



Net zero energy building policy: benchmarking Australian practices against Asia Pacific

Assoc Professor Usha Iyer-Raniga
School of Property, Construction and Project
Management, RMIT University,
Co Lead UN 10YFP SBC Programme



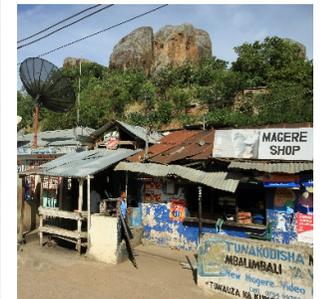
Organisers:



International Co-owners:



UN 10YFP





10YFP Sustainable Buildings and Construction Programme (SBC)

10 Year Framework of Programmes post Rio+20

- STP
- SLE
- SCI
- SPP
- SBC
- SFS





Leadership of the 10YFP programmes



Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety



WORLD GREEN BUILDING COUNCIL



Swedish Government



Kementerian Lingkungan Hidup Republik Indonesia

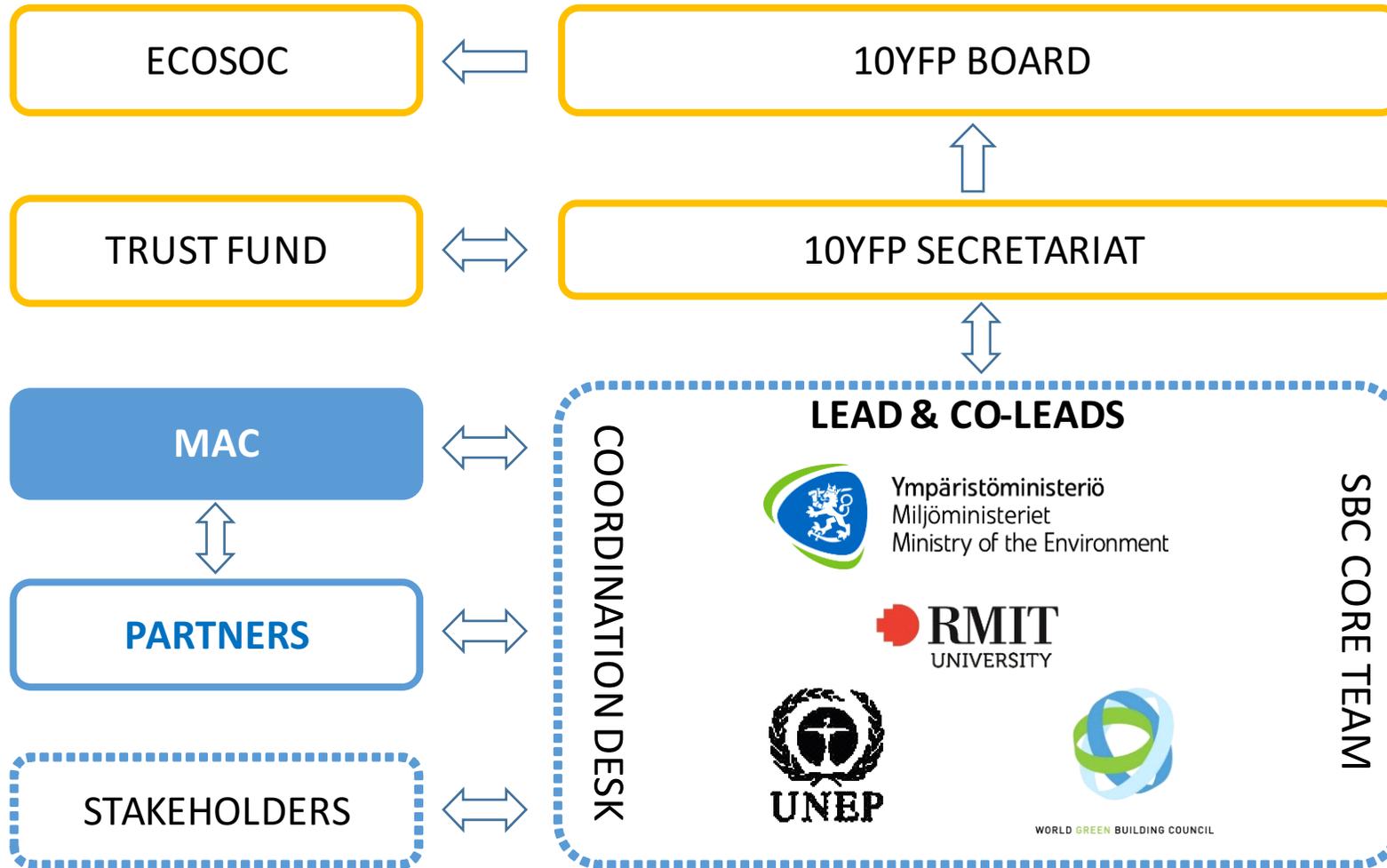


Ympäristöministeriö
Miljöministeriet
Ministry of the Environment





SBC Organisation





SBC Multi-Stakeholder Advisory Committee (MAC)

Co-Leads



Ympäristöministeriö
Miljöministeriet
Ministry of the Environment



WORLD GREEN BUILDING COUNCIL

Governments: Argentina, France, Malaysia, Singapore, South Africa

Business organisations: Skanska, WBCSD

Academia: Energies 2050 France+Africa, Politecnico Italy, Tsinghua China

IGOs: UN-Habitat, UNOPS

NGOs: Bioregional UK, Development Alternatives India, RICS, SEEA US, TERI India, UNEP-SBCI, WWF





SBC and SDGs



8 DECENT WORK AND ECONOMIC GROWTH

SUSTAINABLE DEVELOPMENT GOALS

17 PARTNERSHIPS FOR THE GOALS

4 QUALITY EDUCATION

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



6 CLEAN WATER AND SANITATION

3 GOOD HEALTH AND WELL-BEING

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

7 AFFORDABLE AND CLEAN ENERGY

© Pekka Hevylia

Net Zero Energy Buildings



Definitions

- Net
- Operational vs embodied energy
- On site and off site
- Source energy
- Costs
- Energy is an important element of “green”

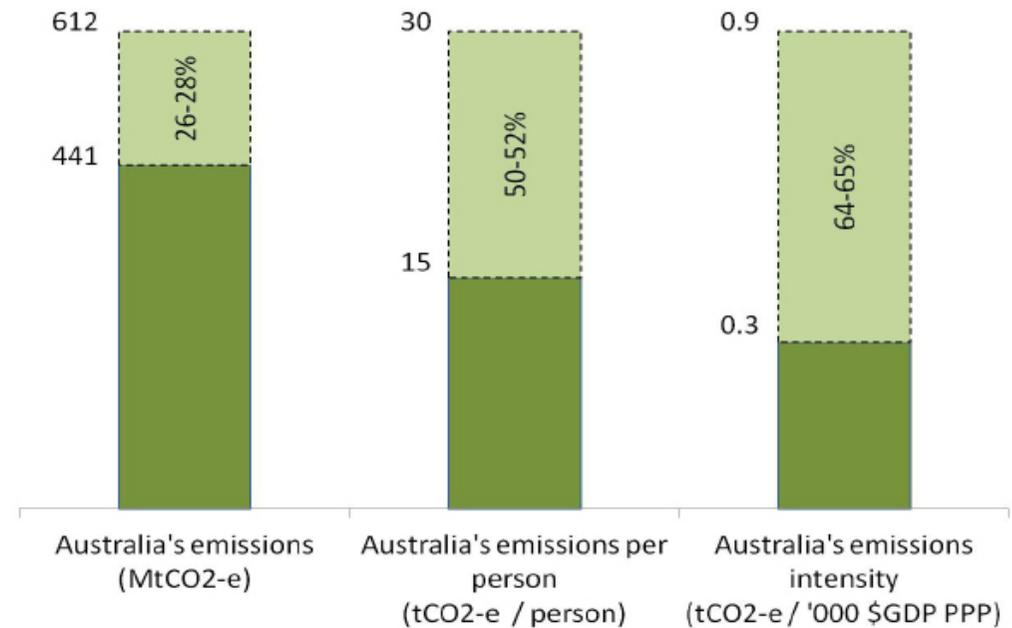


Australia

Goal is to reduce emissions to 26-28% on 2005 levels by 2030

» 50-52% reductions in emissions per capita

» 64-65% reduction in the emissions intensity of the economy between 2005 and 2030



Australia's emissions reduction targets and achievements, 2005–2030.

Source: Department of the Environment analysis



Organisers:



International Co-owners:



Energy use in buildings

- Energy use of buildings contributes to 20% of national greenhouse gas emissions
- Heating and cooling 11% of national greenhouse gas emissions
- Typically:
 - Space heating and cooling: 41%
 - Domestic water heating: 30%



Source: Metricon Homes, Peninsula

Source: Saman, W. Y. 2013. Towards zero energy homes down under. *Renewable energy*, 49, 211-215.

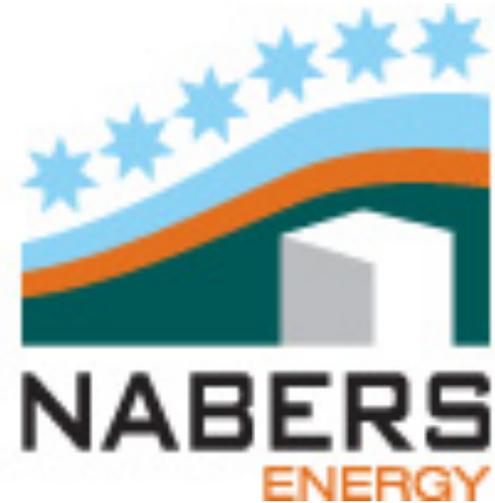


International Co-owners:



Landscape in Australia

- Role of the NCC
- Voluntary targets set up by the GBCA
- BEED 2010
 - Over 2000 meter square
 - Point of lease of sale
 - NABERS rating



The NABERS rating scale:

For NABERS Indoor Environment, Energy and Water tools for offices, shopping centres and hotels:

- 6 stars..... Market leading performance
- 5 stars..... Excellent performance
- 4 stars..... Good performance
- 3 stars..... Average performance
- 2 stars..... Below average performance
- 1 star..... Poor performance
- 0 stars..... Very poor performance

For NABERS Waste for offices:

- 5 stars.....Market leading performance
- 4 stars.....Excellent performance
- 3 stars.....Good performance
- 2.5 stars.... Average performance
- 2 star.....Below average performance
- 1 star.....Poor performance
- 0 stars..... Very poor performance

Source: NABERS: <https://nabers.gov.au>



Japan, Korea, China

Japan and Korea

- Homes to be NZE
- Government incentives and market drivers
- Targeting both residential and non residential buildings

China

- Strong focus on EE
- Energy efficiency codes
- Beyond EE to other capital and operational: e.g., water and materials



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



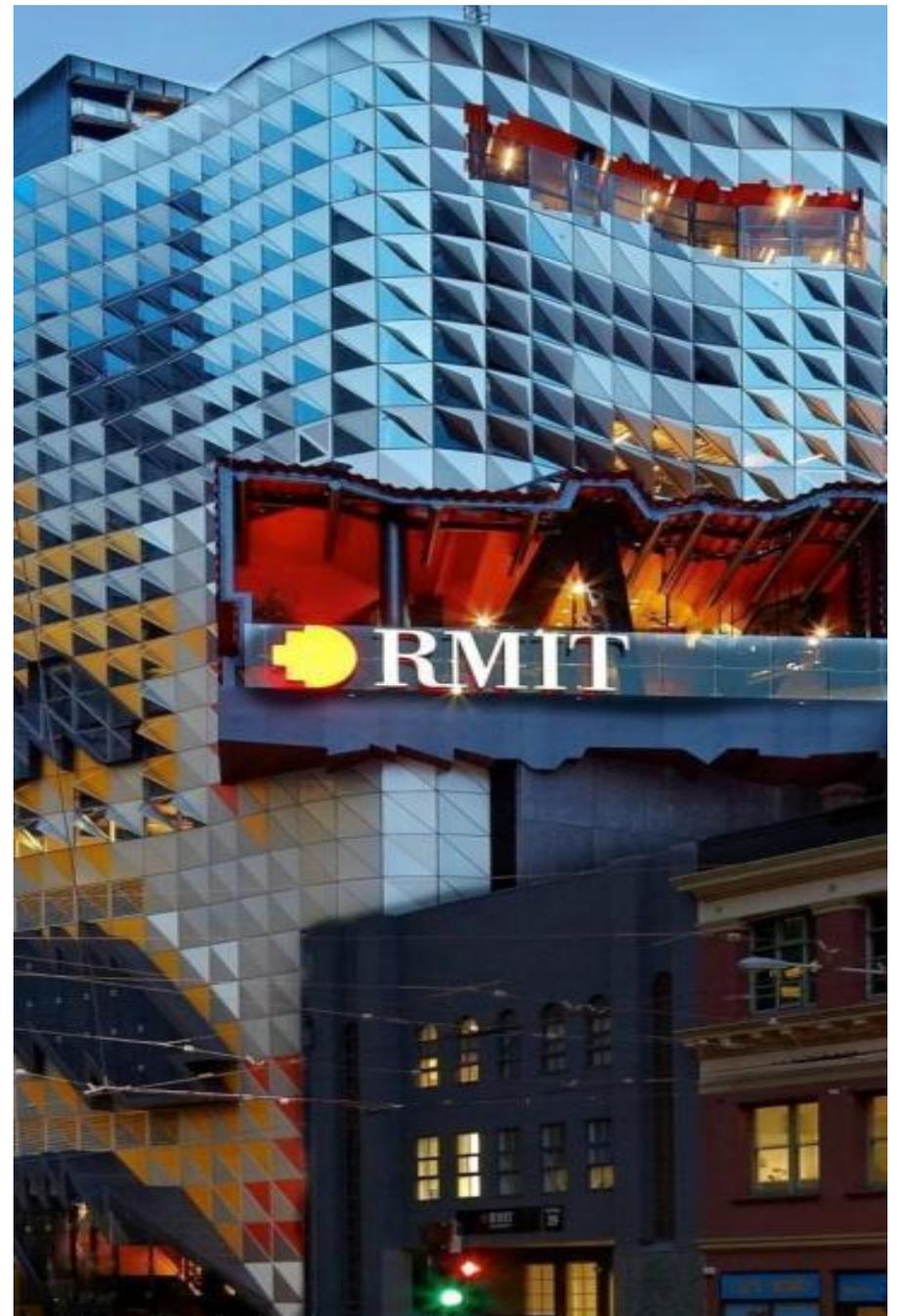
Comparison

Policies/legislation	Australia	China	Japan	S. Korea
Sustainability as a guiding principle as policy/guideline	Yes	Yes	Yes	No
Zero energy building policy	No (in early stages of dev.)	No	Yes	Yes
Energy efficiency in the building code/Energy efficiency mandated through regulation	Yes	Yes	Yes major renovations above a certain size	Yes
Applicability of energy efficiency to existing buildings	Yes not blanket though	Yes	Yes major alternation or renovation	Yes voluntary labelling
Operational energy performance mandated	Yes	No	No	No
Other market based mechanisms/voluntary schemes	Yes (Green Star)	Yes	Yes (BELS and CASBEE)	Yes



Conclusions

- Lack of NZEB is not a hinderance
- Operational energy tracking is the only way to truly handle energy use
- Both residential and non residential sectors need to be involved



Thank you

