



# Energy Efficiency of Buildings in Australia

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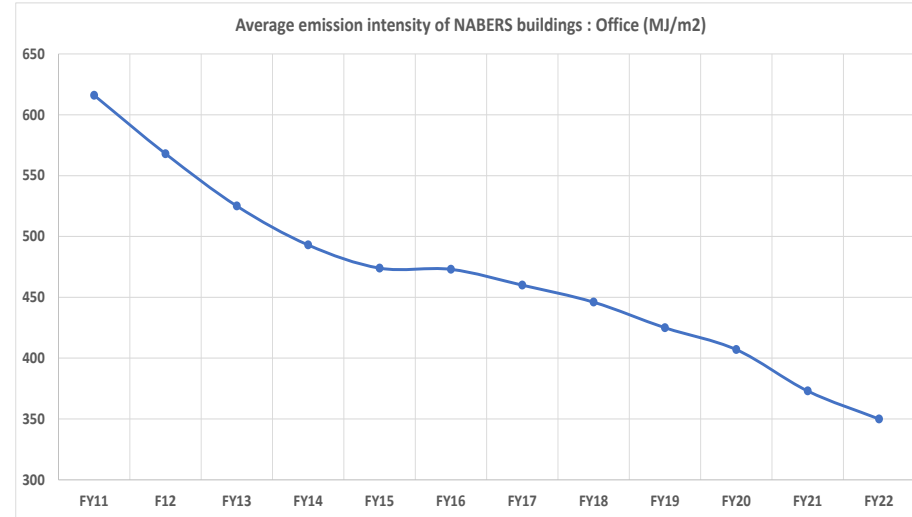
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# Energy use in buildings : Australia

- 86% Australian population live in cities
- Buildings make up of about 18% total emissions
- Nearly 60% of building energy use is through electricity
- High uptake of Distributed Energy Resources (DER). One in every three households likely to have rooftop solar by 2050

# Energy use in buildings : Australia

- National Energy Performance Strategy (2015, 2024)
- Trajectory for low emission buildings (2019,2024)
- Sector wide decarbonisation plans (2023)
- National Construction Code (NCC), Greenhouse and Energy minimum Standards (GEMS) for appliances



Policies with successful implementation history

# Decarbonisation of Australian built environment sector

## ➤ Residential buildings :



- From 2023 : Increased requirements for thermal performance (6 to 7)
- Whole of home rating to incorporate efficiency of appliances
- Household energy upgrade fund

## ➤ Commercial buildings :



- Usage based rating system (NABERS) : highly successful in improving efficiency
- Commercial Building Disclosure (CBD) program requires energy efficiency information to be provided during sale or lease
- Energy efficiency in government operations : Government buildings to lead by example

# Drivers for energy efficiency

## ➤ As a consumer

- Reduce energy bills
- Climate resilient
- Health and comfort

## ➤ Technology/policy

- Net zero
- Electrification
- Distributed generation + storage
- Consumers becoming prosumers

# Emerging Opportunities

## ➤ Electrification & Decarbonisation



- Switch from gas heating to heat pumps
- Gas /electric boiler to heat pumps
- Self consume : use onsite generation and storage

## ➤ Digitalisation

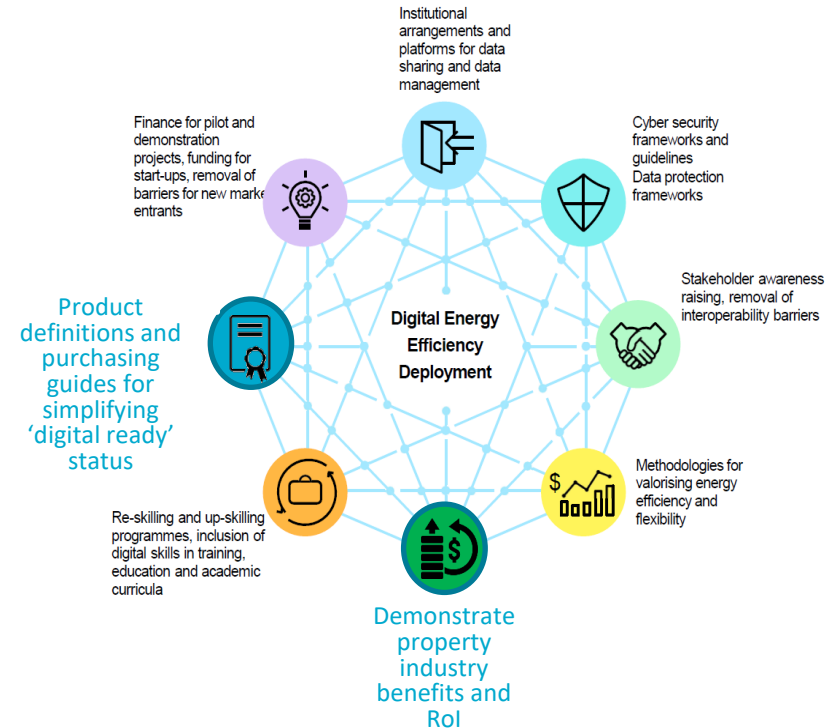


- Smart meters, sensors for monitoring and control
- Optimal control, management, preventive maintenance
- Participate in the electricity market

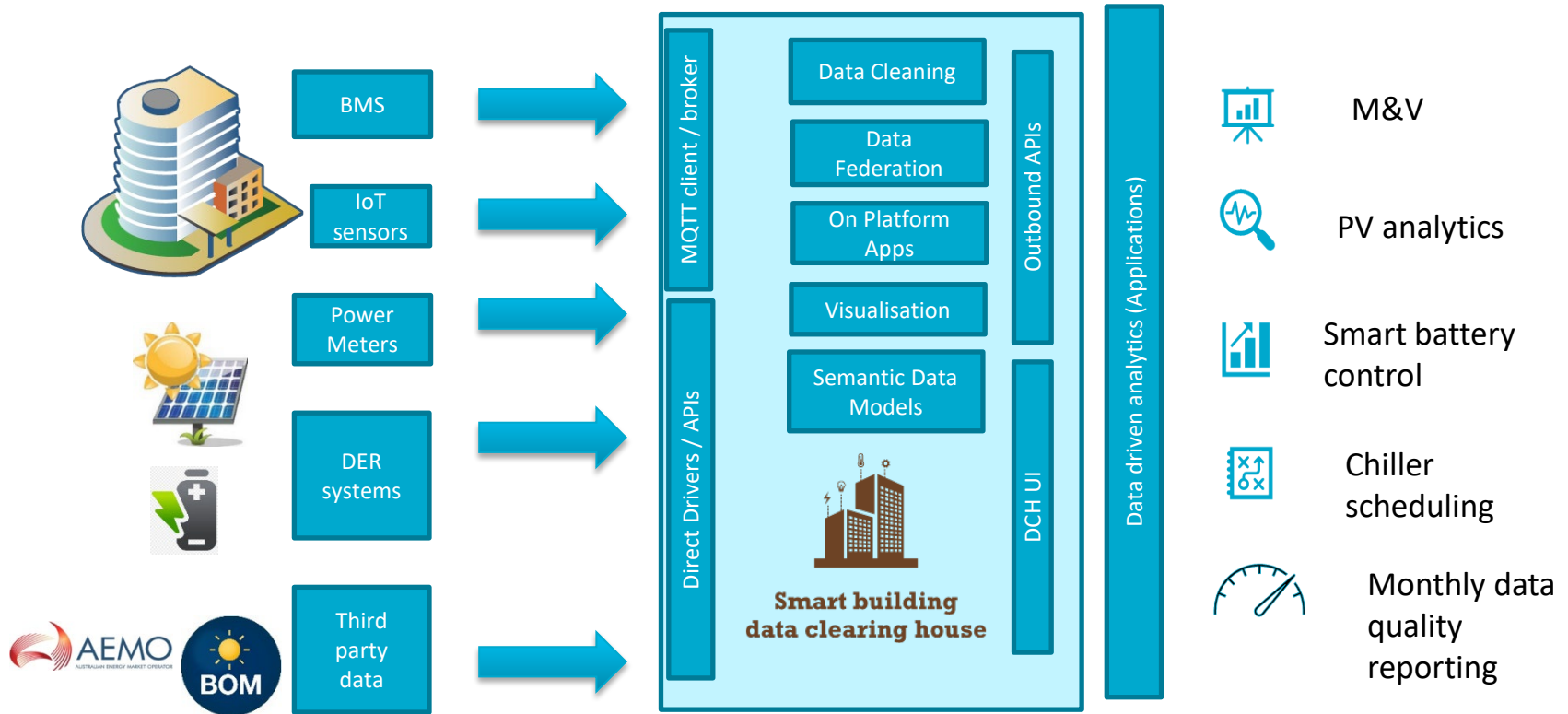
# Digitalisation journey: Australian experience

Two step process :

- Connecting the buildings (“digital ready”) and getting access to all data in a cost effective way
- Delivering benefits through analytics (both operational and energy cost)



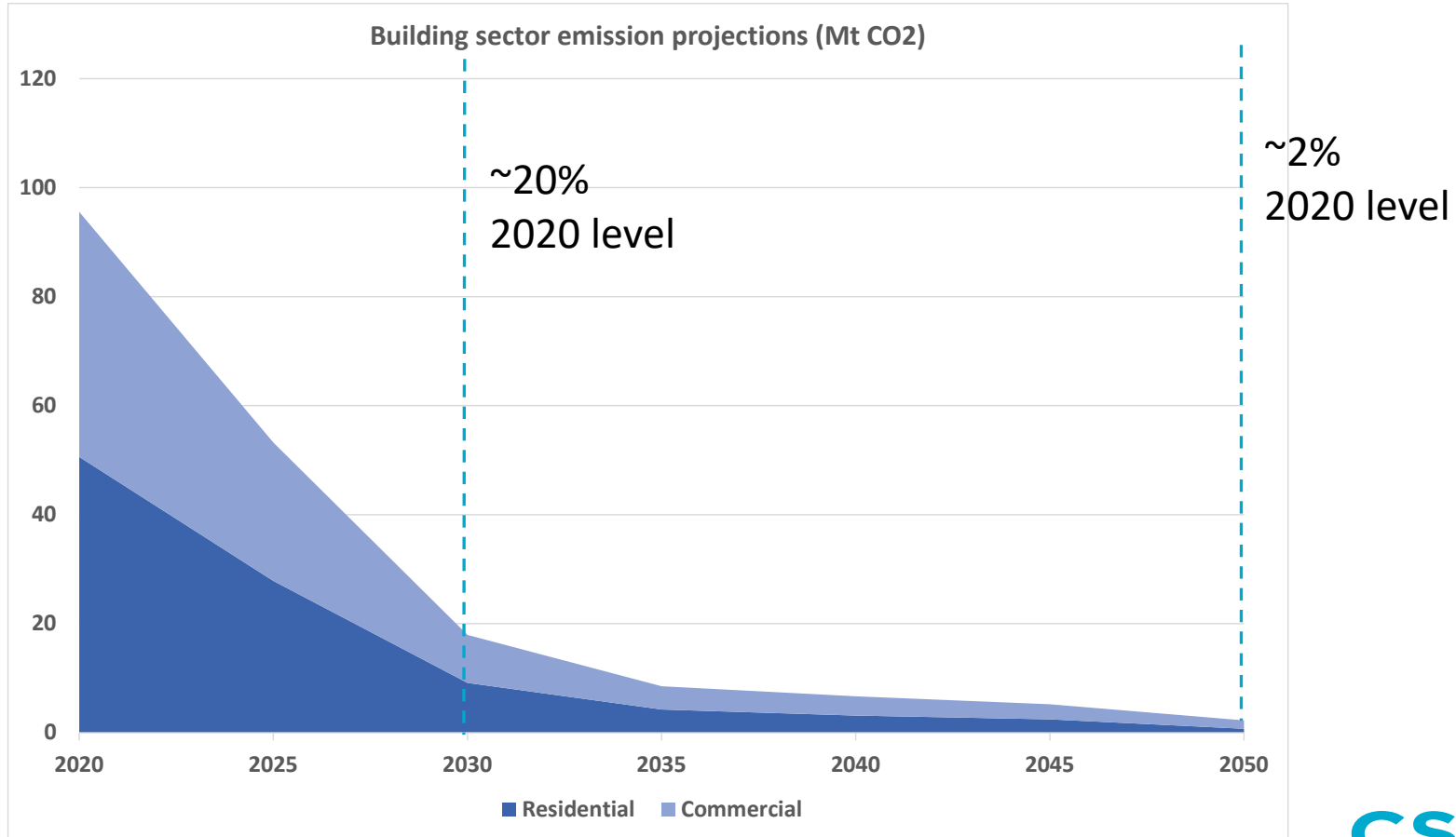
# Digitalisation journey: Australian experience



100+ buildings : office buildings, mixed use, schools, hospitals



# Pathway for decarbonisation of building sector



# Thank you

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