

Is Zero the right target for buildings?

Are Buildings the right target for Zero?

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Flawed logic

- We have to achieve >80% CO₂ reductions ✓
- We need new buildings ?
- Therefore all new buildings must be zero carbon (some say negative) ✗

Fundamentally Flawed

- The building is the wrong boundary
- Forces biomass and/or inefficient building mounted generation
- Typically compromises building efficiency
- Definition is proving elusive!

Boundaries

- Why choose the building?



The most correct boundary but impractical
for daily calculations



All boundaries are wrong, some are useful
(after George Box)



or



or



Imagine idealised renewable but finite fuel

Zero C limited options:

- **Bio-oil/gas** - finite resource, if we use it then not available for others
- **Wood fuel** - loss of carbon sink/renewable resource, pollution, deforestation, food, peak wood revisited
- **PV** - why on the building?
- **Micro wind** - finally discredited.

Some of the Issues:

- **Accounting paradox** - how to calculate saving from efficiency if the energy source is considered to be zero Carbon?
- **Economy of scale** - energy generation more efficient at bigger scale & right location.
- **Opportunity cost** - finite budget and time means efficiency suffers if time and money put into ZC tech'.
- **Doesn't solve peak load** - mismatch with demand, diurnal & seasonal.
- **Arbitrary** - how much ZC kit do we install to achieve zero given large variation in behaviour?
- **Longevity** - lifespan, maintenance?
- **Confusion and distraction** - Red herring, smoke and mirrors!

Why stop at energy?

- Waste neutral.
- Water neutral.
- Food neutral.
- Etc.



Conclusions:

- The building is the wrong boundary for global or National carbon accounting.
- If the energy can be exported it's nothing to do with the building (Bill Bordass).
- Zero carbon buildings - just because they are possible doesn't mean they are sensible.

Recommendations

- Set building energy **consumption** targets.
- Set PE values of exportable energy at the pool/grid value. PV, biomass, bio-gas.
- Evaluate and reward energy generation independently of the building. Don't assume buildings are the best place for a power station or that householders are the best people to manage them.
- If you are going to tax new buildings be honest about that and make it an efficient tax!