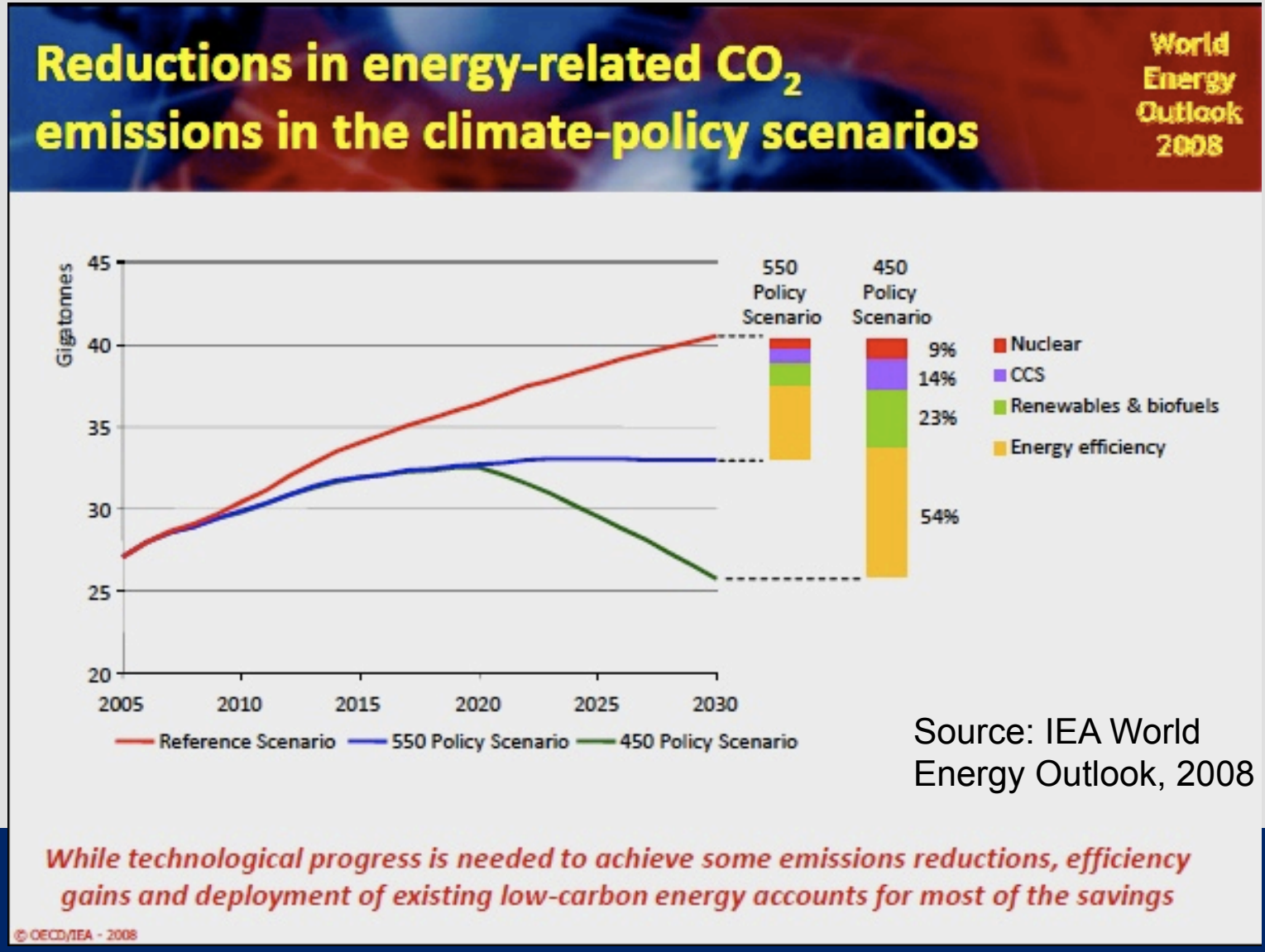
# Exploring the Social Dimensions of Energy Use:
## A Review of Recent Research Initiatives

Katy Janda
Environmental Change Institute
Oxford University

ECEEE, June 4, 2009

# Why Explore Social Dimensions?




Source: IEA World Energy Outlook, 2008

# Energy & Society: A New (?) Relationship

- Not enough social science in energy research (or vice versa), or missing key aspects
  - Lutzenhiser & Shove (1999)
  - Wilhite, Shove, et al. (2000)
  - Berkhout et al. (2003)
  - Biggart & Lutzenhiser (2007)
- Social science on the rise
  - Owens & Driffill (2008)
    - ”evolution of social scientific understanding has been rapid over the past few years, and this is reflected in substantial investment in research”

# Mapping Landscapes in Energy & Social Research

- What is “cutting edge” research?
  - Are we rolling along, reinventing the wheel, or exploring new directions?
- Are there any gaps in the current understanding?
- What kinds of new research directions could be undertaken to help bridge these gaps?
  - What kinds of institutions/programmes are likely to undertake this research?

# UK/US Research Landscapes

- 13 initiatives
  - 11 research programmes (10 UK, 1 US)
  - 1 conference (US)
  - 1 workshop (UN IHDP)
- Via:
  - Content analysis of text on the web
    - corpus analysis & concordancing
- Two stages:
  - Overall characterization
    - Keywords & descriptors
  - Categorization
    - 4 types, developed from keywords

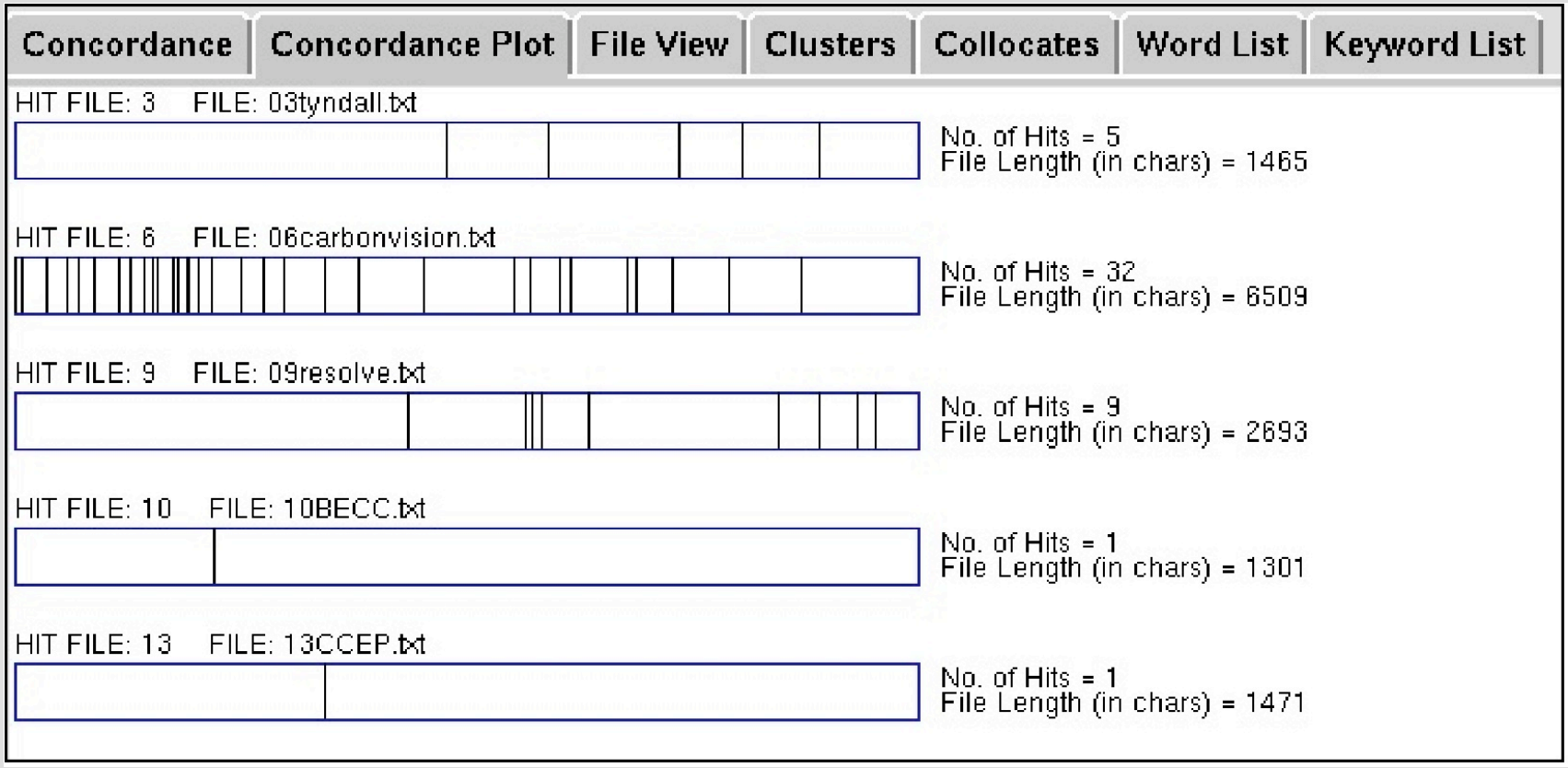
| TABLE 1. Energy and Social Science Initiatives | | | | Disciplines Cited | | | | | | Keywords Used | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Initiative Name | Type | Year | Location | Economics | Politics | Policy | Sociology | Psychology | Interdisciplinary | Markets | Supply | Demand | Efficiency | Conservation | Consumption | Sustainability | Survivability | Adaptation | Climate Change | Energy | Carbon | The Public | Technology | Systems | Lifestyles | Behaviour | Transition | Governance |
| Surrey Energy Economics Centre (SEEC) http://www.seec.surrey.ac.uk/ | RP | 1980 | UK | x | | | | | | x | x | x | x | | | | | | | x | | | | | | | | |
| Oxford Institute of Energy Studies http://www.oxfordenergy.org/research.html | RP | 1982 | UK | x | x | | x | | | x | x | x | | | | | | | | x | | | | | | | | |
| Tyndall Centre for Climate Change Research "Constructing Energy Futures" theme (1 of 7) http://www.tyndall.ac.uk | RP | 2000 | UK | x | x | x | | | | | x | x | | | | x | | | x | x | x | x | | | | x | | |
| Centre for Business Relationships, Accountability, Sustainability, and Society (BRASS) (9 areas) http://www.brass.cf.ac.uk/ | RP | 2001 | UK | | | | | | x | x | | | | | x | x | | | x | | | x | x | | x | x | | x |
| UK Energy Research Centre "Demand Reduction" theme (1 of 7) http://www.ukerc.ac.uk | RP | 2004 | UK | x | | x | | x | x | | x | x | | | | x | | | | x | | | x | x | | | | |
| Carbon Vision Initiative, "Buildings" theme (1 of 4) http://www.carbontrust.co.uk/technology/carbonvision/ | RP | 2004 | UK | | | | x | | x | x | | | x | | | | | | | x | x | | x | | | x | | |
| Sussex Energy Group http://www.sussex.ac.uk/sussexenergygroup/ | RP | 2005 | UK | | | | | | | | x | x | x | | | x | | | x | x | | | x | x | | | x | x |
| Precourt Institute for Energy Efficiency (PIEE) "Behavior" theme (1 of 6) http://piee.stanford.edu | RP | 2006 | US | x | | | x | x | | x | | x | x | | | | | | | x | | | | | | x | | |
| RESOLVE (5 of 5) http://www.surrey.ac.uk/resolve/ | RP | 2006 | UK | x | | | x | x | | | | x | | | x | x | | | | x | x | x | | | x | x | x | x |
| Behavior, Energy, & Climate Change Conference (BECC) http://piee.stanford.edu/cgibin/htm/Behavior/becc_conference.php | CF | 2007 | US | | | x | x | | | | | | x | | x | | | | x | x | | | x | | | x | | |
| Living With Environmental Change (LWEC) http://www.rcuk.ac.uk/research/ccprog/lwec.htm | RP | 2007 | UK | x | | x | | | x | x | | | | | | | | | | x | | x | | | x | | | |
| IHDP Science and Policy Dialogue "Energy, Sustainability and Societal Change" http://www.ihdp.unu.edu/article/431 | WS | 2008 | INT | | | | | | | | x | x | x | | | x | | | x | x | x | x | | | x | x | | |
| Centre for Climate Change Economics and Policy (CCEP) http://www.cccep.ac.uk/ | RP | 2009 | UK | x | x | x | x | | | x | | | x | | | x | x | x | x | | x | | x | x | | | | |
| Totals: | n=13 | | | 8 | 3 | 5 | 6 | 3 | 4 | 7 | 6 | 8 | 7 | 0 | 3 | 7 | 1 | 1 | 7 | 10 | 5 | 5 | 6 | 5 | 4 | 7 | 2 | 3 |

Key: RP = Research Programme (n=11); CF = Conference (n=1); WS = Workshop (n=1)

# Characterization: Keywords

| Frequency Grouping | Keywords/Concepts | # of Initiatives |
|---|---|---|
| **High** | **Energy** | **10** |
| | **Demand** | **8** |
| **Medium** | **Sustainability** | **7** |
| | **Behaviour** | **7** |
| | **Markets** | **7** |
| | **Efficiency** | **7** |
| | **Climate Change** | **7** |
| | **Supply** | **6** |
| | **Technology** | **6** |
| | **Carbon** | **5** |
| | **The Public** | **5** |
| | **Systems** | **5** |
| **Low** | **Lifestyles** | **4** |
| | **Consumption** | **3** |
| | **Governance** | **3** |
| | **Transition** | **2** |
| | **Survivability** | **1** |
| | **Adaptation** | **1** |
| | **Conservation** | **0** |

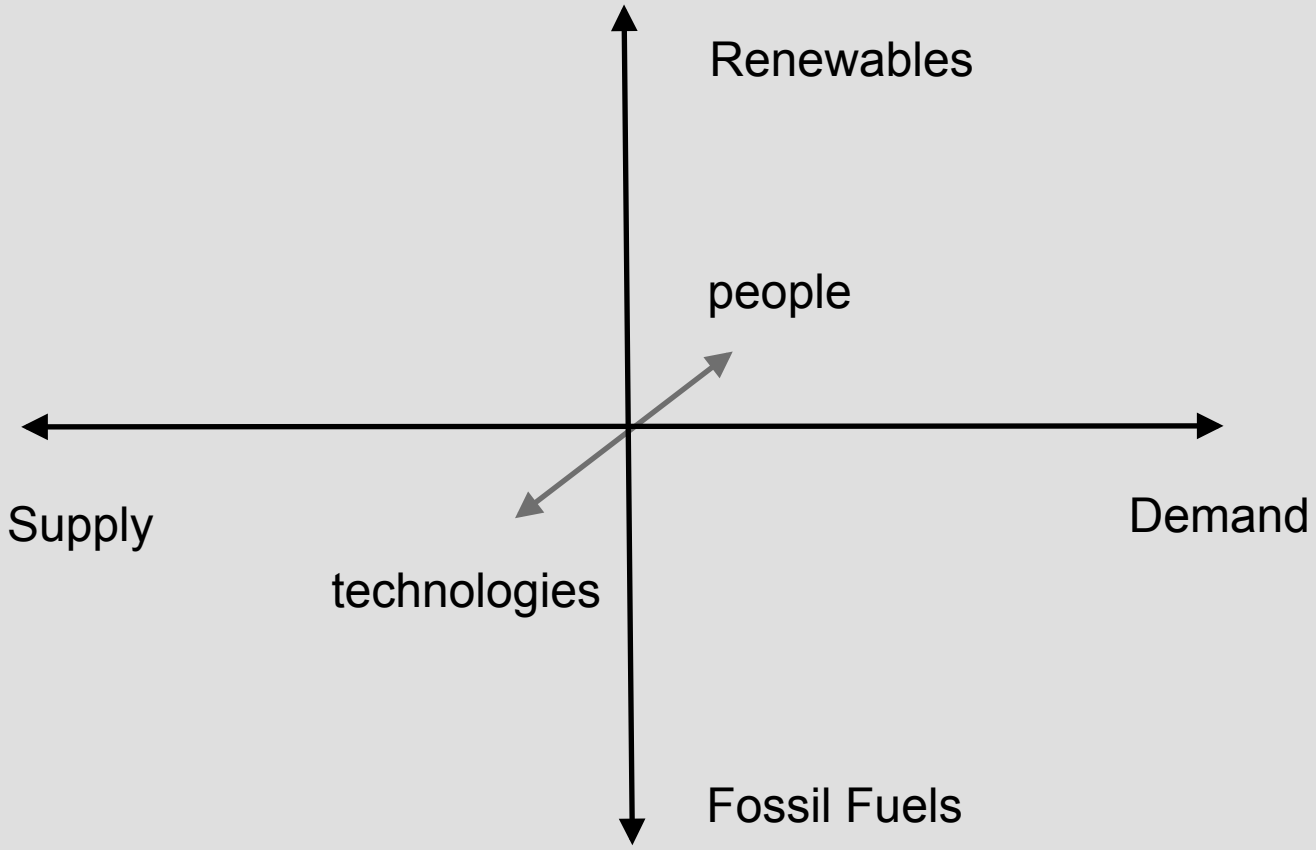
# Characterization:
## More “carbon” = less emitted?



# Categorization: A Typology

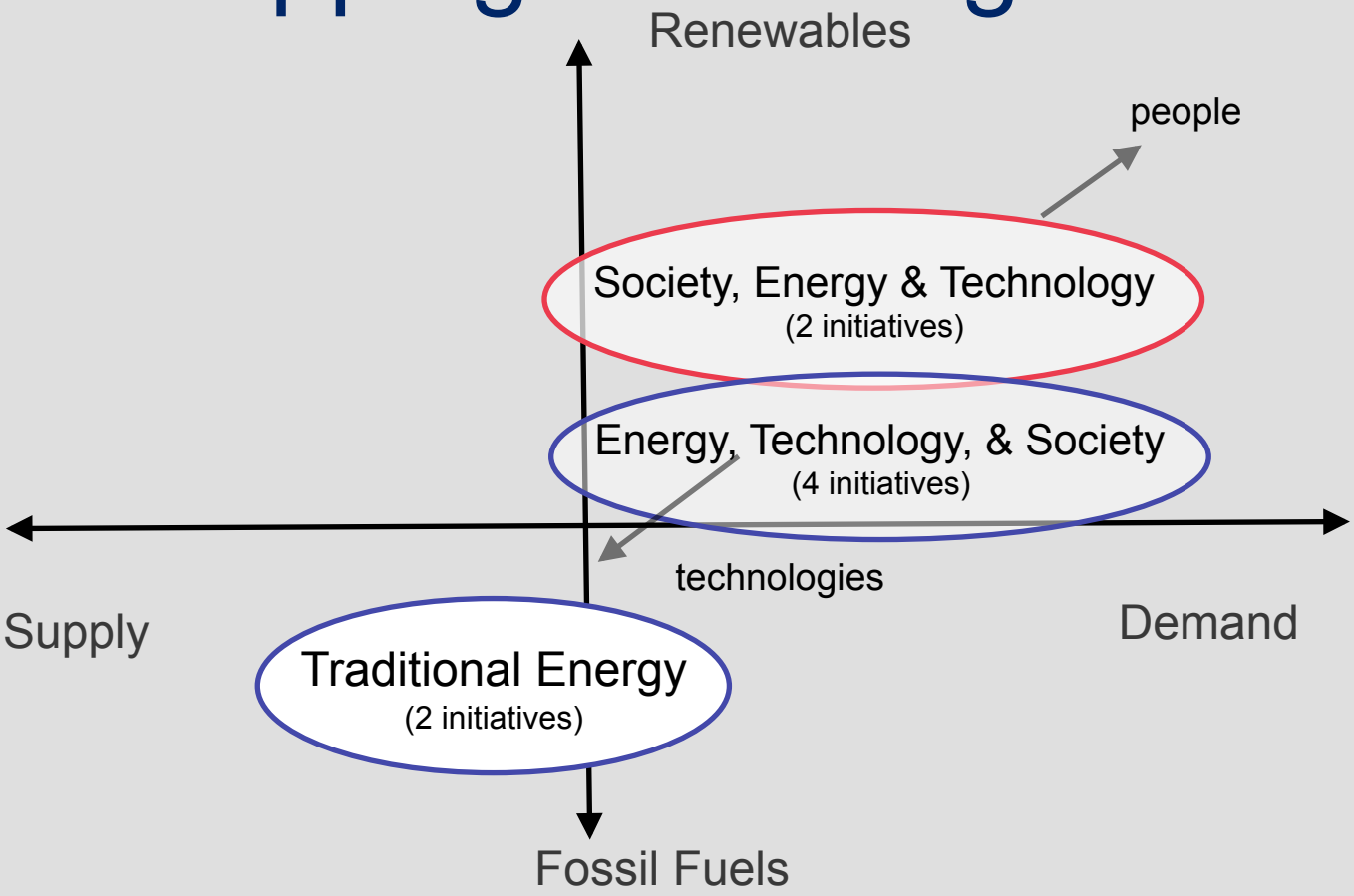
- 1) Macro Environment and Society
  - 5 initiatives
- 2) Traditional Energy
  - 2 initiatives
- 3) Energy, Technology and Society (ETS)
  - 4 initiatives
- 4) Society, Energy, and Technology (SET)
  - 2 initiatives

# (one view of) The Field of Energy & Social Research



Macro Environment
& Society
(5 initiatives)

# Mapping the Categories

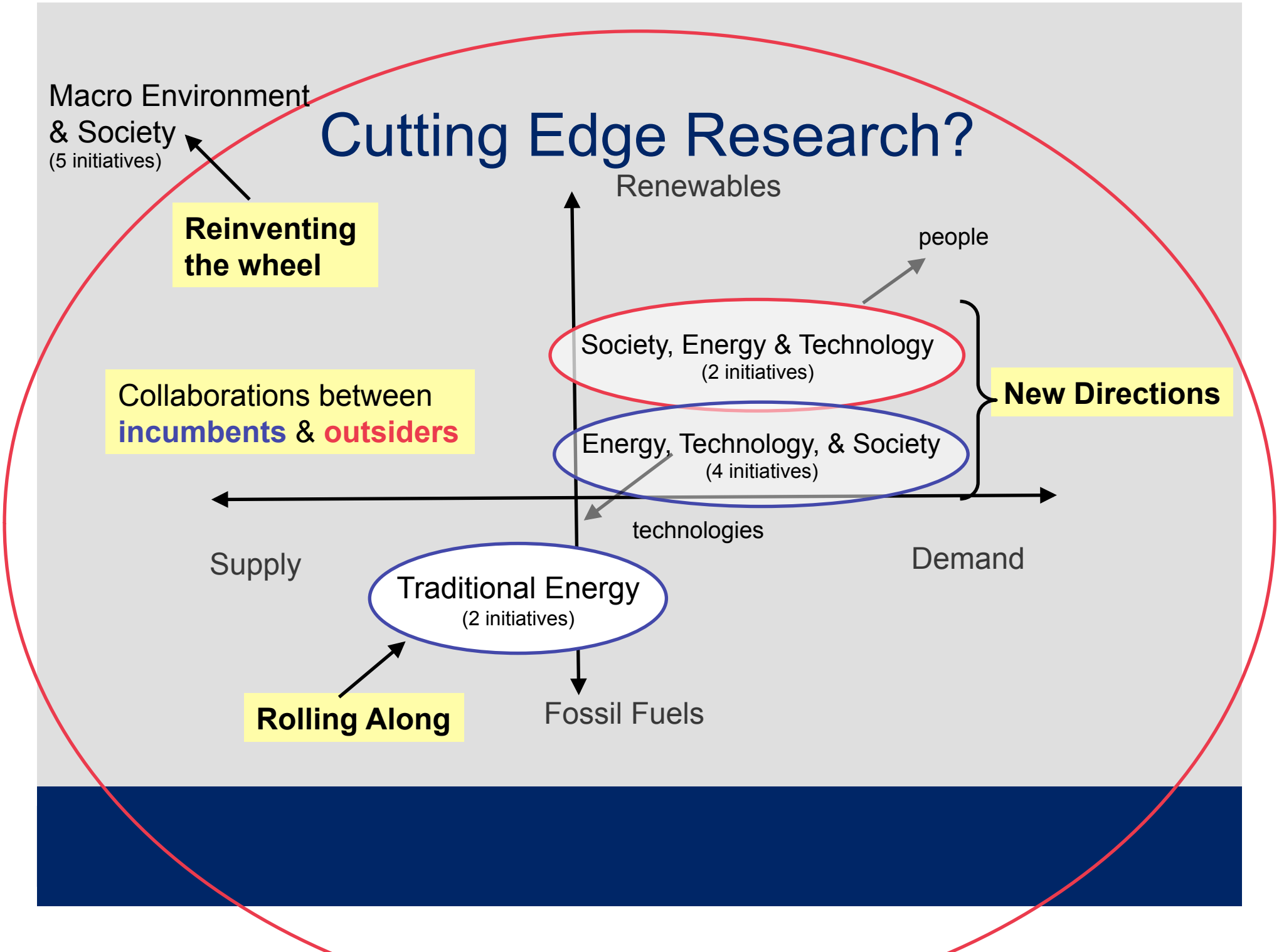


# Some Future Energy & Social Research Priorities

Owens & Driffill propose:

- socio-technical systems
- better ways of dealing with complex situations, and
- reconceiving the role of the public

- Berkhout et al. propose:
  - processes of long-run change in socio-technical systems;
  - vulnerability, resilience, and adaptiveness; and
  - services, systems of provision and consumption practices


Macro Environment
& Society
(5 initiatives)
Cutting Edge Research?
Renewables
Reinventing
the wheel
people
Society, Energy & Technology
(2 initiatives)
Collaborations between
incumbents & outsiders
Energy, Technology, & Society
(4 initiatives)
New Directions
technologies
Supply
Demand
Traditional Energy
(2 initiatives)
Rolling Along
Fossil Fuels

# Conclusions & Further Research

- Synthetic analysis of programmes can help map energy & social research landscapes
  - Suggest opportunities for collaboration
  - Gaps in existing programmes
- Emphasis on expressed institutional goals may yield different picture than literature review
- Further research on research
  - More programmes, additional countries
  - Incumbents & outsiders; individual & social behaviour
    - ACEEE, ECEEE, and academic corpora

# Thank you!

Please send comments & suggestions to:

Katy.Janda@ouce.ox.ac.uk