BBP | BETTER BUILDINGS PARTNERSHIP

NABERS UK Energy for Offices

5th July 2022

David Heaford

MANAGING DIRECTOR, DEVELOPMENT,
LANDSEC

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Agenda

1. **Welcome** – David Heaford, Managing Director, Development, Landsec
2. **Background to NABERS UK**– Sarah Ratcliffe, CEO, Better Buildings Partnership
3. **Energy for Offices**– Robert Cohen, Technical Director, Verco & Technical Lead for NABERS UK
4. **Driving Sector-Wide Energy Performance Improvements in Buildings** – Carlos Flores, Director, NABERS
5. **Panel Discussion –** chaired by Sarah Ratcliffe, CEO, Better Buildings Partnership
   - Nick Deacon, Head of Offices, Europe, Nuveen
   - Shamir Ghumra, Head of Building Performance, BRE
   - Victoria Herring, Director, Sustainability Programme, Grosvenor
   - Luke Menzel, CEO of Energy Efficiency Council of Australia
6. **Closing Comments –**Janine Cole, BBP Chair, Sustainability & Social Impact Director, GPE

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Sarah Ratcliffe

CEO, BETTER BUILDINGS PARTNERSHIP

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Why is NABERS UK important?

NABERS UNITED KINGDOM

NABERS DESIGN FOR PERFORMANCE

Bridging the performance gap to make sure new buildings perform as intended

NABERS ENERGY

Driving improvements in energy efficiency of existing buildings

MEASURES ACTUAL (METERED) PERFORMANCE

PROVIDES A FAIR COMPARISON

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Over a decade in the making …

2005-2007
BPF Landlord Energy Statement

2010
BBP 1st Real Estate Environmental Benchmark published

2011
Industry wide support for mandatory DECs

2012 -2014
Landlord Energy Rating Development

2015
DESIGN FOR PERFORMANCE PROJECT LAUNCH

2015 -16
Design for Performance Feasibility Study

2016 -2019
Design for Performance Pilot Programme

2019 - 2020
NABERS UK Scheme Infrastructure Development

2020
MOU signed between NABERS, BRE & the BBP. BRE confirmed as Scheme Administrators

NOV 2020
NABERS UK SCHEME LAUNCHED

FEB 2022
1st verified NABERS UK Design for Performance Project

JULY 2022
1st certified NABERS UK Energy for Offices Rating

NABERS
UNITED KINGDOM

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Radical collaboration in action

NABERS UK STEERING COMMITTEE

NABERS
bre
BBP BETTER BUILDINGS PARTNERSHIP
BCO
BPF BRITISH PROPERTY FEDERATION
BSRIA
CIBSE
iwfm Institute of Workplace and Facilities Management
RIBA
RICS
UK GBC

DESIGN FOR PERFORMANCE PIONEERS

British Land
DERWENT LONDON
Federated Hermes
GPE Greater together
GROSVENOR
Landsec
Legal & General INVESTMENT MANAGEMENT
lendlease
nuveen REAL ESTATE
MEPC
ROYAL LONDON ASSET MANAGEMENT
STANHOPE
THE CROWN ESTATE

NABERS UK SUPPORTERS

atelier ten
AECOM Imagine it. Delivered.
ARUP
ATKINS Member of the SNC-Lavalin Group
BURO HAPPOLD
bp
Bryden Wood
chapmanbdsp
CUNDALL
EVORA EDGE
Greengage
H|M
HOARE LEA
INKLING
KJ TAIT ENGINEERS
MECSERVE
TFT
thornton | reynolds
TWINEARTH
watkins payne designed engineered focused
wsp

TECHNICAL ADVISORS

verco
DELTA Q
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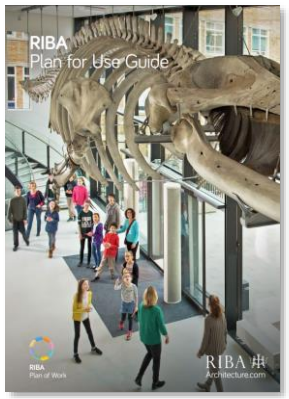
NABERS UK - embedded in industry standards & guidance

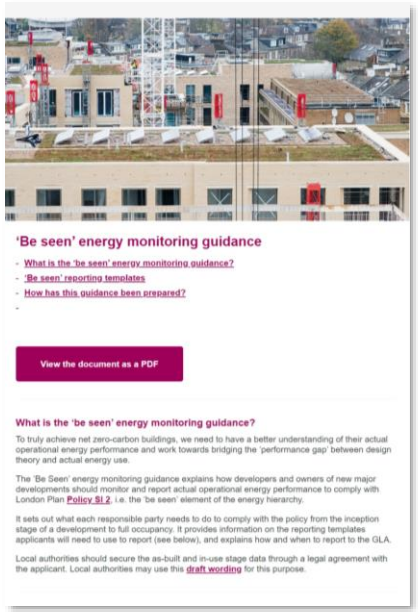
BCO GUIDE TO SPECIFICATION



RIBA PLAN FOR USE GUIDE

UKGBC TARGETS & WLC ROAD MAP

BREEAM NEW CONSTRUCTION



GLA 'BE SEEN' POLICY

CIBSE TM54

BSRIA SOFT LANDINGS

LETI TARGETS & GUIDANCE

GRESB®

GRESB CREDITS

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The industry is upskilling to deliver

NABERS UK ASSESSORS

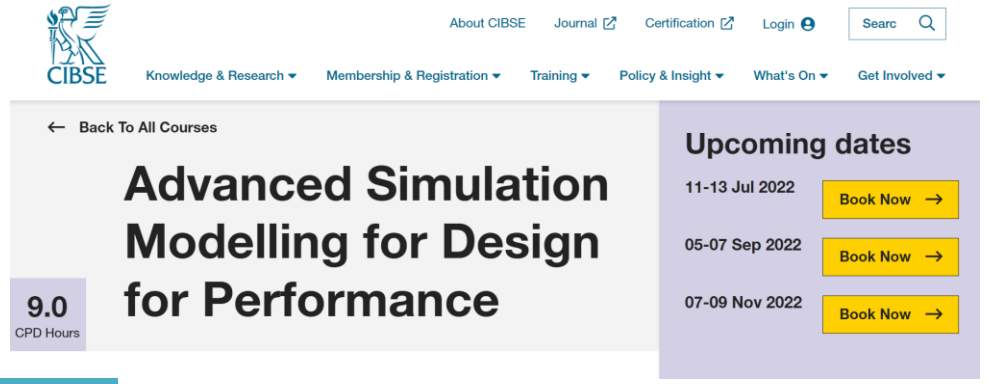
194
ASSESSORS TRAINED

35
LICENSED ASSESSORS

29
ASSESSOR ORGANISATIONS

INDEPENDENT DESIGN REVIEW PANEL

CIBSE ADVANCED SIMULATION MODELLING



30 Delegates attended training in 2021

MANAGING FOR PERFORMANCE

A framework and accompanying methodology for property managers

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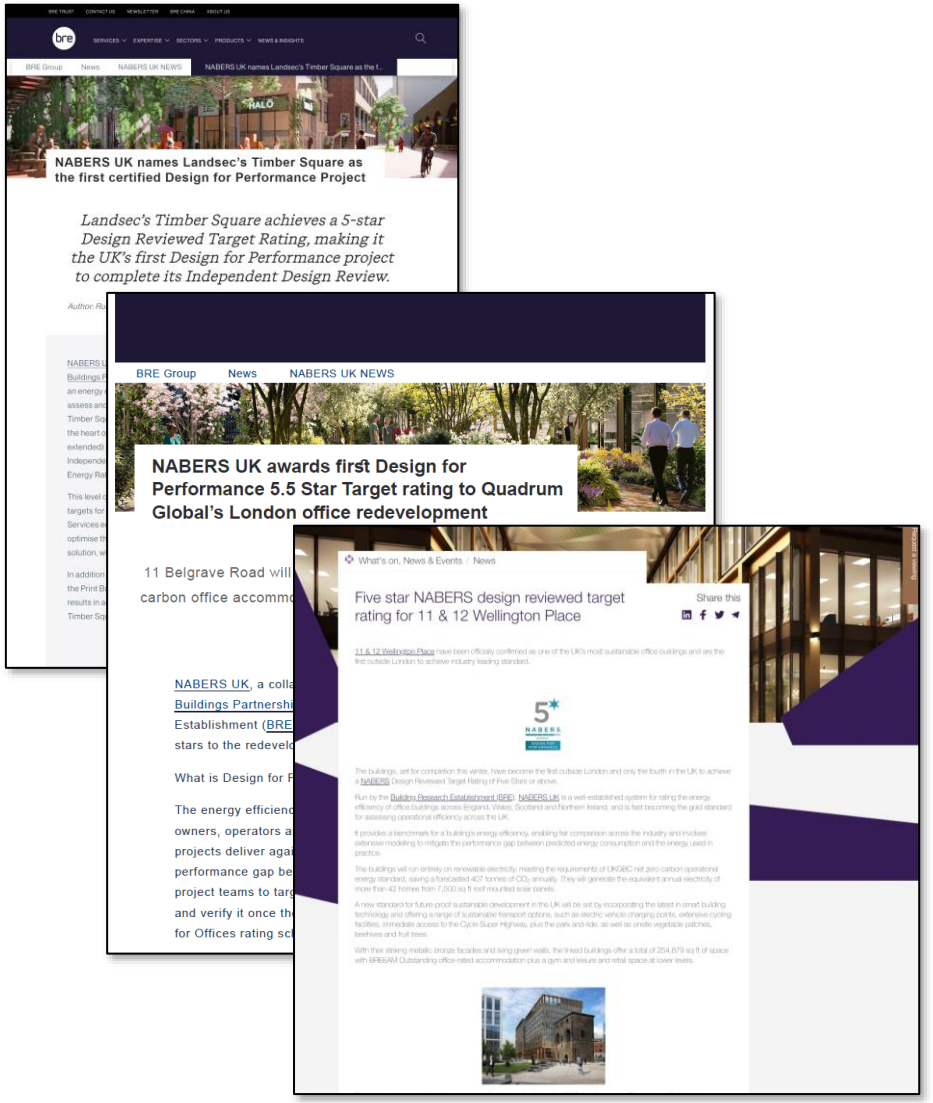
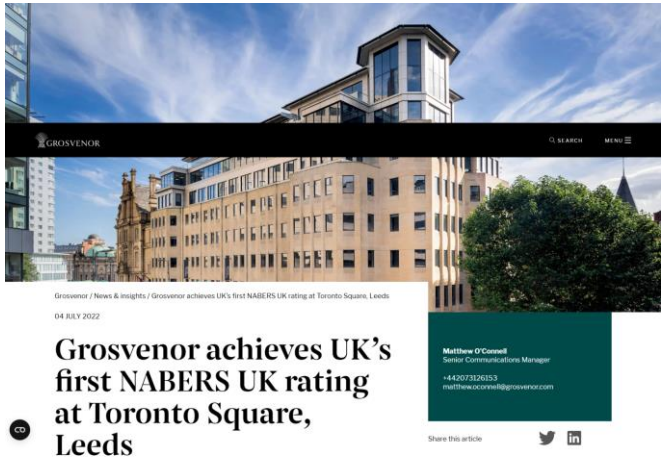
Market competing for industry firsts … and driving performance outcomes





6 NABERS UK DFP PROJECTS VERIFIED	**1** NABERS UK ENERGY FOR OFFICE CERTIFIED
34 NABERS UK DFP PROJECTS REGISTERED	**2 (+8)** NABERS UK ENERGY FOR OFFICES REGISTERED
19 NABERS UK DFP PROJECTS EOI	**47** NABERS UK ENERGY FOR OFFICES EOI

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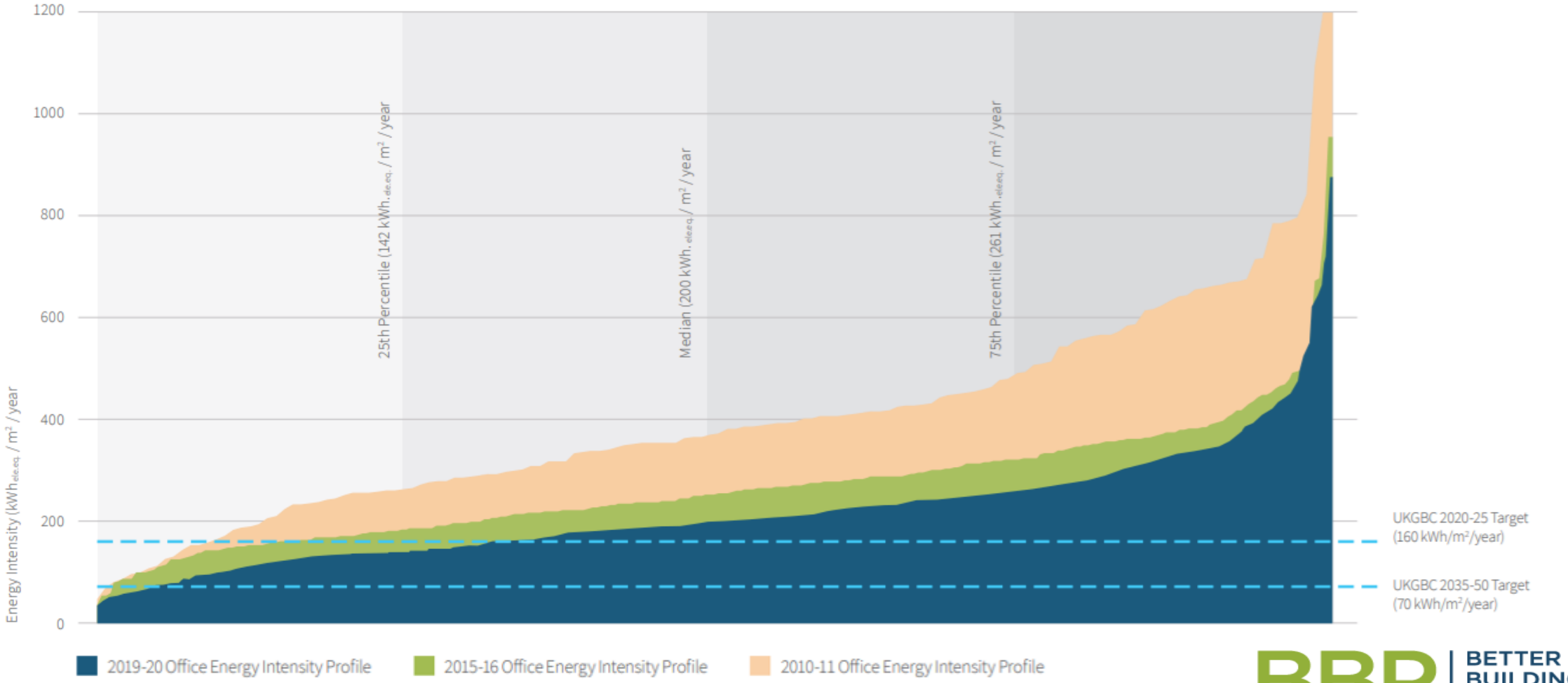
Existing Offices need to improve (fast)

REEB Office Energy Intensities against UKGBC NZC targets



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verco

DELTA Q

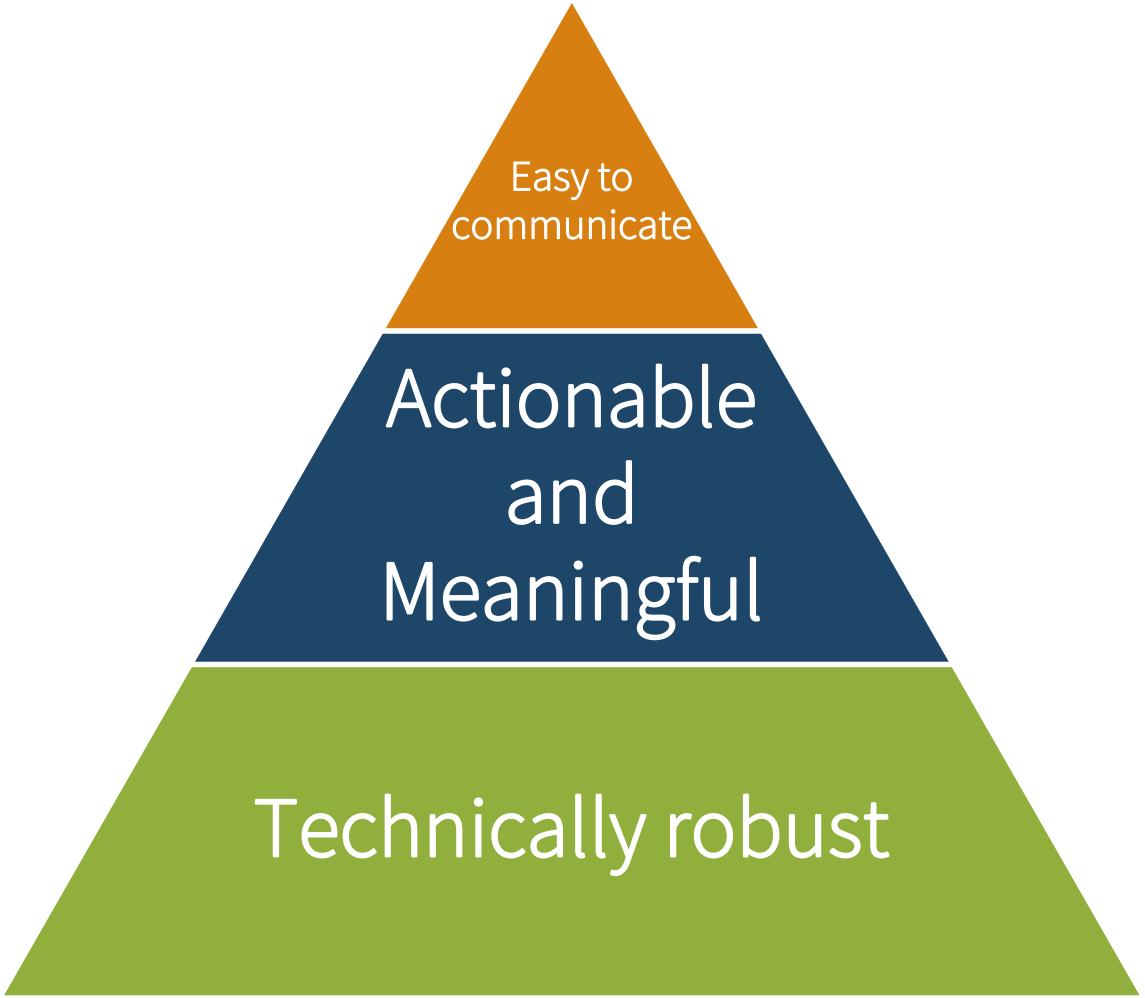
NABERS UNITED KINGDOM

NABERS UK Breakfast Event 05 July 2022:

Energy for Offices Ratings

Robert Cohen
Technical Director, Verco

USPs of NABERS Ratings



The success of NABERS is underpinned by seven key principles
1. Measure **actual impact,** not intent
2. Assess **building operations**, not design
3. Deliver **meaningful ratings** that the market can understand
4. Support a **simple** and **easy-to-perform** rating process
5. Achieve **reliable ratings** that everyone can trust
6. Foster **strong governance** and **trustworthy management**
7. Encourage **collaborative** rating tool development

Energy efficiency in commercial buildings: How NABERS transformed the market, May 2022
https://www.nabers.gov.au/file/101477/download?token=kdpossbI

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EASY TO COMMUNICATE

NABERS communicates through 1 to 6 star scale

Simple metric for investors, owners and occupiers:

measured assessment of how efficiently a building is being operated over a year

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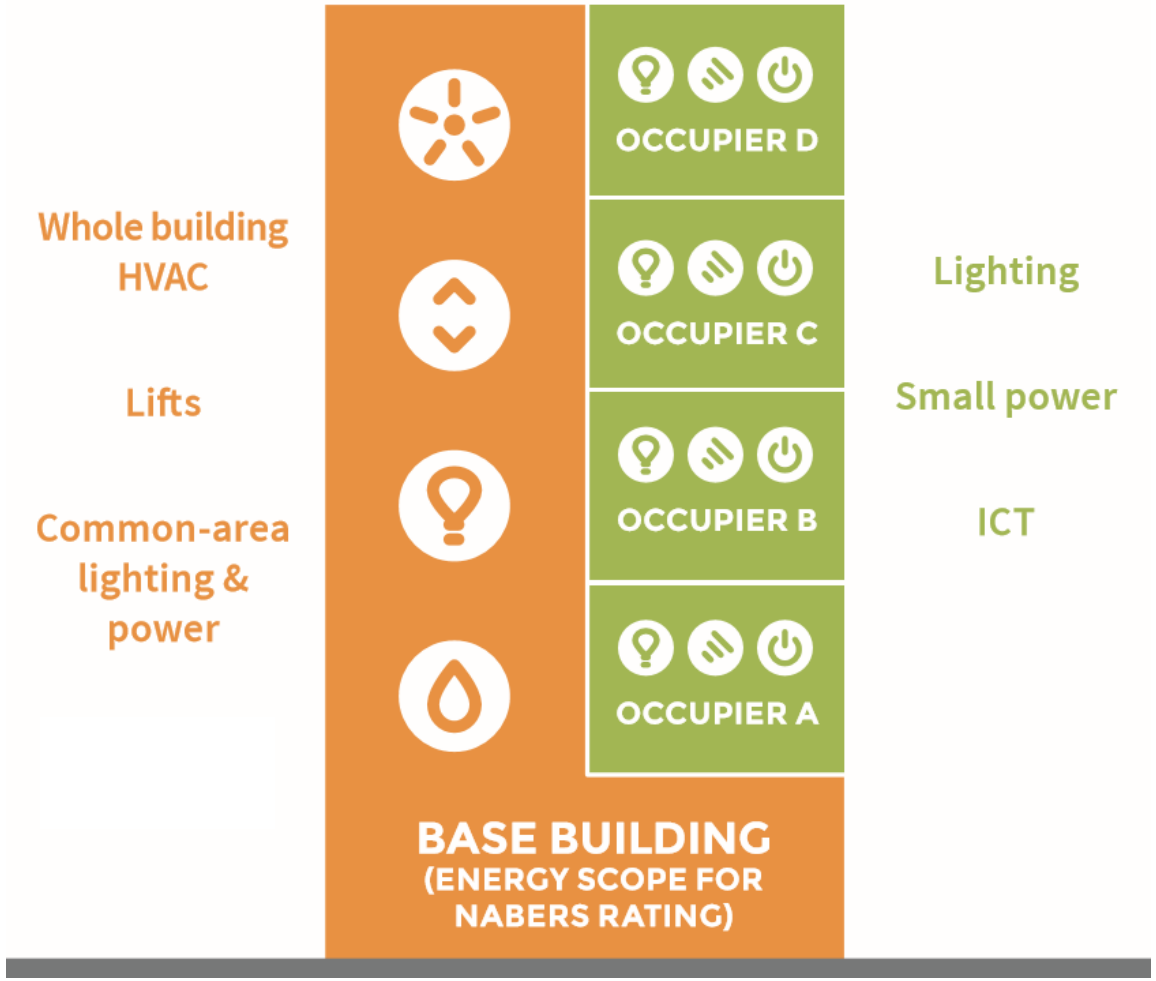
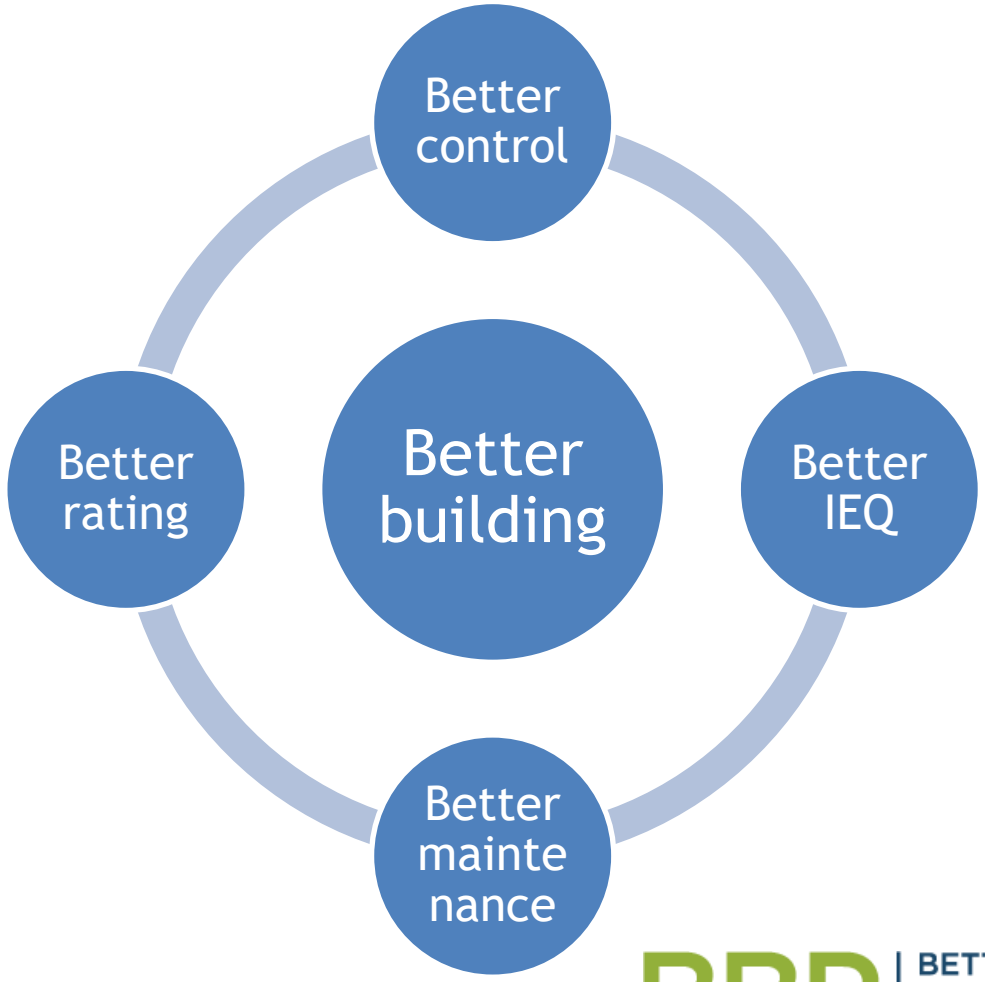
ACTIONABLE AND MEANINGFUL

Responsibility for energy uses aims to align with party in control





Note: car park lighting and ventilation included in base building and whole building to extent car parks provided as service to tenants

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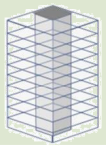
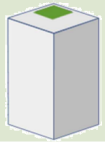
Definition of 3 scopes in full suite of ratings

Type of rating	Responsibility	Scope
Base Building 	**Landlord**	Energy to supply building central services to office NIA and common spaces, incl FCU motors, on-floor fans, tertiary pumps.
Tenancy 	**Tenants**	Energy used by the Tenancy to be rated, typically for lighting and power, plus special tenancy requirements or local a/c.
Whole Building 	**Split**	Assessment of energy used by office Tenancies and by Base Building services to office lettable and common spaces.

Whole building = base building + ∑ (tenancies)

Notes:

- Central DHW, e.g. circulating system from plant room, under landlord control so treated as base building energy (if it serves >30% of NIA). Local DHW, e.g. point of use electric water heaters, if under tenant control, treated as tenancy energy.
- Similarly, a/c for tenant servers allocated to base building (and benchmark compensated) if centrally supplied by landlord, or to tenancy if their supply

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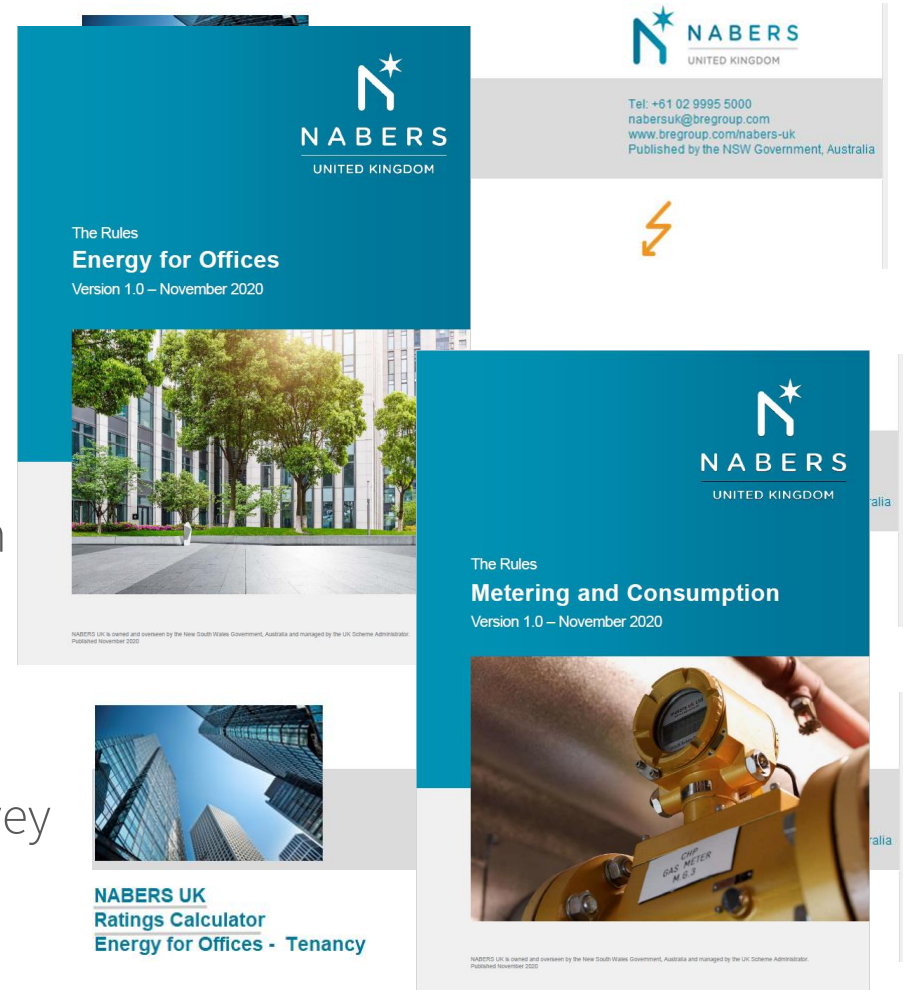
TECHNICALLY ROBUST

Tools and Rules

- Behind NABERS UK Ratings are:
  - The Rules (Energy for offices)
  - The Rules (Metering and Consumption)
  - The Rating Tools used by accredited assessors
- The Rules define how inputs into rating tool are determined
  - Rules are defined to encourage good/best practice design and operation. For example, landlord control and maintenance of whole building a/c system as an entity
  - Where metering not available, conservative defaults used
  - Independent Design Review (new build) or rateability survey (existing) will identify beneficial metering additions.



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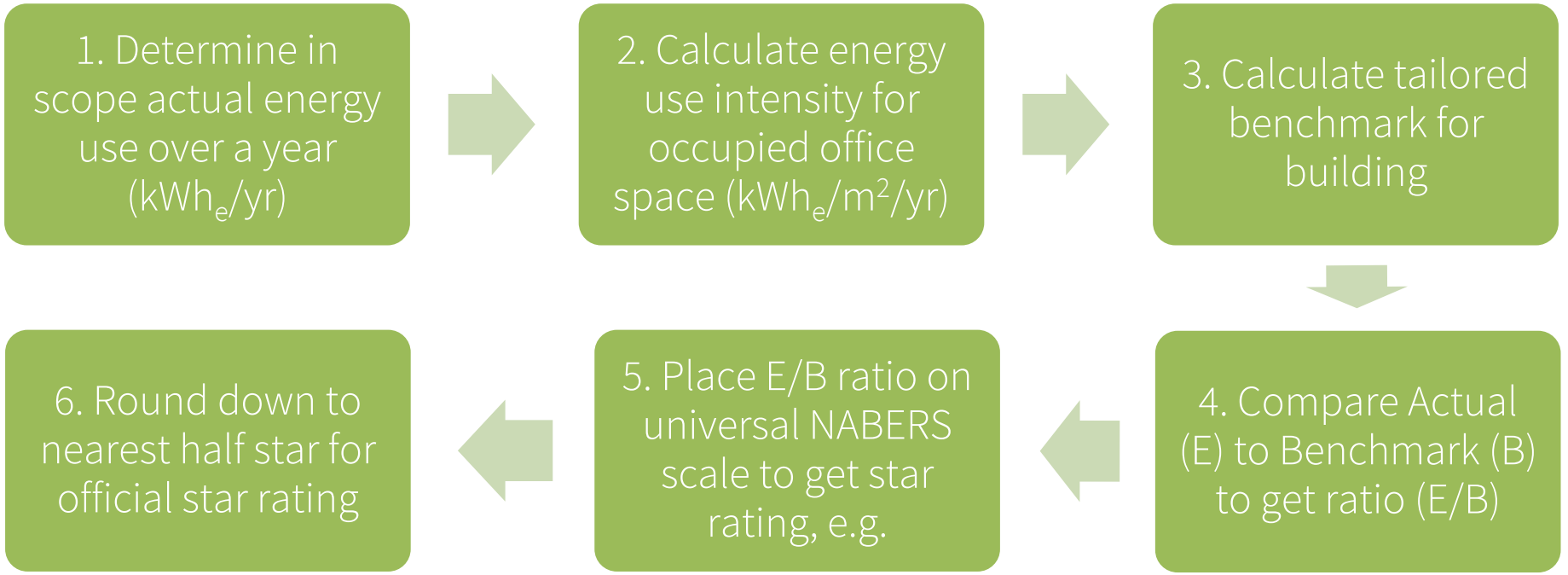
How the rating is determined



E/B Ratio	Star decimal rating
> 1.59	0 stars
1	3.2 stars
0.53	5.0 stars

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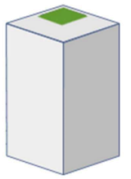
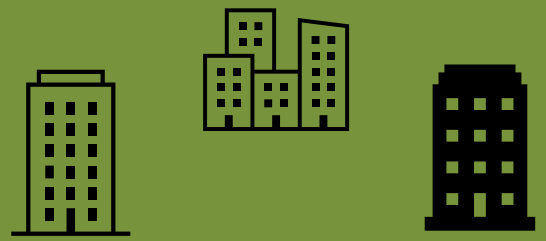
Tailoring the benchmark for each type of rating



Benchmarking Components	Base Building	Tenancy	Whole Building
Median Energy Intensity	✓	✓	✓
Climate Adjustment	✓		✓
Hours Adjustment	✓	✓	✓
Equipment Density Adjustment		✓	✓

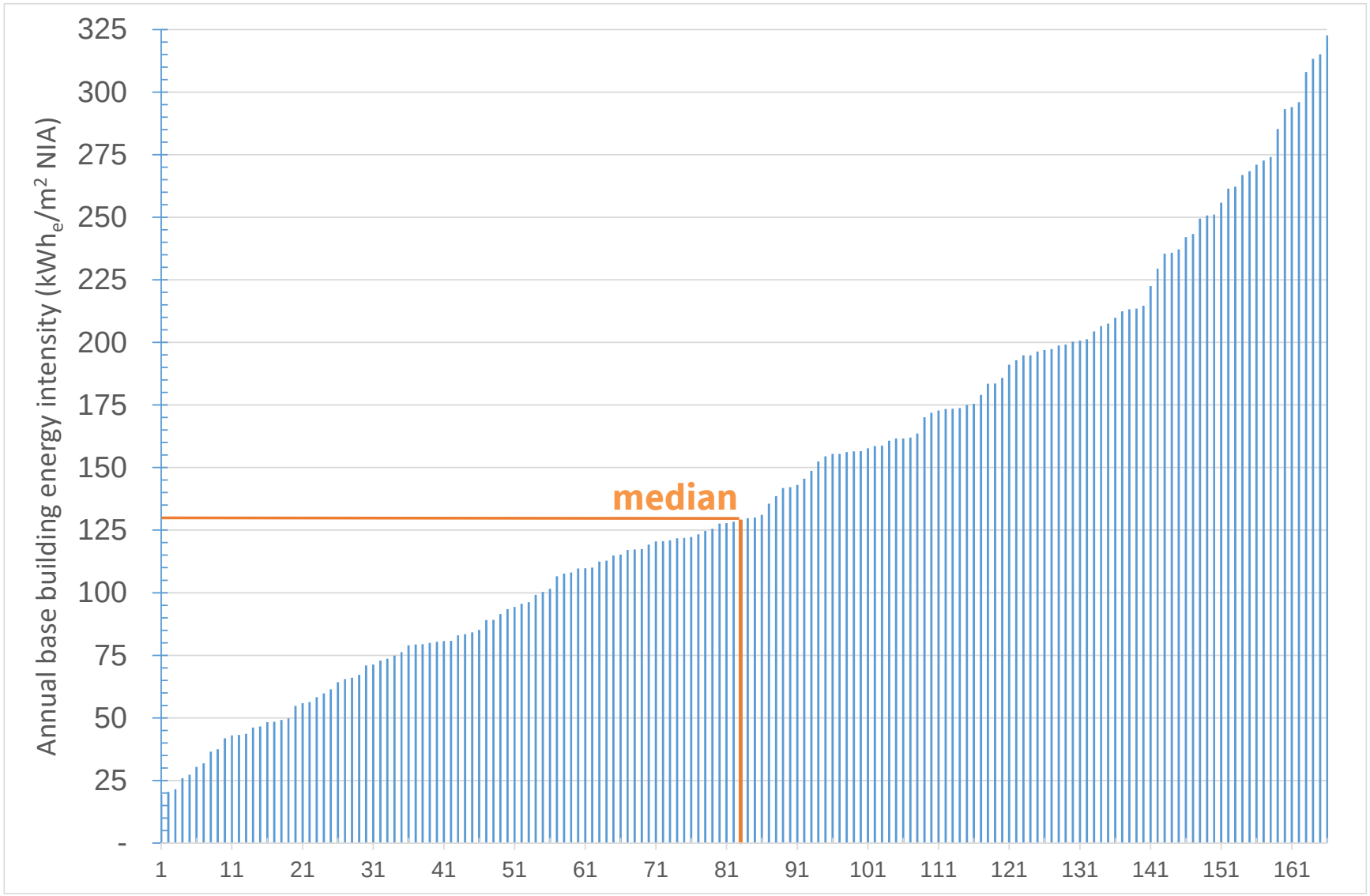
Operational factors affecting the energy use intensity of the building



For a fair comparison of different buildings on a single scale

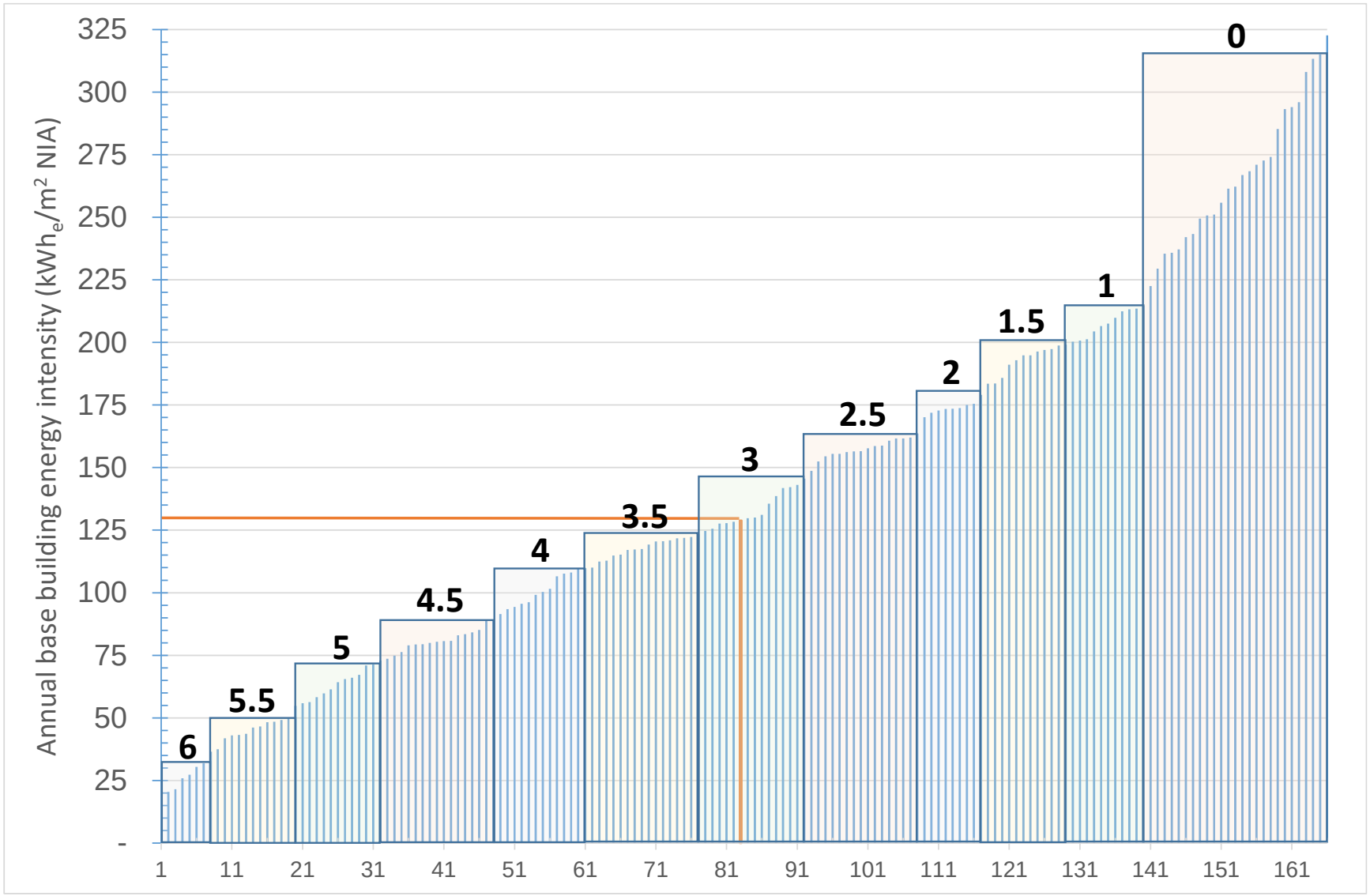
Benchmark (Whole Building) = (Median Energy Intensity + Climate Adjustment + Equipment Density Adjustment) × Hours Adjustment

REEB empirical data is used to set median energy intensity



- Example shown for Base Building data
- N=166 ex outliers. Median = 129 kWh$_e$/m^2
- Benchmark = 136 kWh$_e$/m^2 after allowing for FCU motors included in metered data for tenants' use

Indicative star ratings of dataset before tailoring benchmark



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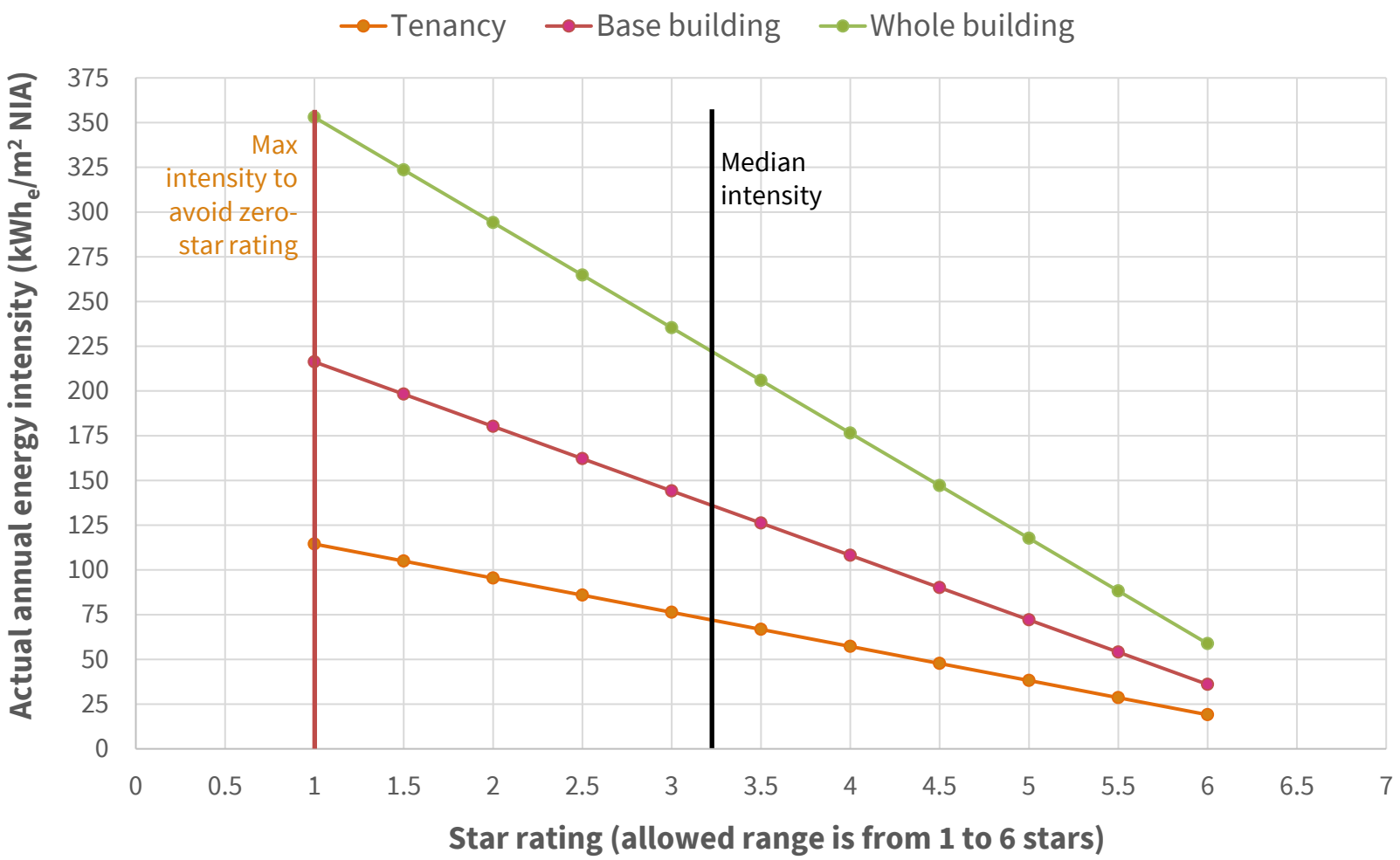
Benchmark scale 6:1 range from 1 to 6 stars



Star Rating	Benchmarking Factor (E/B*100)
6	0<BF≤26.5
5.5	26.5<BF≤39.75
5	39.75<BF≤53
4.5	53<BF≤66.25
4	66.25<BF≤79.5
3.5	79.5<BF≤92.75
3	92.75<BF≤106
2.5	106<BF≤119.25
2	119.25<BF≤132.5
1.5	132.5<BF≤145.75
1	145.75<BF≤159
0	159<BF

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Basic normalising inputs are floor area and hours of use

- **Floor area** based on RICS Net Internal Area used for ‘office-like’ uses
  - NIA represents productive area of the building, financially for landlord and tenants
  - Exclusions:
    - Non-office spaces (retail, data centres)
    - Vacant areas (time adjusted)

- **Hours of use** for the building = area-weighted average of the hours for each functional space (including documented after hours air conditioning requests)
  - No credit given for a space which is conditioned when it doesn’t need to be

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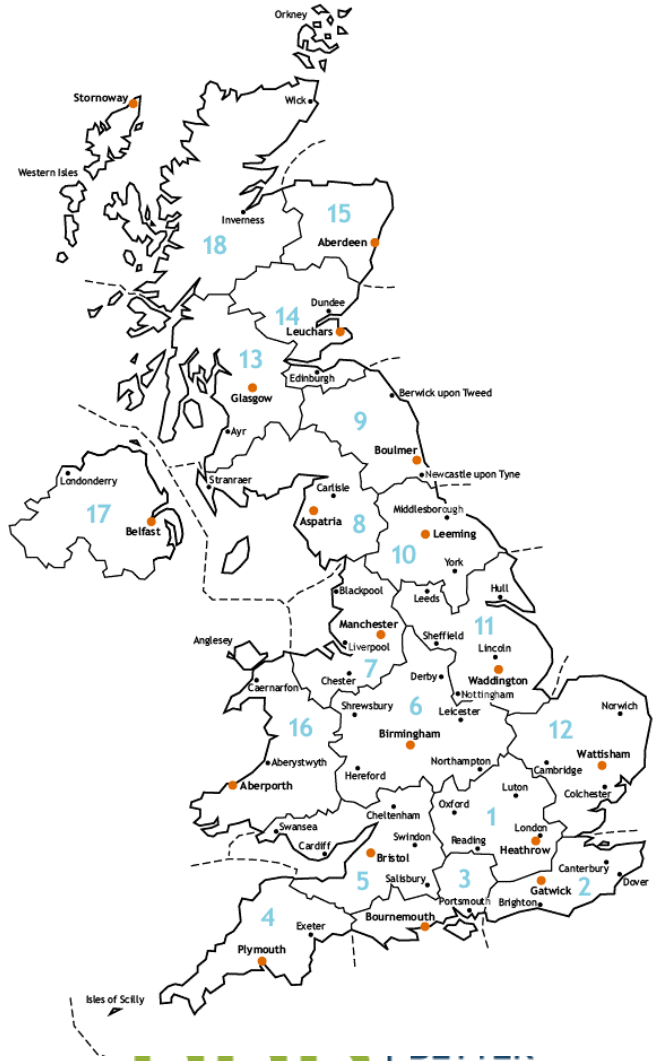
Regional heating and cooling degree days moderate benchmark

- Postcode defines climate zone
- Heating and cooling degree days 20 year average from weather station in that zone represent building's climate
- Adjustment for climate *not* weather



BUILDINGS PARTNERSHIP

Intensity of use also taken into account

3.1 For whole building and tenancy ratings

1. Your assessed number of workstations is *[assessor to fill in number]*.
2. Your current assessed occupancy percentage, based on observation by your assessor is *[assessor to fill in number]*
3. Over the rating period, roughly what percentage of these workstations were utilised/occupied mid-morning/mid-afternoon on an average normal working day:

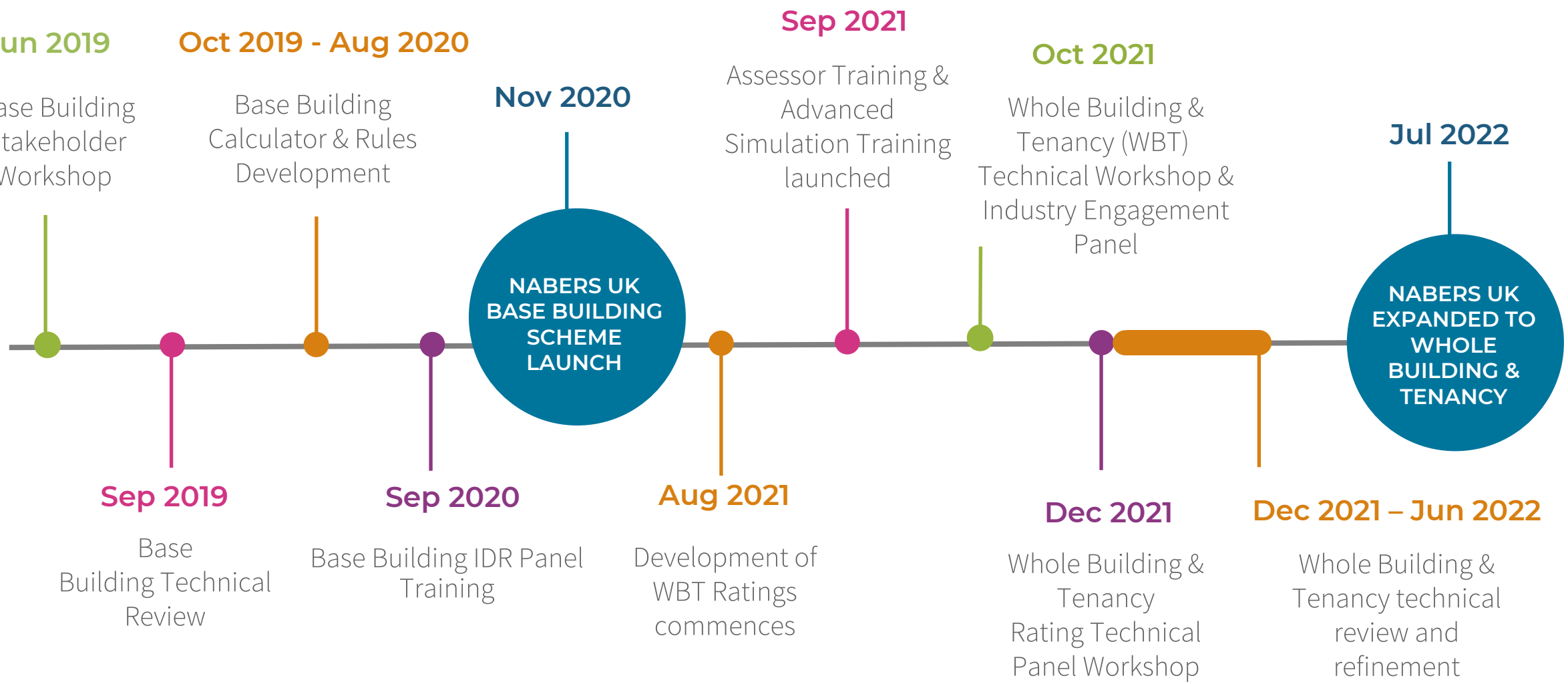
Dates	**Q1** *[assessor to fill in dates]*	**Q2** *[assessor to fill in dates]*	**Q3** *[assessor to fill in dates]*	**Q4** *[assessor to fill in dates]*
	Tick ONE as appropriate	**Tick ONE as appropriate**	**Tick ONE as appropriate**	**Tick ONE as appropriate**
All/nearly all: 80-100%				
Most: 60-80%				
About half: 40-60%				
Some: 20-40%				
Few: 0-20%				

Table 1. Estimated average occupancy for the four quarters of the rating period.

Tenancy manager to fill in their answers in Table 1

Any explanatory comments:

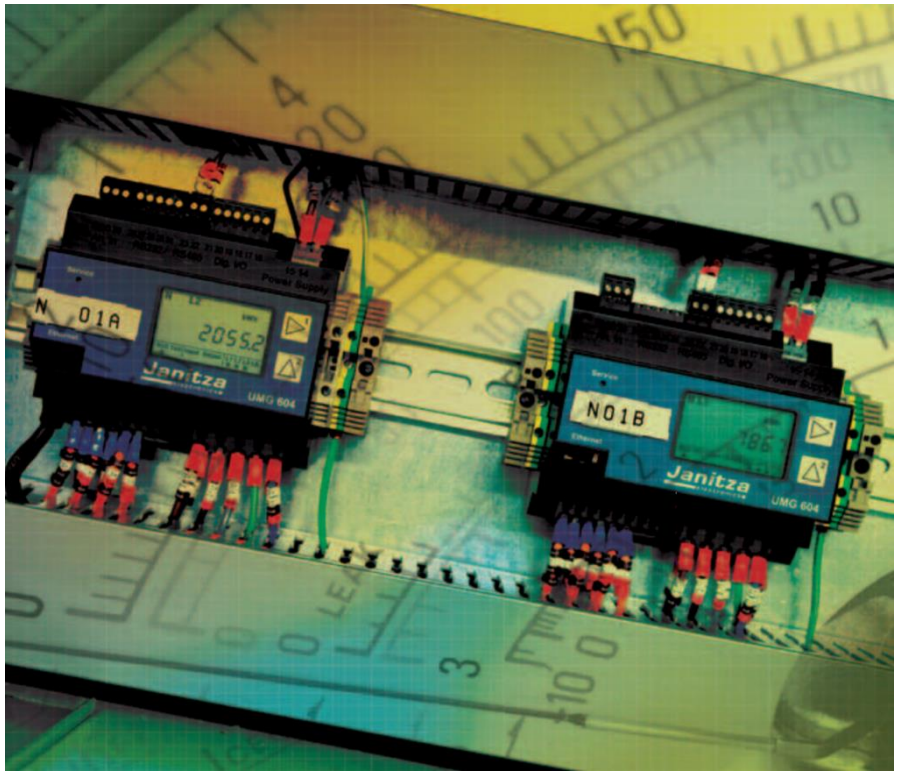
Methodology development - stakeholder engagement



NABERS UK ENERGY FOR OFFICES RATINGS: GETTING YOUR BUILDINGS READY

Use rateability survey to assess readiness for different ratings

- Is NIA measured to acceptable standard?
- Is there digital logging of out of hours a/c requests by functional space?
- Is energy data logging system (EMS) in good working order (and does it reconcile with utility meter data over year)?
- Is there documentation validating existing metering (what is on each meter, CT ratios, gas pressure factors, etc.)?
- Absence of metering necessary to produce a compliant or optimum rating?
- Do all material meters including landlord sub-metering comply with NABERS quality standard?



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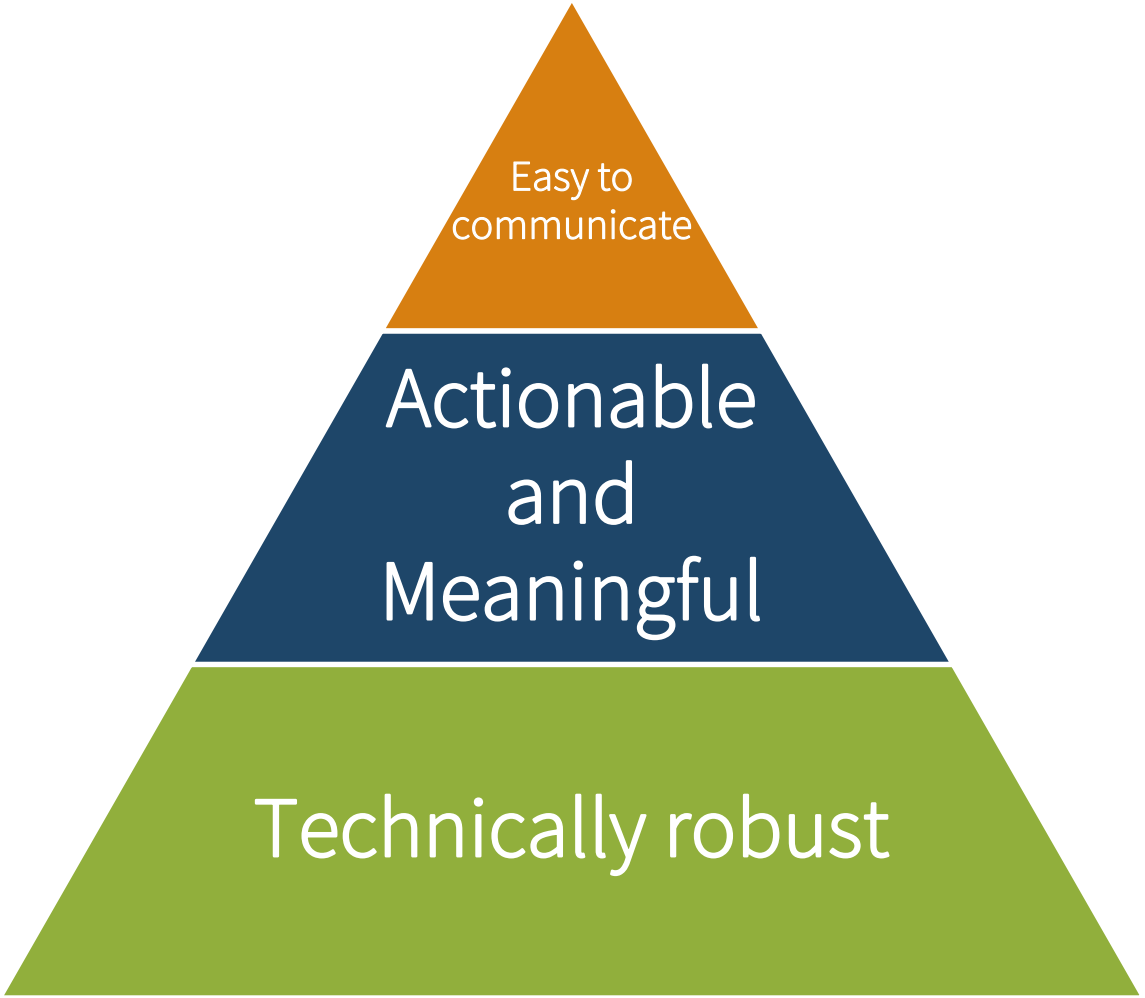
Conclusion: "**delineate, measure, rate and disclose**"



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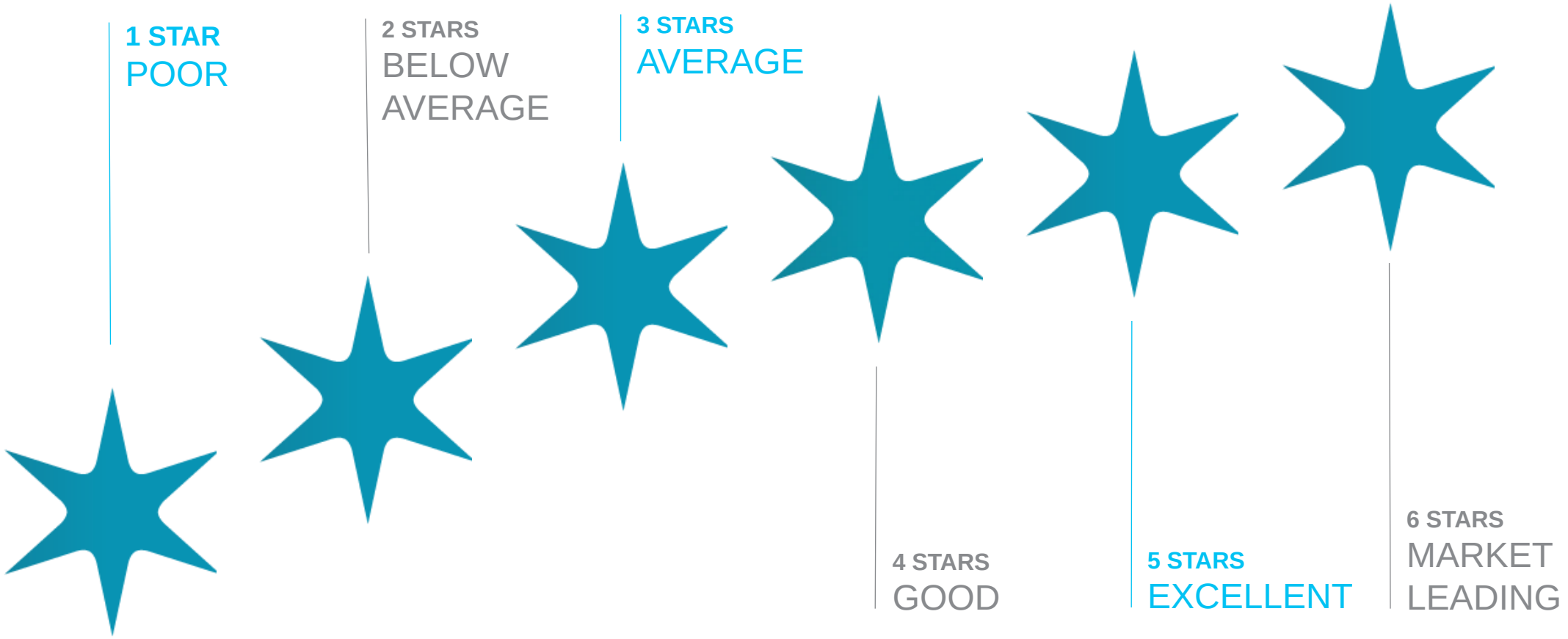
THANK YOU

Driving sector-wide energy performance improvements in buildings

Carlos Flores | Director, NABERS

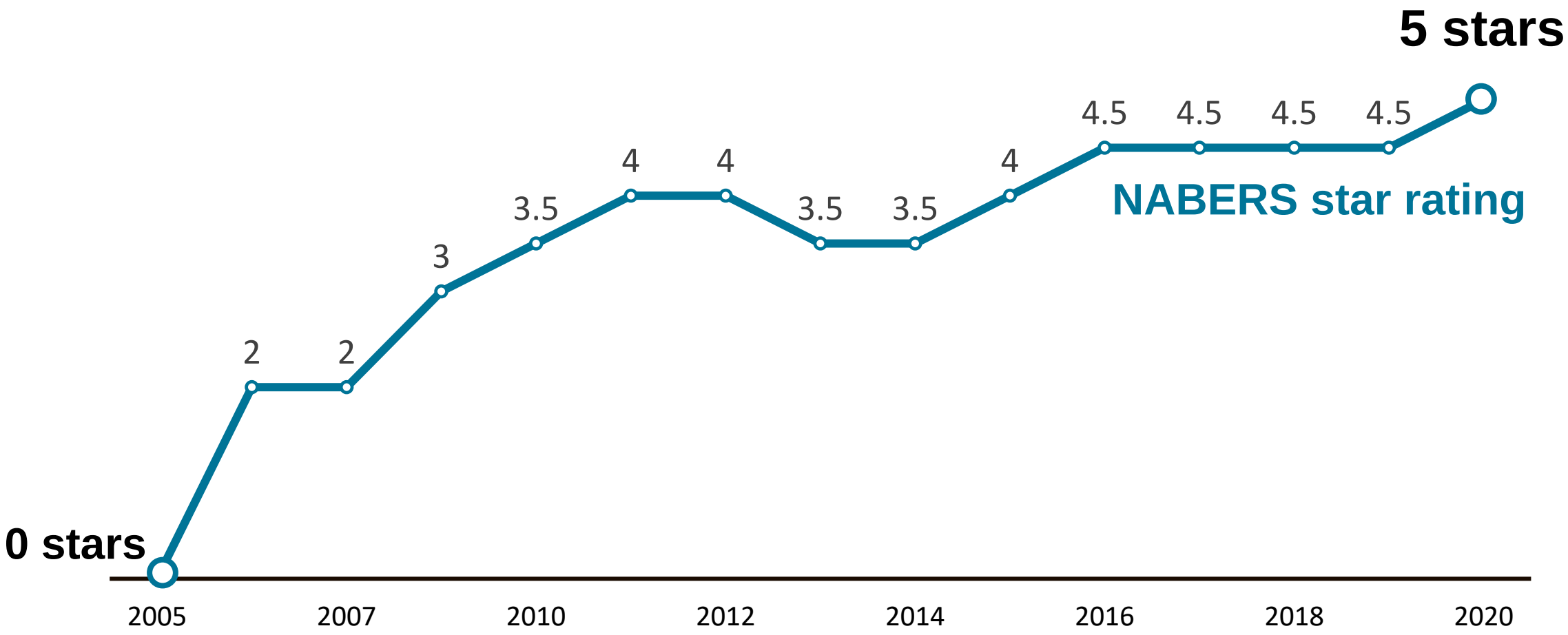
NABERS is Australia's language for building sustainability



Driver for action #1:
Self-awareness of environmental performance

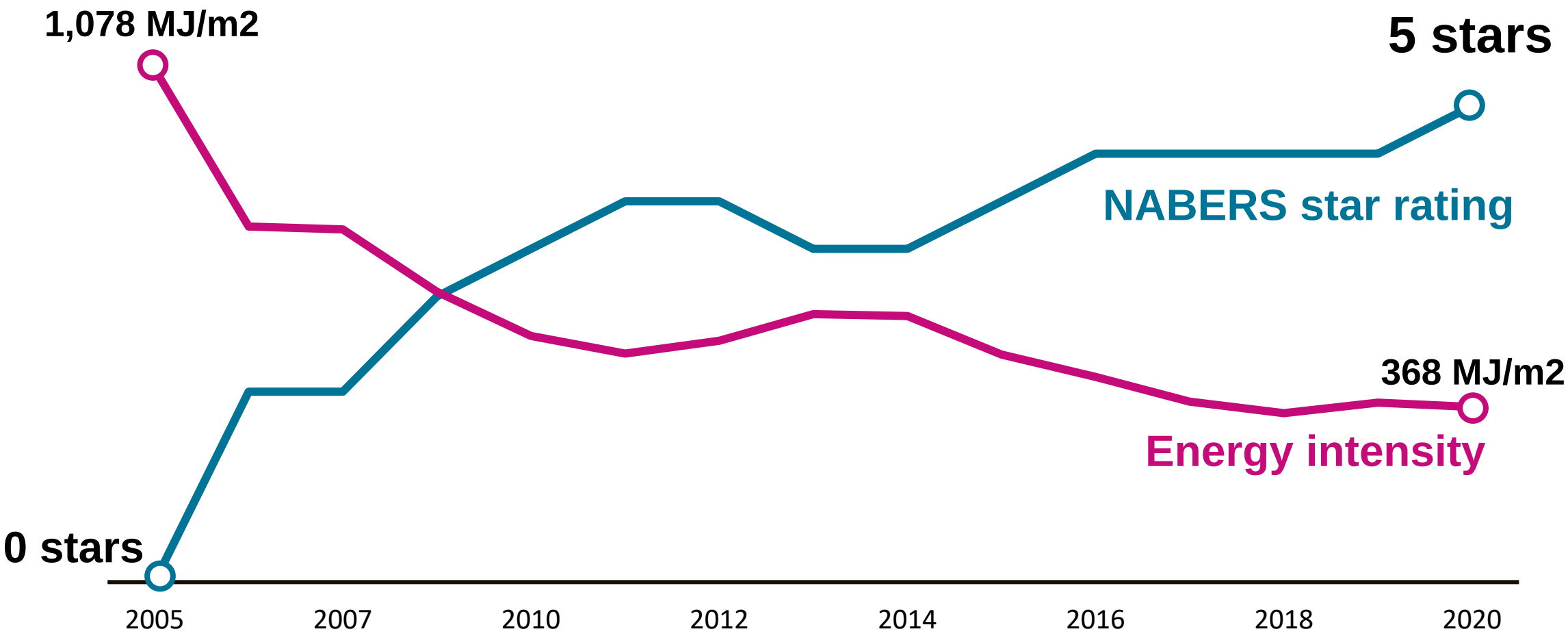
NABERS

What the NABERS journey looks like



*Australia Square | 264-268 George St, Sydney. Co-owned by DEXUS and GPT.

What the NABERS journey looks like



*Australia Square | 264-268 George St, Sydney. Owned by DEXUS and GPT.

Driver for action #2:
Government as a tenant

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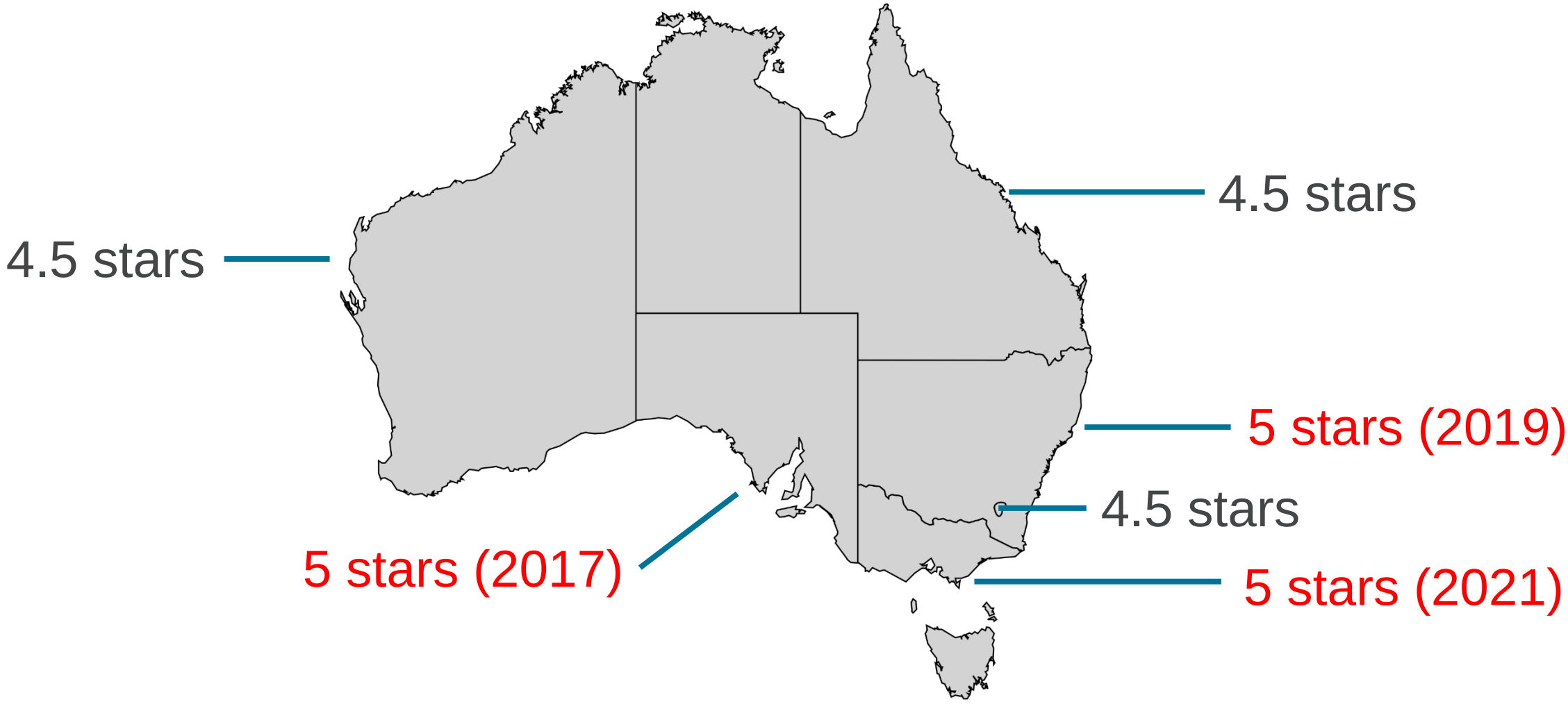
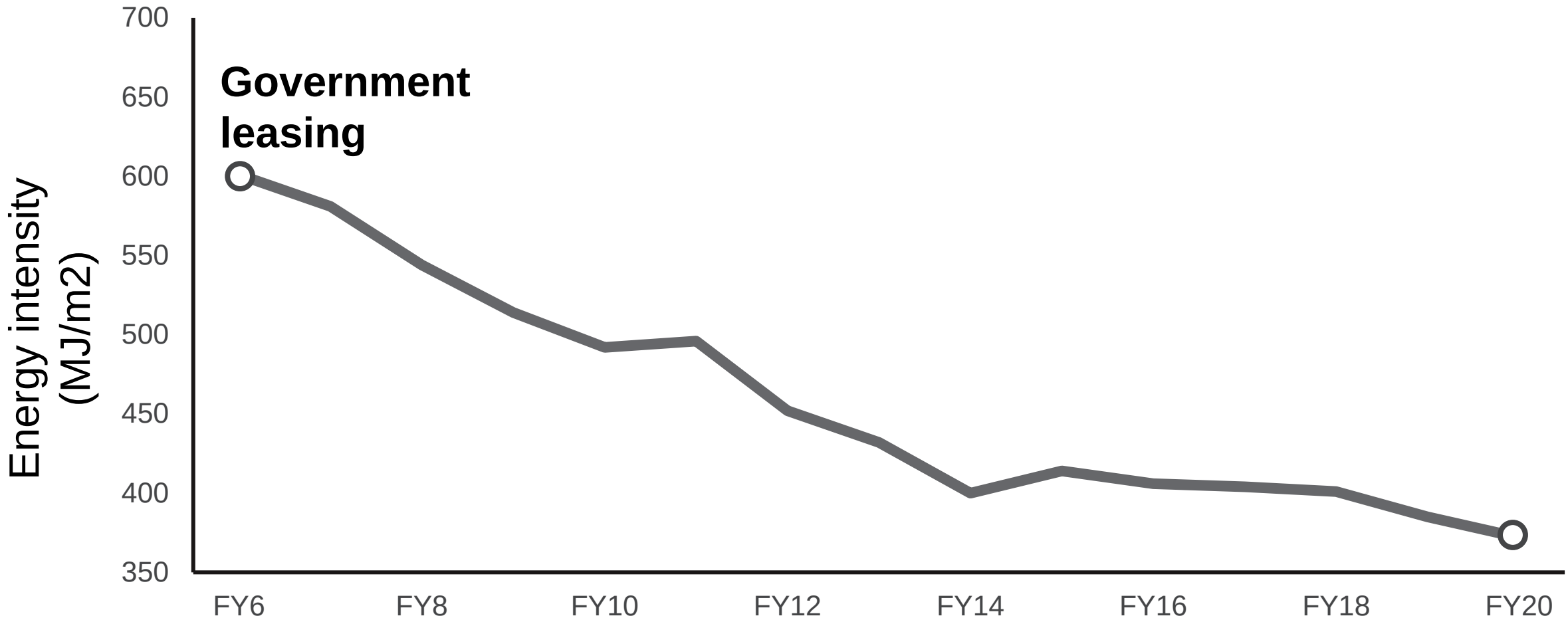
NABERS Energy requirements for government leasing of offices have been in place since 2006



Energy savings since government leasing requirements were introduced



Driver for action #3:
Mandatory disclosure of energy performance

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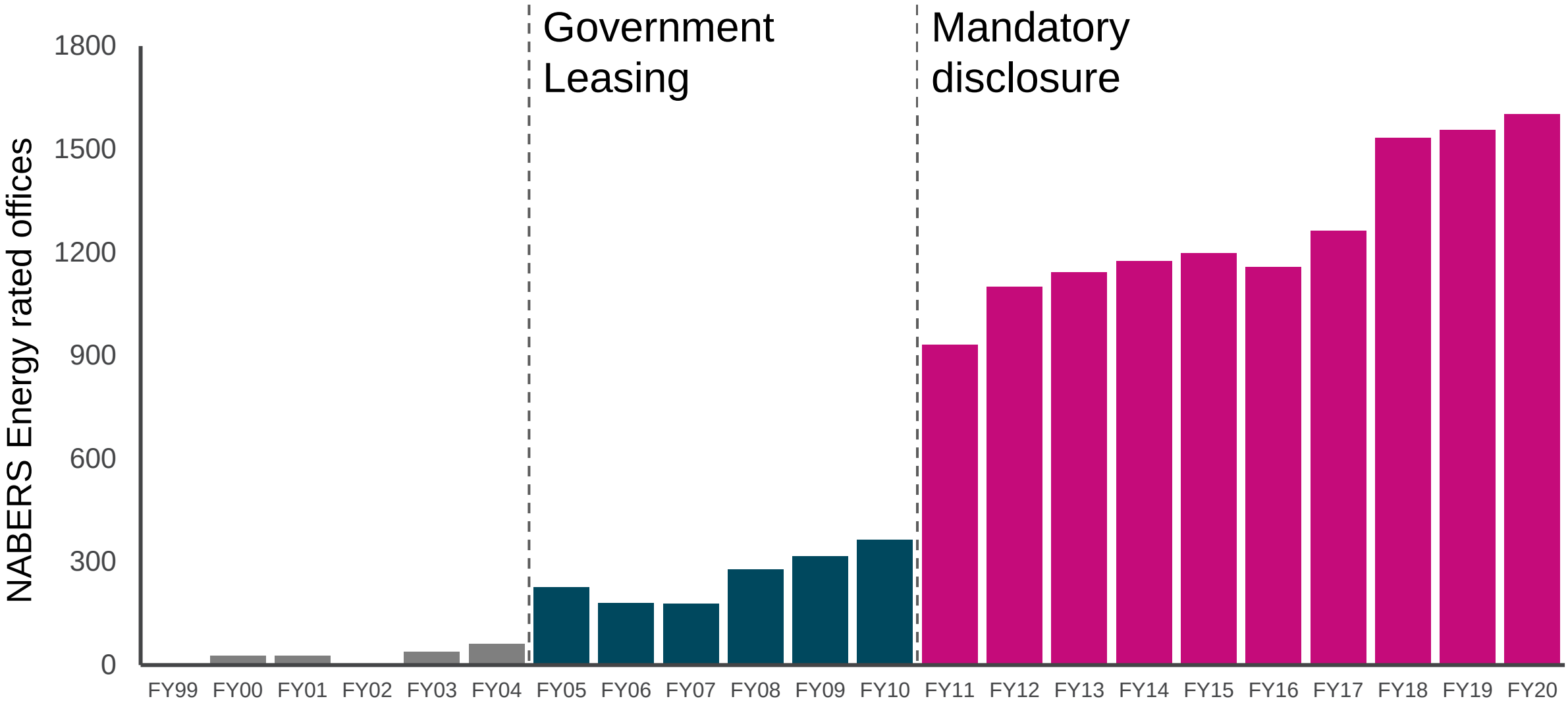
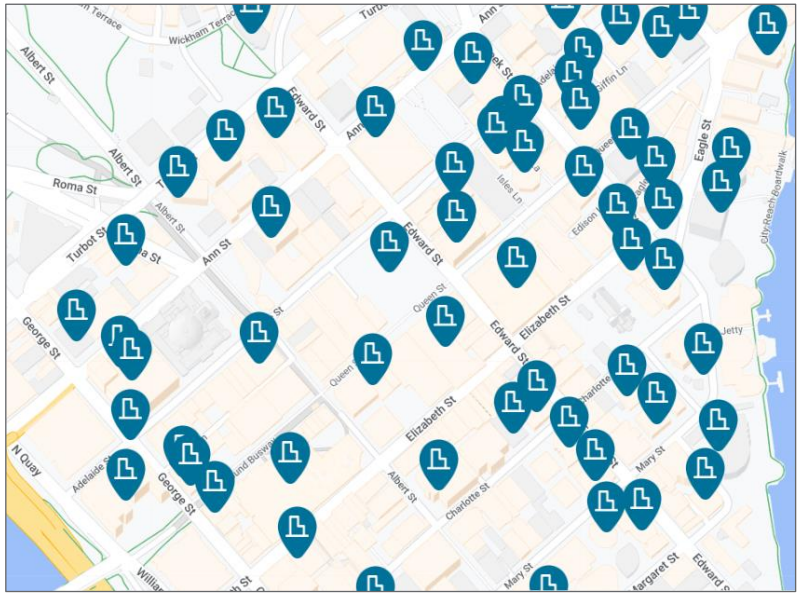
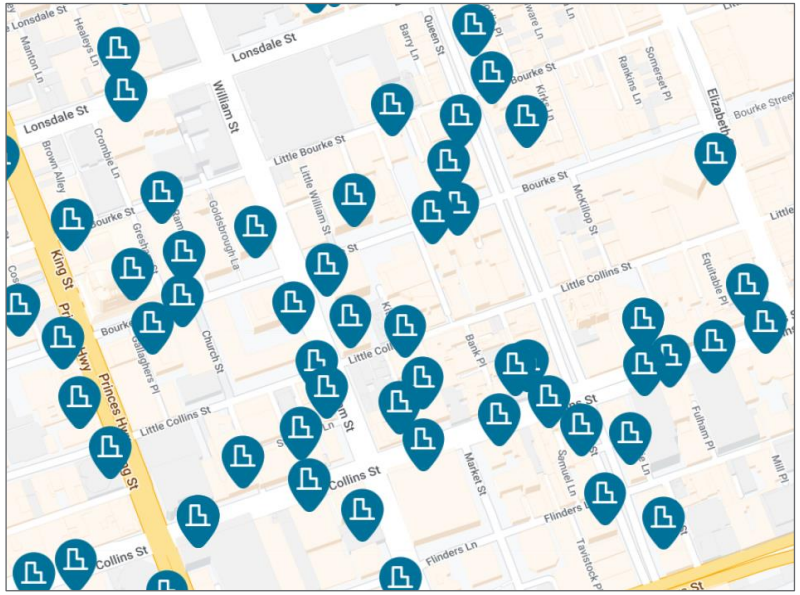
Government policies made building energy efficiency visible



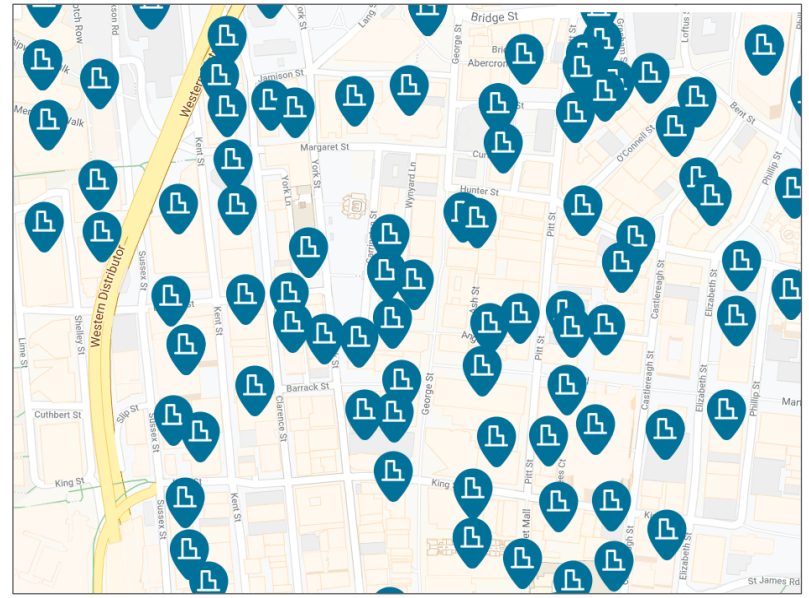
Brisbane



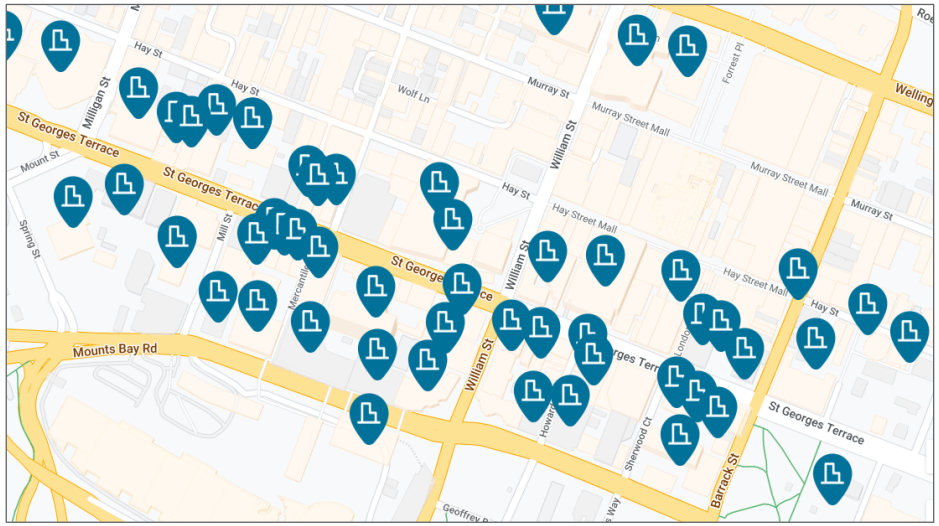
Melbourne



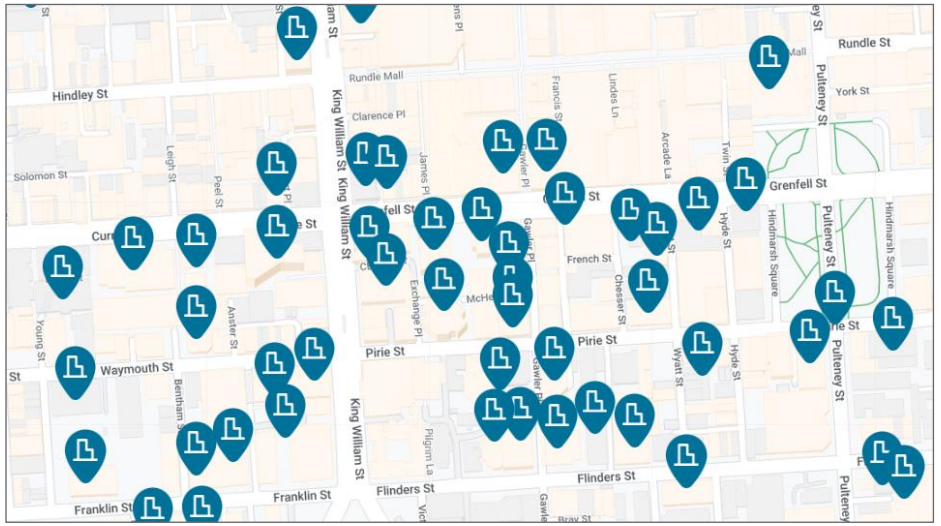
Sydney



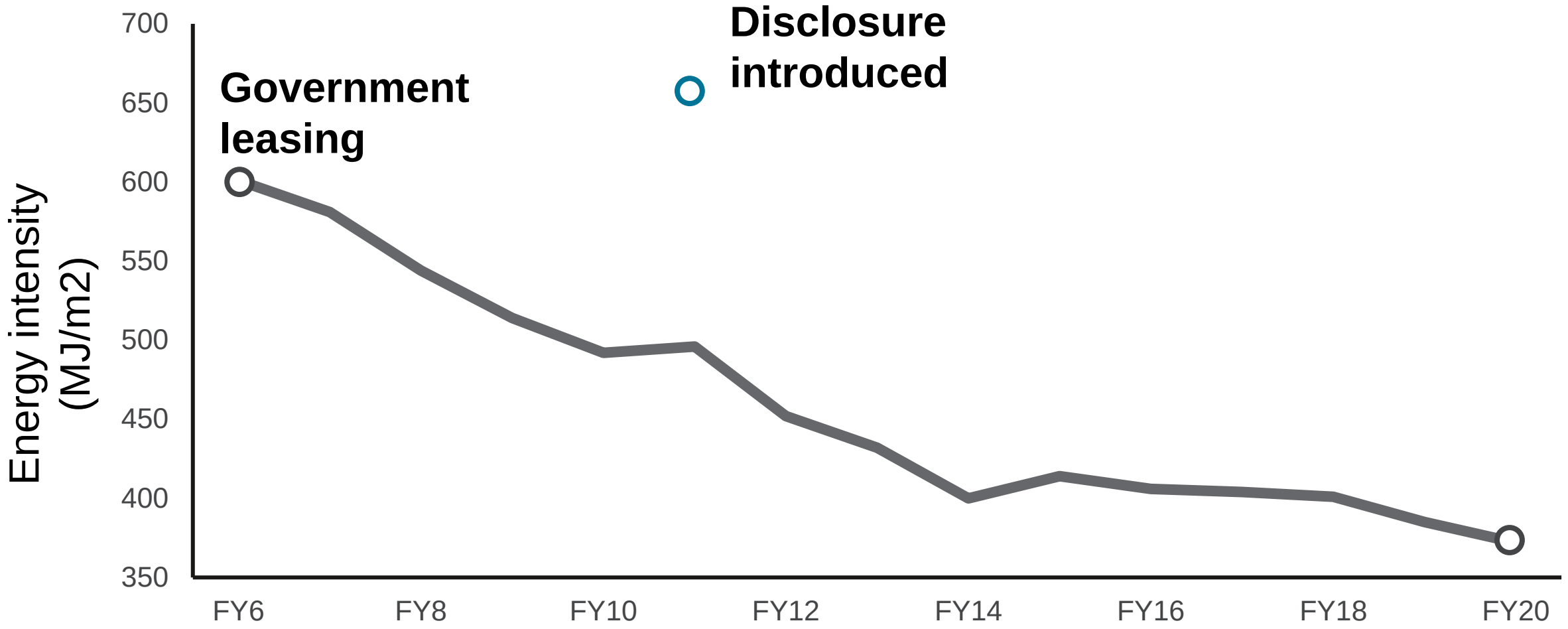
Perth



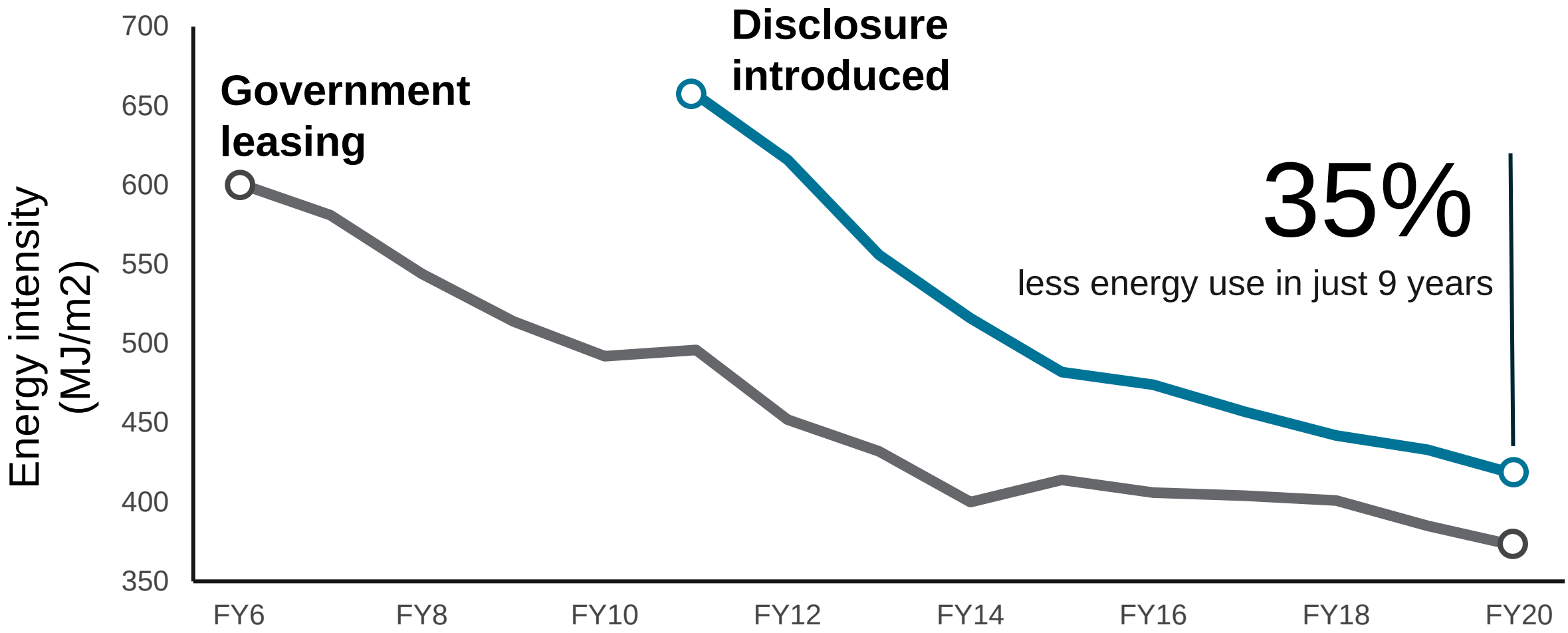
Adelaide



Energy savings following CBD Program



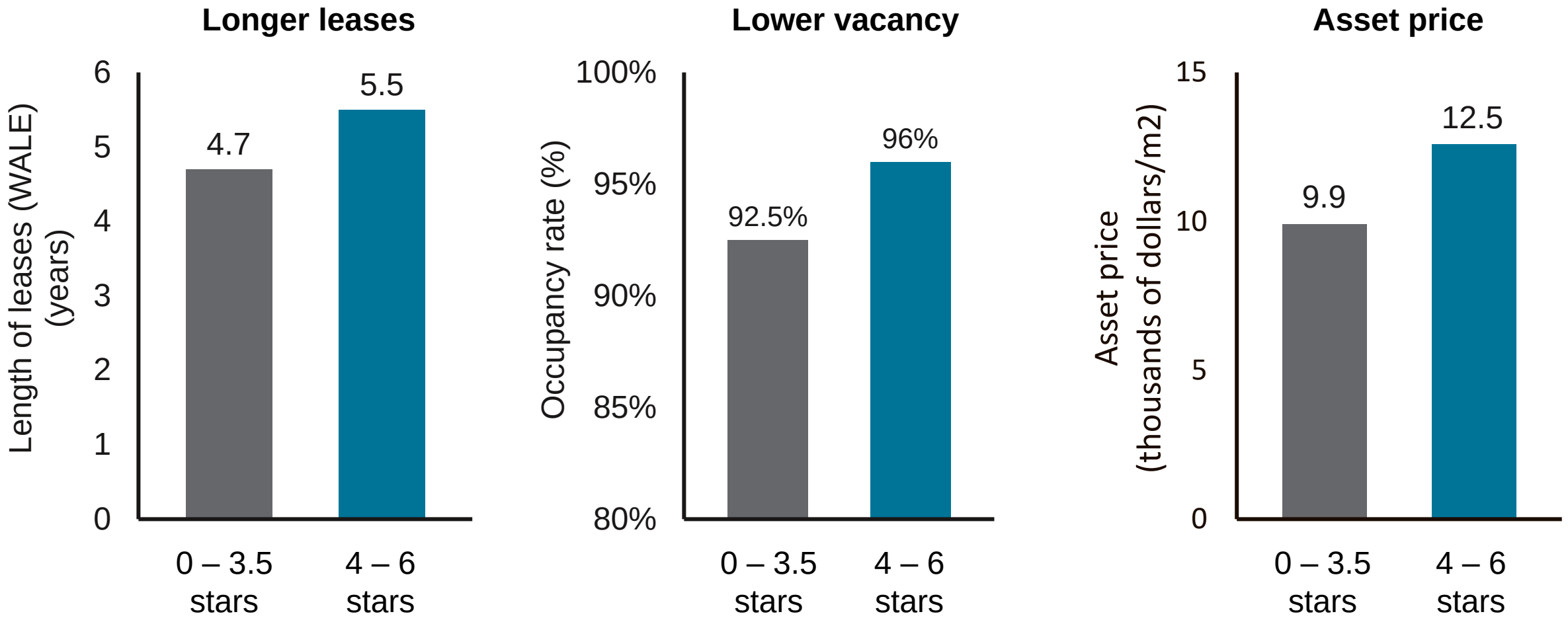
Energy savings following CBD Program



Driver for action #4:
Market demand

NABERS

More demand for buildings with high NABERS ratings means substantially better financial returns

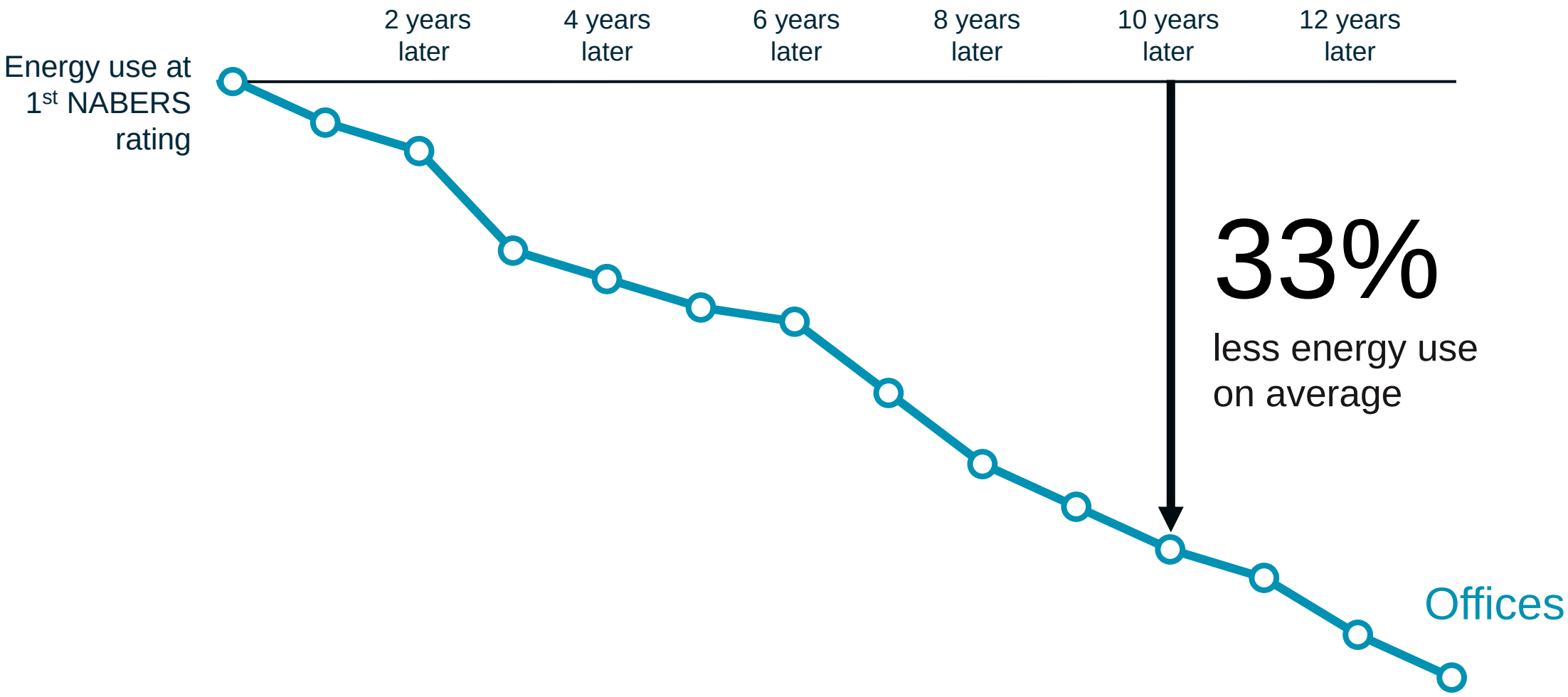


*Source: Real Investment Analytics, Australian Green Office Property indicators. Figures represent the 5-year average.

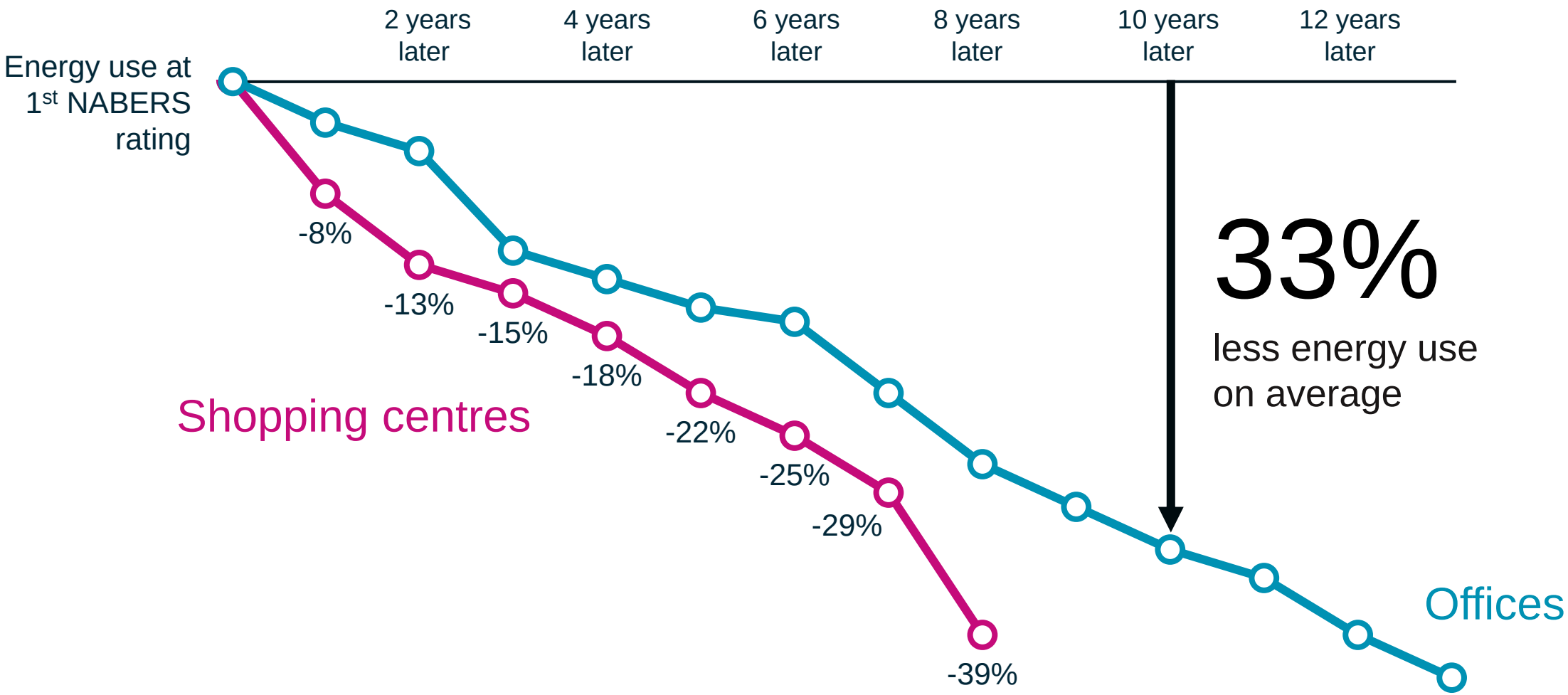
Driver for action #5:
Investor demand for disclosure and climate action

NABERS

Buildings can reduce energy use, making room in the grid to electrify the broader economy



Buildings can reduce energy use, making room in the grid to electrify the broader economy



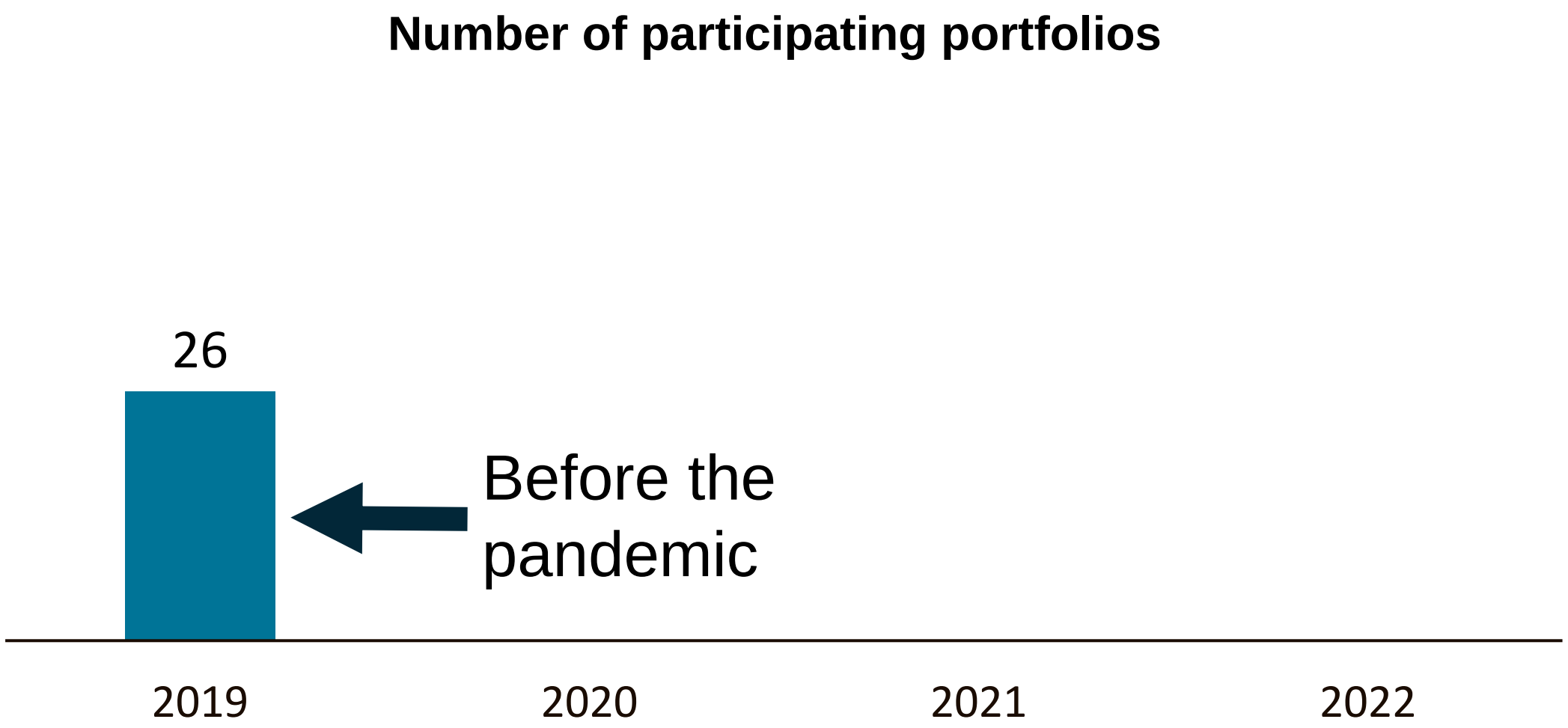
Driver for action #6: Sustainable finance

NABERS

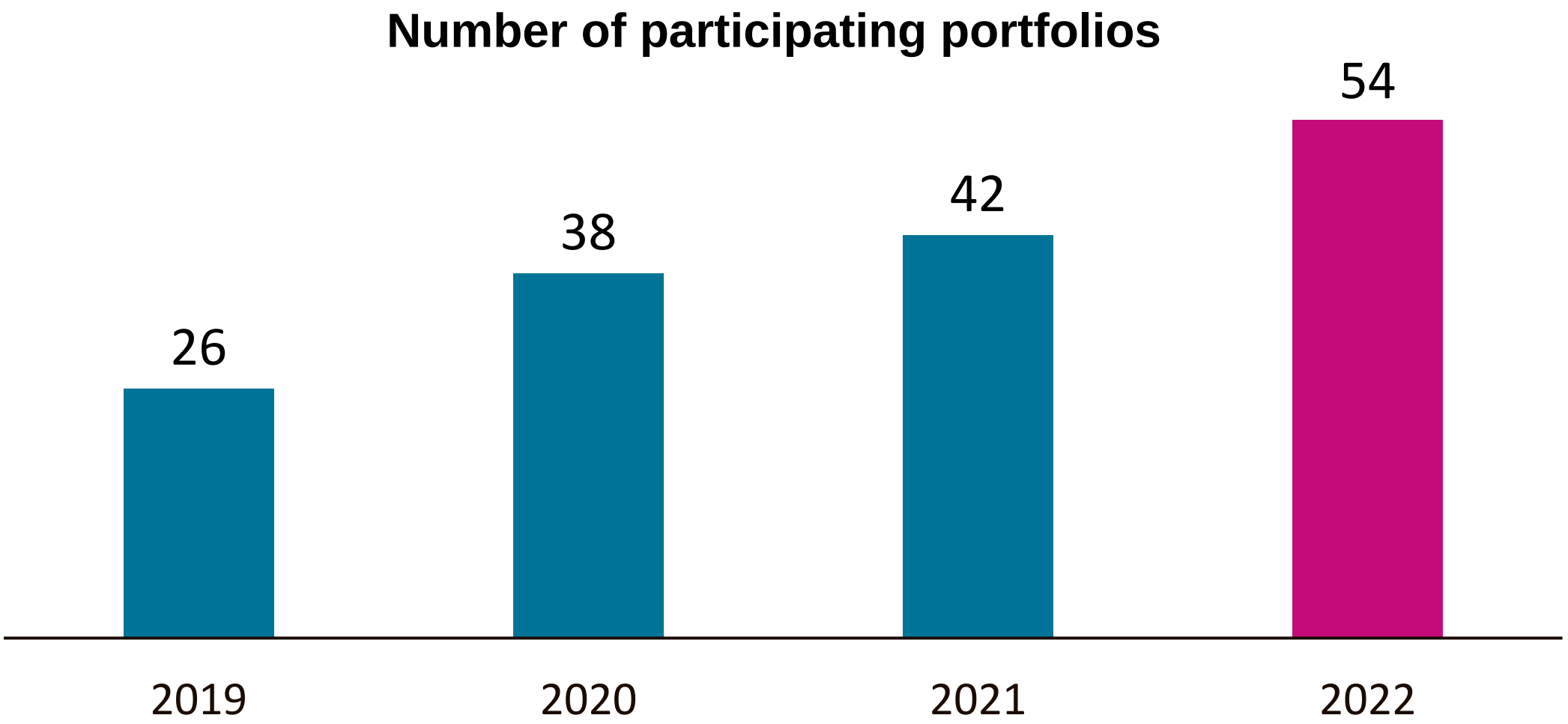
NABERS Sustainable Portfolio Index 2022

Property Portfolio	NABERS Energy rating (stars)	Buildings certified	% of Portfolio rated
Lendlease Barangaroo International Towers	5.6	4	100%
Cbus Property	5.5	7	100%
Parramatta Square (Walker Corp)	5.5	2	100%
Collins Square (Walker Corp)	5.4	6	100%
Brookfield (Premier Real Estate Partners)	5.4	4	99%
Local Government Property Fund (Active Super)	5.3	4	100%
Oxford Investa Property Partners	5.3	5	100%
Property NSW (NSW Government)	5.3	22	100%
QIC Office Fund	5.3	4	100%
Australian Prime Property Fund (APPF) Commercial (Lendlease)	5.2	15	100%
Charter Hall (CLW)	5.2	13	100%
Cromwell Direct Property Fund	5.2	5	100%
GPT Group Office	5.2	23	100%
GPT Office	5.2	11	100%
GPT Wholesale Office Fund (GWOF)	5.2	15	100%
Growthpoint Properties Australia	5.2	23	100%

NABERS Sustainable Portfolio Index



NABERS Sustainable Portfolio Index

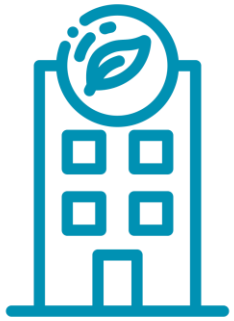


NABERS-based standard for certified green loans

3.5★→5★

#1 Buildings upgrades

- For buildings targeting reductions in energy use of 30% or more



#2 Low-carbon buildings

- For buildings among the 15% lowest carbon emissions in the market

#3 Low-carbon portfolios

- For portfolios among the 15% lowest carbon emissions in the market

THANK YOU

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NABERS

Panel Discussion

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Panel Chair, CEO, Better Buildings Partnership

Nick Deacon
Head of Offices, Europe, Nuveen

Shamir Ghumra
Head of Building Performance, BRE

Victoria Herring
Director, Sustainability Programme, Grosvenor

Luke Menzel
CEO of Energy Efficiency Council of Australia

@bbpuk #NABERS_UK #Realestate #Energyefficiency

BBP | BETTER BUILDINGS PARTNERSHIP

Janine Cole

CHAIR, BBP

SUSTAINABILITY & SOCIAL IMPACT DIRECTOR, GPE

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CIBSE
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CUNDALL
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EDSL Tas
ELEMENTA
EP&T GLOBAL
EVORA
EVORA EDGE
Federated Hermes
GPE Greater together
Greengage
GROSVENOR
H|M
HOARE LEA
INKLING
KJ TAIT ENGINEERS
Landsec
LAING O'ROURKE
Legal & General INVESTMENT MANAGEMENT
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MECSERVE
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Norman Disney & Young A TETRA TECH COMPANY
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SWECO
TFT
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thornton reynolds
Transport for London
TWINEARTH
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UK GBC
USS
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Thank you

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