

CLEAN ENERGY FINANCE CORPORATION

Making Cities Liveable
Presentation by Oliver Yates CEFC CEO
Kingscliff, 11 July 2014



CEFC Mission

Accelerate Australia's transformation towards a more competitive economy in a carbon constrained world, by acting as a catalyst to increase investment in emissions reduction

Making Cities Liveable

Renewable Energy and Energy Productivity –
Making cities more healthy, sustainable and
resilient in three key areas:

- 1. Building & infrastructure solutions**
- 2. Energy solutions**
- 3. Waste solutions**



CEFC in action – 12 months in business

- **Role:** Operate like a bank to catalyse profitable investment in clean energy
- **Mission:** Accelerate Australia's transformation towards a more competitive economy in a carbon constrained world
- **\$10 billion fund - \$2 billion per annum - 2013 to 2017**
- After 1 year, invested > \$800 mill in a range of projects to deliver:
 - Profitable results: Lower energy costs and improved competitiveness for businesses, manufacturers, councils and community clubs
 - 500MW of clean electricity generation capacity supported
 - >4 million tonnes CO₂e p.a. emissions reductions
 - Unlocking lowest cost emissions reduction - net return or benefit to the taxpayer) of \$2.40 per tonne of abatement.

Where the CEFC is financing

NOT-FOR-PROFIT

- Lighting
- Heating, Ventilation, Air- Conditioning upgrade (HVAC)
- Solar PV

LOCAL COUNCILS

- Co-generation
- Street lighting
- Building lighting & sensors
- Municipal waste-to-energy
- Insulation
- HVAC
- Solar PV

AGRIBUSINESS

- Bioenergy
- Refrigeration
- Solar-thermal greenhouse
- Solar PV

MINING

- Waste Coal-Mine Gas-to-energy

RETAIL/SMALL BUSINESS

- Lighting
- HVAC
- Chillers
- Refrigeration

MANUFACTURING

- Refrigeration, freezers & ovens
- Lighting & sensors
- Air compressors & pumps
- Waste heat & steam capture & re-use
- New or upgraded high-efficiency production equipment
- Solar PV
- Bioenergy

TRANSPORT

- Air-conditioning
- Truck Retardation
- Refrigeration
- Terminal upgrades
- Aircraft efficiency

COMMERCIAL PROPERTY

- Lighting & sensors
- Commercial solar
- Chillers
- Tri-generation
- Elevator upgrades
- Variable speed drives
- Smart controls
- HVAC

1. INFRASTRUCTURE SOLUTIONS

- Business & council building upgrades
- Efficient lighting & sensors
- New heating, ventilation & AC
- Chillers
- Insulation
- Smart controls

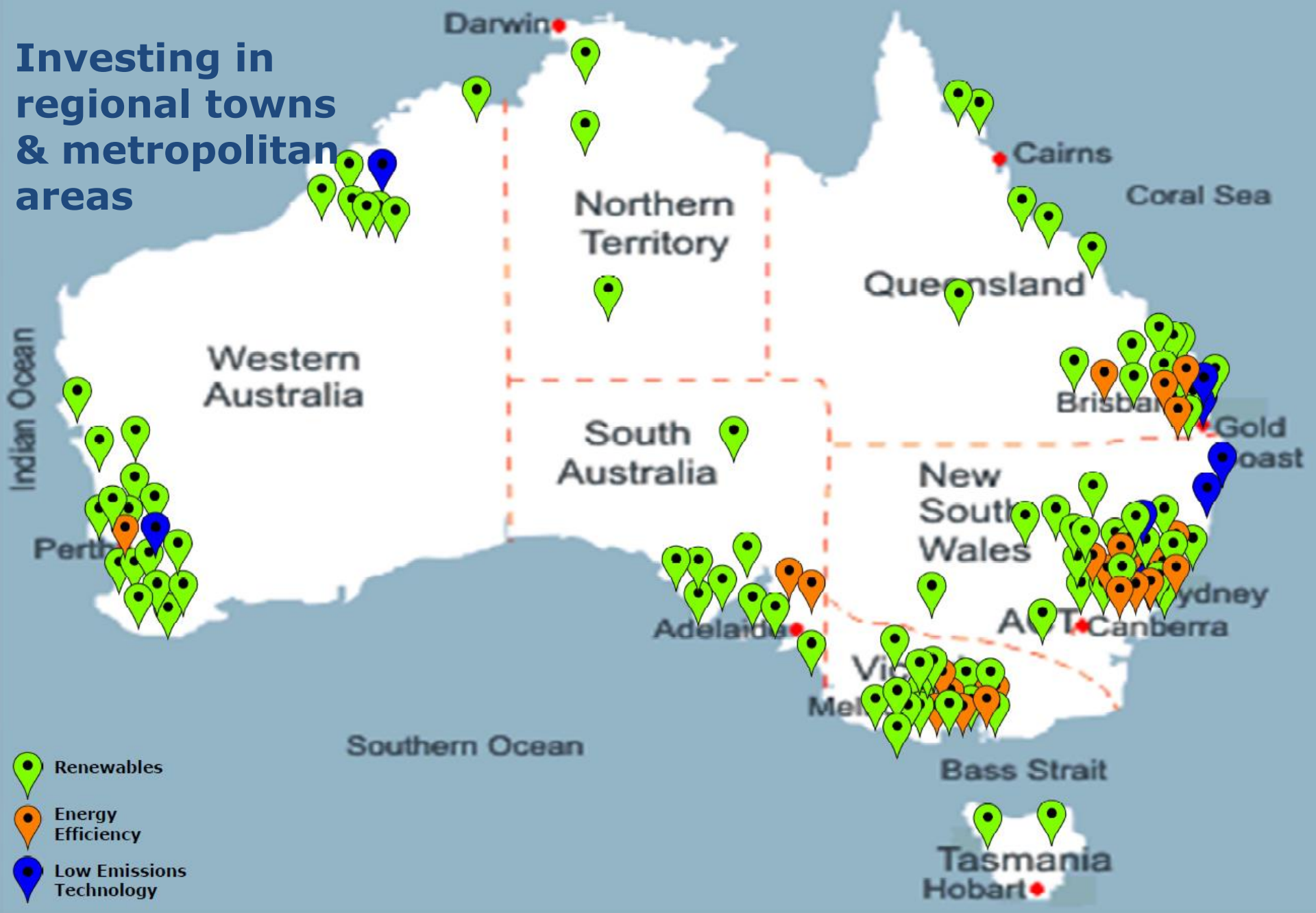
2. ENERGY SOLUTIONS

- Solar Farms
- Distributed Solar PV for households, businesses & councils
- Wave energy & solar energy to power desalination
- Cogeneration/trigeneration
- High-efficiency gas

3. WASTE SOLUTIONS

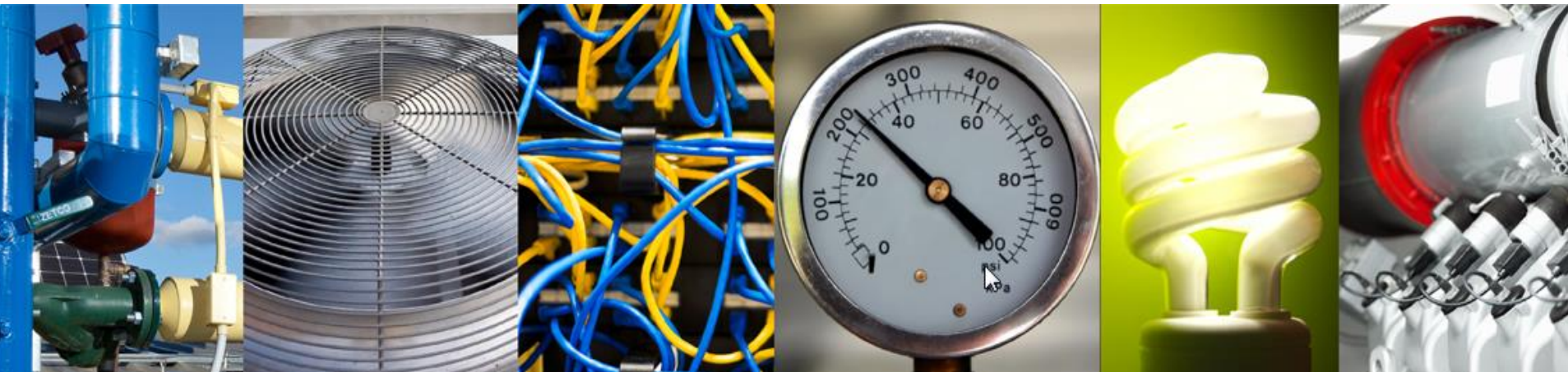
- Municipal waste-to-energy
- Biogas in agribusiness
- Plant waste-to-energy
- Industrial & commercial waste-to-energy

Investing in regional towns & metropolitan areas



Financing to help businesses, councils and not-for profits

- Finance for energy efficiency upgrades of buildings, equipment or on-site-generation systems.
- Loans can be tailored to suit business and life of project
- Offer specialised private sector finance experience and expertise in energy efficiency and renewable energy.
- Types of finance include: project finance, corporate finance and aggregation finance programs.



Building & infrastructure solutions

- Air-conditioning (HVAC), chillers & heating
- Smart controls, sensors & lighting, LED streetlights
- Cogeneration & trigeneration
- Refrigeration, freezers & appliances
- Variable speed drives
- Air-compressors & pumps
- Insulation, lift upgrades



Local Council building & infrastructure solutions

Councils save around 60% on lighting costs

Baw Baw Shire Council (Vic)

- Saving \$160,000 per year on electricity bills due to street lighting upgrade and cut emissions by almost 20%

Tumut Shire Council (NSW)

- Reducing its administration building's electricity costs by 66% by installing solar, insulation and energy efficient lights and replacing old air-conditioning.



Community infrastructure solutions

- Oasis Regional Aquatic Centre in Wagga Wagga cut energy use by half after installing co-generation
- Central Coast Youth Club near Gosford cut energy use by 60% after upgrading lighting at its basketball stadium
- Gold Coast's Burleigh Bears Rugby League Club installed new lighting and cut lighting bills by 65%



Commercial building solutions

- Retrofits see energy costs for base buildings typically reduced by up to 45%.
- Environmental Upgrade Agreements (EUA) enable ageing commercial property to be retrofitted (e.g. lighting, HVAC, elevator upgrades).
- Local councils can facilitate energy efficiency improvements within their local government area; provide added value for local businesses and help meet council environmental targets.



Energy solutions

Tri-generation provides onsite power “Central Park”

- Central Park designed as self-sufficient mixed-use urban renewal development, with:
 - on-site 2MW central thermal tri-generation plant to provide low-carbon energy, heating and cooling; and
 - on-site water recycling plant used to water rooftop gardens and green walls.



Sustainable Energy

Tri-generation EUA provides onsite power “Central Park”

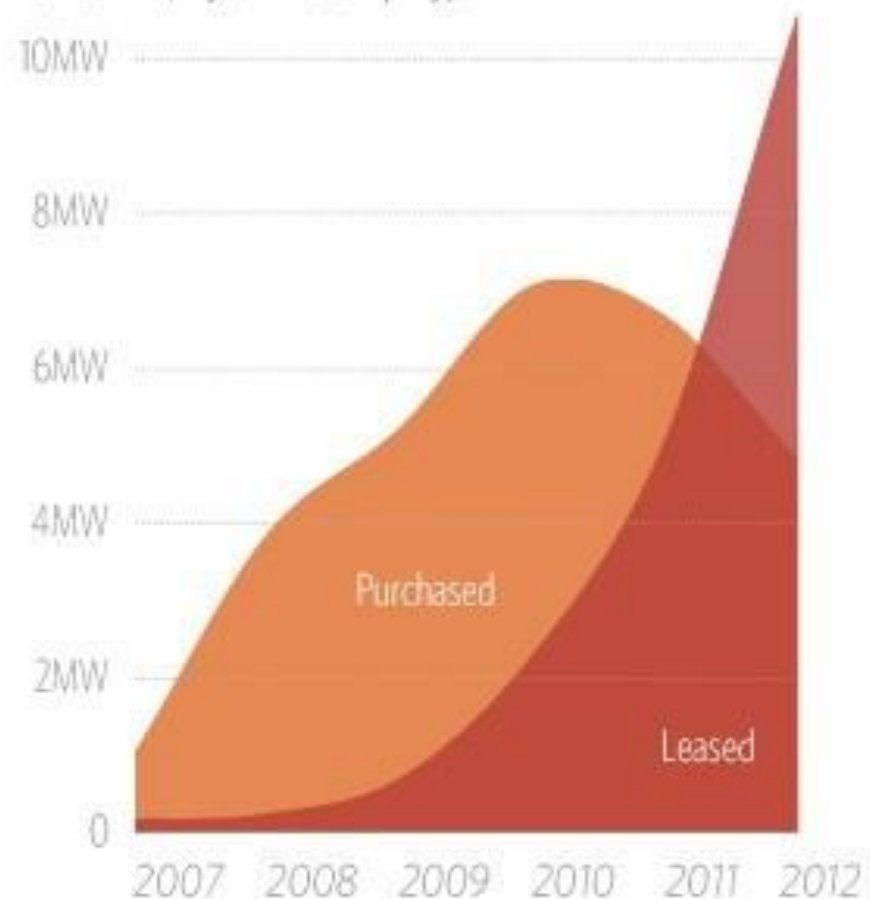
- Central Park Precinct includes 14 new buildings (3,000 apartments, 900 student accommodation units, 50,000 m² commercial office space and 25,000 m² of retail space)
- Will save 190,000 tonnes of emissions
- Precinct can export excess water and electricity to nearby neighbourhoods – representing the potential to develop off-grid, sustainable mixed-used precinct



Distributed Solar – learning from the Californian model

- Over 75% of new solar-homeowners in California are leasing/buying solar under power purchase agreements.
- Owners will purchase power rather than panels when incentives are right to protect against future price rises

Annual Deployment of Residential-Scale Solar PV in California, by Ownership Type



Energy Solutions

Solar for transportation?

- Electric vehicles with rechargeable batteries
- Or fuel-cell cars which produce electricity from hydrogen through a chemical reaction that emits no greenhouse gases



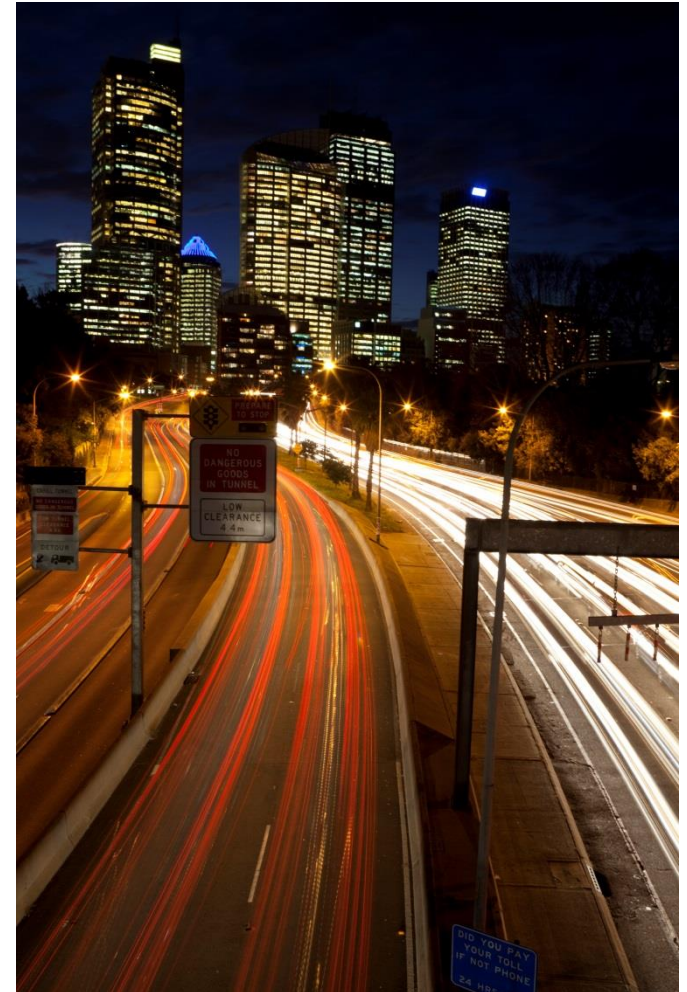
Waste to energy

- Nearly half of all waste is disposed to landfill in Australia, compared to countries like Germany, Sweden, Belgium and Denmark, which dispose <20% of municipal waste in landfill.
- CEFC finance assisting world-leading developments in this space
- New Energy Corporation: Waste-to-energy plant in the Pilbara utilising Australian gasification technology will turn municipal, industrial and commercial waste into energy, with a capacity of 16.6MW, saving 135,000 tonnes of CO₂-e p.a.



Summary

- Within your cities, assets and opportunities exist for you to achieve the 'trifecta':
 - Save money
 - Improve your buildings, waste and energy infrastructure
 - Reduce emissions
- CEFC is available to work with you and provide finance to achieve these projects.



Our website has more information
cleanenergyfinancecorp.com.au

Follow us on Twitter [@CEFCAus](https://twitter.com/CEFCAus)

