Skills to achieve zero carbon cities and give you an edge

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Zero net carbon cities
What a challenge!
We Just Breached the 410 PPM Threshold for CO₂

Carbon dioxide has not reached this height in millions of years

By Brian Kahn, Climate Central on April 21, 2017

The Mauna Loa Observatory in Hawaii recorded its first-ever carbon dioxide reading in excess of 410 parts per million. Credit: Shaulach/AirPikr (CC BY-SA 2.0)
Applying skills as usual isn’t sufficient

• Transform by 2050:
  • infrastructure
  • skills and capabilities
Persuasion and communication skills

Hermann Scheer

‘Hero for the Green Century’ TIME magazine
The ability to get corporations to change

• Linfox reduced its carbon intensity by over 50% over the last 10 years

• Corporate change (Harvard Professor John Kotter)

• See more: Linfox 25c project https://www.youtube.com/watch?v=DSO3dV-HIQU
The ability to build trust

“When trust goes up speed goes up and costs come down” Stephen M.R. Covey
Design skills

• Chris Barnett (left), Habitech Systems, Melbourne, with senior architect Jon Pye; into the low carbon era one home at a time
The ability to make low carbon low cost

- Wait for govt?
- Or make low carbon = low cost?
The ability to reinvent

- Imagining shipping over short distances: https://product ion.presstogo.c om/mars/emb ed?o=61B31CB 1FF164E2D&c= 10651&a=Y
Collaboration and learning skills

• Open source
Sector specific skills (briefly)

• Existing buildings
• New buildings/developments
• Transport
Existing buildings

• Make it easy to improve
• Persuade for stewardship thinking
• 30% to 50% reduction before renewables
• Then cover with PV

Skills for zero CO2
New buildings/developments

- Integrated approach: wide, long
- Have ambitious CO2 budgets
  - Passive/Active Design
  - Solar from the start
  - Electric vehicle
  - Go electric / no fuels
Transport

- Planning
  - minimize kg-kms
- Set ambitious targets
  - UK, France to ban IC engine vehicles from 2040
  - China – electric vehicle quota from 2019
  - India only electric vehicles from 2030
- Replace coal, gas generation with renewables

Skills for zero CO2
How to develop great skills?

Engage in purposeful practice
Purposeful practice

Very specific goals

Intense focus

Feedback

Improve

Beyond comfort zone
Focus

• Analyse, copy the best
• Beyond comfort zone
• Hour per day
• Persist
• Maintain motivation
Feedback

- Were the objectives well defined?
- Were facts known and correctly identified?
- Was my goal hard enough?
- What should I do differently?
- What did I do well?
- What did I do poorly?
- What do I need to improve on?
Example: Improve CW pump system effcy

• Very specific goal:
  • Achieve pump effcy of > 60%
  • 38 storey building
• Intense focus: e.g. System curves / pump curve(s)
• Beyond comfort zone: Solution may be 1st ever
• Feedback: Meter pump, observe when installed
  • What worked well (do again)
  • What didn’t (how to fix?)
Summary

• Zero carbon cities is a huge challenge, need better skills and capabilities to meet the challenge.

• Skills: persuasion and communication, the ability to create change and build trust; design skills, making low carbon low cost, the ability to reinvent.

• Specific skill areas in the decarbonising of existing buildings, new buildings and transport were identified

• Engaging in purposeful practice, which involves well defined goals, focus, feedback and getting out of your comfort zone is a highly effective way of improving your skills
Thanks and contact details

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