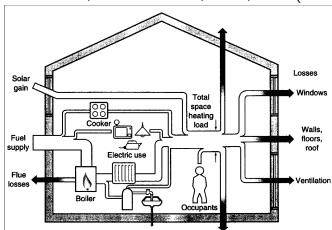


- ▶ Energy is used heating and powering buildings.
- ▶ People determine how buildings use energy:
 1. by operating buildings and appliances
 2. by installing technology in buildings



Energy Retailers Association/PA

BREDEM-12, B.R. Anderson, et al., BRE (2001)

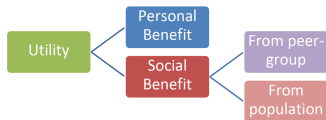


<http://www.greendayrenewables.com>

Models of Complex Systems

- ▶ Models represent the main features of reality:

Conceptual Model:

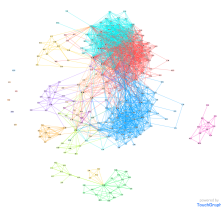


Mathematical Model:

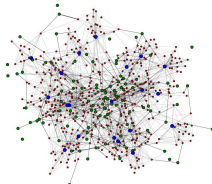
- ▶ $u_i = \alpha_i p_i + \beta_i s_i + \gamma_i m$
- ▶ p_i, s_i, m : **personal**, **peer-group** and **societal** influence.
- ▶ $\alpha_i, \beta_i, \gamma_i$: relative weightings given to each factor,

- ▶ Networks are models of interactions between individual people/elements:

Real Social Networks:



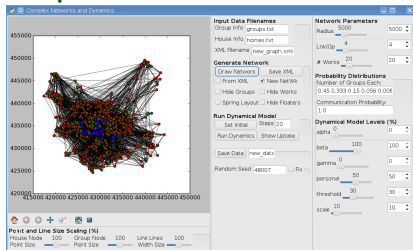
Network Models:



- ▶ **Rules** can be used to determine how processes occur (e.g.: $u_i > \theta_i \Rightarrow$ “buy”).

Simulating Uptake of Energy Tech.

Computational Model:



Using Real-World Data:

Model element	Parameter	Question/Data
Network parameter	number of individual/group connections.	who talks to whom about energy.
Threshold	θ	house type, tenancy and income.
Node archetypes	α, β, γ	pro-environmental behaviour / social influence.

Simulation Results:

