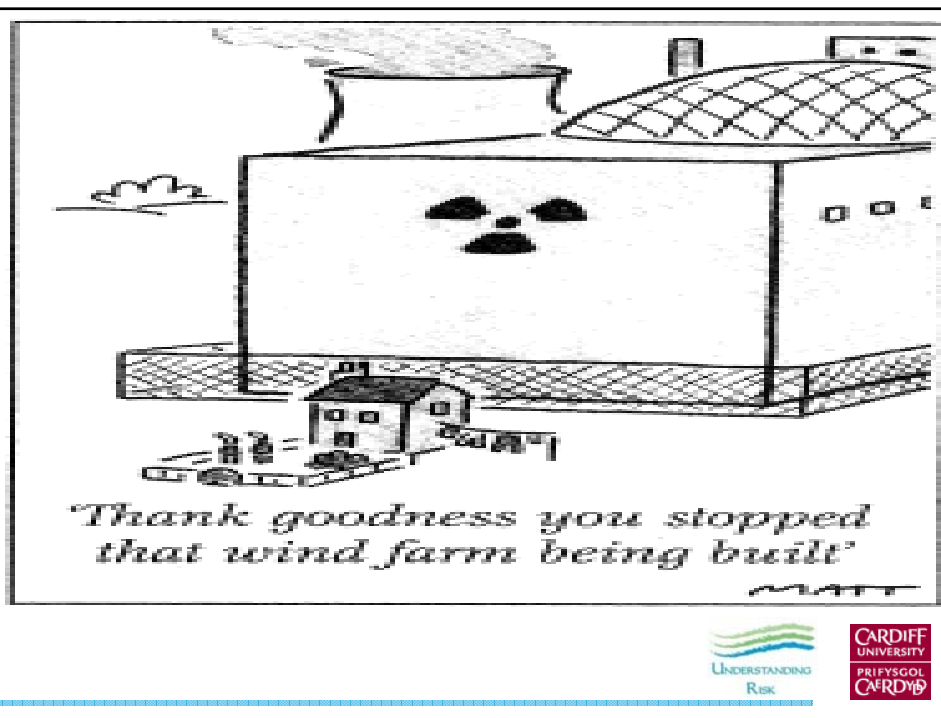
## Conclusion - National Beliefs pre-Fukushima

- Opposition fallen from the very high levels seen in Europe (80%) after Chernobyl
  - energy security and climate framing lifts support
  - lack of visible accidents since mid-1980s
- But support was fragile – a 'reluctant acceptance' - and remains far higher for renewables

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## The Local Picture





## Existing Nuclear Communities

- **Each is subtly different (e.g. from Dounreay to Hartlepool, or Wylfa to Bradwell!) local history and context matter**
- **In general more support for nuclear (and new build) than in national samples – but complex and not just pro- or anti-**
- **Benefits (economic and other), familiarity, and trust in local managers are all important**
- **Anxieties exist below the surface – ‘noticing the extraordinary’**

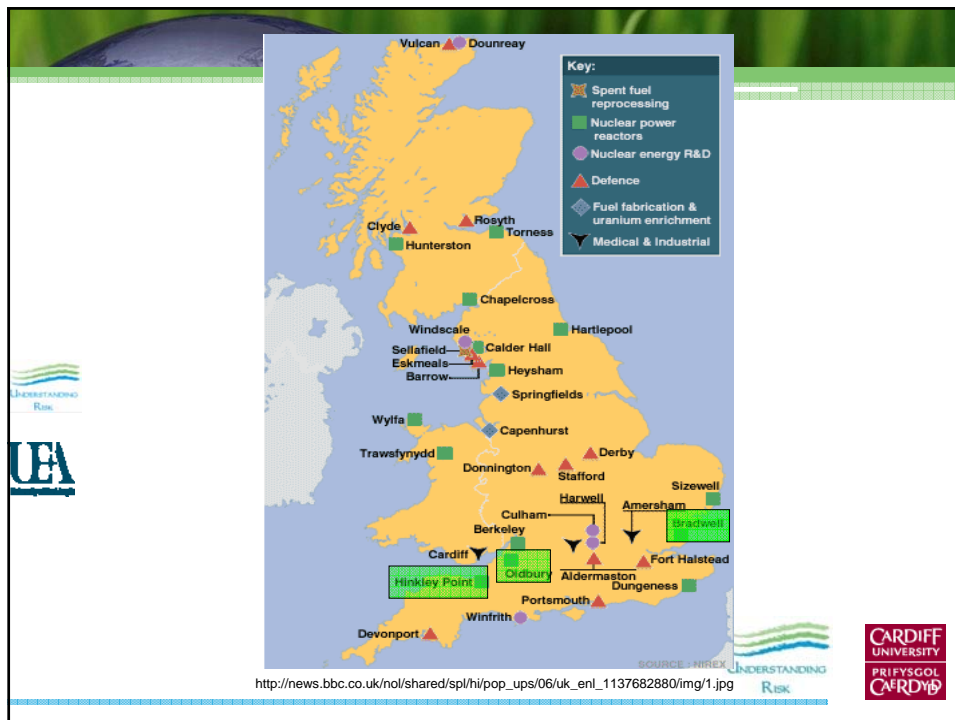


## Living with Nuclear Power Study (2003-2008)

- **3 Existing civilian nuclear sites at Bradwell, Oldbury, Hinkley**
- **Narrative interviews, 2004 and 2007 (n=82)**
- **Q-Study 2007 (n=84)**
- **Survey 2008 (n=1,326)**

Henwood et al (2008) *Health, Risk Society*, 10, 421-438  
Venables et al (2009) *Risk Analysis*, 29, 1089-1104  
Parkhill et al (2010) *Trans Inst Brit Geog*, NS 35, 39-58.  
Parkhill et al (2011) *Brit J Sociol.*, forthcoming





## Theme 1: Making Risk Ordinary

### • Familiarisation

- The power station fading into the landscapes  
*"[...]it's just there and that's it, it's just part of the landscape"* (Sophie, Oldbury)
- Benign constructions of the power station  
*"I don't know why, it used to be a pleasant site if you were at sea, you had a bit of a rotten voyage, you could see that power station and [think/say] 'thank god we're nearly home'"* (Trevor, Bradwell)
- Social connections with nuclear power station staff & knowing about the working practices  
*"[...]from what I know of them on a surface basis they're a good bunch of people doing their job properly, on the same basis that I go to work[...]and...] from what I see there are a lot of failsafe procedures in effect to stop accidents"* (Francesca, Oldbury)

### *A taken for granted presence*

Parkhill, K.A., Pidgeon, N.F. et al (2010) *Trans Inst Brit Geog*, NS 35, 39-58.

## Theme 2: Noticing the Extraordinary (risk, threat and anxiety as part of everyday life)

- Intersection of risk and biography (as primers of anxiety)
  - Mediated impact risk issues (terrorism, large explosions, health)

*"No not about the area but I have thought many times you know when there were terrorist bombs in London and other places, I have thought the most obvious place for a nuclear, for a terrorist attack would be a nuclear power station and that made me really quite scared" (Sara, Oldbury)*

Parkhill, K.A., Pidgeon, N.F. et al (2010) *Trans Inst Brit Geog*, NS 35, 39-58.



## July 2008 Oldbury and Hinkley Survey, Predictors of Support for Local New Build

| Variable                           | Beta coefficient (standardised) | S.E. of Beta | Sig.       |
|------------------------------------|---------------------------------|--------------|------------|
| Place attachment (Power station)   | .429                            | .007         | $p < .001$ |
| Trust in Nuclear Industry          | .301                            | .003         | $p < .001$ |
| Perceived benefits to local people | .078                            | .030         | $p < .001$ |
| Female gender                      | -.093                           | .051         | $p < .001$ |
| Concern about climate change       | -.090                           | .033         | $p < .001$ |
| Perceived risks to local people    | -.053                           | .026         | $p < .05$  |

Model:  $r^2 = .625$ ; Adjusted  $r^2 = .623$ ;  $df = 1057$ ;  $f = 292.637$ ;  $p < .001$

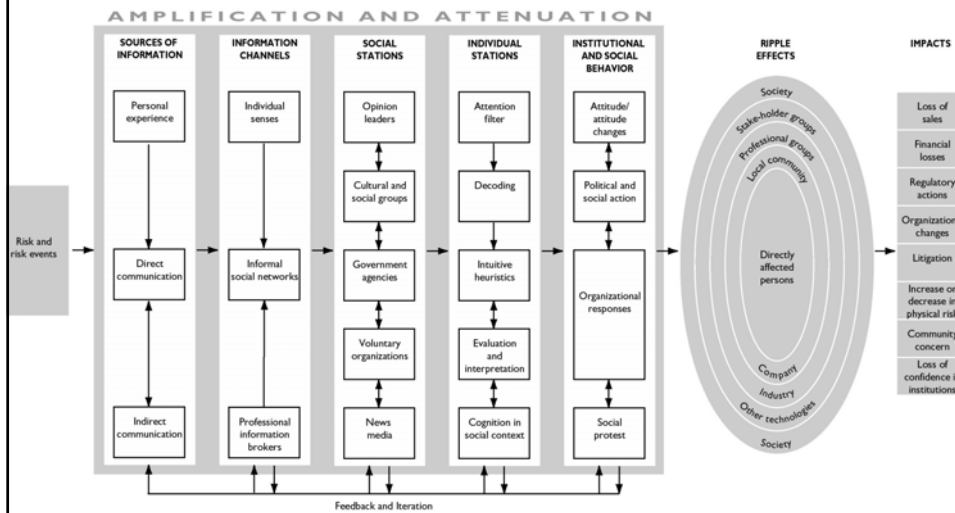


# The Events at Fukushima

**Technological controversy is invariably a dynamic social process – which cannot be readily predicted or ‘managed’**

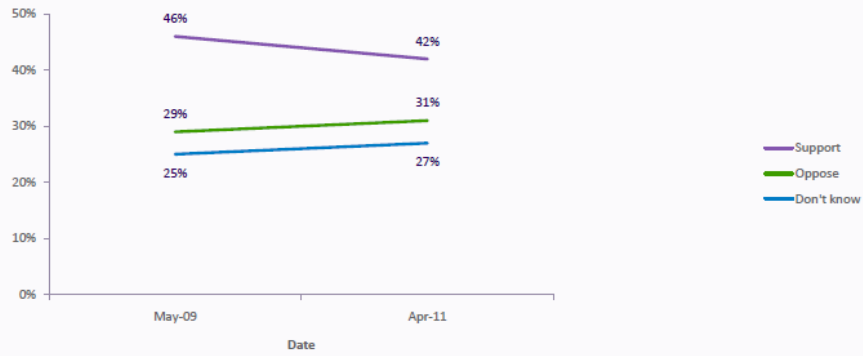


# Social Amplification of Risk Signals



## Attitudes to new-build nuclear power

Q: Do you support or oppose the building of a new generation of nuclear power stations in the UK?

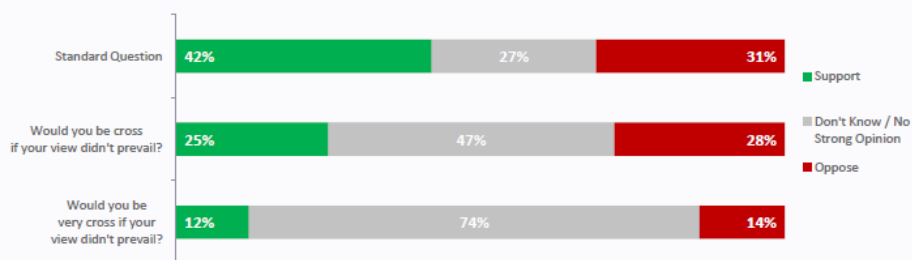


1,043 interviews conducted online among adults aged 18+ between 15 – 18 May 2009  
2,049 interviews conducted online among adults aged 18+ between 21 – 25 April 2011

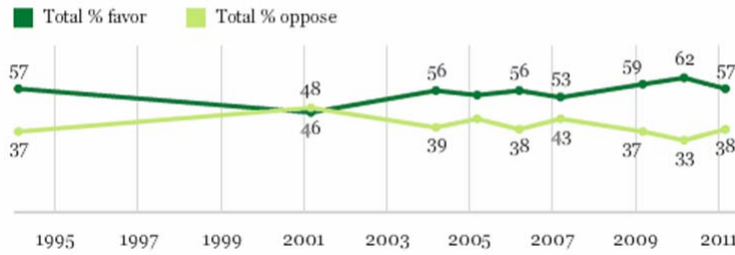
## Attitudes to new-build nuclear power stations

Q: Do you support or oppose the building of a new generation of nuclear power stations in the UK?

Populus Online Omnibus, 21-25 April 2011



Overall, do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose the use of nuclear energy as one of the ways to provide electricity for the U.S.?

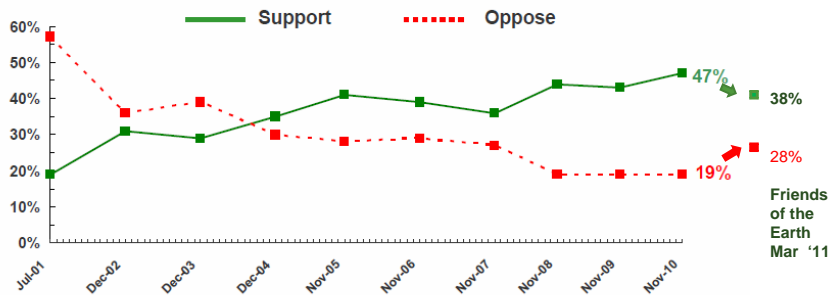


GALLUP

Source, Gallup, March 16, 1,004 adults, telephone poll



Q To what extent would you support or oppose the building of new nuclear power stations in Britain TO REPLACE those that are being phased out over the next few years? This would ensure the same proportion of nuclear energy is retained.



Ipsos MORI Base: All respondents c2,000

\* Wording in 2001 was "To what extent would you support or oppose the building of new nuclear power stations in Britain?"



GFK for Friends of the Earth, 18-20<sup>th</sup>, 1,033 adults, 18-20<sup>th</sup> March 2011, the question asked was slightly different: 'To what extent do you support or oppose building new nuclear power stations to replace those that are being phased out over the next few years'



Q: Favour or oppose the use of nuclear energy as one of the ways to provide electricity for the world (self-reported views as before versus after).

### MATRIX OF OPINION CHANGE on Nuclear Energy

| Type A: MAJORITIES TURNED MINORITIES<br>(8 countries) |                               | Type B: MAJORITIES SEVERELY THINNED<br>By 10% points or more<br>(6 countries) |                             |
|---|-------------------------------|---|-----------------------------|
| <b>Japan</b> (62:39) ↓                                | <b>Saudi Arabia</b> (62:43) ↓ | <b>China</b> (63:70) ↓  | <b>Egypt</b> (65:52) ↓      |
| <b>Canada</b> (51:43) ↓                               | <b>Tunisia</b> (44:39) ↓      | <b>India</b> (58:49) ↓  | <b>Iraq</b> (62:49) ↓       |
| <b>Netherlands</b> (51:44) ↓                          | <b>Hong Kong</b> (48:40) ↓    | <b>Russia</b> (63:52) ↓   | <b>Bangladesh</b> (64:51) ↓ |
| <b>Romania</b> (51:41) ↓                              | <b>Cameroon</b> (48:44) ↓     |   |                             |

Source: WIN-Gallup Snap Poll, March 21-April 10

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Q: Favour or oppose the use of nuclear energy as one of the ways to provide electricity for the world (self-reported before versus after).

| Type C: MAJORITIES AFFECTED MODERATELY<br>Drop in support less than 10% points<br>(10 countries) |                                |                          | Type D: MINORITIES FURTHER THINNED<br>(18 countries) |                            |                            |
|--|--------------------------------|--------------------------|--|----------------------------|----------------------------|
| <b>USA</b> (53:47) ↓   | <b>Finland</b> (58:52) ↓       | <b>Nigeria</b> (65:63) ↓ | <b>Germany</b> (34:26) ↓                             | <b>Poland</b> (38:30) ↓    | <b>Kenya</b> (32:21) ↓     |
| <b>France</b> (66:58) ↓  | <b>Czech</b> (63:61) ↓         | <b>Vietnam</b> (62:57) ↓ | <b>Belgium</b> (43:34) ↓                             | <b>Iceland</b> (38:32) ↓   | <b>Palestine</b> (39:30) ↓ |
| <b>Korea</b> (65:64) ↓   | <b>Bulgaria</b> (43:34) ↓      | <b>Latvia</b> (54:53) ↓  | <b>Switzerland</b> (40:34) ↓                         | <b>Georgia</b> (25:18) ↓   |                            |
| <b>Pakistan</b> (65:63) ↓  |                                |                          | <b>Brazil</b> (34:32) ↓                              | <b>Italy</b> (28:24) ↓     | <b>Serbia</b> (21:17) ↓    |
|  |                                |                          | <b>Austria</b> (13: 9) ↓                             | <b>Bosnia</b> (20:17) ↓    | <b>Colombia</b> (24:23) ↓  |
|  |                                |                          | <b>Greece</b> (12: 10) ↓                             | <b>Macedonia</b> (21:19) ↓ |                            |
|  |                                |                          | <b>Ireland</b> (34:30) ↓                             |                            |                            |
|  |                                |                          | <b>Turkey</b> (45:41) ↓                              |                            |                            |
| Counter Trend cases (5)  |                                |                          |  |                            |                            |
|  | <b>Spain</b> (59:41) ↑         |                          | <b>Azerbaijan</b> (17:20) ↑                          | <b>Fiji</b> (28:28) ↑      |                            |
|  | <b>*South Africa</b> (45:49) ↑ |                          | <b>**Morocco</b> (18:35) ↑                           |                            |                            |

Source: WIN-Gallup Snap Poll, March 21-April 10

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## Concluding Comments

- **Support does not appear to have altered all that radically (Distance effect? Lack of recreancy? Counter framings are strong?)**
- **Need longer-term studies for more subtle effects**
- **Impacts in existing nuclear communities may be more complex - dialogue and for some people support**
- **Fukushima highlights accidents and unintended failures**
- **Openness, transparent learning (and responsible risk management) a prerequisite for trust**



## Acknowledgements

Karen Henwood, Terre Satterfield, Peter Simmons, Wouter Poortinga, Irene Lorenzoni, Karen Parkhill, Alexa Spence, Catherine Butler, Adam Corner, Christina Demski, Dan Venables, Ed Langley and Ipsos-Mori.



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Website: [www.understanding-risk.org](http://www.understanding-risk.org)

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