EAGA
EASTERN ALLIANCE
FOR GREENHOUSE ACTION

Business Case for Upgrading Major Road Lights in the EAGA Region

May 2018

Summary

- Replacing Victoria's major roads lights could save ~$24M and reduce emissions by ~86,500 tonnes annually
- The opportunity is split between State and Local Government
- Costs and benefits vary for individual councils depending on network region and technology types
- The business case has become more compelling over time
- Significant savings will be lost if a co-investment model cannot be established
- Existing subsidies are unlikely to stimulate additional activity or address split incentives for cost-shared lights
- A coordinated program between State and Local Government will unlock investment and fast-track action
- References, assumptions and limitations

Replacing Victoria's major roads lights could save ~$24M and reduce emissions by ~86,500 tonnes annually

~200,000 inefficient lights across the State

25,985 lights in the EAGA region

The opportunity is equivalent in scale to residential street lights

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The opportunity is split between Local and State Government with 16,453 cost-shared lights in the region

EAGA Region Summary	Total Project	Council Share	VicRoads Share
Number of lights	25,985	25,985	16,453
Total Project Cost	$23,261,086	$14,491,755	$8,769,330
Cumulative Simple Net Savings	$61,595,790	$38,109,362	$23,486,428
First Year Savings	$3,341,330	$2,072,985	$1,268,345
Net Present Value	$32,257,187	$19,923,268	$12,333,919
Cumulative GHG Savings (20 yrs, tCO2e)	236,682	145,577	91,104
Average Greenhouse savings per year	11,834	7,279	4,555
Payback period (yrs)	5.5	5.2	6.3

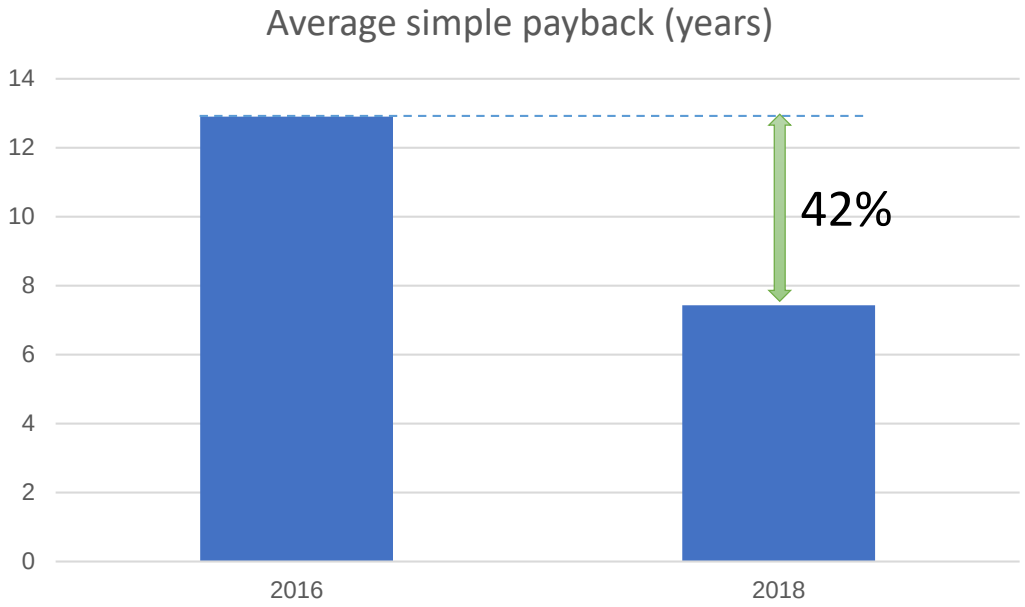
Costs and benefits vary for individual councils, depending on network region and existing technology types

- By replacing all lights through a coordinated approach, substantial savings and implementation efficiencies can be achieved through reduced project management and material costs

Council	COB	GE	KCC	MCC	COM	SCC	WCC	YRC
Total Project Cost	$4.35M	$2.82M	$2.74M	$2.17M	$4.01M	$2.67M	$2.67M	$1.82M
Cumulative Savings (20yr)	$9.35M	$6.09M	$10.18M	$8.53M	$8.73M	$5.71M	$5.94M	$7.05M
First Year Savings	$538K	$340K	$505K	$418K	$511K	$334K	$346K	$346K
Net Present Value	$4.63M	$3.03M	$5.67M	$4.80M	$4.36M	$2.83M	$2.99M	$3.94M
Av GHG Savings (t/yr)	1,869	1,330	1,520	1,229	2,170	1,305	1,412	999
Payback period (yrs)	7.5	7.4	5.2	5.0	7.3	7.5	7.2	5.0

The business case has become more compelling over time

- A significant increase in public lighting retail tariffs have made projects more attractive
- Advancement in LED technology options underpin additional efficiency gains and greenhouse savings
- A decline in the operation, maintenance and replacement costs (OMR) have also driven improvement to project economics



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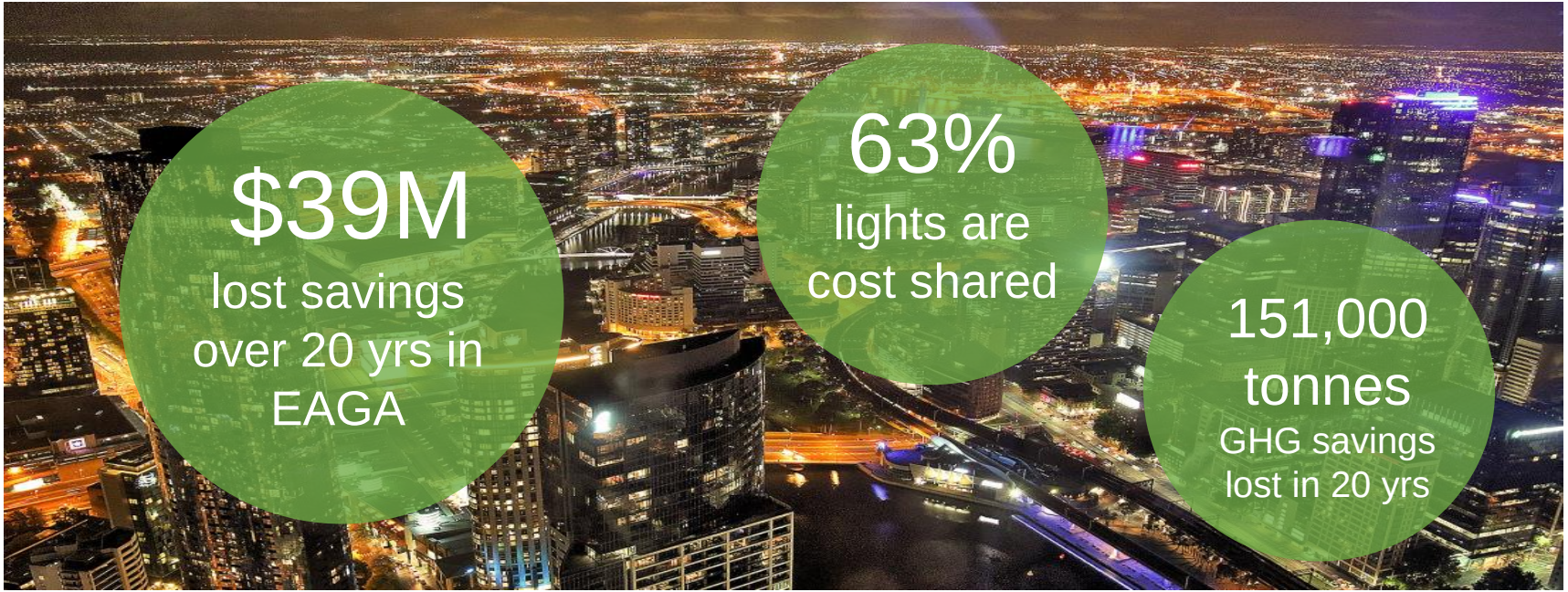
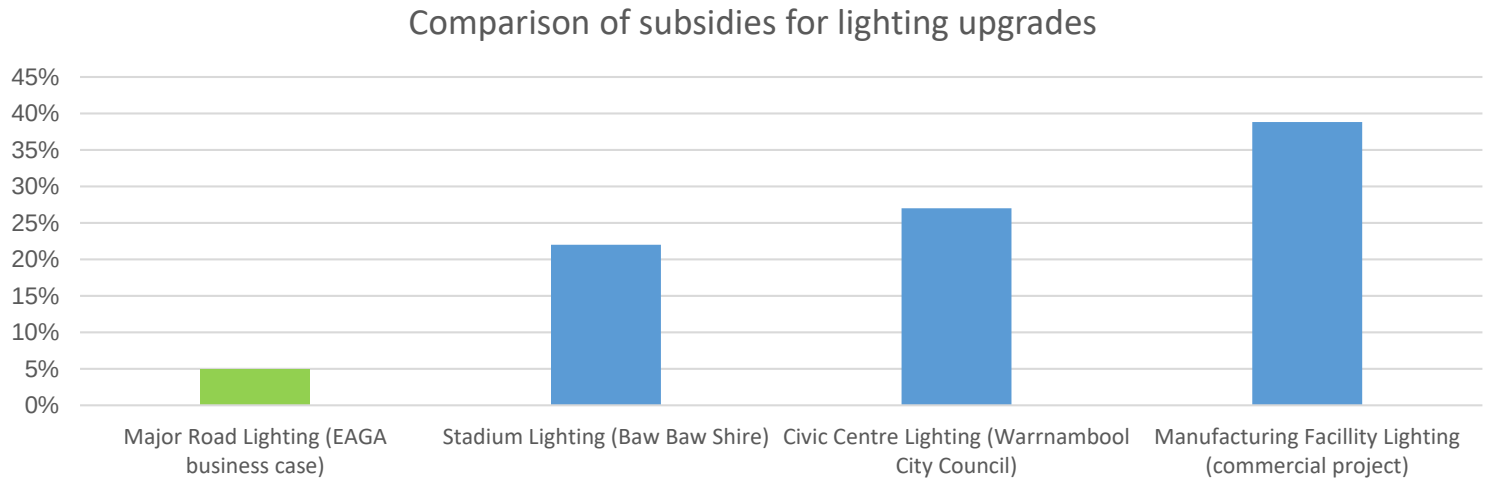
Significant savings will be lost if a co-investment model cannot be established



Existing subsidies are unlikely to stimulate additional activity or address the split-incentive for cost-shared lights



- The Victorian Energy Upgrades (VEU) program is likely to provide a subsidy of ~$1.23M across all EAGA councils – around 5% of total project costs

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A coordinated program between State and Local Government will unlock investment and fast-track action

- A synchronised investment program is required, aligned with the future budget commitments of both levels of government
- A State Government budget allocation ~$10M per year for the next 4 years would enable councils to extend the scope of projects to include cost shared lights
- The Municipal Association of Victoria (MAV) is well placed to administer such a program and already oversees procurement and project management services for major road light projects

References, assumptions and limitations

- Findings are based on *"Basic V-Category LED Street Lighting Replacement Business Case for the EAGA Councils"*, Ironbark Sustainability (Feb 2018)
- Modelling is based on 'moderate' assumptions, whereby the capital costs and ongoing operating costs are average (between pessimistic and optimistic)
- Long term energy prices based on AEMO long term forecast for Victoria
- State-wide savings are extrapolated from average EAGA figures provided in the business case
- Comparison of average simple payback data based on both EAGA business case reports and Central Victorian Greenhouse Alliances reports
- Comparison of subsidy data based on information provided by Department of Environment Land Water and Planning Data (April 2018)