



The Future of Sustainability for our Communities: Improvements in Asset Management

IPWEA

Sustainability in Public Works Conference

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Stuart White
Director

Institute for
Sustainable Futures
isf.uts.edu.au



Institute for Sustainable Futures, UTS

CITIES & BUILDINGS

Improving the liveability of urban environments with holistic and net-positive social, infrastructure and resource solutions

CLIMATE CHANGE & ADAPTATION

Helping partners adapt to the challenges of a changing climate

FOOD SYSTEMS

Transforming food systems to ensure healthy, thriving and food secure communities and businesses

ENERGY FUTURES

Accelerating the transition to more decentralised energy systems that are clean, affordable, reliable and empower communities

LANDSCAPES & ECOSYSTEMS

Enhancing ecosystem integrity and livelihoods by incorporating perceptions, values and practices into decision-making

INTERNATIONAL DEVELOPMENT

Working in partnerships to end poverty and ensure sustainable development for all

RESOURCE FUTURES

Advancing responsible and efficient production and consumption by fostering stewardship and circular resource flows

LEARNING & CHANGE

Facilitating individual, social and organisational transformation, learning and change

TRANSPORT

Providing solutions for quality transport services that maximise productivity at least cost and lowest impact

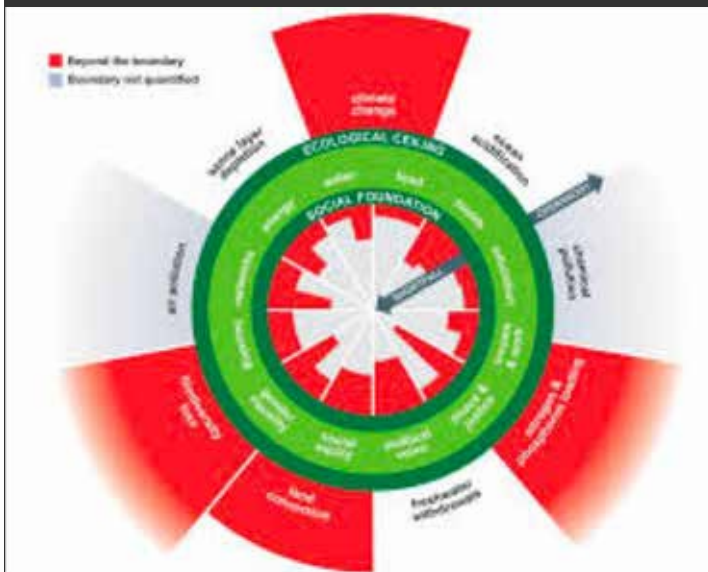
WATER FUTURES

Developing restorative, sustainable and resilient water management solutions



Creating change towards sustainable futures

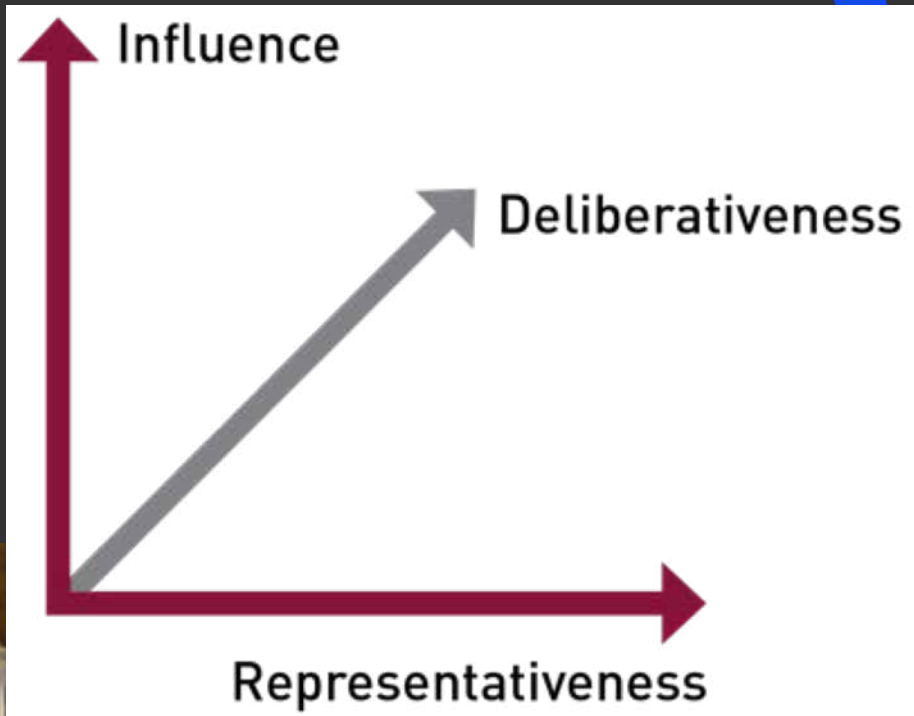
1. Goals and targets



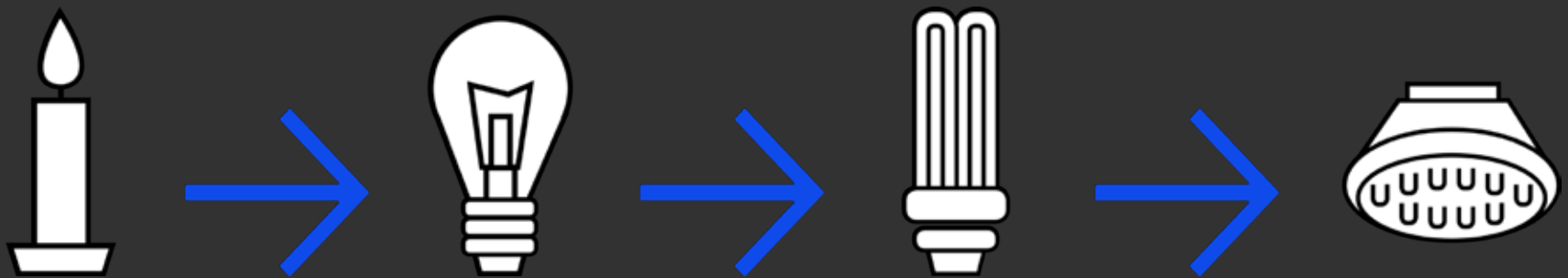
2. Visioning future cities, towns and regions



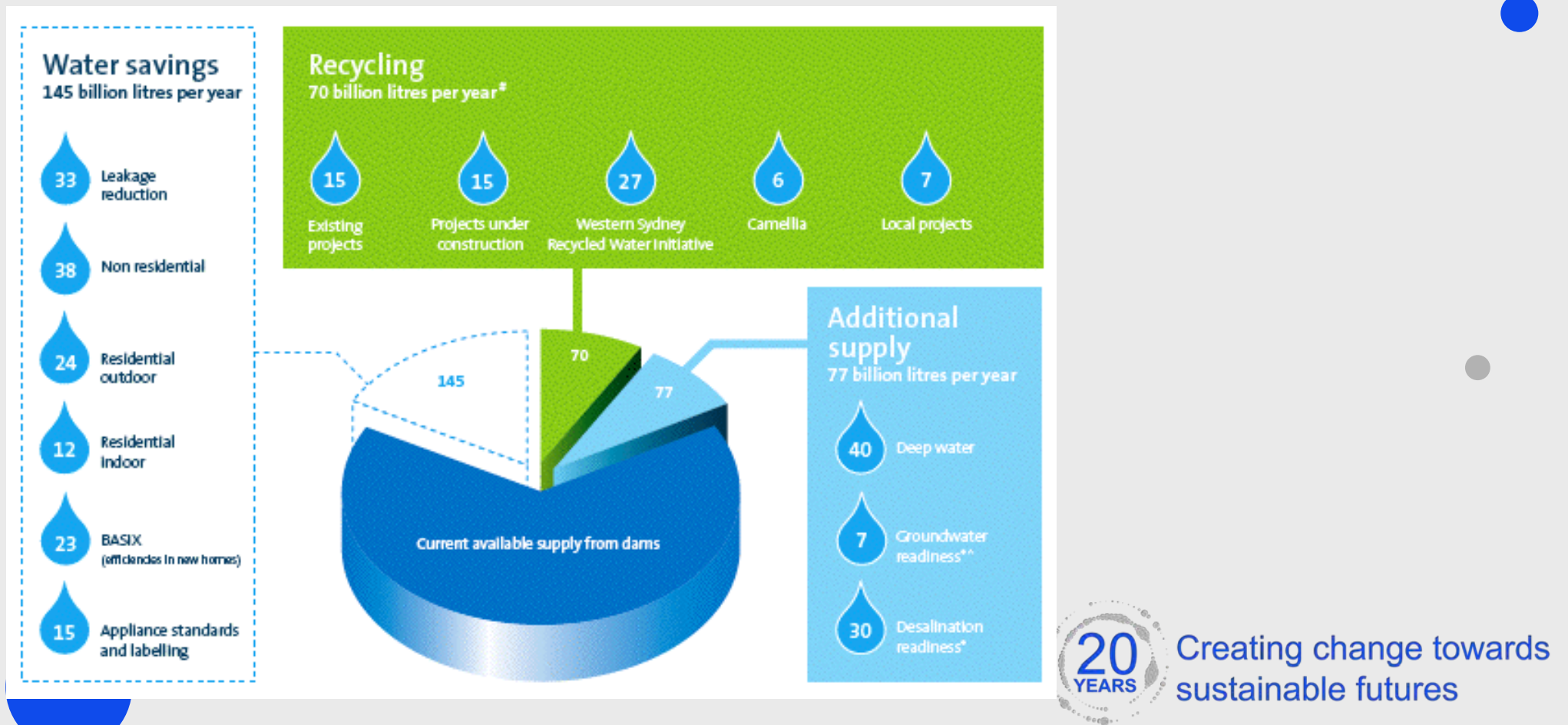
Deliberative democracy



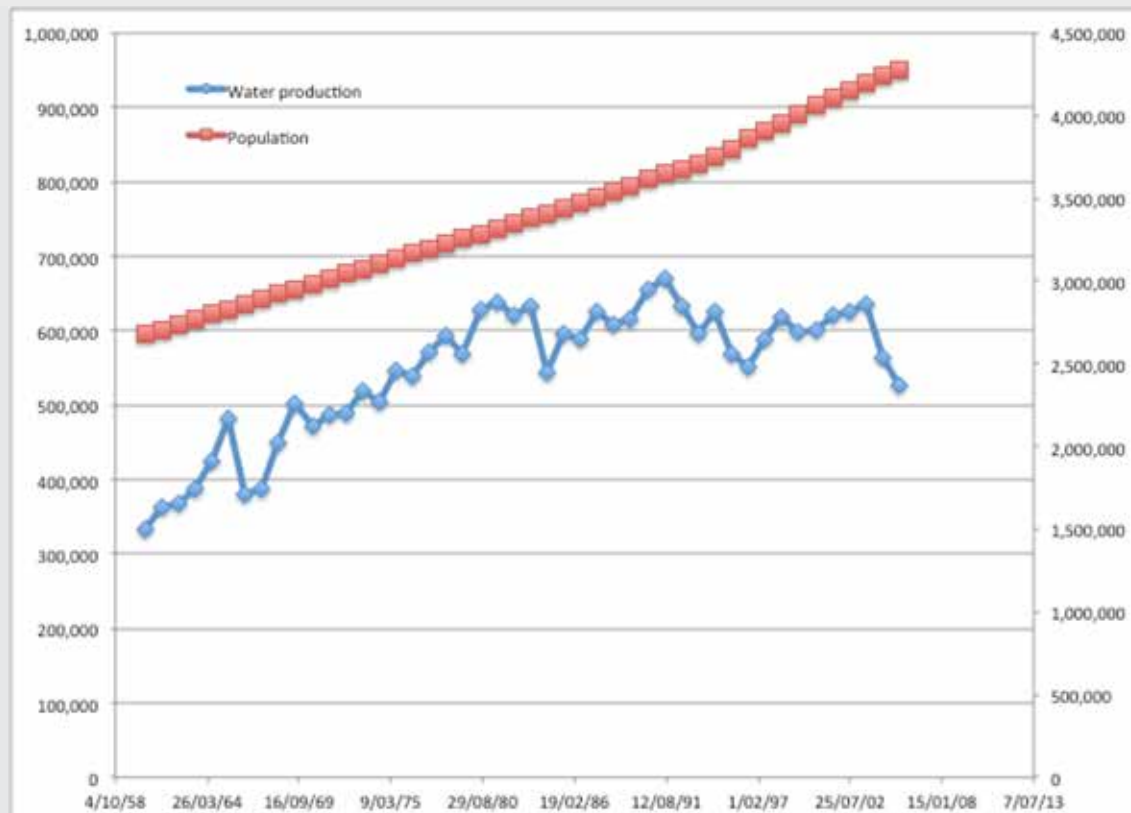
3. The demand side



Relative contribution to supply and demand

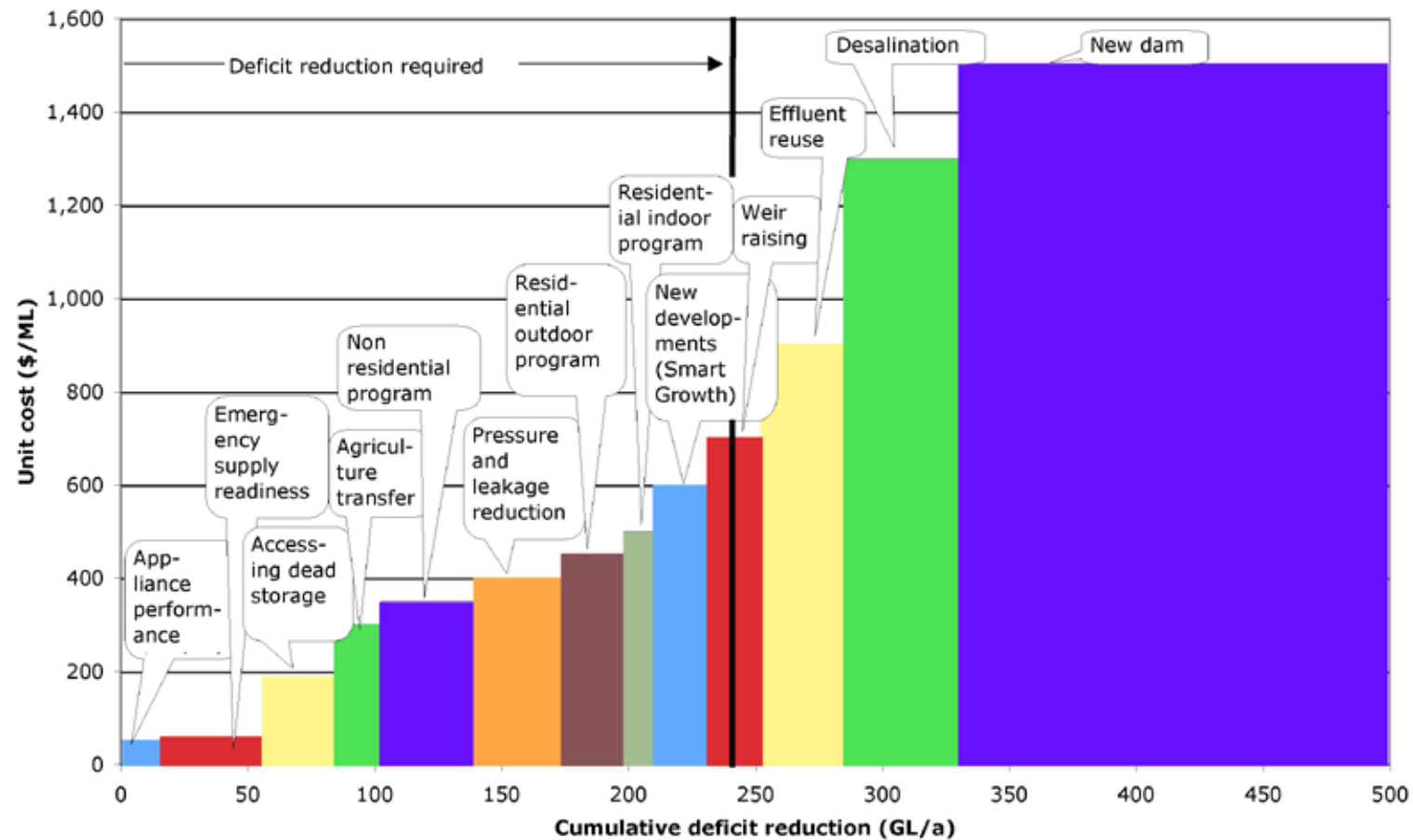


Sydney water demand

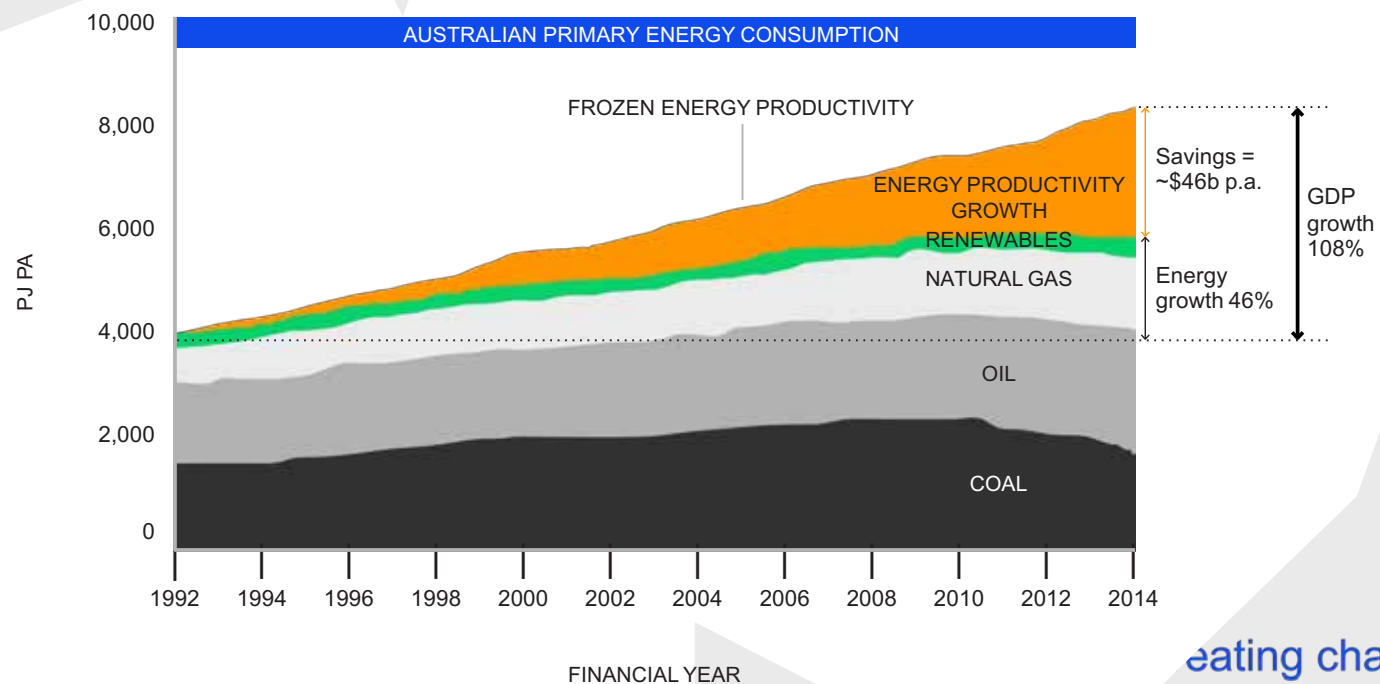


sustainable futures

Typical supply curve for urban water



Energy Productivity: The Fifth Fuel

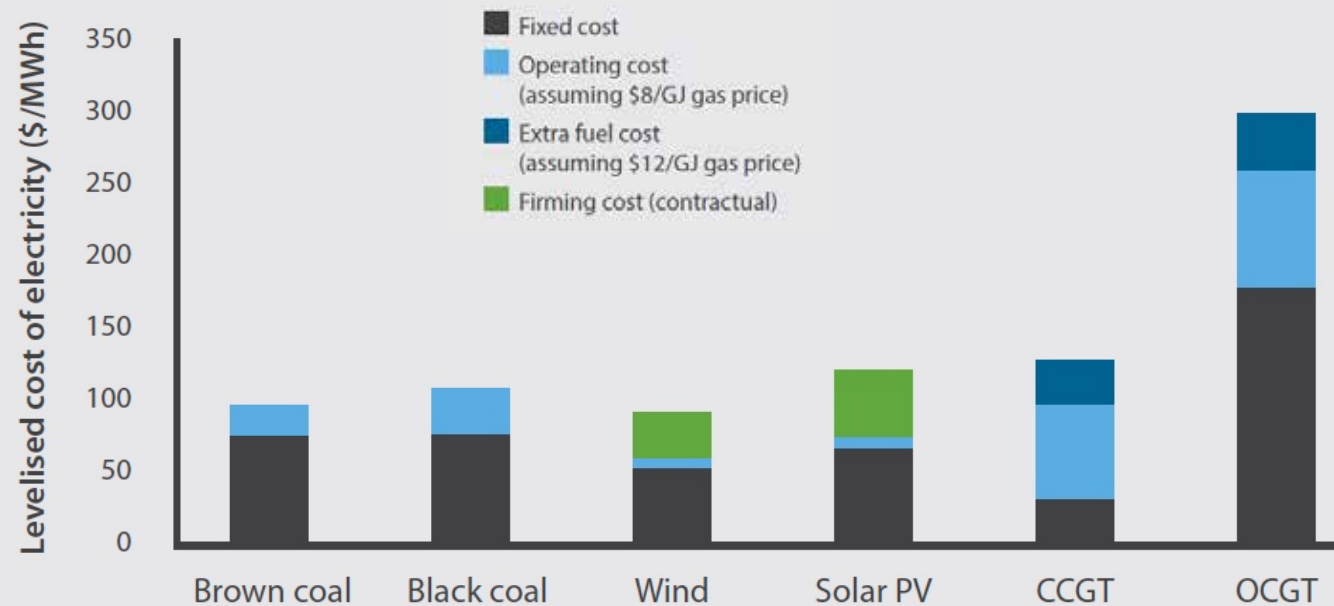


SOURCE: Chris Dunstan, Institute for Sustainable Futures 2016

Leading change towards
sustainable futures

Innovation in
Energy

The lowest cost option



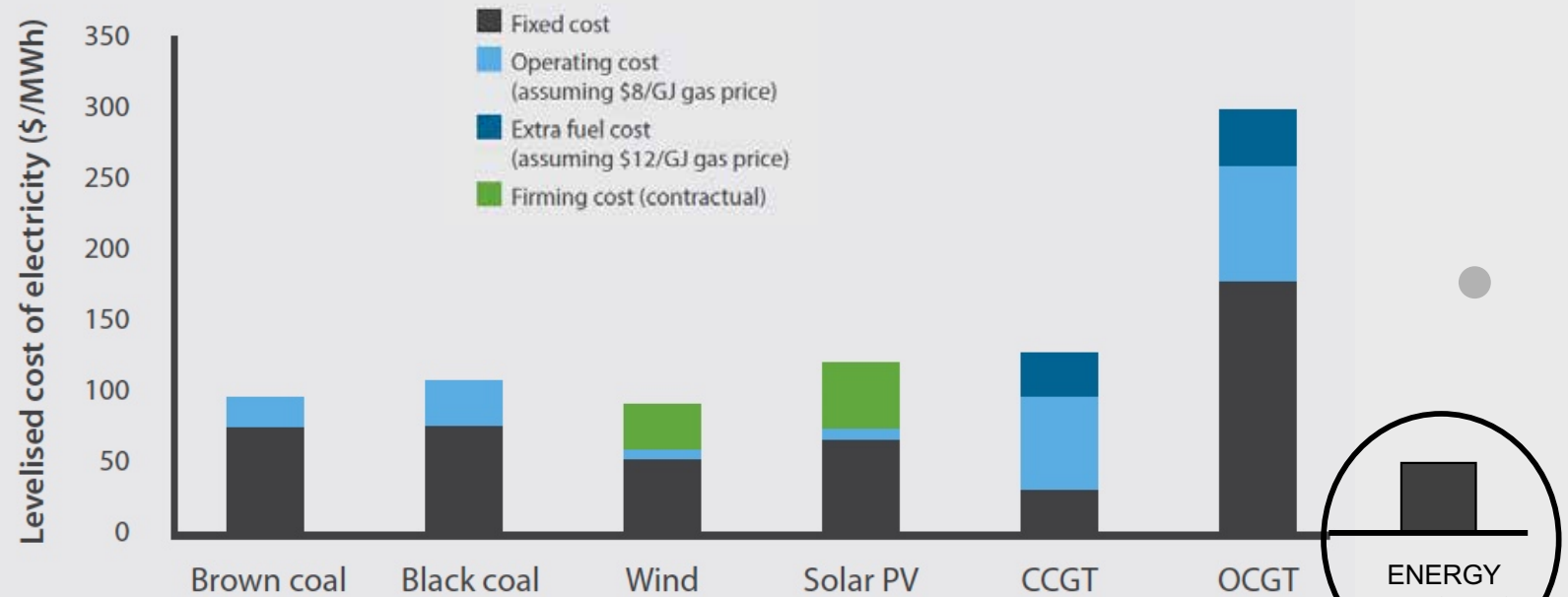
SOURCE: Finkel Review 2016 Figure 3.11



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sustainable futures

Innovation in
Energy

The lowest cost option



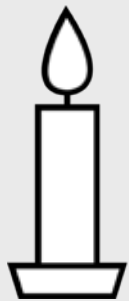
SOURCE: Finkel Review 2016 Figure 3.11 and US Energy Information Administration



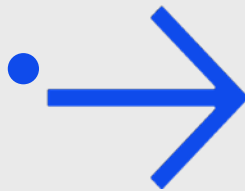
Energy change towards sustainable futures

Innovation in Energy

Lighting revolution (lumens/W)



0.3



10



70



100-200

SOURCE: CSIRO Low Emission Technology Roadmap 2016



Creating change towards sustainable futures

THE DECENTRALISED ENERGY REVOLUTION HAS BEGUN

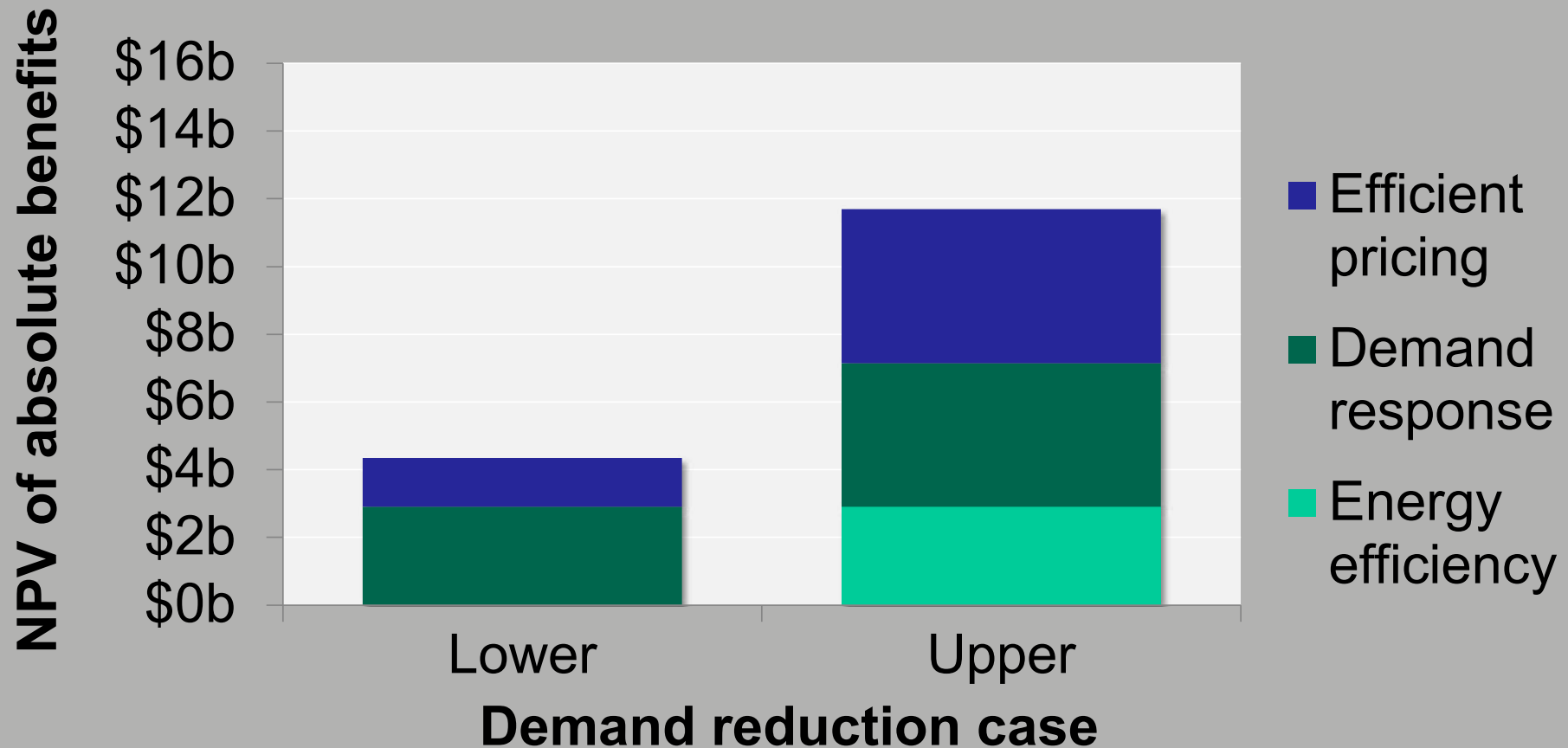


ge towards
tures

Consumer interests:

DM is central to affordable energy (bills and price)

Total benefit of demand reduction in the NEM (2013/14 to 2022/23)



Source: AEMC **Power of Choice** Review Final Report, 2012



Australian Government
Australian Renewable Energy Agency

DATA 81



Australian Renewable Energy
Mapping Infrastructure

version: 2018-01-15

Data Catalogue

Legends

Search

Electricity Infrastructure

Generation

Transmission

Network Opportunities - ISF

Available Capacity

Proposed Investment

Annual Deferral Value

Peak Day Available Capacity

Renewable Energy

Infrastructure

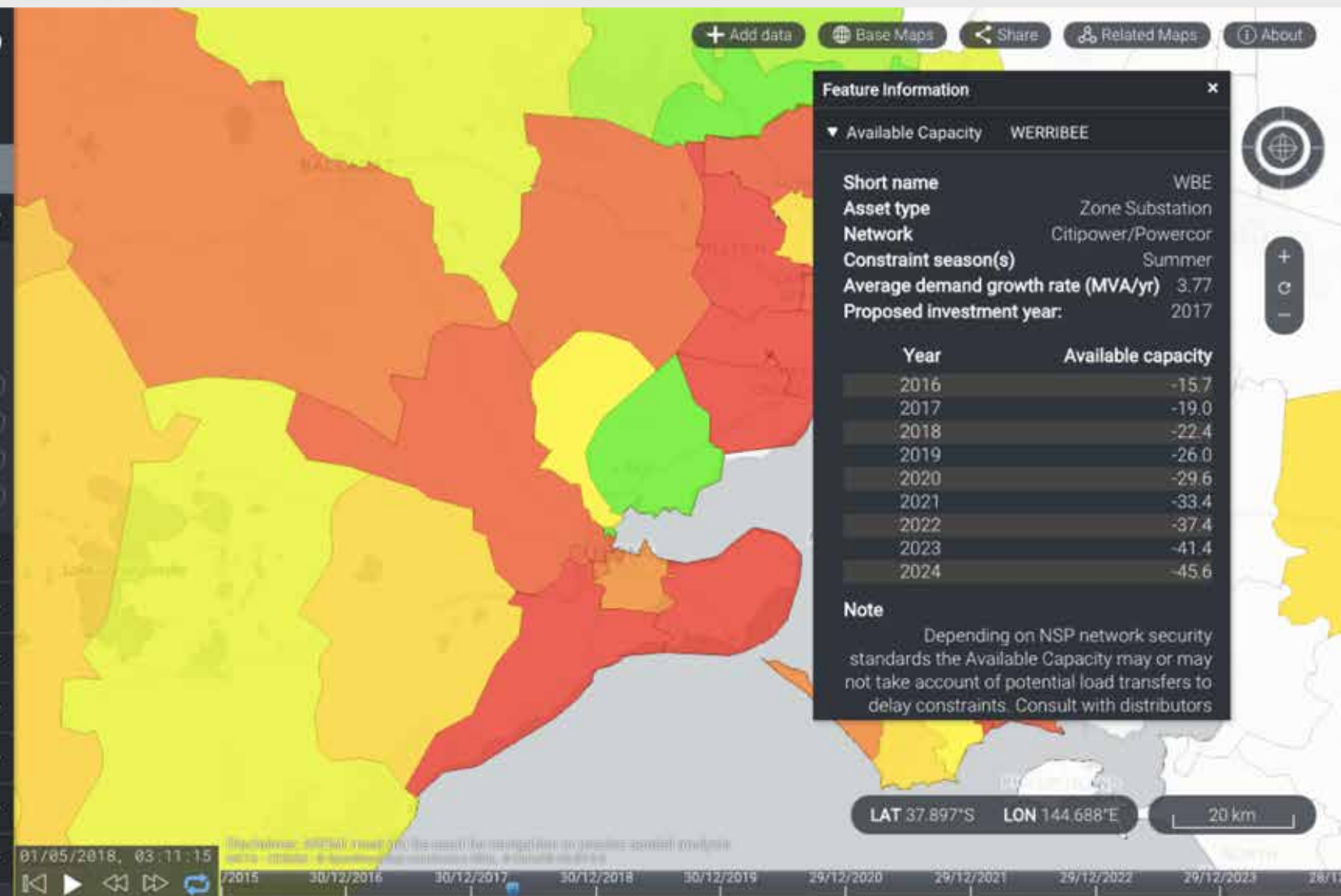
Boundaries

Topography

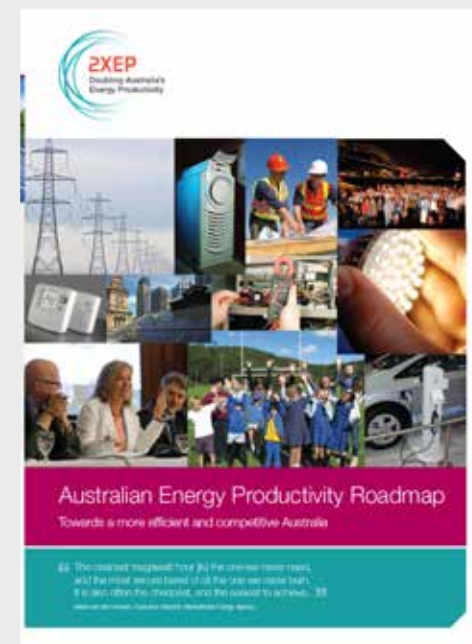
Population

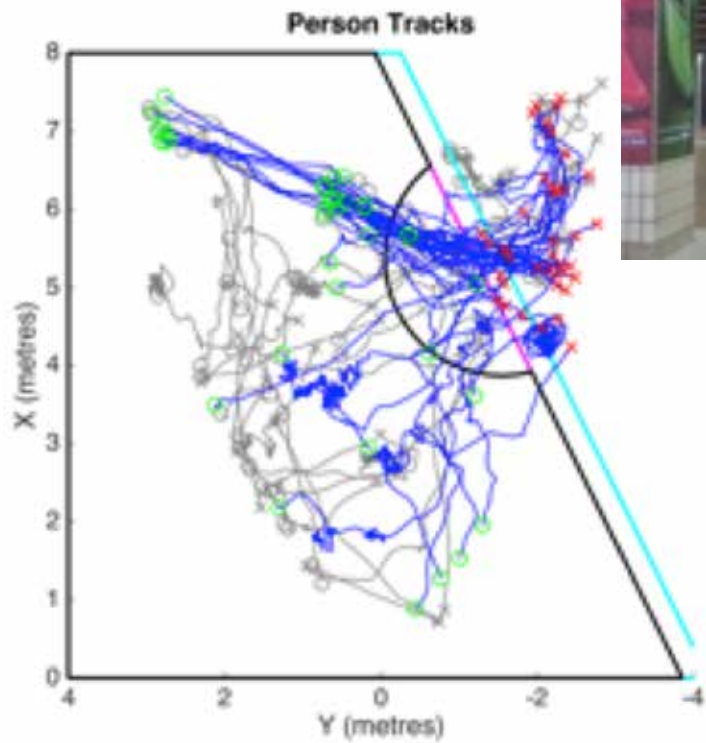
Research

Weather



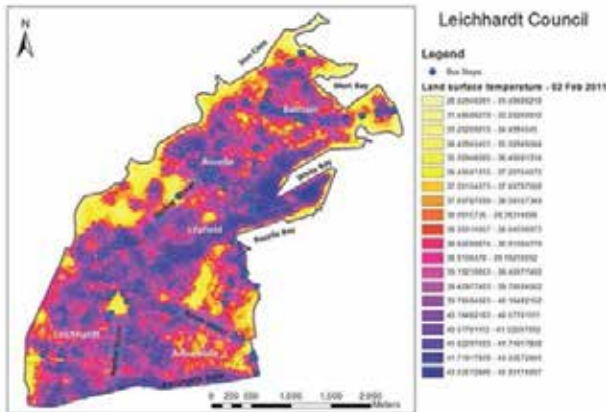
Decentralised energy and energy productivity





UTS

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sustainable futures



Penrith City Council 2015 "Cooling the City Strategy", penrithcity.nsw.gov.au

Externalities good and bad



Net financial costs and environmental benefits (Table 3.5-2)

Option	Net financial cost relative to current kerbside (\$m/a)	Net environmental benefit relative to current kerbside (\$m/a)
CDL intermediate 5¢	32	109
CDL point-of-sale 20¢	47	149



Foodsheds (<http://www.sydneyfoodfutures.net/>)



Institute of Sustainable Futures (2016) Sydney Food Futures

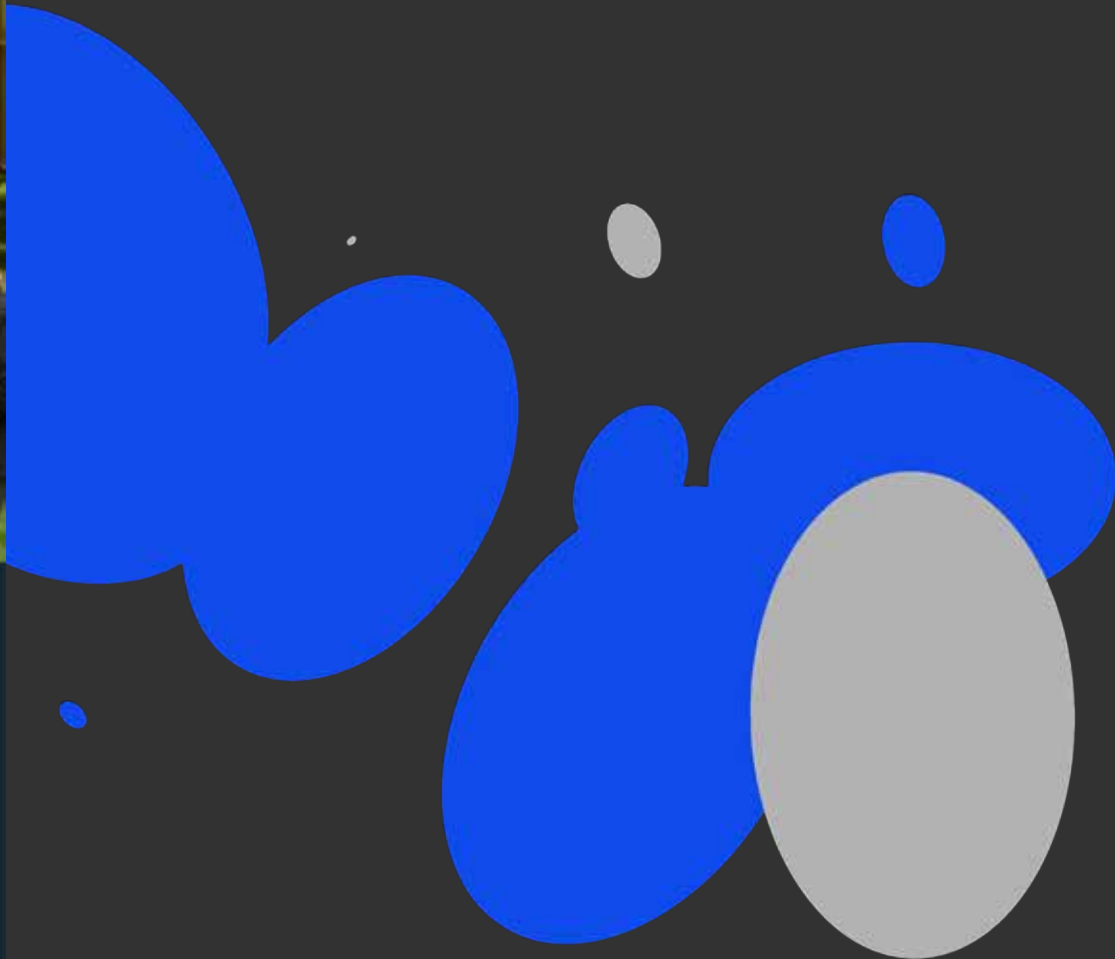


Sydney2030/Green/Global/Connected

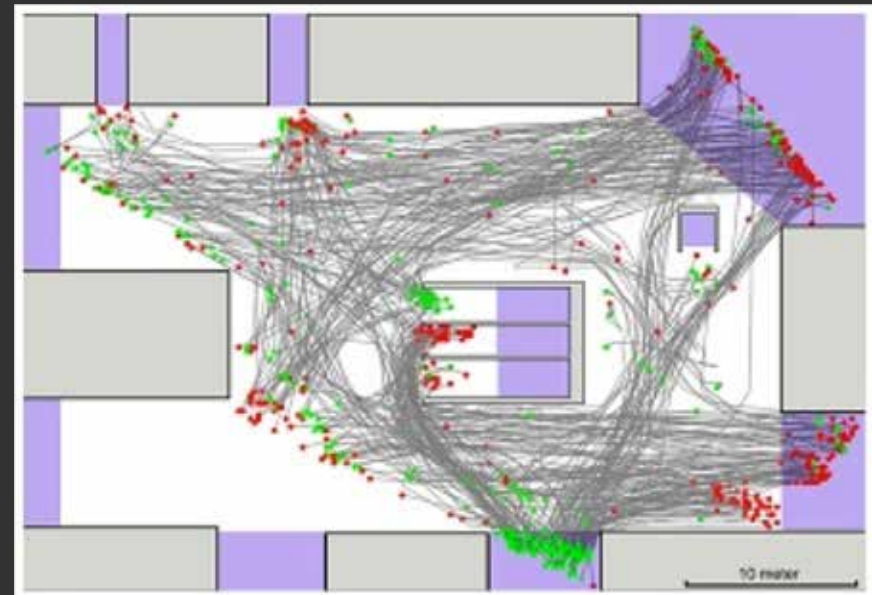


Community Wellbeing Indicators

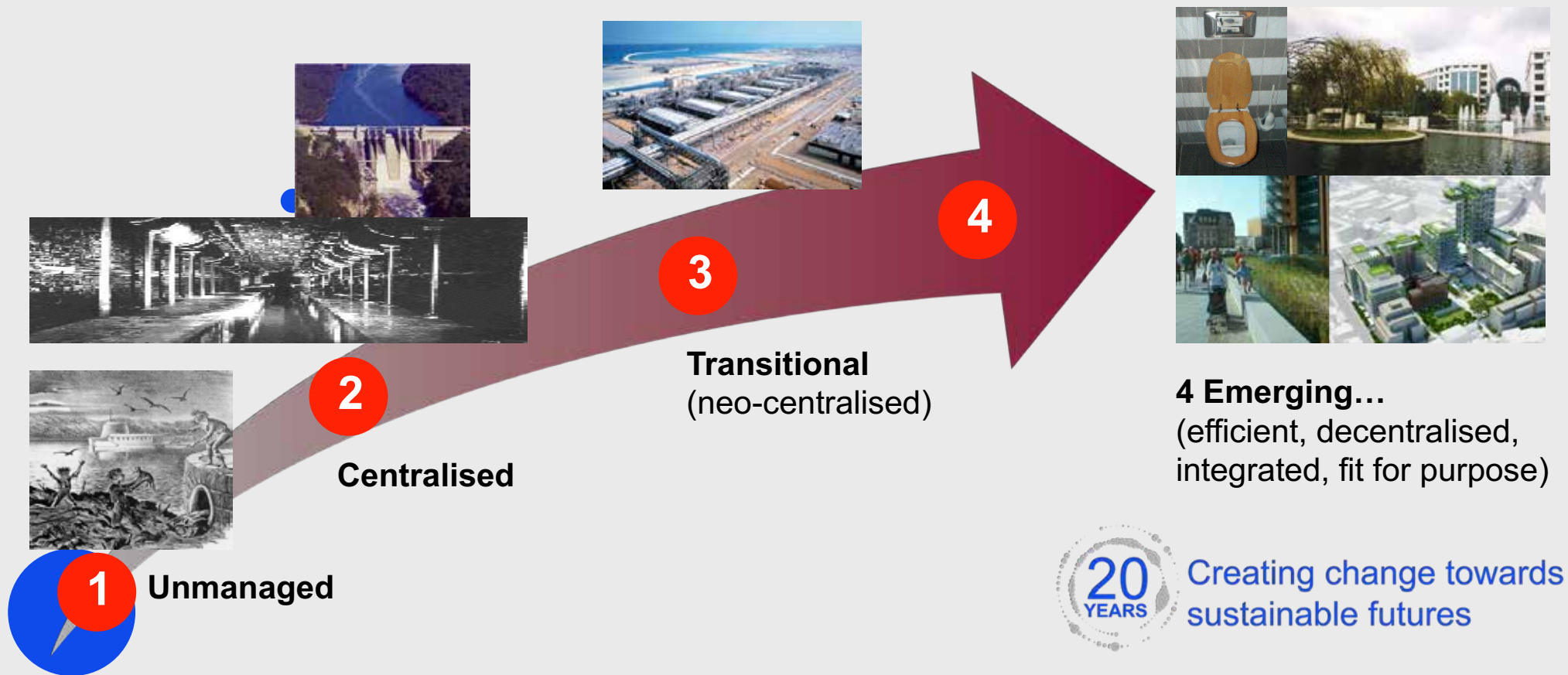
Understanding our changing communities



5. Fourth generation infrastructure



Future proofing: Four generations of water infrastructure



Fourth generation in practice

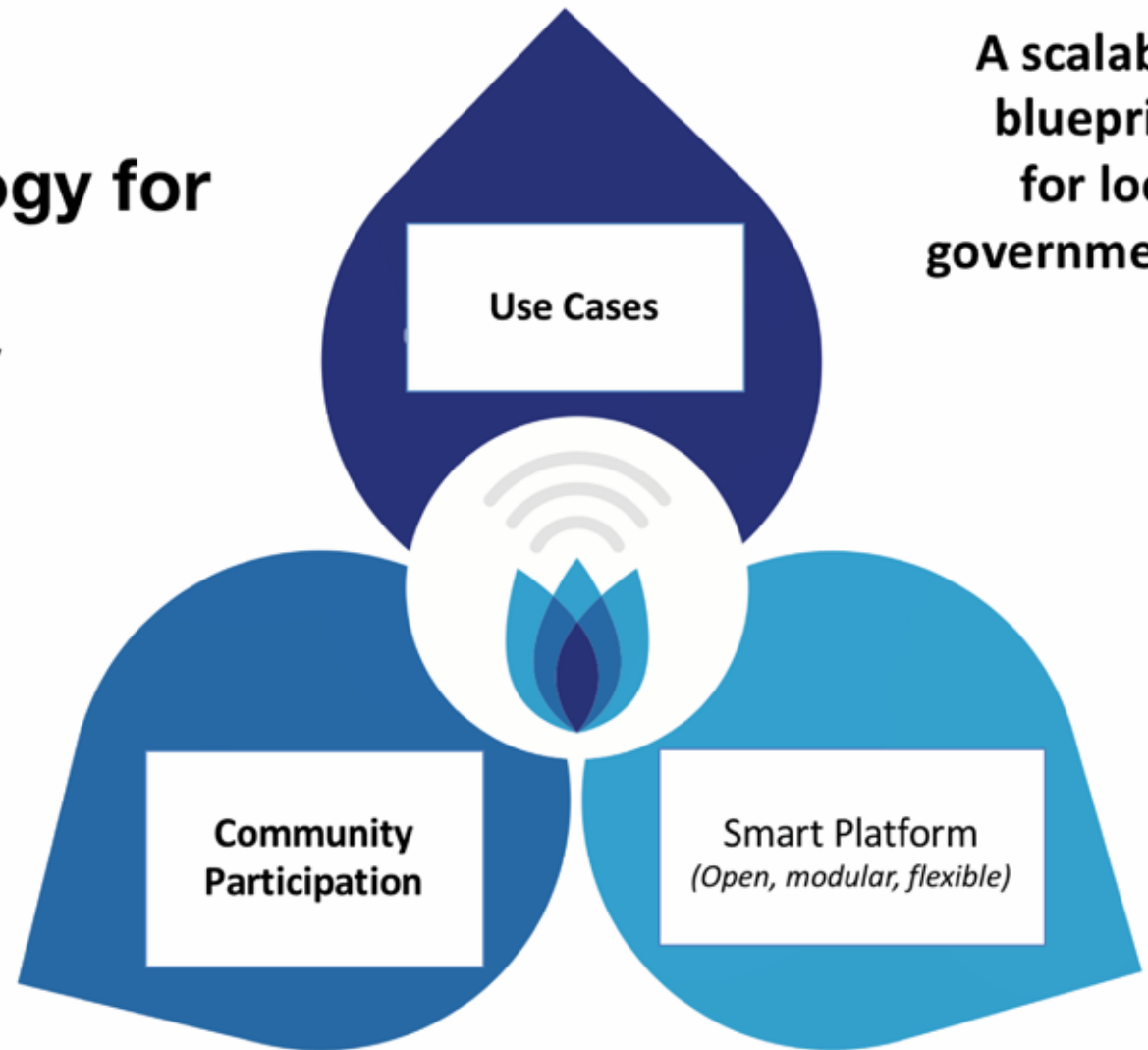


TULIP

Technology for Urban Livability Project

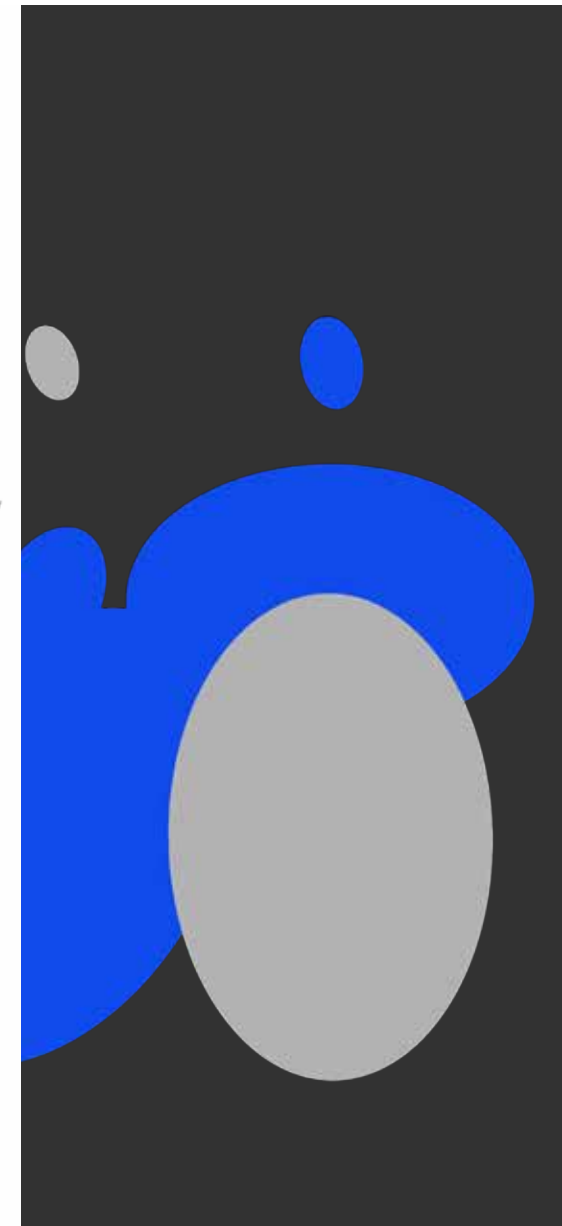
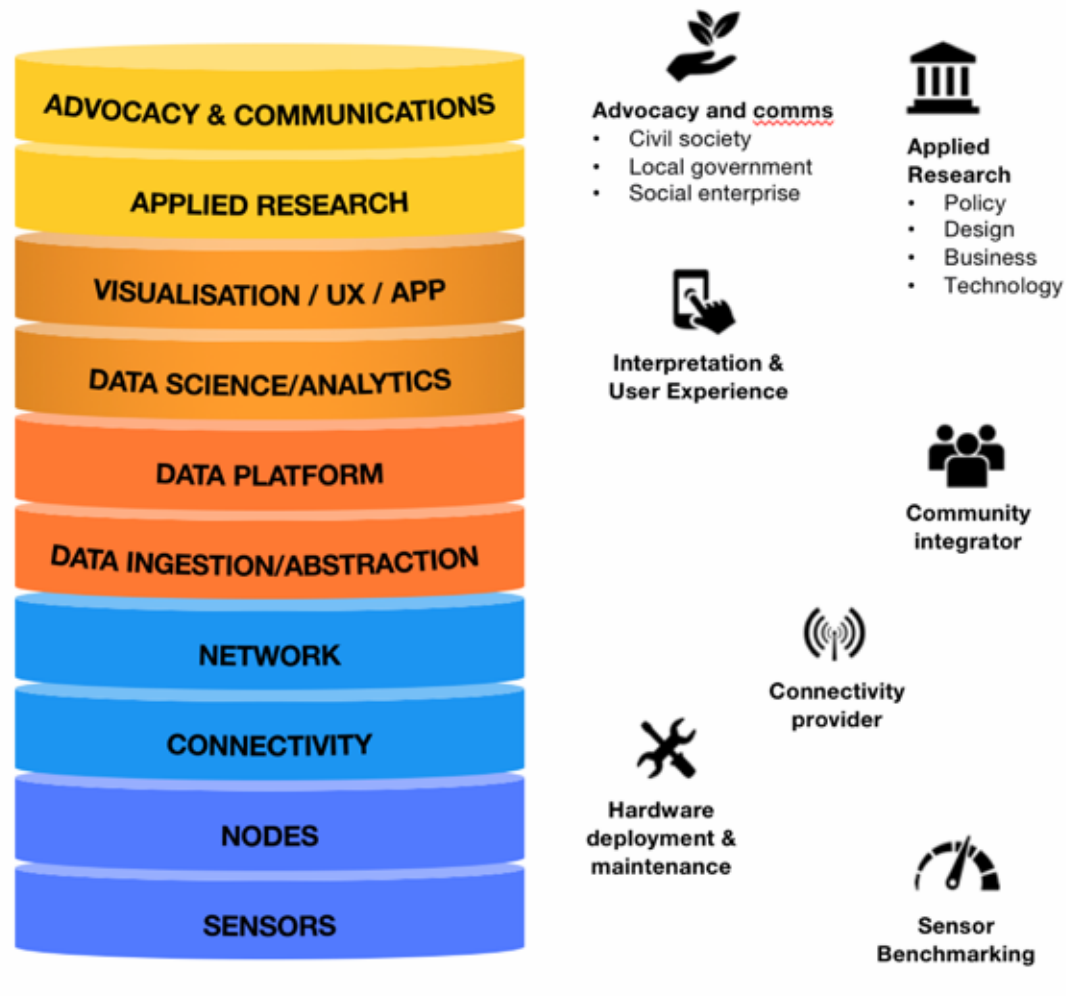


A scalable
blueprint
for local
government



Open Modular Platform

Building an ecosystem of service providers around an operational blueprint



Thank you



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