Moreland Solar City:
Decentralised Energy: Where and How?

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Decentralised Energy or Distributed Generation is about matching supply with demand

- Bringing together the generation of energy with its use
Scale

- Microgeneration
  - Residential PV

- Building Integration
  - Building Cooling Heat & Power (BCHP)

- Precinct Wide
  - District Heating & Cooling Networks

Moreland Solar City

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How Serious?

Legend:
- Decentralized CHP
- Centralized CHP
- Wind mill park

Centralized production in the mid 80's

Decentralized production of today

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Where? A practical example

Central Coburg 2020
# Vision for sustainable urban redevelopment

Scope
# 3000 Apartments
# 65,000 m² retail, office space
# Community Facilities
# Public transport interchange
Business as Usual Building Performance

Energy Map© / Carbon Map©
World’s Best Practice Energy Efficiency

Energy Map© / Carbon Map©

63% reduction in greenhouse gas emissions

Greenhouse Gas Emissions

- Standard
- Best Practice

Savings
Retail
Offices
Apartment
Decentralised Energy & WBP Buildings

Energy Map© / Carbon Map©

60% additional reduction on remaining greenhouse gas emissions
Key Factors - Technical

• Understand Energy / Sustainability / $ Basics

• Residential / Commercial Low Grade Heat
  • Tension between Passiv Design & CHP
  • Delivering a service not an energy supply

Emissions by End Use (Wilkenfeld 2008, p. 77)
What’s Needed?

- Energy Supply
- Generation
- Distribution
- Network
- Metering / Billing
- End Use
- Grid Connection
- Gas Connection
- Energy Management
- Customer Service

[Diagram showing the flow of energy supply, generation, distribution, and customer service.]
Moreland’s journey
How?

# ESCo model to deliver
- local generation
- network
- billing / customer service
- Aggregation and dispatch of PV Peak generation
Key Factors – Finance / Partnership

• Finance / Partnership Challenges
  • Consortium approach
  • Understand values / needs of stakeholders
  • Market / Regulatory space is changing for the better
  ... but slow and needs catalyst projects
  • Water, Gas, Energy can have natural synergies (MUSCo)
  • ....... Bundled services

  eg. Data, CarShare, within new developments
Conclusion

# Lessons from history

# New drivers

# New business models