



LOW CARBON LIVING
CRC

Low Carbon Living - Australia

RP3010u3 – Final Report



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The author(s) confirm(s) that this document has been reviewed and approved by the project's steering committee and by its program leader. These reviewers evaluated its:

- originality
- methodology
- rigour
- compliance with ethical guidelines
- conclusions against results
- conformity with the principles of the [Australian Code for the Responsible Conduct of Research](#) (NHMRC 2007),

and provided constructive feedback which was considered and addressed by the author(s).

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Executive Summary

This CRC-LCL RP3010u3 Project was undertaken 2018 by the Blue Mountains World Heritage Institute to develop its Low Carbon Living - Australia website; an online Carbon Calculator; a business plan to support its National roll out; along with the transfer of the program to two additional regions beginning with Port Douglas in Queensland.

This is the fourth grant the CRC-LCL has provided to the Institute to develop its Low Carbon Living Program, beginning in 2014 with the establishment of a Living Laboratory pilot program with a focus on the tourism industry in the Blue Mountains. This was followed by an additional grant to support the programs further development into a financially self-sufficient program in the Blue Mountains. A third grant was to support the transfer of the program to the Southern Highlands region of NSW in 2017, followed by the present grant to support the National expansion and the establishment of the Low Carbon Living – Australia program in Port Douglas in Qld.

Beginning in August 2018 the Institute begin developing the new Low Carbon Living website which was designed to include a carbon calculator to allow both businesses and households to establish their carbon footprint, identify what could easily be done to reduce carbon usage, and to provide access to carbon offsets which could be purchased to cover the carbon usage that could not be immediately addressed. The website also provided access to the existing LCL regional sites and integrated them more effectively into the national program.

The Carbon Calculator to be used in this program was developed in conjunction with EcoLogic a start-up linked to the Energy Lab at University of Technology Sydney. This group had developed a calculator to support energy reduction for households, and had been adopted by a number of Southern Sydney councils. An agreement with EcoLogic was reached to redevelop the energy calculator into a carbon calculator, based on our LCL auditing protocols and NCOS standards. This agreement involved both a cash component for development and a monthly service agreement on an ongoing basis. (see fig 2)

The second key activity was to develop a business plan which could support the rollout of the program at a national level. Two options had been identified. One was a Franchise model which was trialled in the Southern Highlands, and involved the transfer of the program to the CAN-Win group, a local community based Climate Change action group linked the regional council.

The second approach was to establish a Collaborative/Partnership model involving a network of regions managed locally but administered centrally through the LCL Australia in conjunction with National of State partners. This second approach has been adopted for the management of the program in Port Douglas, which involves a collaboration with the Qld Government agency EcoBiz, and EcoTouriam Australia. This approach was adopted following two workshops, the first in Sydney in February 2019 second in Brisbane in April 2019.

To complement these two models, a business plan was developed to help inform the discussions with partners in the Queensland pilot project. The analysis carried out to support this strategy has been based on projections for potential growth in income from membership fees and carbon offset sales, as well as carbon reduction outcomes over five year from 2019-23 (See Tables 2-4). While these projections are based on levels of growth achieved in the Blue Mountains over the past five years, they are only indicative. They are unable to adequately estimate the potential growth in household carbon reduction and offset sale linked to the free access to the carbon calculator. Nonetheless the modelling provides a sufficiently positive business case to justify the further expansion of the program.

The transfer of the program through the Collaborative/Partnership model, is being adopted in Port Douglas which will commence in July 2019. It is supported by funding provided by EcoTourism Aust and EcoBiz Qld, and the outcome will be evaluated in December 2019, with the option of then extending it to other regions throughout Qld.

A second region under discussion is Kangaroo Island in South Australia. Following the CRC Expo in Adelaide in May 2019, the South Australia Ministry of the Environment has begun discussions regarding the programs transfer to SA in conjunction with EcoTourism Australia and Qantas. A workshop to review options is planned for mid August. Other regions already in discussion are the Tweed/Byron region of NSW, and Margaret River in West Australia.

Introduction

The Low Carbon Living – Australia program was begun in 2013 by Blue Mountains World Heritage Institute (BMWHI) with funding from the Cooperative Research Centre (CRC) for Low Carbon Living (LCL). It was established as a ‘living laboratory’ to test a double incentive strategy for reducing carbon in the Small and Medium Enterprises (SME’s) and households, with a pilot project based in the Blue Mountains of New South Wales (NSW). The original partners included NSW National Parks & Wildlife Service (NPWS), Blue Mountains City Council (BMCC), and the Universities of NSW, Melbourne and Curtin.

By late 2014, twenty-eight tourism businesses had been recruited for this pilot project. Participants were provided with a free carbon audit, based on their energy, waste and water use, and were provided with a report on how to reduce their carbon footprint. Although methods for measuring results were yet to be fully developed, the first year’s audit data in June 2015 revealed an average carbon reduction of 14%. While focusing on ‘low hanging fruit’, it certainly showed the potential for that cost-effective carbon action strategy.

By 2016, a program website was in place, featuring a rating scheme for business members of bronze, silver and gold. Ratings were based on the first year’s carbon reduction, allowing visitors and residents to use the website to choose low carbon businesses and services. Consumers of services were encouraged to recognise that they could reduce their own carbon footprint by purchasing services from businesses that had reduced theirs. Their promotion on a low-carbon tourism website gave businesses added incentive to continue reducing carbon, achieve higher ratings and thereby attracting more customers. The launch of a monthly newsletter for program members and the wider community commenced, offered subscribers information on the carbon reductions achieved by participating businesses and how it was achieved. (See <https://lowcarbonliving-bluemountains.com.au>).

In April 2016, market research was undertaken to help test consumers interest in using this LCL initiative. Five hundred Blue Mountains visitors and residents were surveyed on their attitudes to lower carbon services, and both groups’ responses were positive as summarized in Figure 1.

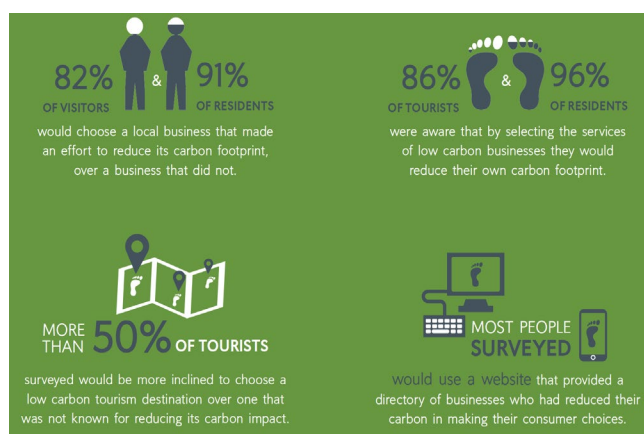


Figure 1: Summary of survey results from LCL brochure, 2016

The relevance of the double incentive model for this LCL initiative of reduced costs for businesses and households was clearly evident. With a view to moving from a ‘living lab’ to a self-funded social enterprise, a second survey was conducted amongst pilot businesses to determine if they were prepared to pay an annual membership fee (based on business size) to be part of an ongoing program. A favourable 95% responded that they would, thus supporting the case for continuing and formalising the program.

A formal Low Carbon Living-Blue Mountains program was launched in May 2016. New businesses were recruited, and by May 2017 the number had doubled to over 60, with membership fees able to fully support the project’s ongoing growth and operation. Late 2017 saw over 80 members, and a membership shift beyond tourism to schools, tertiary education, retailers and community organisations. By the end of 2018, membership had grown to 80. A Google analytics study by one accommodation provider found that 34% of their guests had come through the LCL – Blue Mountains website as a result of their having a Gold rating.

Recognising the opportunity to scale

A longer-term vision for this program was its take-up in other regions, and ultimately the establishment of a national network. By 2017 interest had spread to other regions with strong tourism sectors, beginning with the NSW Southern Highlands. With funding from the CRC-LCL and Wingecarribee Shire Council the Institute worked with partners to develop a franchise model that would protect program integrity and IP, and identify program elements best managed by the BMWHI and those best managed locally.

In August 2018, Low Carbon Living - Southern Highlands was launched with the support of new partners including Tourism Southern Highlands, the Chamber of Commerce, and a local NGO, ‘Climate Action Now, Wingecarribee’ (CAN Win), and the local BDCU Bank.

Leading up to this launch, a mini Low Carbon expo was held in the Blue Mountains to announce the plan to develop a national LCL program, with representatives from the Blue Mountains, Southern Highlands and the CRC-LCL. It was also attended by a representative from Ecotourism Australia, who recognised the opportunity of this national program to meet their need for a carbon reduction program as part of to their Ecotourism certification program. A MOU between BMWHI and Ecotourism Australia was subsequently signed in 2018, and two new destinations were identified for trials – Port Douglas in Queensland and the Byron/Tweed region in NSW.

Evolving the approach to meet partner and market needs and opportunities

The CRC’s RP3010u3 Project provided the funding for this next stage of national scale up, which included developing a national organisational structure with a new website ‘Low Carbon Living - Australia’ (see www.lclaustralia.org). To inform this new phase, key insights from the past few years of operation and the perspective of partners were considered in identifying the requirements for a national program. It was soon recognised that new and more efficient carbon calculator was needed to simplify the process of auditing energy, waste and water at a national scale.



Figure 2: Page from the LCL Australia Website

In both the Blue Mountains and Southern Highlands well-trained carbon auditors were available to collect data relatively quickly, but in more remote regions this was not the case. So an investigation was undertaken into the availability of developing an online audit system. Ecologic, a start-up emerging out of University of Technology Sydney's Energy Research Lab, had developed an excellent system for household energy auditing, which also advised users how they could reduce their energy use. BMWHI subsequently contracted Ecologic to develop a similar self-assessment tool for carbon reduction based on the LCL auditing protocols for energy, waste and water assessment.

In August 2018, the 'LCL-Carbon Calculator' was created to help participating businesses and now households who were provided with free access. The calculator provided simple 'snap shots' of their carbon footprint and provided guidance for the first stages of carbon reductions. By enabling household participants to select local businesses/services that also participate in the program, the incentives for businesses to further reduce carbon was also reinforced and the impacts magnified.

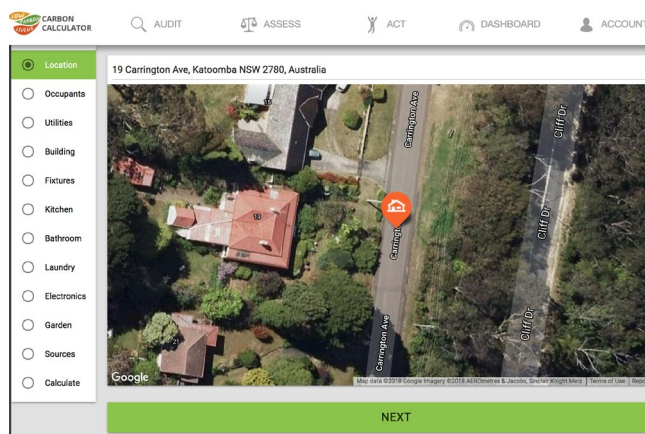


Figure 3: Front page of the LCL Carbon Calculator version 1.0

Another initiative under the next phase of the LCL program was to work with a group of partners comprising Ecotourism Australia, Pangolin and GreenCollar. There was now an opportunity to offer both households and Small and Medium Enterprises (SME's) with the opportunity of becoming carbon neutral, while at the same time supporting local low carbon industries such as wind and solar farms. However while

carbon offsets are not recognised as part of the rating scheme, which is only based on the actual carbon reduction achieved within the businesses operations, they could be used to achieve carbon neutrality

The final critical element in this phase of the project was the development of a suitable business plan to address the requirement of a national program.

The Business Case for an LCL National Program

Evidence of market demand for scaling up a National LCL Program comes from several sources. (See Fig 1)

Firstly, demand from program partners and those expressing interest in a future partnership demonstrated that there was the market need for an LCL-Australia program targeting SME's and Households.

- The growth in the LCL- Blue Mountains initiative validated the hypotheses that there was a demand for an innovative, relevant programs to lower carbon emissions in SME sector.
- Funding and adoption of the program in two additional regions highlighted that communities wanted to reduce their contribution to climate change and readily accepted the LCL-Australia program model.
- Demand for the program in the Southern Highlands was indicated by multiple organisations including: a local government agency (Wingecarribee Shire Council), a public private industry association (Tourism Southern Highlands), an NGO (Climate Action Now, Wingecarribee), and a local financial institution (BDCU Bank). The resulting institutional partners investment in this local program exemplifies demand for LCL's community-centric model.
- There is also a high level of interest from emerging and prospective partners for the program to roll out in other areas. EcoTourism Australia recognises that this model can help their organization realise its vision for an Ecotourism certification program for regional tourism destinations with a carbon reduction component. They have entered a MOU with BMWHI with the intention to roll out the program in 23 regional locations.
- The Queensland Government's EcoBiz program has commitment \$15,000 in cash and approx \$25,000 in kind to support SME's in eight regions across the State beginning in Port Douglas in 2019, with the aim of reducing their carbon footprint via their EcoBiz program, further verifying the demand met by this model.
- Green Collar who in conjunction with Qantas has developed local North Qld carbon offsets marketed as 'Reef Credits' is partnering with BMWHI in the expectation that the LCL Australia program will be a significant player in the purchaser of these Reef Credits

Secondly, uptake of the program by businesses in the Blue Mountains and Southern Highlands has demonstrated demand at community and business level. Program membership has grown year on year in Blue Mountains and payment of annual membership fees has been sustained evidencing the long term value the program delivers. Representatives of other regions consulted about the program to date indicate there is similarly strong demand within their communities for such a program servicing both businesses and residents.

Thirdly, market trends are a further source of evidence of demand for the LCL program:

- A Qantas survey of 1532 Australians in 2018 found that most (83%) of respondents said it was important to reduce their carbon use via offset. It also found that 86% believe businesses have a key role to play in tackling environmental issues. It concluded that businesses that act will be rewarded, as ‘green’ product and service attributes are driving consumer choice, as evidenced by 77 per cent claiming they choose products and services with green attributes, and 63 per cent willing to pay a premium for green products and services. This data, similar to that found in BMWHI’s 2016 survey highlights the ongoing relevance of a program that helps businesses and individuals to monitor and reduce their carbon emissions.
- At national level, there is renewed public and business concern regarding the need to address climate changes. This is reflected in a 2018 Lowy Institute Poll which shows that Australians’ support for climate action at its highest level in a decade. (See Fig 4)
- Due to the technological innovations associated with the program’s online LCL Carbon Calculator, a new market of individual households can now engage with the program at a national level. Their concern to reduce their carbon impact could lead to the additional purchase of carbon offsets that will provide a significant additional source of revenue for the program.
- Pangolin Pty Ltd, one of the Australia’s leading carbon auditing and management firms, has seen its sale of carbon offsets increase by 300% over the past 18 months by businesses wanting to become carbon neutral, but are limited in what they can achieve through carbon efficiency in the short term. Pangolin’s overall business has grown by over 400% during this same period.

Competitor Analysis

An assessment was undertaken to identify five carbon reduction programs that had some similarities to the LCL-BM program as outlined. (See Fig 5)

The majority of the identified programs focus on the Tourism sector, and have been adopted primarily by large organizations, which is reflected in the costs for participation/membership. This is also true of the Federal government programs including NCOS that have for the most part targeted the large polluters.

From its inception the LCL- Australia program has focused on Small and Medium Enterprises (SME’s), enabling carbon reduction participation by these businesses. Furthermore, the program model has been designed to enable community-led

ownership and implementation. These factors set it apart from similar programs. In a sense, this program is creating its own market by provide a service to a large sector that have for the most part been ignored by other more commercial carbon reduction programs.

The Business Opportunity

This national carbon reduction program has a clear value proposition to organisations, small businesses and local communities. As a not-for-profit social enterprise LCL Australia is able to operate at a significantly lower costs to the businesses involved, and is essentially free to householders, who in turn support the local businesses.

LCL-Australia and its partners have built a unique and effective carbon reduction program over the past five years. BMWHI has driven this effort, convening and finding resources as needed, in a resource-constrained environment. The program’s vision of scaling-up and becoming a national initiative with positive outcomes for businesses and communities across the country is achievable.

Result Projections: From the evidence outline above there is clearly an emerging public demand and market for the carbon reduction strategy offered by LCL Australia. By bringing together the capacity of the online Carbon Calculator in conjunction with advice of how to reduce one’s carbon footprint, there is the possibility for the use of this program by both SME’s and Households will significantly increase. This coupled with the capacity for businesses and households to become carbon neutral by purchasing carbon offsets through the program will allow it to play an important role in reducing Australia’s carbon usage.

Based on evidence of market demand for a national LCL Program, the following projections are proposed for the scale up of the national LCL program. This assumes two new regions in 2019, four in 2020, four in 2021, six in 2022, and eight in 2023. (see Table 2,3&4)

Scaled up Business Model and Short-term Strategy

A range of business models for scaling up the program has been considered over the past few years with two clear contenders:

- A Franchise model trialled with the Southern Highlands roll out.
- A Collaborative/Partnership model to be introduced in Port Douglas involving Ecotourism and EcoBiz

It was concluded that given the growing sophistication of the online auditing function, and with on-ground support at a regional level the Collaborative/ Partnership model would be the preferred approach for Port Douglas. This would see the LCL Australia website having a series of regional portals by which local businesses engaging in the program would have their details displayed on an the National site eg Blue Mountains , Southern Highlands and Port Douglas. It would simplify the program’s administration and particularly the management of carbon offsets, and provide a centralised database of business members and household users involved in the program.

Program Results for Regions

It is anticipated that carbon reduction at a regional level will soon be available, as the number of business and households involved reaches a significant threshold eg 25% to 50%

The membership base for the Blue Mountains program has increased year on year, and currently sits at a high of 88. The rate of *new* members signing up has slowed slightly, however that is to be expected following an intense recruitment phase in the first three years. Also the regional range of each program is increasing in size to create economies of scale for the programs operation.

Awareness of the program nationally has increased significantly with the Low Carbon Living - Australia program being showcased as part of the CRC-LCL Expos in Sydney, Adelaide and Perth in May and June 2019, and increased media attention. A national marketing campaign is planned for the second half of 2019.

The LCL-Australia is not yet financially self sufficient in terms of being able cover the costs of the roll out to additional regions. While individual regions have become self sufficient eg Blue Mountains and the Southern Highlands, there is a start-up cost for each new region that requires external funding, usually from partners such as Councils or State government agencies. However it is anticipated that as the program grows over time central revenue will be able to fund the start-up costs of additional regions. (see Table 4)

In summary – the Current Status of the Program

As of June 2019, the status of the LCL National Program is:

- Blue Mountains: Program in its fourth year with 88 members, and the region is self financing
- Southern Highlands: Program in its second year of development with 25 members. Managed by partner CAN-Win with support from Wingecarribee Council and Tourism Southern Highlands. The region should be largely self funding by the end of this financial.
- Port Douglas: Program will commence in July 2019 in conjunction with partners EcoBiz, Ecotourism Aust, Green Collar and Douglas Shire Council. Its anticipated that this region will be at the end of the next financial year.
- Byron/Tweed: Program under discussion with prospective partners, including local councils, Tweed Shire and Byron Shire.
- Kangaroo Island in South Australia is under discussion with the SA Ministry of the Environment, Ecotourism Aust and Qantas.
- Other regions under discussion include Margaret Rive in WA and the Great South Road region of Victoria

Table 1: Summary of Program Results (Outcomes and Impacts)

PROGRAM RESULT INDICATORS		≥2014	2015	2016	2017	2018	Total to Date or Current ¹
OUTCOMES	Partner funds: Cash invested:	\$268,000		\$66,000	\$20,000	\$45,000	Total to date: \$399,000 cash
	In-kind (approx.):	\$150,000	\$150,000	\$120,000	\$50,000	\$50,000	\$520,000 in-kind
	New members - Blue Mtns		28	22	28	10	Current: 88
	Revenue member fees - BM						
	New members – Sthn Highlands					25	Current: 25
	Revenue member fees - SH					\$10,000	Total: \$10,000
IMPACTS	Approximate carbon emissions reductions per annum (tonnes Co2)		1,064 tonnes CO2	836 tonnes CO2	1140 tonnes CO2	1330 tonnes CO2	Total to date: 4370 tonnes CO2

Table 2: Projected Regional Program Results (Members and Impacts)

PROGRAM RESULT INDICATORS (LCL REGIONAL PROGRAMS)		2019	2020	2021	2022	2023	Total to end 2023
OUTCOMES	New members - Blue Mtns	30	50	60	80	80	300
	New members – Sthn Highlands		40	50	60	80	230
	New members – new regions 2019			40	60	100	200
	New members – new region 2020					200	200
	New members – new region 2021					350	350
	New members – new region 2022					450	450
	New members – new regions 2023					500	500
IMPACTS	Approximate Carbon emissions reductions per annum (tonnes Co2)		tonnes CO2 3,420	tonnes CO2 5,700	tonnes CO2 7,6000	tonnes CO2 66,880	Total to end 2023 tonnes CO2 84,740

Table 3: Projected Results for New Residential Self-Audits Component

PROGRAM RESULT INDICATORS (RESIDENTIAL SELF-AUDITS)		2019	2020	2021	2022	2023	Total to end 2023
OUTCOMES	New self-assessments completed	200	1000	3000	5000	10000	19,500
	New reduction plans prepared		1000	3000	5000	10000	19,500
	New reduction plans implemented						unavailable
IMPACTS	Approximate carbon emissions reductions per annum (tonnes Co2)		tonnes CO2 5000	tonnes CO2 15,000	tonnes CO2 25,000	tonnes CO2 50,000	Total to end 2023 95,000 tonnes CO2

Table 4: Projected Results for New Carbon Offsets Component

PROGRAM RESULT INDICATORS (CARBON OFFSETS COMPONENT)		2019	2020	2021	2022	2023	Total to end 2023
OUTCOMES	Carbon offsets purchased by business members of regional programs # (tonnes) & \$.	1000 tonnes \$12,000	5000 tonnes \$60,000	10,000 tonnes \$120,000	20,000 tonnes \$240,000	40,000 tonnes \$480,000	\$912,000
	Carbon offsets purchased by household participants in regional programs. # (tonnes) & \$.		\$60,000	\$120,000	\$240,000	\$480,000	\$900,000
	Carbon offsets purchased by other # (tonnes) & \$.					\$600,000	\$600,000

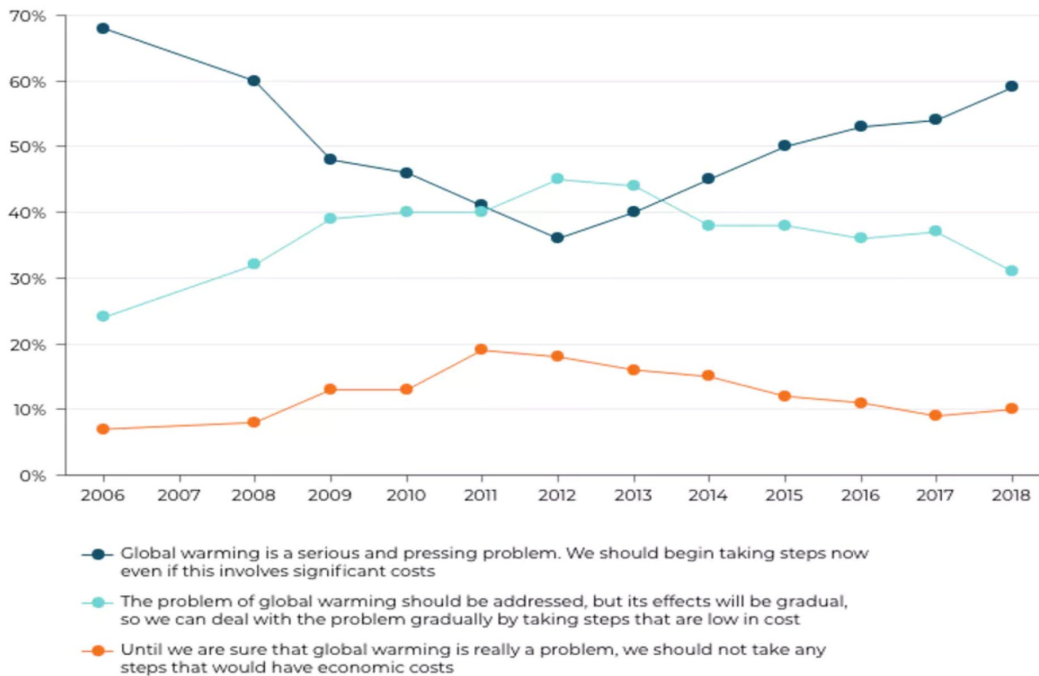


Fig 4: 2018 Lowy Institute Poll

Scheme	System	Coverage	Criteria	Cost
NABERS	Stars (1-6)	Hotels, but not food or attractions	Energy and water use vs industry averages	\$1000-4000 (valid for 12 months)
Sustainability Advantage, NSW Government	Bronze, Silver, Gold, Platinum	All business types	Commitments and achievements (broad range)	\$2000-3000 one-off joining fee
EarthCheck	Bronze, Silver, Gold, Platinum	Tourism	No. of years in program (5 = Gold, 10 = Platinum)	\$4500 per year
Green Tourism Business Scheme (UK, Canada)	Bronze, Silver, Gold	Tourism	Score against a broad set of criteria	\$350-1000 per year for hotels
Green Leaders (TripAdvisor – North America & Europe)	Bronze, Silver, Gold, Platinum	Hotels and B&Bs	Score on survey of green practices (30% = Bronze, 60% = Platinum)	Free to hotels with listings on TripAdvisor

Table 5: Competitor Analysis