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Co-benefits of low carbon policies in the built environment: An investigation into the adoption of co-benefits by Australian local government

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Abstract

Background: In Australia, co-benefits have rarely entered policy discourse and have so far failed to gain traction in climate change-related policy debates. This is partly due to the dominant perception about the difficulties associated with identifying, quantifying and incorporating co-benefits into decision-making frameworks. There is also limited understanding on the part of policy-makers about the profound policy implications of a 'co-benefits approach' as a paradigm that can address multiple policy goals, including addressing climate change impacts, achieving sustainable development, and enhancing health, wellbeing and liveability.

Objectives: Our paper addresses this gap by contributing to current understandings of the 'co-benefits approach' as a means of integrating climate concerns into local planning and development control in general. At a more specific level, the paper provides an insight into the Australian local government policy context to illustrate how to plan, generate and purposively promote co-benefits in planning urban built environments.

Methods: A desktop review of NSW councils' web sites and their climate change-related policies was undertaken. A comprehensive online survey was subsequently conducted to investigate the extent to which councils have adopted a 'co-benefits approach' in their low carbon policies.

Results: Major barriers to integrating co-benefits in the policy process were identified in this research. They include: (i) local government's current practice of single-sectoral policy development; (ii) absence of an integrated and co-ordinated 'whole-of-government approach' to address climate change impact; (iii) over-reliance on quantitative decision-support frameworks; and (iv) over-emphasis on short term and readily quantifiable monetary consideration of benefits.

Conclusion: Local government's over-emphasis on readily quantifiable 'monetary considerations' in targeting benefits from climate change policies excludes a wide range of environmental, social and health benefits from incorporation in policy. This limits the achievement of optimal policy outcomes across multiple sectors using a co-benefits approach.

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Keywords: Australia; built environment; climate change; co-benefits; health and wellbeing; liveability; local government; low carbon

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1. Introduction

As growing evidence confirms that our planet's climate is changing rapidly due to human-made emissions of greenhouse gases (GHG) into the atmosphere, the *Intergovernmental Panel on Climate Change (IPCC)* in its *Fifth Assessment Report* warns that without substantial policy and technological changes, the world is heading towards dangerous tipping points in its climate system [1]. Australia faces multiple challenges in its response to the threat of climate change, conserving its natural environment, as well as securing adequate supply of energy and natural resources to meet its development needs [2-5]. Being a country with some of the highest per capita GHG emissions in the world, and as a signatory to *Kyoto Protocol* [6, 7], the nation needs to significantly reduce its GHG emissions. If Australia is to achieve the national 2020 target of a 5% reduction (which is to cut 159 million tonnes of carbon pollution between 2001 and 2020), it needs to adopt low-carbon development pathways [3, 4].

The key to an appropriate and effective low-carbon development pathway lies in formulating effective cross-sectoral policies that integrate climate change response policy goals with broader development policies, and wherever possible, realising synergies and mutual benefits. In doing so the 'co-benefits approach' emerges internationally as an important paradigm for analysing, developing and implementing policies and strategies that simultaneously contribute to tackling climate change whilst addressing local environmental and developmental problems. Here the term 'co-benefits' means the collection of benefits accruing to actions linking climate change and other development priorities. The *IPCC* defines 'co-benefits' as: "the benefits of policies that are implemented for various reasons at the same time – including climate change mitigation – acknowledging that most policies addressing greenhouse gas mitigation have other…..equally important rationales" [8].

This definition focuses on simultaneous effects of policies specifically introduced with explicit intention to integrate climate change response benefits with other fields. According to this definition the 'explicit intention' and integration of policy measures are considered essential in order to qualify for a 'co-benefit principle'. We adopt this definition of 'co-benefits' as it appropriately suits the scope and objectives of this paper.

Over the past two decades, a growing number of studies have demonstrated that a 'co-benefits approach' could prove more cost effective than managing climate and development issues in isolation [9-11]. With increasing global attention and interest in mitigating GHG emissions since the 1990s, several studies indicated that GHG mitigation policy co-benefits could be the same order of magnitude as the cost of implementing the policies [9, 10]. Several studies around the turn of the millennium found that co-benefits could significantly reduce the net costs of GHG reduction efforts [11]. Based on these and other studies, as well as in response to the movements towards a global climate treaty in the late 1990s, several international and government bodies (including the *UN Framework Convention on Climate Change (UNFCCC)*) directed considerable attention to understanding and integrating co-benefits analysis into climate change policy.

Evidence suggests that in the area of public health, action on climate change can bring multiple co-benefits. The *IPCC* in its *Fifth Assessment Report* stressed that the short-term and relatively localised health co-benefits from reducing emissions could be very large. Opportunities to capture health co-benefits include reducing health-damaging climate-altering air pollutants (CAPs) through: energy efficiency measures, shifting to cleaner energy sources, shifting consumption away from animal products toward less CAP-intensive healthy diets, and designing transport systems that promote active transport. In economic terms, these health co-benefits from reducing emissions would be extremely cost-beneficial [12].

Active transportation modes, such as walking and cycling, are widely recognised for their zero carbon impact and benefits for public health [13-17]. In a recent *Lancet* series, leading health researchers argued for the alignment of policy responses to climate change with those to tackle epidemics of chronic illnesses such as cardiovascular disease, diabetes and cancers. Moreover, special issues in the *Health Promotion Journal of Australia* [18] and the *NSW Public Health Bulletin* [19] have examined the co-benefits for health from action on climate change in the Australian context. This body of research advocates that aligning policy responses to climate change with those of public health can simultaneously contribute to addressing climate change and health problems, which could also have other local environmental and social benefits.