EUA Finance for the Regions:

Addendum - The ongoing financial and environmental benefits of retrofitting Victoria's building stock

September 2014

An joint initiative of the Victorian Greenhouse Alliances

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Addendum Summary

- This report follows from a study undertaken in December 2013, *EUAs for the Regions: The Economic benefits of retrofitting Victoria's building stock through Environmental Upgrade Agreements*, which estimated the direct economic benefits that may flow from facilitating access to EUAs: ~**$4.5B of investment and +18,000 jobs across Victoria**.
- This Addendum report takes this analysis one step further to estimate the ongoing financial and environmental benefits of undertaking energy efficiency retrofits in non-residential buildings: ~**$0.4B and 1.7M tonnes of carbon emissions annually.**
- This report illustrates that Local Government has a role to play in facilitating access to retrofit finance that can overcome structural and market barriers to building upgrades.
- The analysis demonstrates that building upgrades can enable Victoria's regions to capture significant financial savings, deliver substantial emission reductions and enhance the State's economic productivity.

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Objectives & Approach

- This study aims to quantify the annual financial and carbon savings from an increased uptake of building retrofits in Victoria and demonstrate how Victorian Councils can assist businesses capture these opportunities through facilitating access to retrofit finance.
- The work presented is secondary research that draws on key reputable studies (see *Assumptions, Limitations and References* section).
- The research methodology included:
  - quantifying the floor space and number of properties within each municipality (<50m^2) using data provided by the Valuer General Victoria
  - a segmentation model of all commercial building stock
  - applying a plausible upgrade scenario (15% additional to business as usual)
  - applying existing estimates of the financial and carbon savings resulting from the decreased energy consumption associated with the upgrade scenario
  - engagement and interviews with a number of Councils across the country

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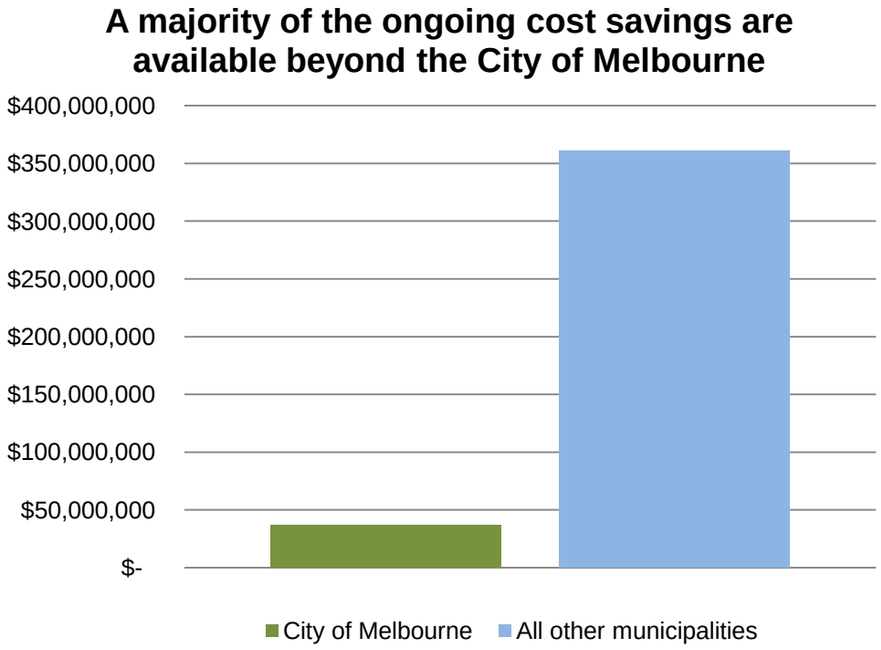
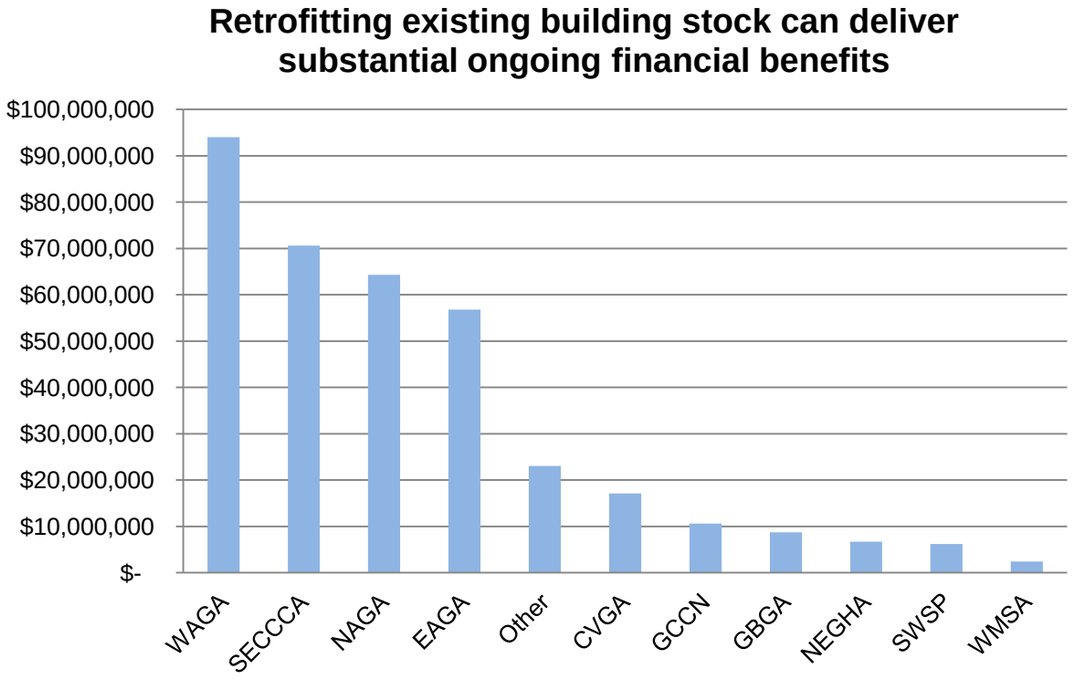
Retrofitting buildings can save Victorian businesses $0.37B annually and reduce emissions by 1.7M tonnes





Increasing the energy efficiency of the building stock provides an opportunity to reduce the risks for building owners and tenants from increasing energy costs, deliver low cost abatement within the buildings sector, stimulate investment and grow the local building retrofit industry.

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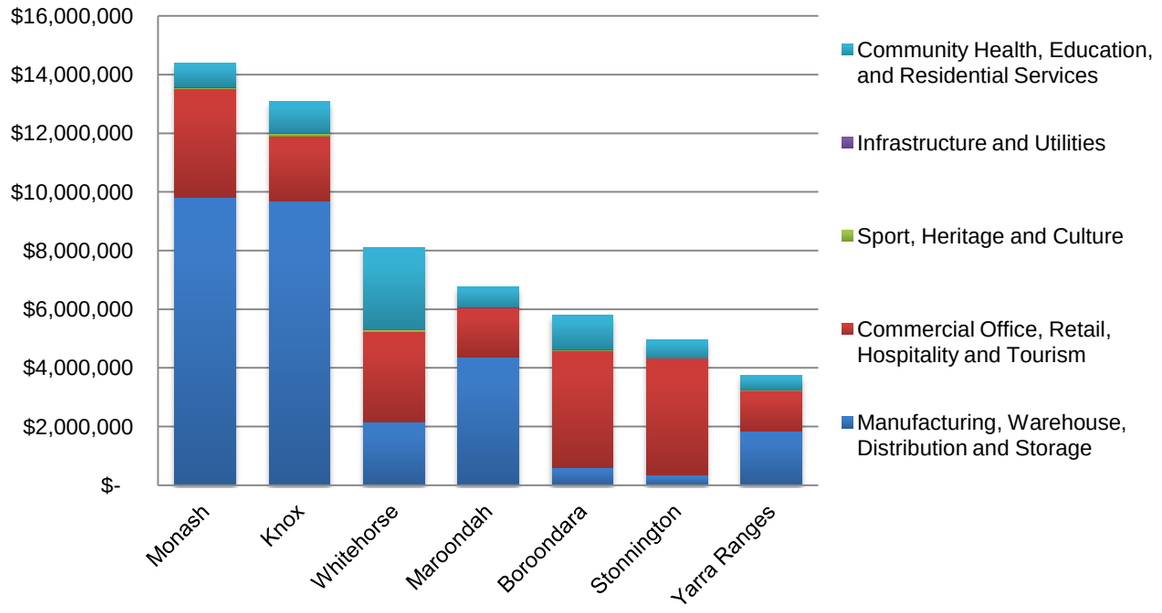
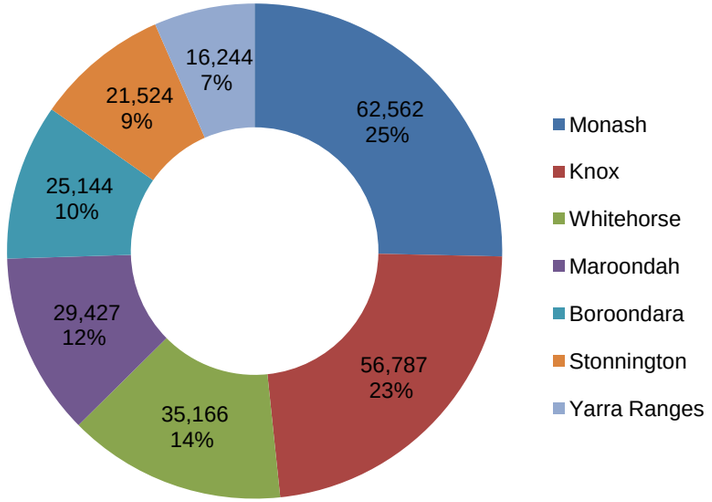
Businesses in the EAGA region can save $56M annually and reduce emissions by 0.25M tonnes

Annual financial savings by municipality and sector



Emissions reduction potential (tCO2-e)



EAGA's region covers approximately 3,000km2, extending from densely populated urban areas in the west to less populated rural areas in the east. The industrial areas in Knox, Maroondah and Monash are a major contributor to Victoria's manufacturing sector and could enjoy significant productivity outcomes through building upgrades.

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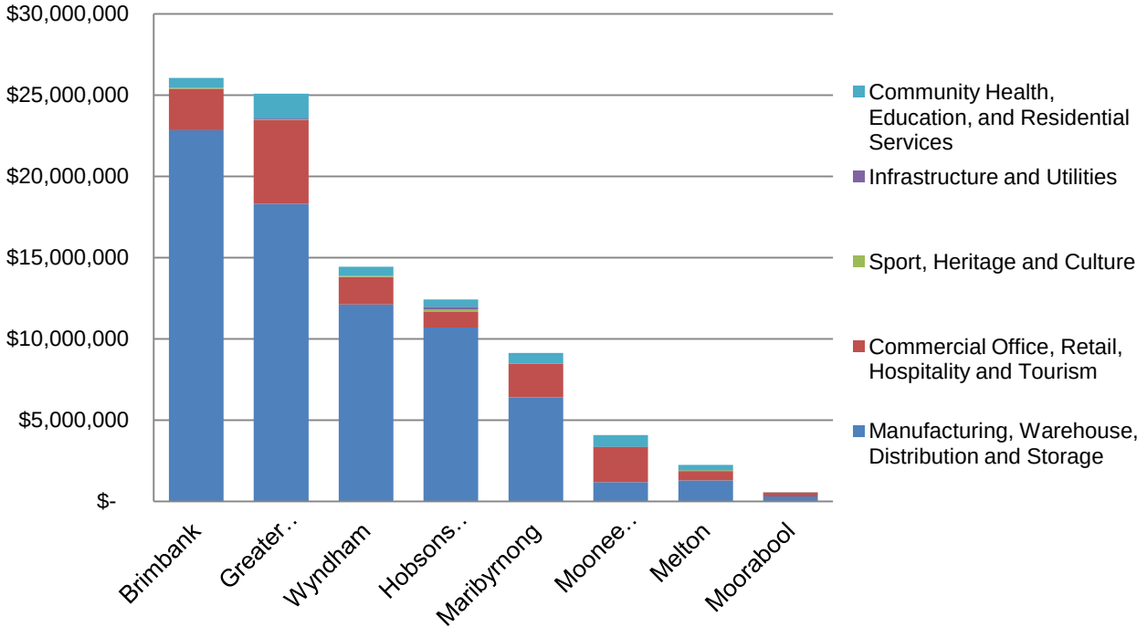
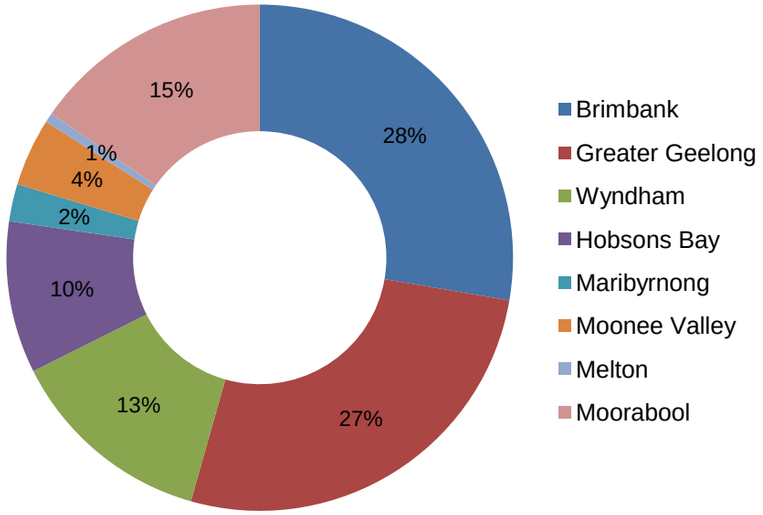
Businesses in the WAGA region can save $94M annually and reduce emissions by 0.4M tonnes

Annual financial savings by municipality and sector



Emissions reduction potential (tCO2-e)



The identified potential in municipalities west of Melbourne is consistent with the findings of WAGA's 'Big Roofs' project, a study which mapped the largest roofs across the region and identified some 14km2 of industrial roof space that could be used to harvest water and energy.

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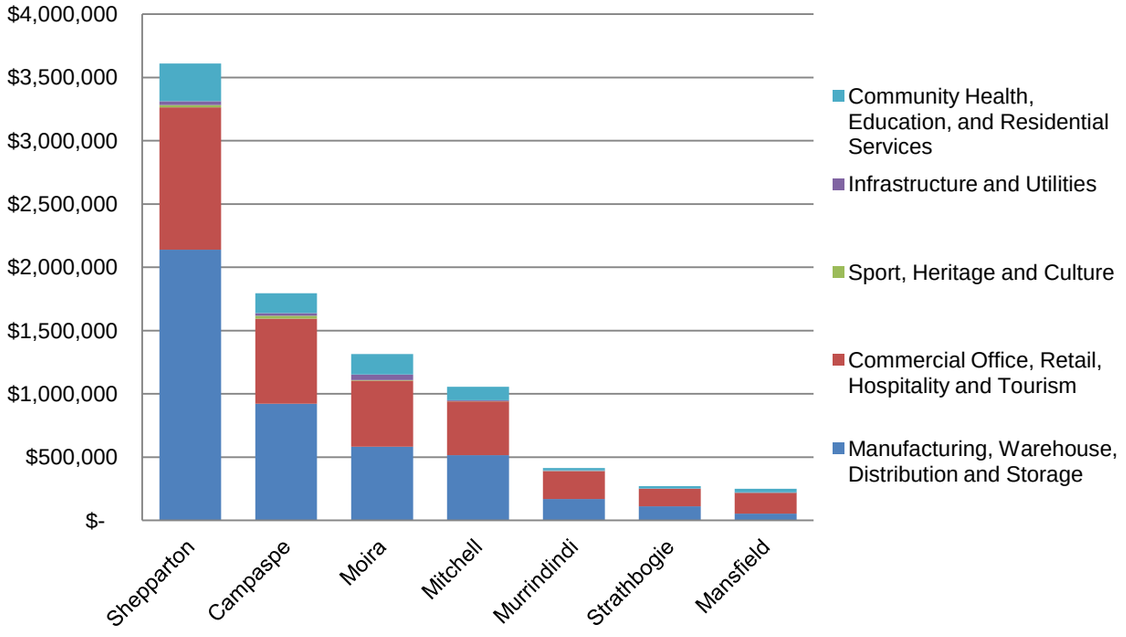
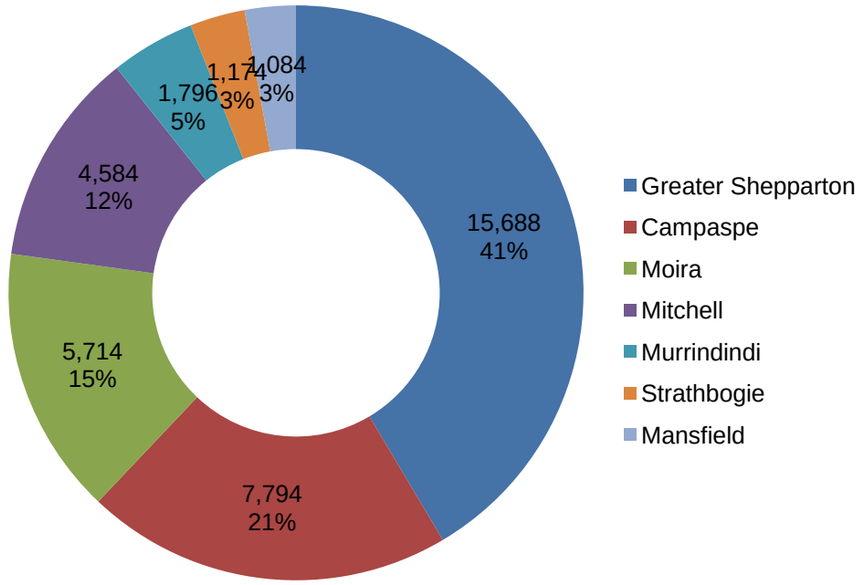
Businesses in the GBGA region can save $9M annually and reduce emissions by 38,000 tonnes

Annual financial savings by municipality and sector



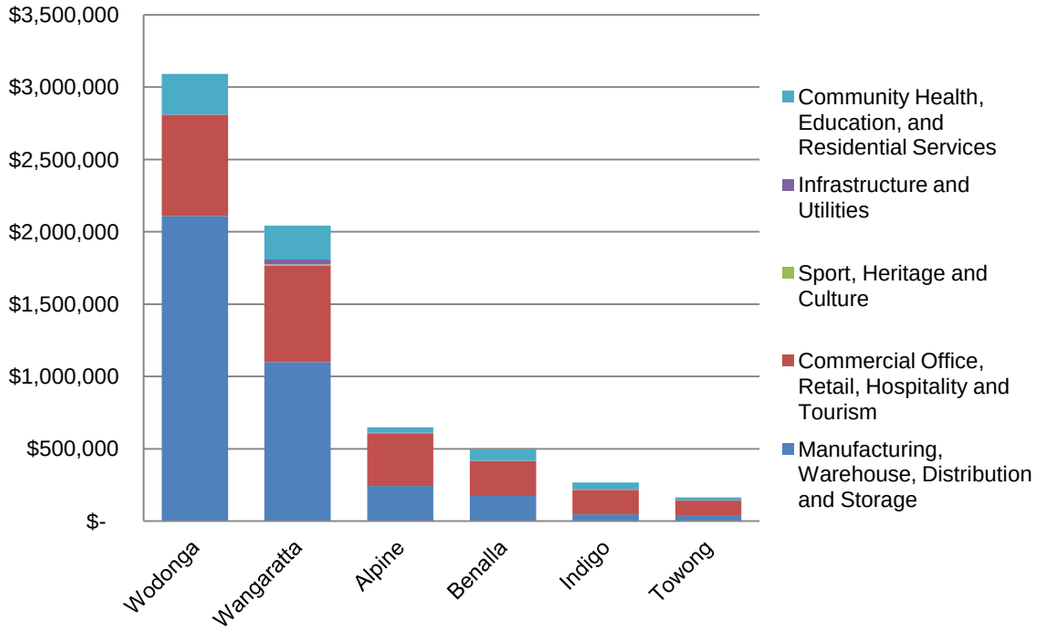
Emissions reduction potential (tonnes CO2-e)



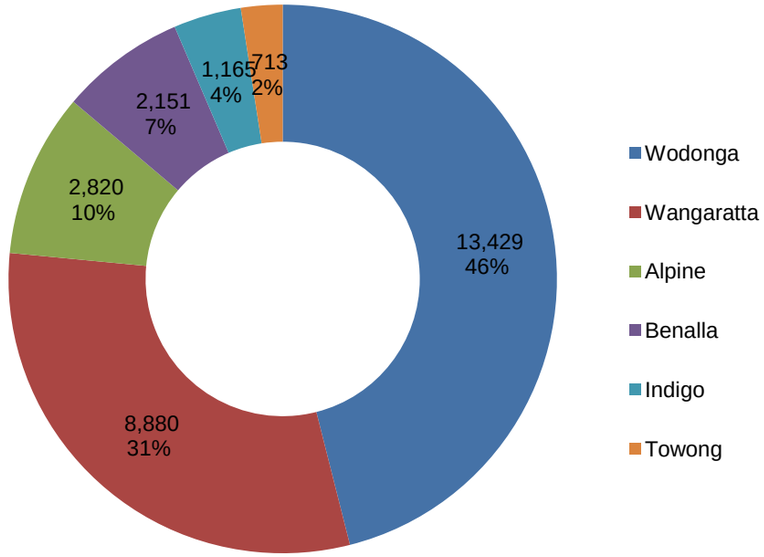
The Goulburn Broken region in northern Victoria is part of the Murray Darling Basin. It covers about 10% of the State and is home to 181,000 people. The major cities include Mooroopna, Shepparton, Numurkah, Cobram, Yarrawonga, Benalla, Euroa, Nagambie, Mansfield, Alexandra, Yea, Seymour, Broadford, Kilmore and Wallan.

Businesses in the NEGHA region can save +$6M annually and reduce emissions by 29,000 tonnes

Annual financial savings by municipality and sector



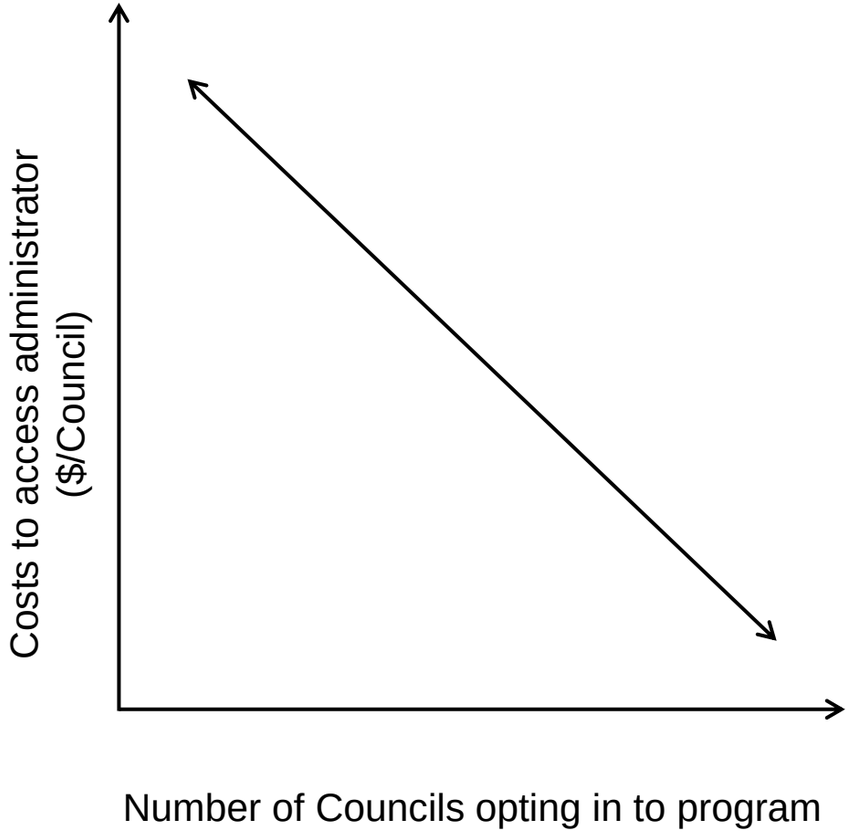
Emissions reduction potential (tonnes CO2-e)



North East Greenhouse Alliance (NEGHA) was established in 2005 to provide a framework for local stakeholders to work together in a variety of greenhouse projects such as carbon sinks, community energy efficiency, street lighting efficiency, climate change adaptation strategies, renewable energies and alternate fuels and vehicles.

Establishing an EUA scheme across Victoria

- The necessary legislative amendment to the *Local Government Act* is currently before Victorian Parliament
- Once this has passed, a cost effective administration scheme will need to be established
- South Australia's Business Case Report evaluates the preferred approach for administering an EUA scheme and recommends adoption of an independent third-party model
- This replicable approach can create economies of scale for Councils wanting to voluntarily opt in over time (and consistency for businesses operating over multiple jurisdictions)



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The role of an EUA program administrator

The role of an independent third-party administrator model is to:

- Assess a project's eligibility for an EUA
- Assist with upgrade identification and business case development
- Inform local Council that the EUA is being drafted
- Complete the EUA forms on behalf of the building owner, and the lodgement of the EUA documentation to the relevant council for approval
- Facilitate discussion between the building owner and financier on the loan offer
- Facilitate the lodgement of EUA documentation to the financier for approval
- Facilitate the legal process and any approvals
- Assist the building owner with tenant stakeholder engagement
- Facilitate the signing of the EUA

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The role of Councils in stimulating retrofit activity

- As trusted advisors to business, Council economic development staff will need to communicate the benefits of retrofitting and advise building owners on how they can access EUA finance.
- Council officers will need to work in partnership with independent third party administrators to facilitate EUA deals
- To process EUAs, minor administrative changes to Council information's systems (including Pathways and accounts payable) would be required
- At set up, Council may need to seek legal advice accounting advice on GST treatment

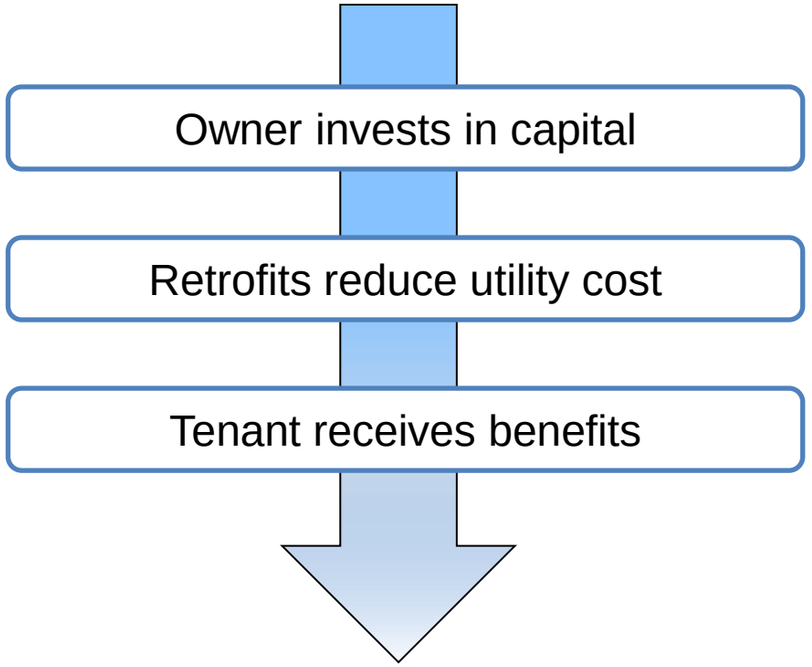

Figure 1: EUAs are a key tool for addressing ‘the split incentive’ barrier

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Recommendations for Local Government

- **Advocate for the adoption of a third party administration model for Victoria** – establishing a consistent scheme across the State will require up front investment. Without State funding, the economic development opportunity could be lost.
- **Develop the capability of economic development staff –** businesses and Councils are largely unaware of this funding opportunity. To effectively engage businesses, economic development staff will need to develop a working knowledge of energy efficiency and how businesses can capture the benefits through access to EUA finance.

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Assumptions, Limitations and References

Input	Assumption	Source	Consideration / Limitations
Upgrade scenario	15% uptake or penetration rate	Arup (2012) *Quantifying the environment and economic opportunities from retrofitting commercial buildings across SA*: *SA Segmentation study*, p.21	• A conservative retrofit scenario of 15% above business as usual has been chosen – this is consistent with the low uptake scenario modelled by ARUP in the recent SA study • More ambitious scenarios have been used in other studies, including the Deloitte report on the 1200 Buildings Program
Energy and Financial savings ($)	53kWh/m^2 236MJ/m^2 $0.30/kWh $0.02/MJ	SGS (2013) *Environmental Upgrade Finance: Business Model & Business Case*, Table 13 p. 44	• Investment opportunities relate to upgrade initiatives targeting energy consumption and do not include other retrofitting initiatives (such as cosmetic enhancements) • The range of upgrade improvements considered are consistent with measures delivering an increased NABERS rating of 2.5 to 4.5 stars in office buildings. These assumptions have been extrapolated to all non residential building types
Carbon	1.32 kg Co2-e/kWh 52.23 kg C02-e/GJ	NGA (Factors) July 2013	• Based on penetration rates for electricity and gas use as specified in SGS Business Model and business case – these are South Australian assumptions where these likely to be a smaller portion of natural gas in the energy mix
Floor space data	Valuer General Victoria data 2012	Valuer General Victoria, 2012	• Data provided in accordance with appropriate Australian Valuation Property Classification Codes (AVPCC) • Data on building floor area (m2) is aggregated into 50 m2 ranges and excludes entries of less than 50 m^2 • Use of the average floor area per range multiplied by the number of entries within the range to give a total floor area per AVPCC code within given a municipality • The segmentation model does not include assigning a level of upgrade to a particular building type

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Further information

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