Local leadership targeting global issues

Maurice Marquardt

In November 2016 the Paris agreement aimed at limiting global climate change to less than 2 degrees came into effect, providing hope to curb man-made climate change. Estimates based on global policies currently in place and unconditional pledges as a result of Paris indicate that we are still on a pathway for at least 2.8 -3.6 degree warming. A significant gap remains between what governments have promised to do and the total level of actions required.

Internationally, cities are increasingly being recognised as playing a key role in reducing global emissions. A study by C40 estimates that urban action would enable cities to reduce their relative emissions by 24% by 2030 and by 47% by 2050. This paper outlines the work done to date by New Zealand cities and some of the options to reduce city wide emissions.

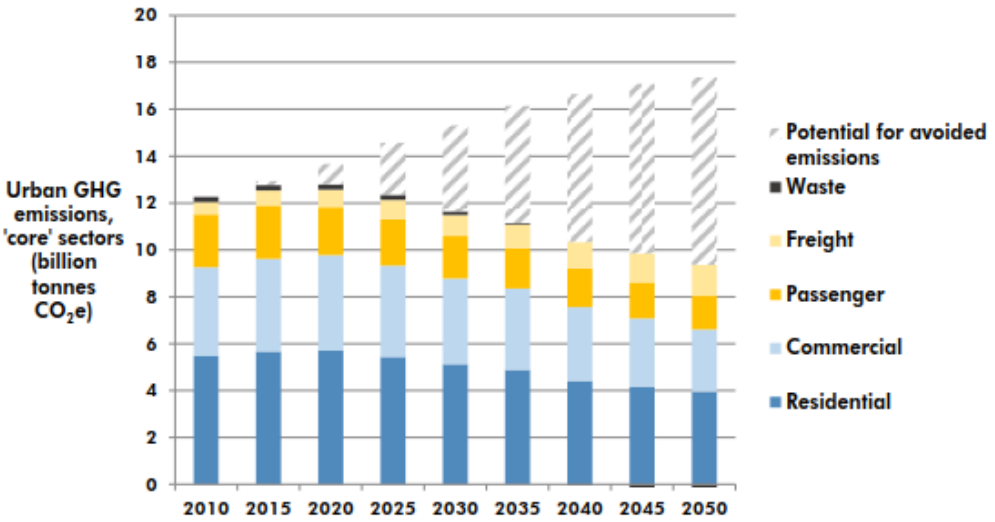

Figure 1 C40 – Emissions avoided by urban action (C40 2014)

BACKGROUND

In 2014 the World Resources Institute together with C40 and ICLEI developed the Global Protocol for Community Carbon Footprints (GPC). The protocol provides a framework for cities to measure and report their emissions on a community level and to measure their progress. The protocol also allows for comparisons between cities with similar emission profiles, demographics and economies. This information enables local policy makers to develop a better understanding of available mitigation options and their potential impacts.

A number of cities and regions in New Zealand have or are currently in the process of estimating their community GHG emissions, following the GPC. Auckland, Wellington and Dunedin have also signed up to the Global Covenant of Mayors for Energy and Climate

(previously the Compact of Mayors), with a number of other cities in New Zealand currently investigating or preparing to join the Covenant. Internationally nearly 7,500 cities have signed up to the Covenant. One of the key requirements of the Covenant is the development of community GHG inventories allowing for subsequent setting of emissions reduction targets and development of climate action plans.

The GPC requires cities to report emissions for stationary energy, transport, industry, waste, agriculture and forest and land-use change. Emissions for each of these sectors are calculated following the IPCC 2006 national best practice guidance for GHG emissions calculations.

Emissions are estimated based on local data (e.g. fuel sales figures or flight movements). Where necessary these can be substituted by national data (e.g. per capita average for industrial product use) to overcome data gaps. The reporting boundary is typically based on the governing authority's boundary, i.e. city boundary, district boundary or regional boundary. Emissions are reported on a financial year or calendar year basis. The resulting emissions profile represents the economic and demographic setting of the city and is unique for each city.

NEW ZEALAND EXAMPLES – INVENTORIES AND ACTIONS

The graph below illustrates the emission profiles for Auckland, Wairarapa District and Wellington City.

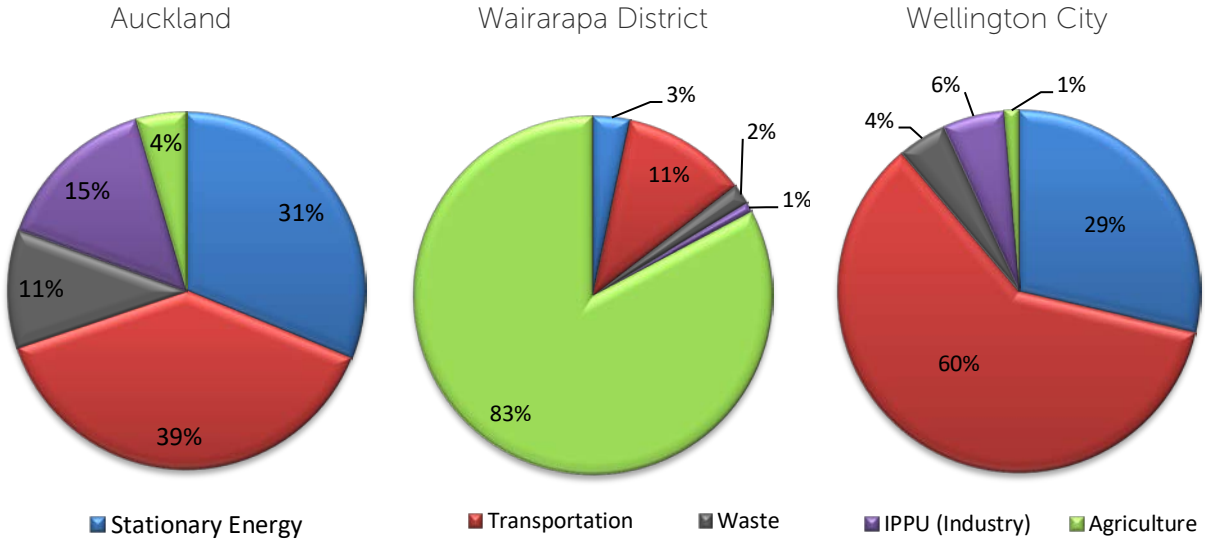

Figure 2 Emissions profile for Kawerau, Dunedin and Wellington

Cities like Auckland and Wellington all have airports and ports that serve areas beyond their city boundaries, significantly impacting their emissions profiles. Rural communities such as the Wairarapa District generate the majority of their emissions from agriculture. The forestry sector plays a significant role in sequestering emissions on a national scale. However, depending on the stage of the local harvest cycle the forestry sector can also result in significant emissions.

Once councils understand their emissions profile they are able to identify potential emission mitigation opportunities for further consultation.

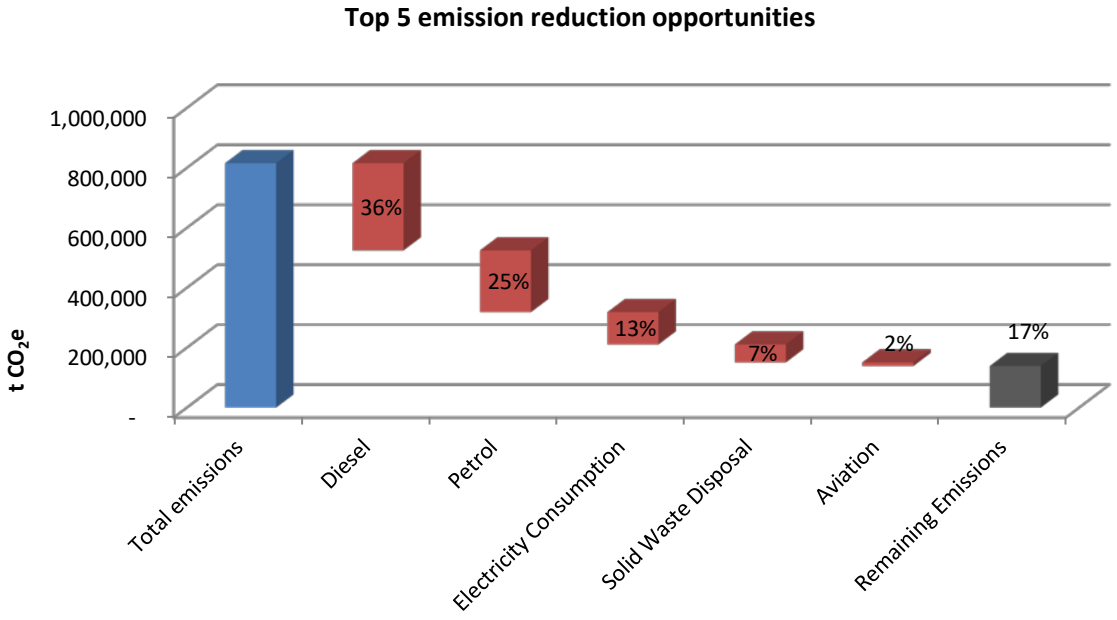

Figure 3 Example of emission reduction opportunities

Wellington City and Region have estimated their emissions since 2000/01 allowing for a more in-depth assessment of their emission trends and how policies have or may influence their overall emissions.

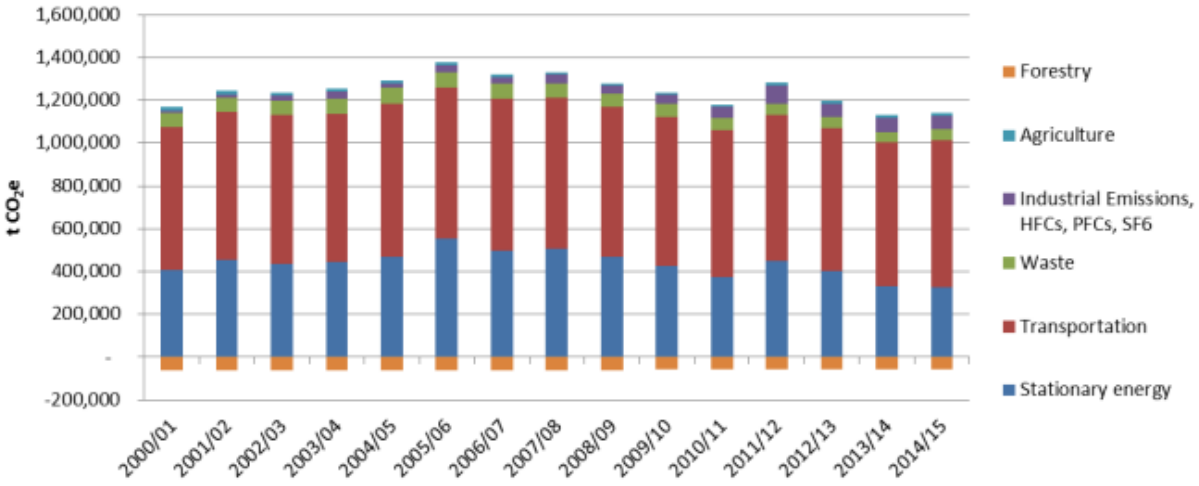

Figure 4 Wellington City emissions trend

Wellington was able to demonstrate that their emissions reduced despite an increasing population and increasing regional GDP. The most significant impact on their annual emissions was due to changes in the electricity generation mix. Emissions fluctuated significantly between dry and wet years due to the amount of water available for hydro power generation. Most other emission sources (e.g. petrol and diesel consumption) only changed gradually from year to year.

Most council in New Zealand can directly influence solid waste and waste water treatment facilities and transport emissions through planning for urban growth or by promoting active and public transport systems. Councils have however a limited influence on stationary energy, industrial, agricultural and forestry emissions.

Understanding the city emissions profile allows councils to identify key stakeholders and their significant emission sources. This enables councils to engage with relevant stakeholder groups (e.g. industry groups or iwi) to communicate the results, develop low carbon action plans and promote emission reduction measures.

Beyond measurements

Developing community carbon footprints is only a starting point. Once councils have a better understanding of their local emissions profile and where these emissions come from, emission reduction becomes the main objective.

Comparing the per capita emissions from one city to another can help to put the emissions profile into perspective. However, more relevant will be measuring the rate and speed at which these emissions can be reduced. Ultimately each city will need to transition to a net carbon zero economy by the second half of this century to stay within 2 degrees warming globally.

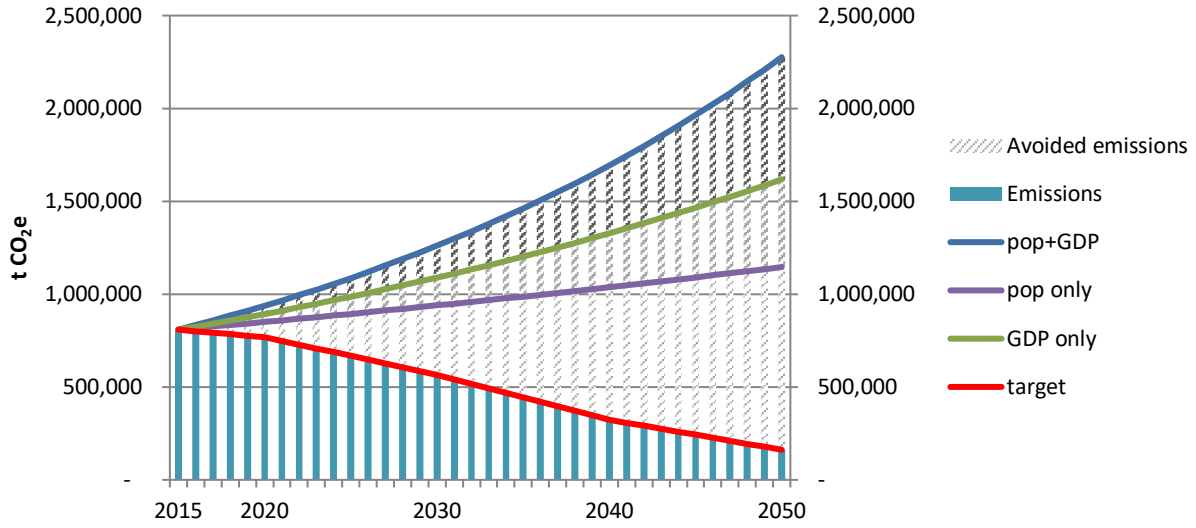

Figure 5 Potential emissions pathways for Dunedin City

Measuring city carbon footprints over time will help councils to understand the impact of their policies and provides a mechanism to measure their progress towards their emission reduction goals.

Sharing information and collaborating with other cities facing similar issues or that have already had significant learnings are crucial avenue to identify suitable mitigation opportunities and actions.

Analysing the costs of potential mitigation options against the expected emission reductions provides councils with a means to select suitable mitigation measures.

Similarly, joining international networks such as the Global Covenant for Mayors network will allow cities to access international experiences and tools. These networks also provide a useful mechanism for cities to stay committed and to develop a more strategic approach to their emission reduction efforts.

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October, 31, 2017


IT'S NOTHING, GUYS— JUST A HOAX PERPETRATED BY PRANKSTER CLIMATE SCIENTISTS IN A VAST WORLDWIDE CONSPIRACY.
caglecartoons.com
GLOBAL WARMING

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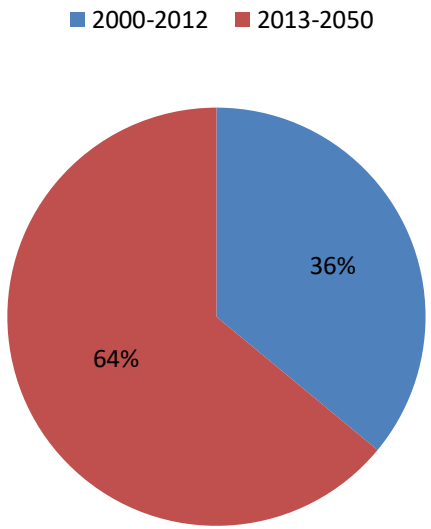
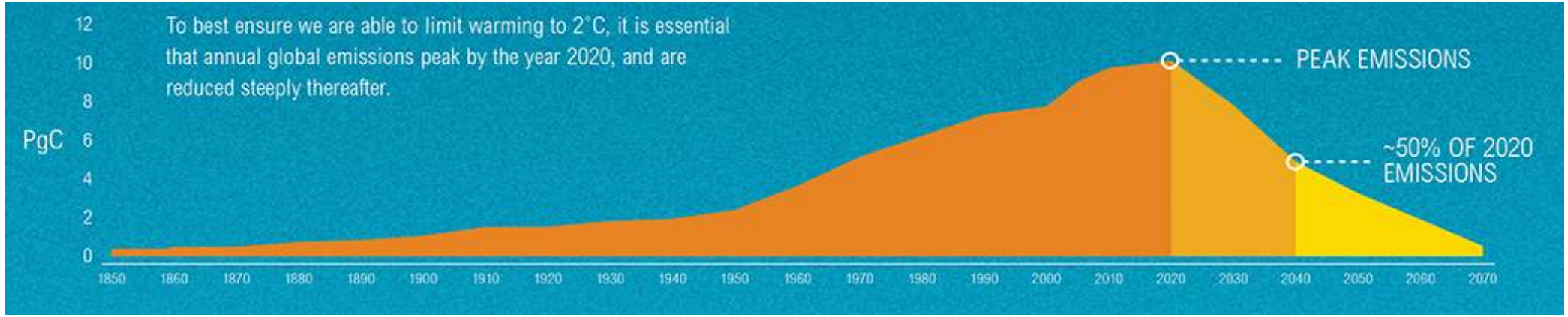
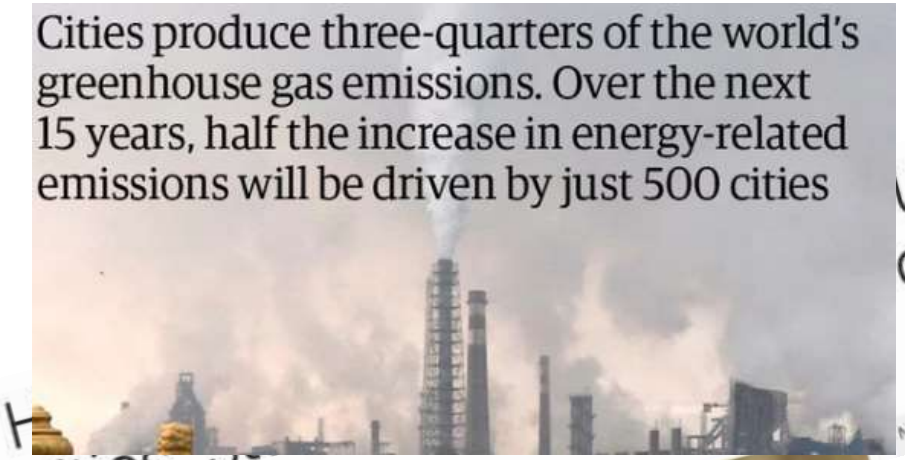
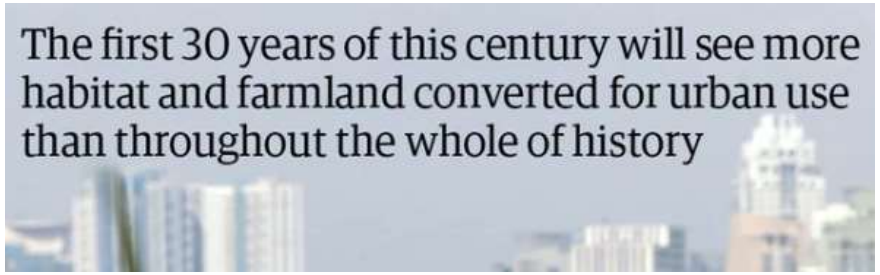
The facts

- Paris accords came into effect in November 2016 – 196 parties signed agreement
- Global carbon budget to stay within 2 degrees warming is 1,700 Gt CO_2e
- Globally, between 2000 and 2012 we have released 610 Gt (or 36% of our allowance) at a rate of approx. 7t CO_2e/person/year.
- For 2013-2050 we have 1,090 Gt CO_2e allowance remaining (or approx. 3.4 t CO_2e/person/year)









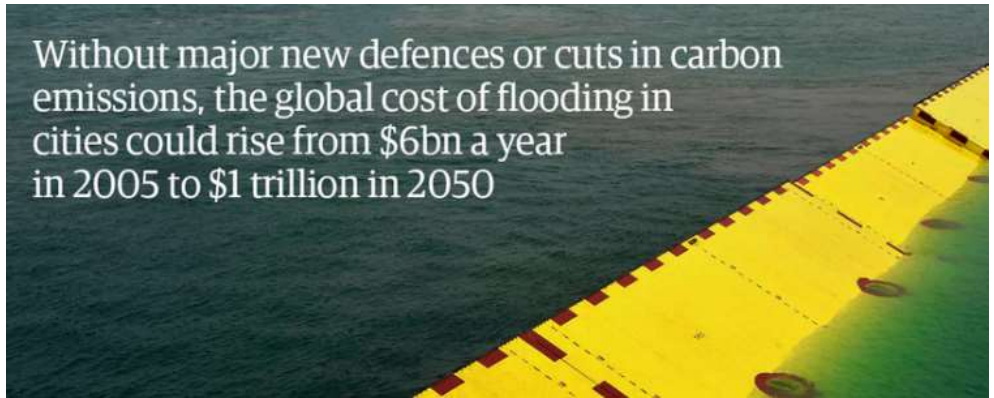
5 years after Superstorm Sandy, experts say no US city is remotely prepared for climate change

AP Frank Eltman, Associated Press
12h 864

FACEBOOK LINKEDIN TWITTER EMAIL PRINT

Sydney, Melbourne urged to prepare for 50C days by end of century

By Jake Evans
Updated 4 Oct 2017, 10:29pm



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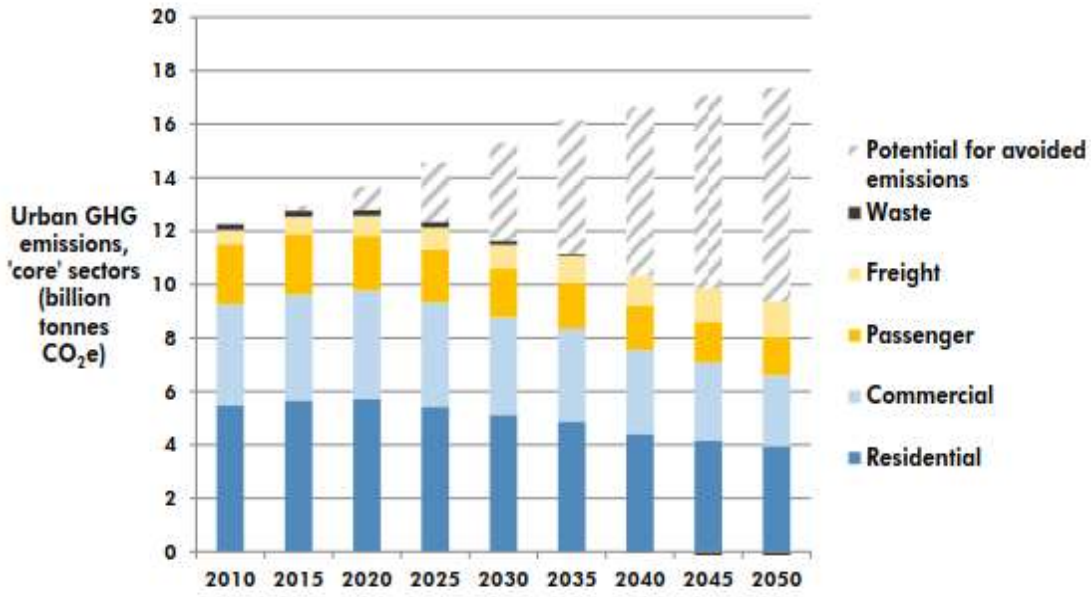
The role of cities

Cities are increasingly being recognised as playing a key role in reducing global emissions

C40 estimates that urban action would enable cities to reduce their relative emissions by 24% by 2030 and by 47% by 2050

Sector	Action
Buildings, residential	New building heating efficiency
	Heating retrofits
	Appliances and lighting
	Fuel switching / solar PV
Buildings, commercial	New building heating efficiency
	Heating retrofits
	Appliances and lighting
	Fuel switching / solar PV
Transport, passenger	Urban planning–reduced travel demand
	Mode shift and transit efficiency
	Car efficiency and electrification
Transport, freight	Logistics improvements
	Vehicle efficiency
Waste	Recycling
	Landfill methane capture



Source: C40 – Emissions avoided by urban action (C40 2014)

The GPC

GREENHOUSE GAS PROTOCOL

Global Protocol for Community-Scale Greenhouse Gas Emission Inventories

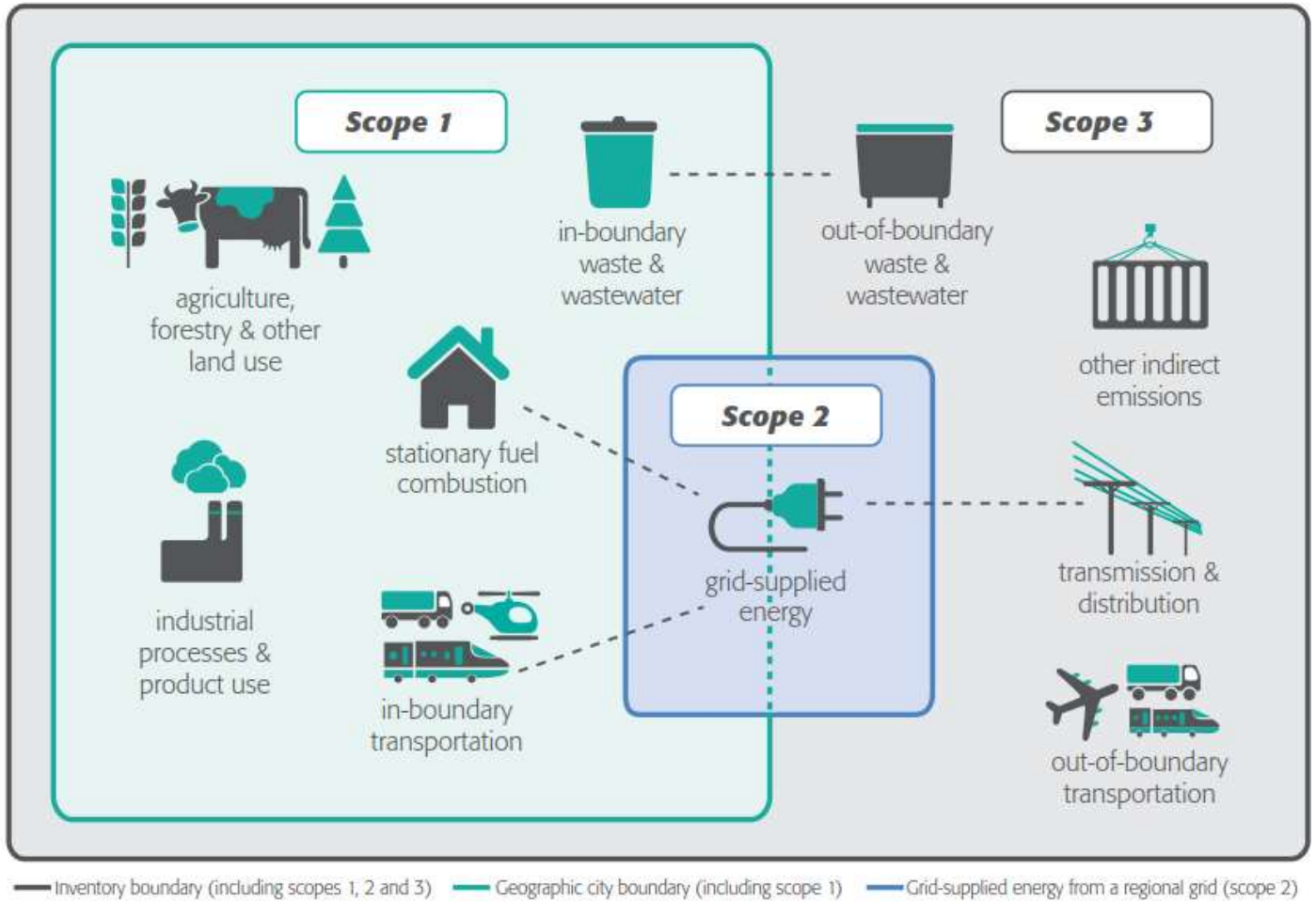
EXECUTIVE SUMMARY

An Accounting and Reporting Standard for Cities

WORLD RESOURCES INSTITUTE

C40 CITIES

ICLEI Local Governments for Sustainability



Source: WRI – Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (WRI 2014)

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6382 cities internationally submitted (over 7400 have committed)
3 cities in NZ (so far)

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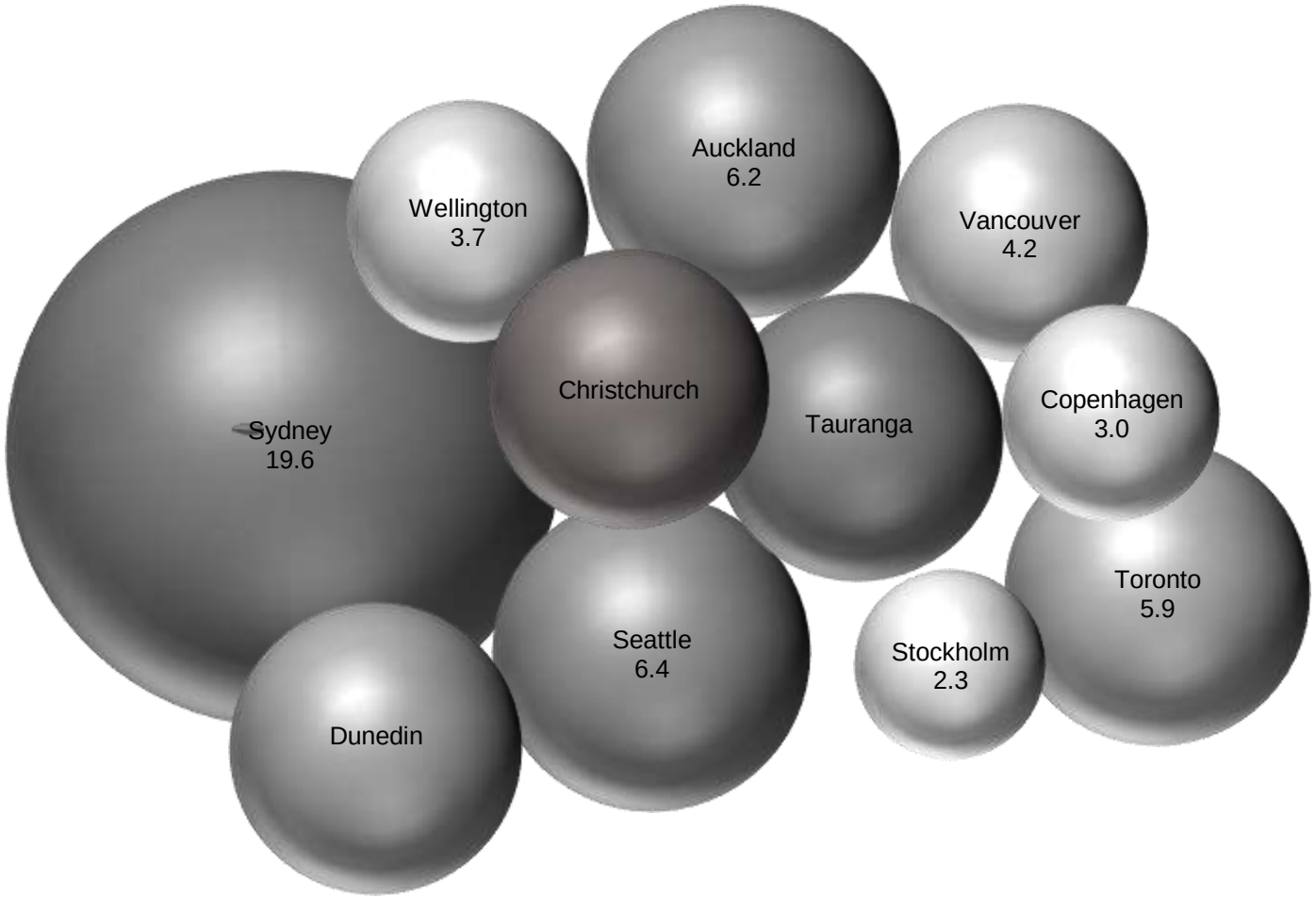
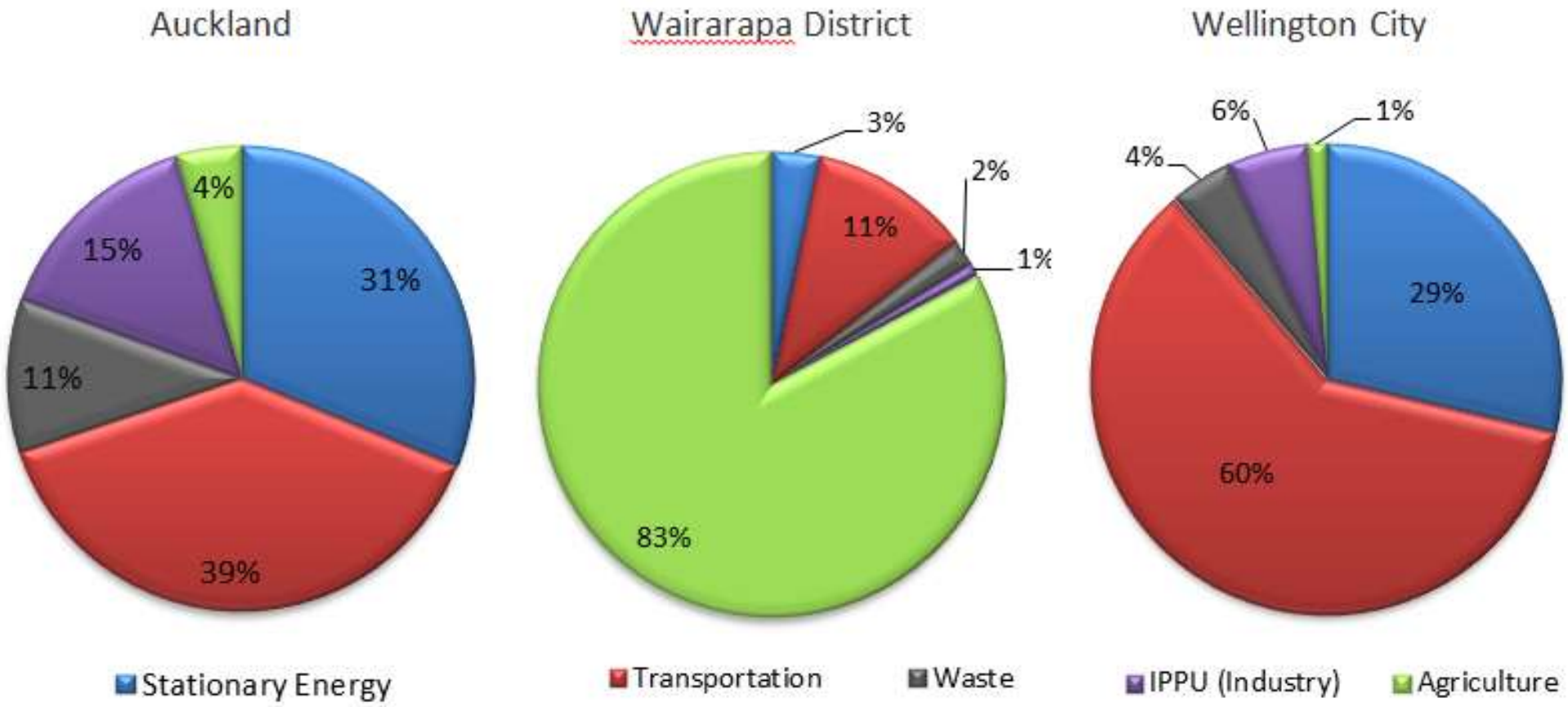


t CO_2e/per person/ year

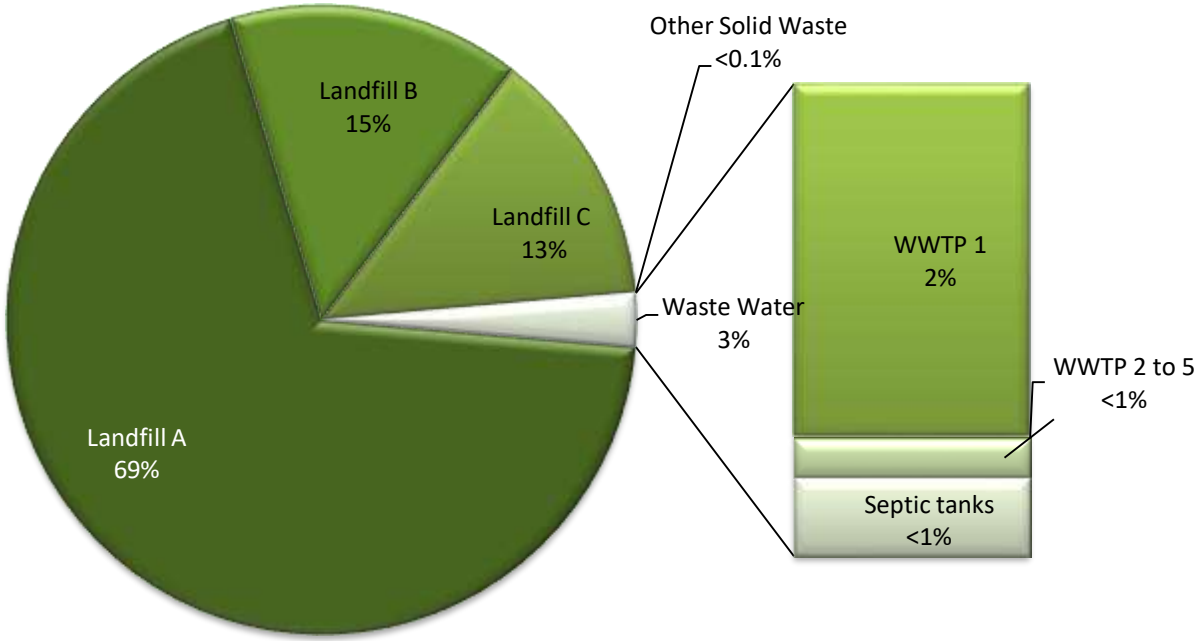
*Based on BASIC emissions as reported by Covenant of Mayors

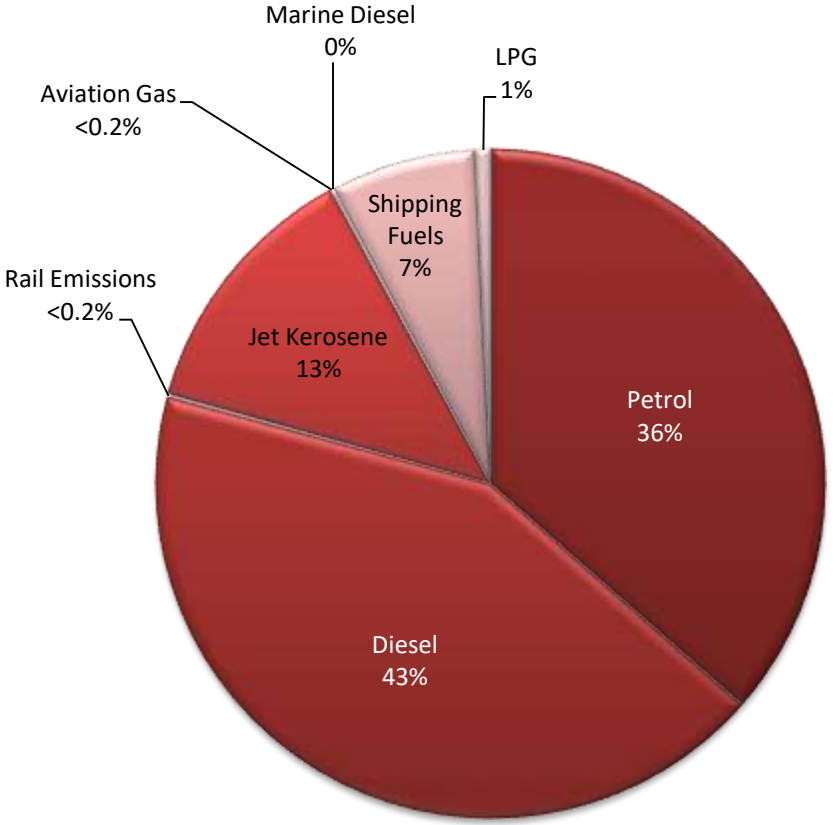
New Zealand examples

New Zealand - examples

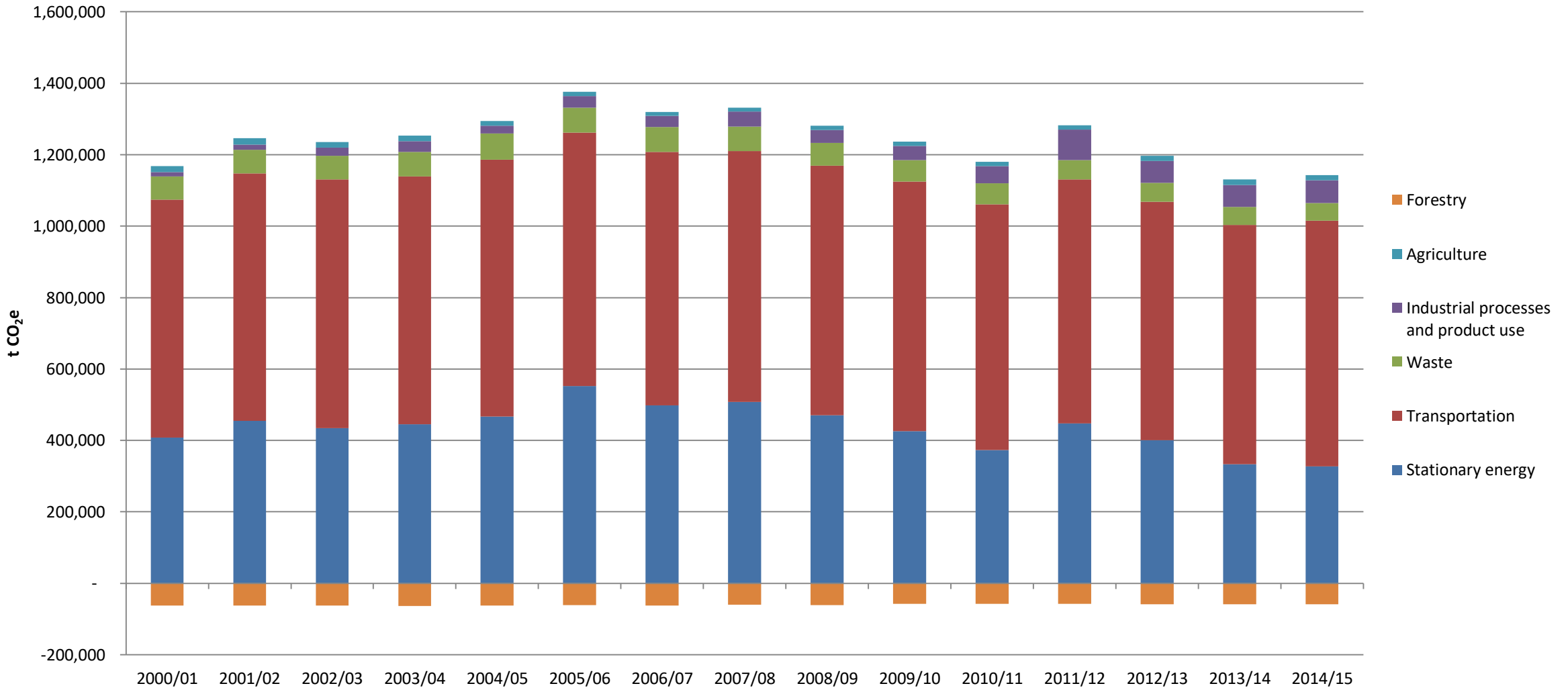


New Zealand - examples

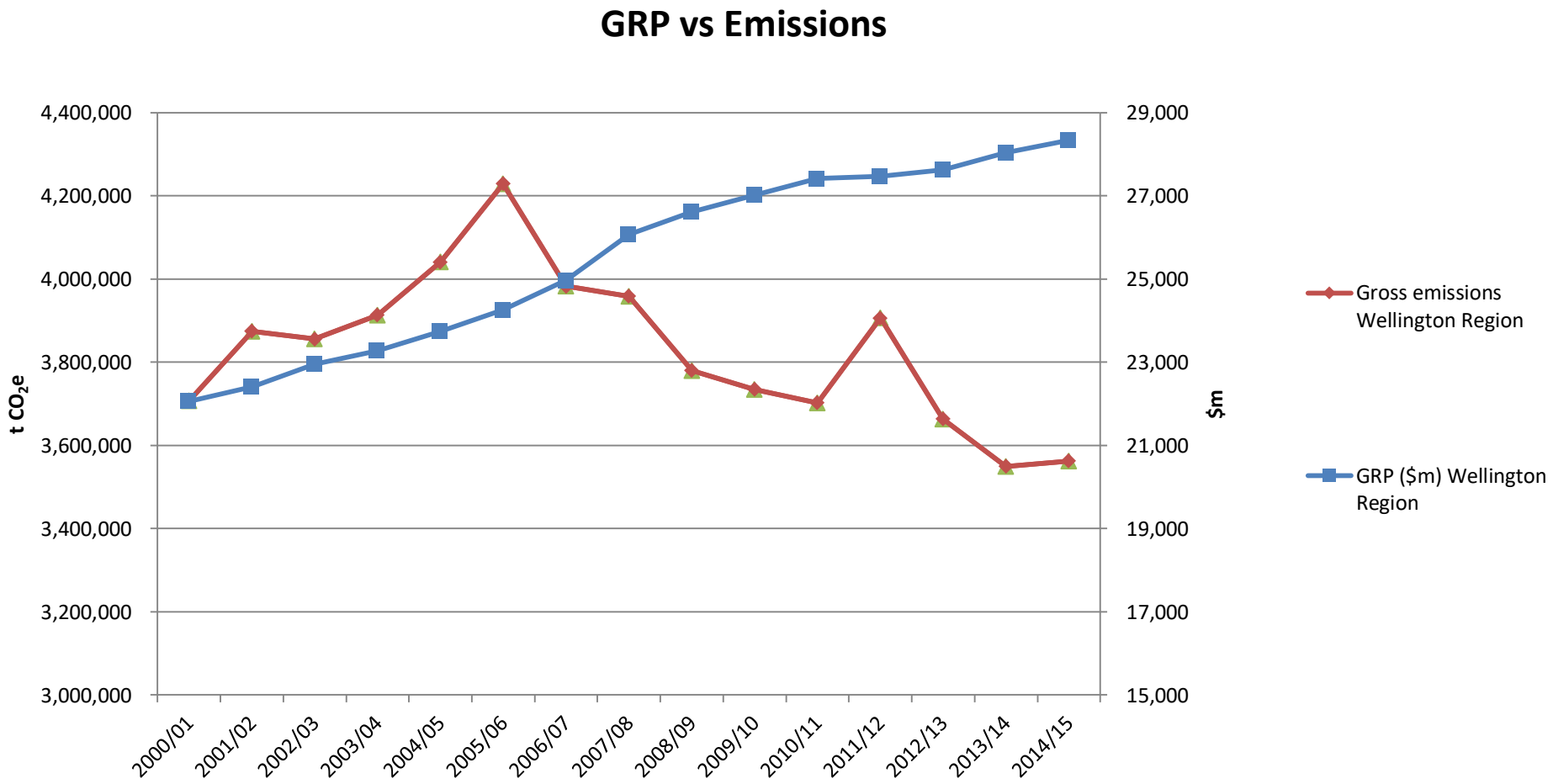




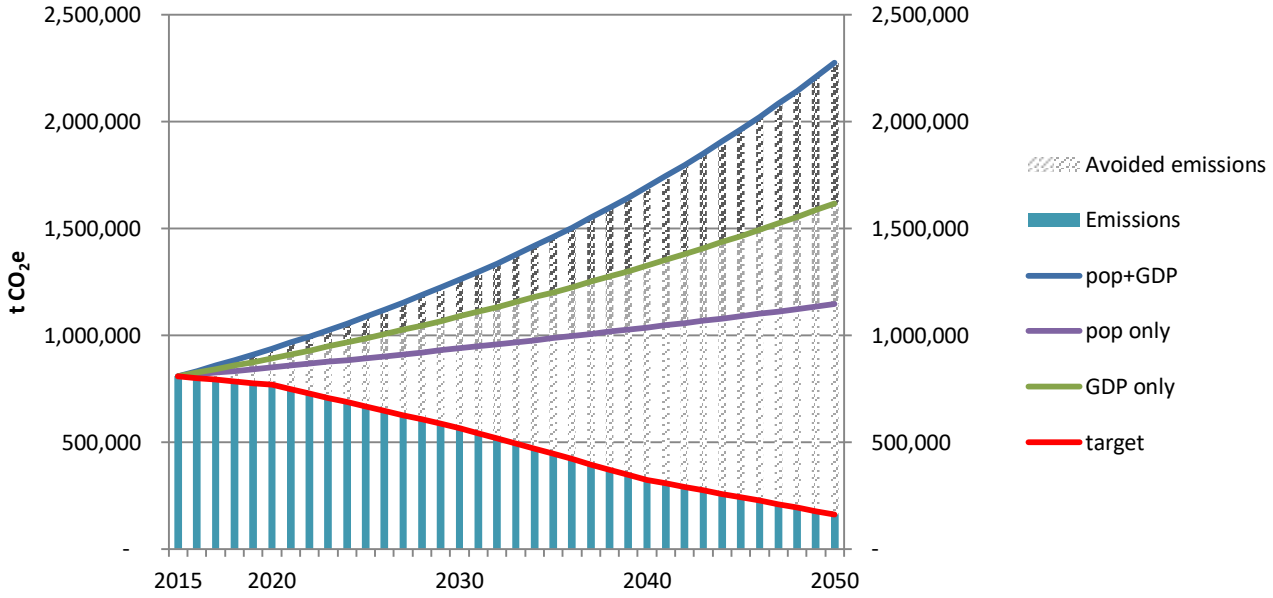
NZ examples – WLG City emissions trend

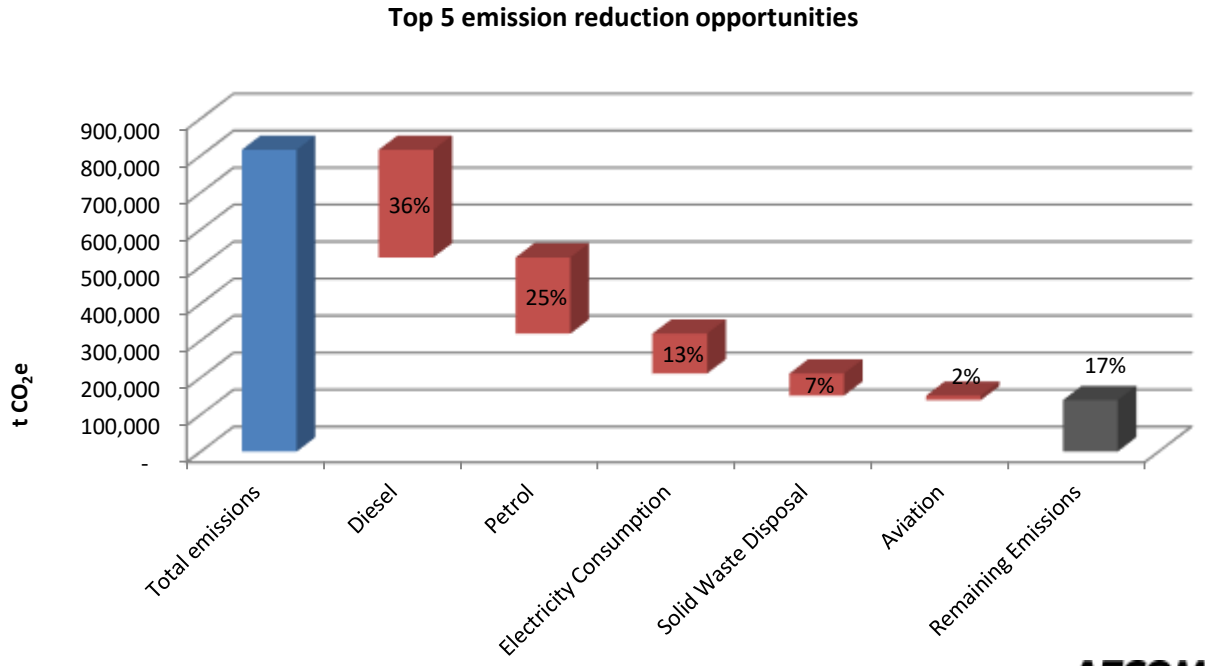


NZ examples – decoupling



NZ examples – what next?





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Beyond measurements

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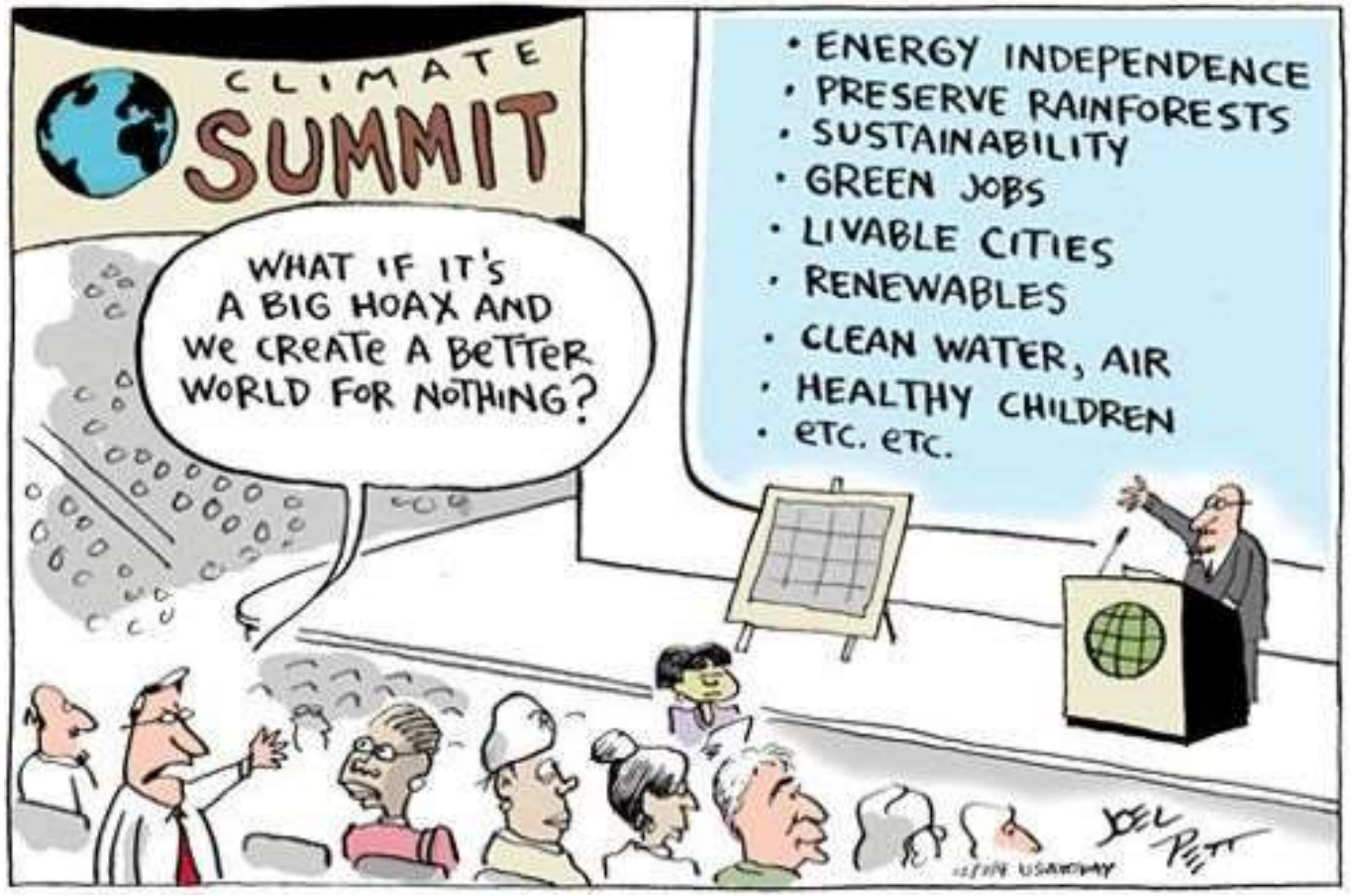
Source: NASA


CLIMATE
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WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?
• ENERGY INDEPENDENCE
• PRESERVE RAINFORESTS
• SUSTAINABILITY
• GREEN JOBS
• LIVABLE CITIES
• RENEWABLES
• CLEAN WATER, AIR
• HEALTHY CHILDREN
• ETC. ETC.

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Imagine it.
Delivered.