

Green Energy and Technology

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Decarbonising Cities

Mainstreaming Low Carbon Urban
Development

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Foreword

We have known for decades now that a more sustainable planet requires significant attention to climate change and that reducing carbon output from human settlements is absolutely imperative for the future of human civilisation. However, most of the effort to monitor and assess carbon and other greenhouse gas emissions has been at the level of the individual building, and of those various and often competing schemes to assess and/or certify green buildings. The terrain is muddy at best. Rauland and Newman have done us a great service by dissecting this mess with tremendous clarity and in drawing our attention to the level of the precinct or neighbourhood as a better focus than the city itself, which on its own is a valuable insight.

Having established this perspective, Rauland and Newman offer an overview of several international and Australian eco-city case studies which they then evaluate in terms of their carbon claims, setting the stage nicely for the following detailed chapters on carbon neutrality and measurement, GHG accounting frameworks and rating tools for cities and precincts, and carbon-neutral certification schemes for the built environment. Their presentation is clear and helpful as there are many difficult issues and tangents associated with this material.

The clarity of analysis and presentation in these chapters is exceptional, and that in itself is a valuable addition to the literature. However, it is in moving forward from this foundation that the work becomes particularly interesting and where Rauland and Newman's contribution to knowledge becomes most apparent. They offer a framework for calculating the emissions associated with precinct-scale low-carbon development, and outline some core elements to be considered when establishing a certification process for such development. Their core elements include site preparation and construction processes, embodied carbon in materials, energy production and management, water management, waste management and travel, analysed before, during and after construction. This framework will not satisfy everyone interested in sustainable development, but it stays focused on carbon reduction and makes it measurable and manageable.

This carefully focused approach lays the groundwork for a final discussion of the benefits, barriers, opportunities and governance associated with low-carbon development. Specific barriers to the uptake of such low-carbon development are outlined, followed by specific opportunities for overcoming those barriers. Rauland and Newman demonstrate that this transition will not be easy, but nor is it impossible; indeed, most of the opportunities for overcoming these barriers exist already. Someone needs to connect the dots and package them together in a way that enables the low-carbon transition to proceed apace, and this book has done a better job than anyone else so far in doing exactly that.

Rauland and Newman's concluding chapter has some tantalising ideas for where the decarbonising of cities could go. In particular, they hold out a most promising idea, namely that enabling carbon credits to be generated from low-carbon developments and made tradable could provide a critical new dimension to climate change policy, making possible a mechanism for trading carbon within the built environment and creating a significant financial incentive for decarbonising cities. They suggest a possible way this could be approached and thus have laid the foundation for a global debate on how decarbonising cities can be mainstreamed.

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Abbreviations

ACCC	Australian Competition and Consumer Commission
ACCU	Australian Carbon Credit Unit
ASBEC	Australian Sustainable Built Environment Council
BAU	Business As Usual
BID	Business Improvement District
BSI	British Standards Institution
C&D	Construction and Demolition
CBD	Central Business District
CDP	Carbon Disclosure Project
CFI	Carbon Farming Initiative
CNP	Carbon Neutral Program
CNPG	Carbon Neutral Program Guidelines
CPM	Carbon Price Mechanism
CSIRO	The Commonwealth Scientific and Industrial Research Organisation
CSR	Corporate Social Responsibility
CUSP	Curtin University Sustainability Policy Institute
D&D	Demolition and Disposal
DAP	Direct Action Plan
DOIC	Domestic Offsets Integrity Committee
EE	Energy Efficiency
EMC	Environmental Management Committee
EmE	Embodied Energy
EMP	Emission Management Plan
ERAC	Emissions Reduction Assurance Committee
ERF	Emissions Reduction Fund
ESCo	Energy Service Company
GFC	Global Financial Crisis
GHG	Greenhouse Gas
GRID	Greening, Regeneration and Improvement District

ICLEI	Local Governments for Sustainability (Formerly ‘International Council for Local Environmental Initiatives’)
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organisation of Standardisation
MT	Mega Tonne
NAMA	Nationally Appropriate Mitigation Action
NCOS	National Carbon Offset Standard
NGERS	National Greenhouse and Energy Reporting Scheme
NPQ	North Port Quay
PDS	Public Disclosure Summary
RECs	Renewable Energy Certificates
RET	Renewable Energy Target
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
V2G	Vehicle to Grid
VKT	Vehicle Kilometre Travelled
WBCSD	World Business Council for Sustainable Development
WRI	World Resources Institute
WSUD	Water Sensitive Urban Design

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