Slide 1

School of Civil Engineering
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Sustainable Indicators in ReVISIONS

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Slide 2

Preamble: SOLUTIONS

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Radar chart with axes: Net Economic cost (CV), Economic efficiency (Transport Cost), Land area developed, Energy used, Impermeability, NOx emission, Residential crowding, Social segregation. Scale from -150 to 100. Legend: Trend 1997, Trend 2031 +RUC, Compaction 2031 +RUC, Dispersal 2031 +RUC, Planned Expansion 2-31 +RUC.
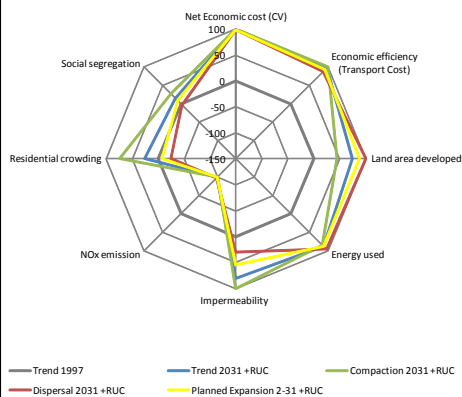
EPSRC funded project SOLUTIONS

•Form offered marginal improvements to sustainability

•BAU Technology only

ReVISIONS:

Are there cross-sector benefits arising from particular mixes of future technologies?

Example: Waste Management

New build:

- Economic incentives for AD, Pyrolysis, Gasification
  - Potential for micro-generation CHP
  - Very different by-products
- Energy from LFG and sewage gas
  - Economically discouraged
  - Benefits of garbage disposal units(?)

Existing dwelling stock??
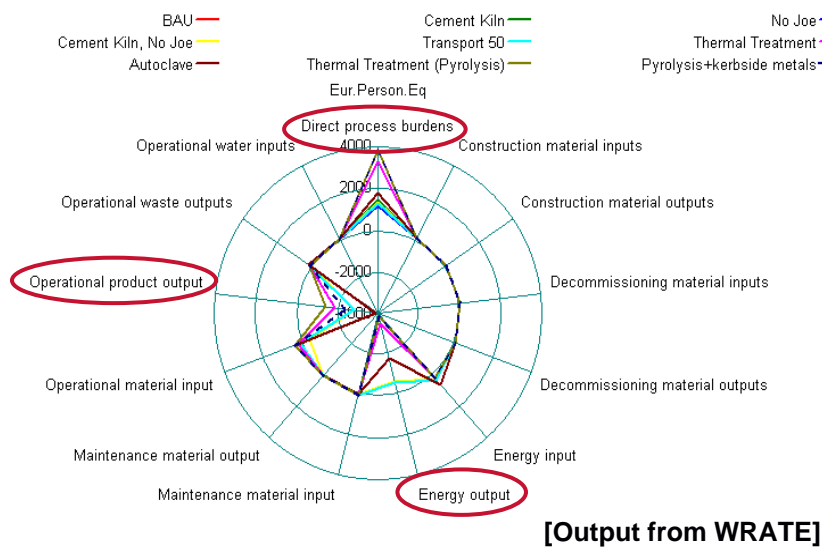
Future Technologies

ReVISIONS has horizon of 30 yrs

- Electricity offsets can be adjusted with predictions of generation mix
- What about transport emissions if all vehicles are electric or hydrogen or powered or run on bio-fuel?
- How can the LCI data be reliable/dynamic?

✔ Economic

- Levelised cost analysis of each technology

? Social

- Health, Noise, Traffic

? Environmental

- GWP, Ozone

? Ecological

- Toxic releases to air, water, land

How can consistent system boundaries be allocated?

- What are the trade-offs?

[Output from WRATE]

Questions/Comments?

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