



# Sustainability: Now and the Future

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# The big picture

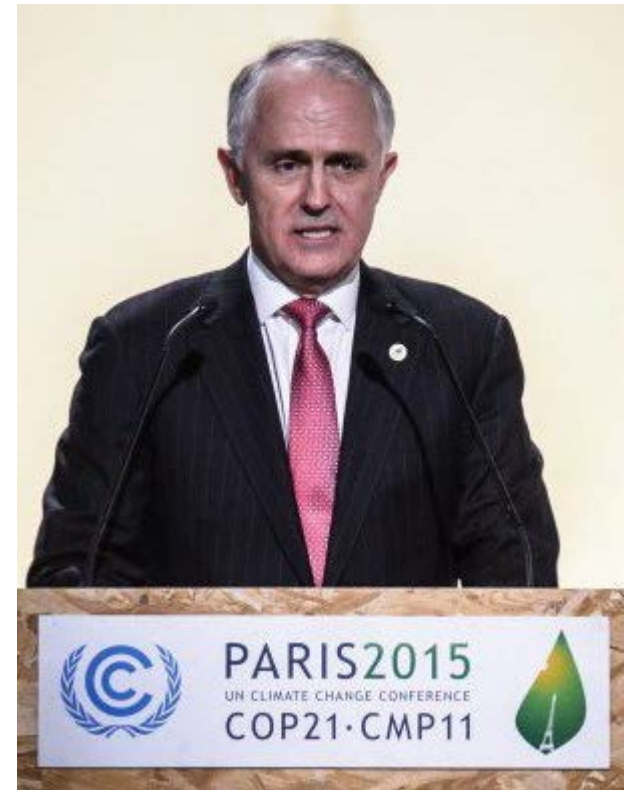
As signatories to the Paris Agreement, our federal governments commit to:

## Nationally

- Keep global warming to under 2°C
- Strive for under 1.5 °C
- Develop mid-century decarbonisation strategies
- Reach net zero by 2050
- Upgrade emissions reductions targets every five years
- Transparent reporting

## Locally

- ACT Government committed to carbon neutral in it's own operations by 2020
- Moving away from gas boilers for heating and hot water with a view that electricity will become clean

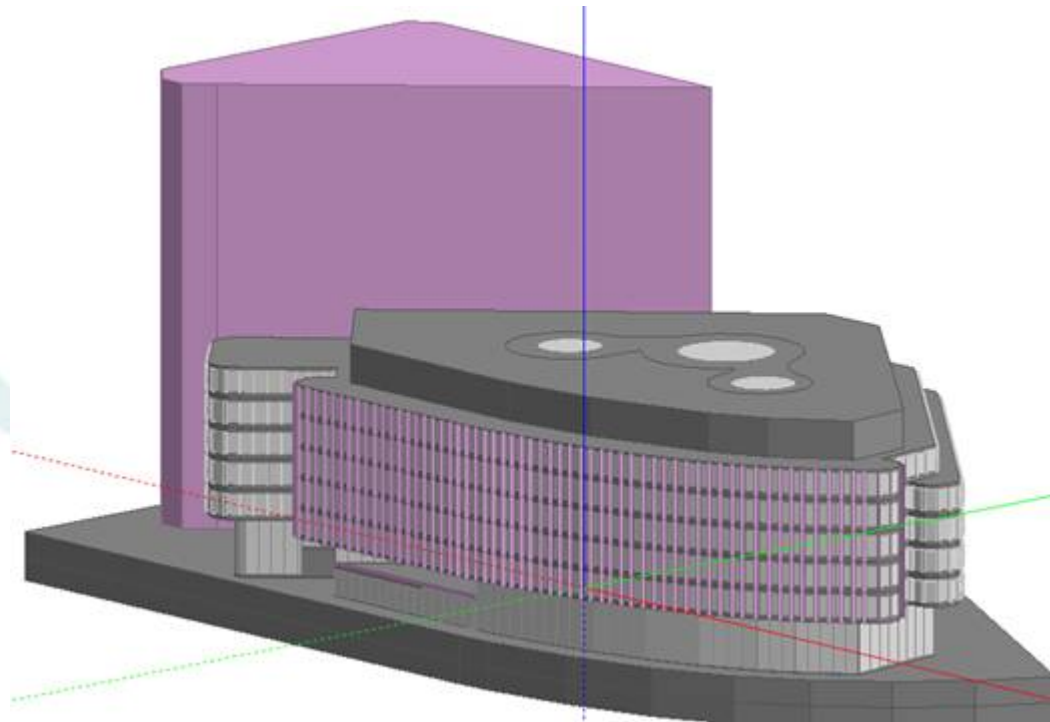
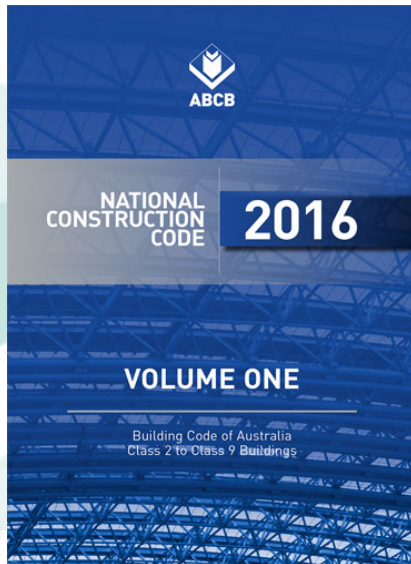




# What is sustainability?



# It's more than just Section J compliance...





# Or rating tools...

Common place



A bit different





# Sustainability is...

- **Environmental drivers:** energy, water, waste and other environmental impacts
- **Social drivers:** health, wellbeing, diversity, equity and social inclusion
- **Economic drivers:** productivity, jobs and viability of assets in the long-term





# The now of sustainability (in terms of HVAC)

## General

- Demand controlled ventilation – based on internal CO<sub>2</sub> levels
- Designing with the end user in mind
- High quality indoor environments
- Ongoing monitoring and building tuning
- Resilient buildings
- Adaptive design and smart construction
- Energy recovery

## ACT Specific

- Electric heating
- Minimising infiltration and building leakage testing
- Addressing thermal breaks



# The (near) future of sustainability?



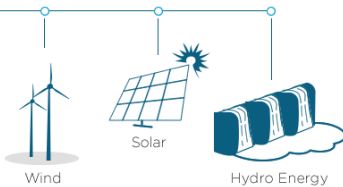
## To Create a Zero Energy Building...

### STEP 1 Increase energy efficiency

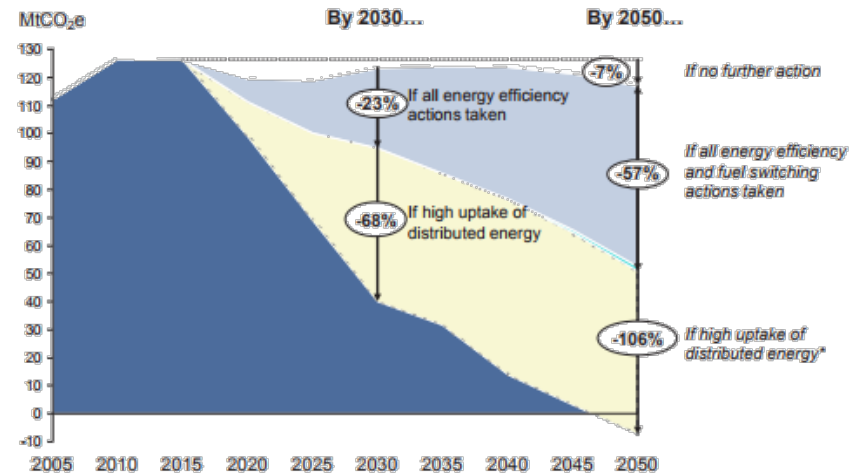
- Efficient building construction
- Efficient systems and appliances
- Operations and maintenance
- Change in user behavior



### STEP 2 Address remaining needs with on-site renewable energy generation



**Figure 4. Built environment emissions and opportunities to achieve zero carbon buildings (MtCO<sub>2</sub>e)**



- Energy efficiency
- Fuel switching
- Zero emissions electricity
  - Onsite
  - Offsite
  - Grid

\* Distributed energy potential presented in this chart is based on the modelled potential uptake of distributed solar PV from the Future Grid Forum *Rise of the Prosumer* scenario (Graham et al, 2015).

Source: ClimateWorks team analysis







# So what's next??

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