

Towards City Wide Emissions Reduction

Summary

Objectives

- Comparing the impact of either citywide or corporate focus if Council were to add another \$250,000 pa to its normal \$800,000 budget for environment/sustainability
- Introducing CSOI (Carbon Saved on [Council] Investment)
- Consideration of costed co-benefits of emissions reduction, and the social cost of carbon, within Council decision making about sustainability and emission reduction programs

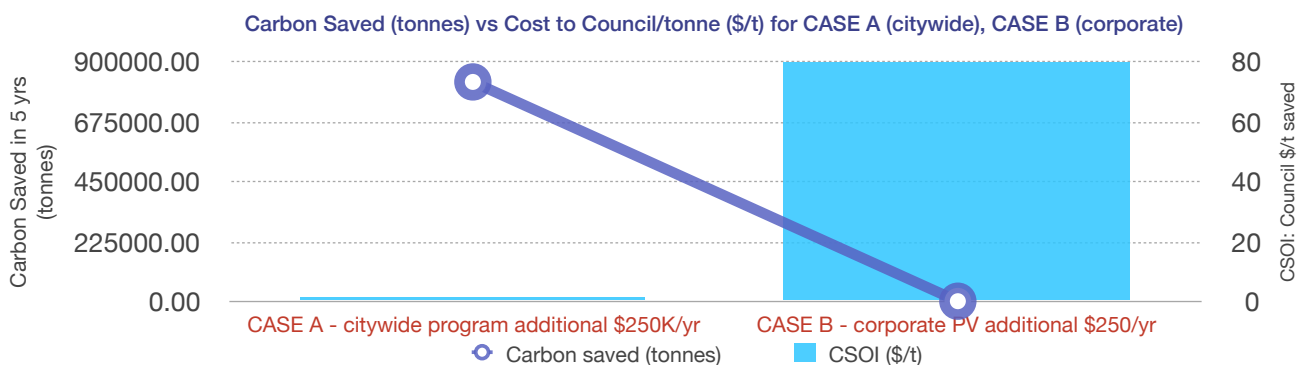
Two Cases in Brief - for an additional \$250,000 spend

CASE A:

- Moreland style ZCE¹ 5 yr city wide emissions reduction program at \$250,000/yr with 2.5 project officers and Council's administration through rates, leveraging external finance at 5% rather than 8+ %, for energy efficiency and solar PV programs for constituents
- ≈ 825,000 CO2 tonnes saved in 5 yrs
- CSOI at \$1-2/tonne
- Climate and health impact reduction in 5 years ≈ \$29,700,000 (@ \$36/tonne (EPA)²) - twenty times cost to Council

CASE B:

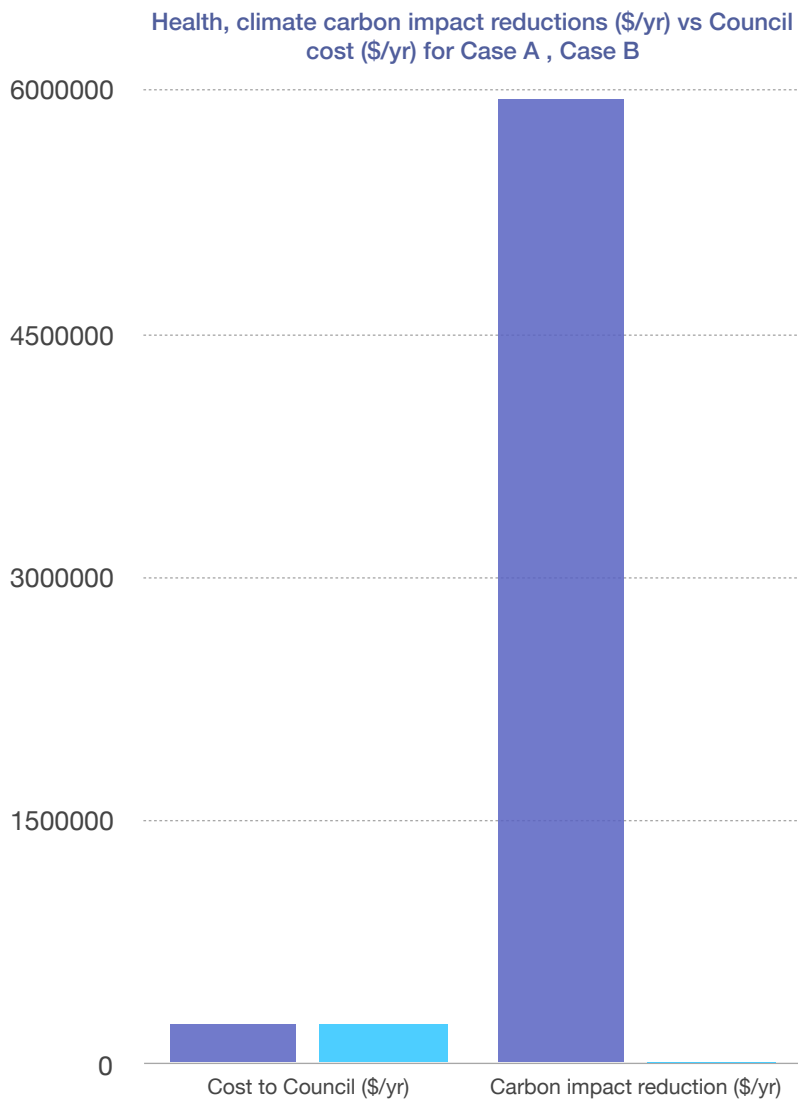
- Direct purchase of local energy generation for 5 yrs (e.g. six 50K systems) for \$250,000/yr (less electricity savings at 8yr payback)
- ≈ 2700 tonnes CO2 saved in 5 yrs
- CSOI at approximately \$80/tonne
- Climate and health impact reduction in 5 years ≈ \$97,000 (@ \$36/tonne (EPA)) - 20% of cost to Council



¹ City of Moreland, 2015 "Zero Carbon Evolution: getting on track to a carbon neutral Moreland community", <http://www.moreland.vic.gov.au/globalassets/key-docs/policy-strategy-plan/zero-carbon-evolution-strategy.pdf> The ZCE program has an aim point of 22% city wide carbon reductions in 5 years.

² EPA, "The Social Cost of Carbon", <https://www3.epa.gov/climatechange/EPAactivities/economics/scc.html>

STONNINGTON CLIMATE ACTION NETWORK



- **Case A:** citywide program (purple) returns \approx **\$5,900,000 per year** in health and climate impact reduction - **around twenty times the cost of the program** (Council program cost: \$250,000 /yr).
- **Case B:** corporate PV (blue) returns \approx **\$19,440 per year** in health and climate impact reduction - **less than 20% of the cost of the program** (Council program cost: \$250,000 /yr less electricity savings on an 8 yr pay back period, with six 50kW projects staggered over 5 years)

Recommendations

- Evaluate the benefits of a Moreland style ZCE program for Stonnington, including valuing emissions reduction co-benefits³ in improved health⁴, environmental benefits, stimulus to local businesses from solar work, householder and SME lowered energy costs / increased resilience from increased energy productivity and local energy generation.
- Report on the costs of health and climate impacts⁵ and the costs of delay of such citywide action, noting the increases in social costs of carbon metrics per year, accelerating damage from emissions, and bearing in mind the EIA's assessment that leaving action until after 2020 will cost four times as much.⁶
- Evaluate increased pool of solar and energy efficiency uptake made possible by the improved business case for householder energy efficiency and solar PV improvements from Council offering solar rates and rates energy efficiency programs, given that the State government is easing the administration of such programs in concert with current NEJF offering. This would include evaluating increased numbers of constituents, such as pensioners, who would be able to participate given Council's administrative support⁷; and also an increase in the solar uptake pool from decreases in interest rates - probably a much more attractive 5% - given Council's administrative support in leveraging external finance through facilitating solar rates and energy efficiency programs⁸.
- Measure Stonnington LGA emissions as a baseline for evaluation and action, within one year. This could be accomplished in a similar way to Moreland (see Section B below).
- Consider the benefits of climate leadership for Council and Stonnington - such as signing onto the prestigious UN sponsored Compact of Mayors⁹, given the increasing popularity and feasibility of renewables transitions¹⁰, and increasing pace of disengagement from carbon in the global business environment¹¹, with associated demands for more accountability about carbon exposure¹².

³ C40 Cities, 2015, "The Co-Benefits of Sustainable City Projects", October, http://c40-production-images.s3.amazonaws.com/press_releases/images/99_Co-Benefits_of_Sustainable_final_highres.original.pdf?1450463497

⁴ CAHA, 2013, "Submission to Senate Standing Committees Community Affairs: Inquiry into the impacts on health of air quality in Australia", March, http://caha.org.au/wp-content/uploads/2012/03/CAHA-Submission-Air-Quality-March-2013_final.pdf The peak body Climate and Health Alliance notes that reducing air pollution from fossil fuel generation has a very strong cost benefit: "the evidence from the US suggests that there is a very high benefit: cost ratio from improving air quality, with twenty- five dollars saved in healthcare costs for every dollar spent complying with regulations, due to the lower disease burden."

⁵ 2) Climate Institute, 2014, "Counting All The Costs: Recognising the carbon subsidy to polluting energy", September, http://www.climateinstitute.org.au/verve/_resources/TCL_SocialCostOfCarbon_PolicyBrief_September2014.pdf This policy brief quantifies the social costs of carbon, noting the IMF's use of \$35/tonne. The brief applies US methodology to calculate the cost to Australia of these hidden subsidies (climate damage, health impacts and so on) at around \$14-39 B per year (or \$7-20B for the electricity sector alone), and uses both the EPA's social cost of carbon \$36/tonne for midrange and rising per year, and a UK methodology based on 2050 aim points.

⁶ IEA, 2011, "The world is locking itself into an unsustainable energy future which would have far-reaching consequences, IEA warns in its latest World Energy Outlook", 9 November, <https://www.iea.org/newsroomandevents/pressreleases/2011/november/the-world-is-locking-itself-into-an-unsustainable-energy-future.html>

⁷ <http://eaga.com.au/wp-content/uploads/MEFL-EAGA-Solar-Rates-Final-Report.pdf>

⁸ Conversations with MEFL officers who are working on the NEJF process, and on ZCE on 28.4.16 and 2.6.16 - external financing offers are coming in at around 5% including administration costs. 5% is also supported by experience with Darebin Solar Savers.

⁹ http://www.c40.org/compact_of_mayors

¹⁰ Teske, S. et al, (2016) '100% Renewable Energy For Australia: Decarbonising Australia's Energy Sector Within One Generation', Institute for Sustainable Futures, UTS

¹¹ Leaton, J. (2011) 'Unburnable Carbon: Are the world's financial markets carrying a carbon bubble?', Carbon Tracker. This analysis was based on a 2° target. A 1.5° target means that over 90% of known fossil fuel reserves are unburnable. See analysis by Carbon Brief (2014) 'Six years worth of current emissions would blow the carbon budget for 1.5 degrees', November 13 2014.

¹² <http://www.aodproject.net>

Towards City Wide Emissions Reduction

Introduction

While Stonnington Climate Action Network applauds Council's work on reducing corporate emissions, with a stated goal of 30% reduction by 2020 in line with the corporate aims of protecting heritage and the environment, to make Stonnington a cleaner, safer and better environment for future generations to enjoy, we would advance some points for further Council exploration towards our request for a report from Council on the opportunity cost and cost benefits of earlier rather than later climate action across Stonnington.

We are suggesting that a moderate spend on a program like Moreland's Zero Carbon Evolution program would be an efficient way to achieve quite large emissions reductions, given easier access to external finance at lower rates, and an extended range of constituents able to be serviced, with Council's administrative support.

Requests for evaluation:

- Value of co-benefits from such emissions reduction to constituents in the areas of health, lowered costs of energy bills, energy independence, lowered urban heat island impact and liveability.
- Value to the local and wider economy of accelerating climate action, with more households and businesses putting on solar and paying for energy efficiency measures across Stonnington, including considering increased spending on food, hardware items, and in the solar industry and so on.
- Value of first mover advantage to local SME and industry from transitioning to clean energy, and how lowered energy bills and resilience from lowered exposure to the fiscal risks of carbon would benefit the local economy.
- Value in reputation, and in attracting investment and partnerships, from accelerating climate leadership and lowered fiscal risk, through accelerating climate action through such programs such as signing onto the prestigious UN sponsored Compact of Mayors program.
- Quantify the opportunity costs of delaying climate action for the factors considered above including health impacts, urban heat island effect, lowered ratepayer resilience, impacts on liveability, loss of first mover advantage, fiscal risk from carbon exposure, and lack of climate action given the accelerating pace of change in Victoria and nearby LGA's.

A) Costing Carbon Damage and Benefits from Carbon Savings

The Climate Institute comments that most Australian decision making calculations assign “no weight to carbon damages, effectively ignoring the carbon subsidy and valuing emission reduction at zero economic benefit”.¹³

Their report “Counting All The Costs: Recognising the carbon subsidy to polluting energy”, looks more closely at the mounting costs of carbon born by Australians, noting an IMF method with an updated figure of \$35/tonne with country specific additions related to pollution damage, the well- recognised US EPA’s Social Cost of Carbon¹⁴ with its mid range value currently \$36/tonne and rising steeply per year.

SCAN asks that Council looks at the costs of delaying climate action and the benefits of emissions in the following areas, and considers the social cost of carbon when doing so.

1. Overall assessment using the social cost of carbon methodologies discussed in the Climate Institute Report “Counting All The Costs: Recognising the carbon subsidy to polluting energy”¹⁵
2. Health benefits
3. Lowered energy bills
4. Resilience
5. Lowered climate impacts
6. First mover advantage
7. Reputational benefits

“Estimates of the social cost of carbon provide an indication, however imperfect, of what society ought to be willing to pay now to avoid the costs of climate change.”¹⁶

¹³ Climate Institute, 2014, “Counting All The Costs: Recognising the carbon subsidy to polluting energy”, September, http://www.climateinstitute.org.au/verve/_resources/TCI_SocialCostOfCarbon_PolicyBrief_September2014.pdf

This policy brief quantifies the social costs of carbon, noting the IMF’s use of \$35/tonne. The brief applies US methodology to calculate the cost to Australia of these hidden subsidies (climate damage, health impacts and so on) at around \$14-39 B per year (or \$7-20B for the electricity sector alone), and uses both the EPA’s social cost of carbon \$36/tonne for midrange and rising per year, and a UK methodology based on 2050 aim points.

¹⁴ EPA, “The Social Cost of Carbon”, <https://www3.epa.gov/climatechange/EPAactivities/economics/scc.html>

¹⁵ Climate Institute, 2014, *ibid*

¹⁶ Climate Institute, 2014, *ibid*

B) Base Premise - Approximating Stonnington's Emissions.

In discussions with the responsible officers at Moreland Energy Foundation (MEFL), Moreland's citywide (non lifestyle) emissions have been previously estimated through a process that involves adding:

- A. emissions from electricity suppliers per area
- B. emissions from gas suppliers per area
- C. emissions from Council waste stream per area
- D. vehicle emissions derived from a standard method from vehicle registrations and traffic movements.

Such a process I have been told took one officer and 3 part time interns six months to do rigorously, however with the method now solidified, could be done more expeditiously.

If we take a near current figure for Moreland of 1,491,000 tonnes, and consider that Moreland is larger but has less cars per resident, and residents, on average, have somewhat lower incomes and smaller houses, we could fairly safely say that Moreland's emissions would be similar to Stonnington to half an order of magnitude.

So, for the sake of the following arguments (and to make the maths easier to follow) I am going to peg Stonnington's annual emissions at 1,500,000 tonnes.

That would put Stonnington's corporate emissions at 14,500 tonnes at 1% of city wide emissions, similar to Moreland's corporate emissions.

SCAN would strongly recommend Council following upon calculating Stonnington's city wide emissions as a necessary basis for climate action.

C) Introducing CSOI (Carbon Saved On Investment)

CSOI is defined as GHG emissions saved per unit cost.

I am making an argument and these figures are approximate - but SCAN would appreciate if Council would consider the logic and firm up the costings.

Case A: citywide ZCE style program

- Moreland style ZCE 5 yr city wide emissions reduction program at \$250,000/yr
- 825,000 CO2 tonnes saved
- CSOI at \$1-2/tonne

The responsible officers at MEFL have suggested that such a program could be run in Stonnington with 2-3 project officers, let us call this \$250,000 per year.¹⁷

Moreland has committed to 22% reduction of GHG over 5 years.

If a similar program was run in Stonnington and achieved 21% emissions reduction in 5 years then the emissions saved would be approximately 3%, 6%, 10%, 15% and 21%, resulting in around 825,000 tonnes saved at approximately \$1,250,000, resulting in a CSOI of between \$1-\$2 per tonne of GHG.

Of course the actual costs would be much much higher, but the bulk of those would be borne by the ratepayers through external finance at advantageous rates of around 5%, according to MEFL, as possible with Council backing through solar rates and rates energy efficiency programs.

In other words a modest expenditure from Council would leverage a large reduction in citywide emissions. Given the curve would still continue to bend and that costs on solar and storage would still be dropping, even greater reductions should be achievable in the following 5 year period with the same expenditure on a ZCE program.¹⁸

Case B: corporate PV purchases

- Direct purchase of local energy generation for 5 yrs for \$250,000/yr (less electricity savings)
- 2700 tonnes CO2 saved
- CSOI at approximately \$80/tonne

Assuming projects around the size of the Town Hall project (200 panels) at approximately \$200,000 and saving around 100-200 tonnes/year, then for 5 years (750 tonnes) CSOI works out at around \$266/tonne - less electricity savings - which on an 8 year payback would drop the cost closer to \$80/tonne in 5 years. GHG savings work out around 750 tonnes.

Working with a similar expenditure to Case A:

6 such projects at a bit under a year apart would deliver around (750 + 600 + 450 + 450 + 300 + 150) approximately 2700 tonnes saved.

The point here is to contrast the two cases:

Even with with these approximations it is clear that:

for a similar expenditure, Case A (citywide action) delivers GHG reductions around two orders of magnitude larger than Case B (corporate direct energy generation) per Council dollar spent.

SCAN would ask that Council would examine these cases with more rigorous costings.

¹⁷ Conversations with responsible officers at City of Melbourne in February and MEFL on 28.4.16 and 2.4.16, who estimate a ZCE style program could be run with 2-3 project officers and Compact of Mayors initially with one project officer.

¹⁸ see Appendix One

D) Benefits for Stonnington constituents, businesses and the municipality

The co-benefits of GHG reduction is a field that is becoming quantifiable. The recent C40 Cities report “The Co-Benefits of Sustainable City Projects”¹⁹ associates clear economic values with a variety of types of climate action, including improved public transport, congestion taxes, energy efficiency with LED street lighting change over and ecoroofs. The study compares methods and results, and offers advice about projection selection criteria, decision trees and data collection methods, shows how co-benefits are folded into projected IRRs.

“The C40 report highlights a number of case studies that show clear co-benefits to green initiatives: The case studies presented in this report exemplify green growth initiatives where the benefits are credibly estimated and convincing from a policymaking perspective. not only do the initiatives combat climate change, they display several co-benefits that strengthen the political argument. The green growth initiatives in the sectors analysed in this report lead to increased energy savings, reduced pollution, lowered GhG emissions and improved health. “

Comparing reduction of health and climate impacts for Case A and B

For this exercise lets use the EPA social cost of carbon at \$36/tonne:

Case A: citywide ZCE style program

- $1,500,000 \text{ tonnes} \times 5 \text{ yr} \text{ less } 825,000 \text{ tonnes saved} = 6675000 \text{ tonnes} \times \$36/\text{tonnes} = \$240,300,000$ health and climate impacts for Stonnington LGA for 5 years.
- $825,000 \text{ tonnes saved} \times \$36/\text{tonne} = \$29,700,000$ health and climate impacts saved in 5 yrs or $\$5,940,000 / \text{yr}$

Case B: corporate PV purchases

- $1,500,000 \text{ tonnes} \times 5 \text{ yr} \text{ less } 2700 \text{ tonnes saved} = 74973000 \text{ tonnes} \times \$36/\text{tonne} = \$269,902,800$ health and climate impacts for Stonnington LGA for 5 years
- $2700 \text{ tonnes saved} \times 36/\text{tonne} = \$97,000$ health and climate impacts saved in 5 yrs or $\$19,440 / \text{yr}$

Spending the \$250,000 per year on city wide action in a ZCE style program saves \$29,602,800 more in health and climate carbon impacts in five years or \$5,920,450 per year - around twenty times the cost of the program.

¹⁹ C40 Cities, 2015, “The Co-Benefits of Sustainable City Projects”, October, http://c40-production-images.s3.amazonaws.com/press_releases/images/99_Co-Benefits_of_Sustainable_final_highres.original.pdf?1450463497

This report is useful in examining and creating arguments for the economic as well as environments for greening their cities.

“In the context of GhG emissions, a co-benefit can be defined as the additional effects derived from direct reductions of GhG emissions (OECD 2015). The case studies carried out in this report tell us that co-benefits usually take the form of:

- Economic indicators, such as job creation and return on investments in infrastructure.
- Social indicators, such as liveability and health in urban areas.
- Environmental indicators, such as air-quality and pollution levels. “

Purchasing additional corporate PV at \$250,000 per year saves only \$19,440 in health and climate impacts per year - around one fifth of the cost of the program.

Costs of Delay/ Opportunity Cost Analysis

This calculation does not even attempt to factor in the increasing value of carbon impacts per year, or the rapidly worsening impact of increased GHG on climate, health, global macroeconomics and security.

The EIA states that leaving climate action till after 2020 would cost four times as much²⁰:

Opportunity Cost Analysis

SCAN requests that Council reports back on the opportunity cost of earlier vs later city wide emissions reduction and climate action programs, taking into account health and climate impacts reflected in commonly used metrics for the social cost of carbon, and also considering the value to constituents of lowered health costs, first mover advantages to business, and increased resilience to householders and business from achieving increased energy productivity and independence.

Climate Leadership

Cities are in the vanguard in the inexorable global move away from carbon. It is only to Stonnington's benefit to be seen as a climate leader - to be able to meet constituent expectations and take up the opportunities that will flow from the new clean economy of the near future.

There is no reason given the availability of low cost external finance when partnered with Council's administrative assistance in solar rates or rates energy efficiency initiatives, that a city wide emissions reduction and program would not be successful. The extra finance would be within Council's capacity as a fairly moderate extension of existing programs, or could be justified by greatly magnified health, resilience, energy security and productivity and repetitional benefits. The policy landscape is becoming more favourable, and constituents are much more aware of climate damage given the Tasmanian fires and wide scale damage to the Great Barrier Reef.

Over 70% of voters, even in conservative electorates, now support rapid change to 100% renewables,²¹ and solar PV has a near universal approval rating²².

²⁰ IEA, 2011, "The world is locking itself into an unsustainable energy future which would have far-reaching consequences, IEA warns in its latest World Energy Outlook", 9 November, <https://www.iea.org/newsroomandevents/pressreleases/2011/november/the-world-is-locking-itself-into-an-unsustainable-energy-future.html> "for every \$1 of investment in cleaner technology that is avoided in the power sector before 2020, an additional \$4.30 would need to be spent after 2020 to compensate for the increased emissions"

²¹ Around 75% voters in 4 conservative electorates strongly support a transition to 100% renewables by 2030 - compared to under 20% who opposed it <http://www.tai.org.au/sites/default/files/TAI%20-%20Polling%20-%20Coal%20moratorium%20and%20renewables.pdf>

²² Climate Institute, 2015, "Climate of the Nation Report", August, http://www.climateinstitute.org.au/verve/_resources/Climate_of_the_Nation_web_final.pdf Solar Power is preferred by over 80% of voters

Compact of Mayors

Signing up to the Compact of Mayors²³ would solidify Stonnington as a financially astute and progressive Council post Paris climate agreement energy trajectory. Facilitating lower cost PV finance through basically rates administrative facilitation, which would also greatly extend the pool of available constituents, would align with Council's mandate to protecting heritage and to make Stonnington even more desirable as a cleaner, safer and better environment for future generations to enjoy.

²³ See Appendix B for a backgrounder and links to the Compact of Mayors including notes on Melbourne's program

Appendix One

Towards a Stonnington ZCE Program with 2.5 Officers

From the The Zero Carbon Evolution Program Manager at MEFL²⁴

Roles to be covered by ZCE officers

Program management (initially 1 FTE until strategy is developed - then 0.75FTE would be required annually)

- Identifying sectors emitting carbon emissions
- Identifying opportunities to reduce carbon emissions by sector
- Setting targets for each sector
- Managing program budget
- Developing project strategies and timelines
- Developing and implementing a monitoring and evaluating framework
- Developing and managing relationship with key stakeholders
- Reporting to Council and Project Board
- Developing a program of activities
- Developing and delivering a communications and marketing strategy
- Identifying wider funding opportunities and writing grant applications

Household engagement/ community activation officer (0.5 FTE)

- Developing targeted campaigns using Council marketing to support delivery of Positive Charge's bulk buy offer
- Undertaking profiling of local attitudes to climate change/energy reduction and developing strategies to engage with each group
- Developing relationships with key community partners (ie faith groups, sports clubs)
- Running and promoting 10+ community workshops

²⁴ Email from Helen Eveleigh, detailing how Stonnington ZCE program could be set up with 2.5 project officers with the following note: "Here's a list of the areas that need to be covered by a ZCE team – although for us Council should manage the transport and waste elements so I don't have as much details for these."

-
- Attending community events (20+ each year)
 - Developing policy papers on funding mechanisms for increasing household uptake of renewables and energy efficiency measures.

Non-residential engagement (business and schools) - (0.5FTE)

- Engaging businesses to undertake energy efficiency measures and renewable energy
- Building a relationship with Council's Eco Dev team to cross-promote measures
- Running and promoting 5+ events for businesses and attending 10+ wider events
- Developing network with schools and early learning centres
- Hosting 5+ events a year to promote uptake of energy efficiency measures and renewable energy for schools and early learning centres

Transport/waste - (0.5FTE)

- Developing and delivering programs to reduce carbon emissions from transport
- Developing and delivering programs to reduce carbon emissions from waste

Appendix Two

Compact of Mayors/ C40 cities backgrounder

World's largest “cooperative effort among mayors and city officials to

- reduce greenhouse gas emissions,
- track progress, and
- prepare for the impacts of climate change.”²⁵

1. UN backed initiative backed by Michael Bloomberg, former mayor of New York
2. Allows cities to share expertise and guidance. View the Compact²⁶
3. “accreditation institution that recognises best practice and provides cities with a framework to create an effective climate change action and adaptation plan.”²⁷
4. Compact requires cities to
 - publicly commit to deep GHG emissions reductions,
 - make existing targets and plans public, and
 - report on their progress annually, using a newly-standardised measurement system
5. Key partners are:
 - C40 Cities Climate Leadership Group²⁸
 - ICLEI - Local Governments for Sustainability
 - UCLG -United Cities and Local Governments
 - reporting to CDP central repository using GPC (world's most widely-endorsed GHG accounting and reporting standard for cities)
6. Impacts will include:
 - allowing recognition of city GHG reduction
 - robust and transparent data collection standards
 - common reporting standards, allows assessment of climate progress
 - city commitments, and successful GHG actions will increase national responsibility and foster capital flow for green actions
 - demonstrate commitment to national targets and increase ambition

²⁵ http://www.c40.org/compact_of_mayors

²⁶ http://c40-production-images.s3.amazonaws.com/other_uploads/images/125_FINAL_FINAL_MAYORS_COMPACT_092314.original.pdf?1411481427

²⁷ <https://nextcity.org/daily/entry/mayors-climate-change-planning-network-compact-of-mayors>

²⁸ <http://www.c40.org> - Inspirational stories, quotes and news from C40

-
- foster national regulatory and policy work for mitigation and adaption in local climate action

7. Impacts will include:

- allowing recognition of city GHG reduction
- robust and transparent data collection standards
- common reporting standards, allows assessment of climate progress
- city commitments, and successful GHG actions will increase national responsibility, foster capital flow
- demonstrate commitment to national targets and increase ambition
- foster national regulatory and policy work for mitigation and adaption in local climate action

Target Setting and Reporting Standards

1. Cities to register City Climate Commitments and adaptation plans
2. Adaption of international frameworks and approved standards for reporting, compliance, governance
3. "To gain accreditation, cities must engage in a four-step process that takes place over three years.
 - First, mayors must register commitment.
 - By the end of year one, they must take an inventory of their city's greenhouse gas emissions broken down by sector and identify climate hazards their community faces.
 - Within two years, the city has to update this greenhouse gas inventory to include emissions from its own waste sector and conduct a climate change vulnerability assessment. The city then sets targets for emissions reduction.
 - Finally, within three years, the city must deliver an action plan detailing exactly how it will meet its targets."²⁹

Melbourne, Sydney, Adelaide, Moreland and Port Philip

1. Melbourne and Sydney have signed up - Melbourne was an inaugural signer at ICLEI summit of 35 in April, 2015, Sydney joined in September 2015
2. **Melbourne is in a race with Adelaide to become the world's first zero net emissions city, with a target to reach this by 2020.**

The city has retrofitted more than 540 commercial buildings to become more sustainable in their use of resources over the past five years.
3. **Sydney has a goal to slash emissions by 70% by 2030 based on 2006 levels.**

It also aims to improve the energy efficiency of its buildings by 31% by 2030.

²⁹ <https://nextcity.org/daily/entry/mayors-climate-change-planning-network-compact-of-mayors>

-
4. Melbourne councils have a plan to buy renewable energy directly from solar and wind suppliers, Sydney has a host of measures in place such as changing lighting to LEDs, and is installing solar panels on a range of public buildings.”³⁰
 5. Melbourne compliance achieved: ³¹
 - clear and ambitious reduction targets zero emissions by 2020
 - implementing a common system of measuring emissions and monitoring climate risk
 - 138 Green Star rated buildings largest concentration of green buildings in Australian cities
 - 540 commercial buildings have been retrofitted, 315 in planning
 - Melbourne certified carbon neutral since 2012

Notes from Melbourne’s Sustainability Strategy Manager³²

- Compact of Mayors program takes 1.5 project officers, running off the efforts of 20/40 sustainability officers working on a variety of mitigation and adaptation projects. Apart from CDP, reporting is via the Annual Report only, no separate sustainability report. Emissions are reported per resident and per business.
- GHG accounting is similar in some aspects to Moreland’s emissions measuring, but not more difficult than perhaps by a factor of two.
- Melbourne tracking ok on zero emissions project, needs the help of partners to achieve it
- programs include the 1200 buildings, City Switch, Smart Blocks
- Melbourne has divested from coal
- ROI not the best/only way to sell emissions reduction to Melbourne partners, currently solar ROI is 7 yr payback. Other approaches include corporate responsibility, lead by example and inspire, differentiation, access to information
- the 120MW renewables PPA will do 1-1.5% of Melbourne’s emissions

³⁰ <http://www.theguardian.com/environment/2015/sep/25/melbourne-and-sydney-join-compact-of-mayors-coalition-on-climate-change>

³¹ <http://www.melbourne.vic.gov.au/news-and-media/pages/melbourneleadsglobalcompactofcitiesactingonclimatechange.aspx>

³² Notes from 15 min conversation with Victoria Hart, who runs Melbourne’s Sustainability Strategy