

Fuelling Road Transport: Implications for Energy Policy

Joint EST, IEEP, NSCA research for DfT 2003:

Reliance on petroleum can be substantially reduced -
availability of renewables is key.

- Hydrogen from renewable electricity?
 - significant increase in RE would be needed
 - not first priority for electricity
- And/or woody biofuels
- 25% of UK agricultural land planted with indigenous woody crops could meet transport fuel demand, under some scenarios (hydrogen, bioalcohols)

Environmental Perspective

- Wider impacts
 - Which (AQ / CC / biodiversity / resource use?)
 - Where (local / UK / EU / global)
 - When (effects of timing, rush for H)
 - Why (green cover for strategic policy)
 - Who (sustainability: social / economic impacts)

Hydrogen 1

- Need for medium-term 'carbon hit' to grow market?
- GHG emissions
 - WtW analysis complex – timing and weighting
- Renewables
 - Availability
 - Impacts (biomass, windfarms, PVs)
 - opportunity costs – optimal carbon savings (for who?)

Hydrogen 2

- Atmospheric interactions
 - Ozone depletion?
- Local Air Quality
 - ZEVs useful locally but overall impact marginal
- Resource use
 - Metals?

Biofuels 1

- Which crops?
- Grown where?
- Processed where?
- Comparing disparate impacts
- Foregone options (food / energy / industrial)

Biofuels 2

- **GHG emissions**
 - UK or import?
 - Agricultural inputs
 - Processing, transport and by-products
 - Soil emissions
- **Ecology / Landscape issues**
 - Intensification of low input / set-aside land (RSPB work)
 - Extensive coppicing
 - Exotic perennial / annual species
 - Soil structure / quality?
 - Flood mitigation?

Biofuels 3

- Waste policy interactions
 - RVO – worthwhile but limited
 - Active fraction of MSW / green / agro waste?
 - BPEO for EfW?
- Rural economy
 - More jobs per ha?
 - Local processing viable?
 - Which crops, where...

Implications for DfT study

- Measurability of impacts
- Comparability of impacts
- Conventional baseline has changing impacts
- No environmental optimum
- Matrix and scoring possible
- NSCA / IEEP follow-up research into biofuels