



# MEPS and GEMS for Heat Pump Water Heaters

What we know so far about minimum energy performance for heat pump water heaters in Australia.

| PRESENTED BY                   | DATE               | AUDIENCE                                     | STATUS                                   |
|--------------------------------|--------------------|----------------------------------------------|------------------------------------------|
| Alastair McDowell,<br>EnergyAE | 22 October<br>2026 | Manufacturers, importers, labs,<br>engineers | Exploratory · exposure draft,<br>not law |

# Agenda

- 01 Where things stand: timeline and grandfathering

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- 02 What is covered, and what is not

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- 03 How the Appendix H test works

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- 04 Load size and the 50°C delivery floor

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- 05 Registering and testing your range

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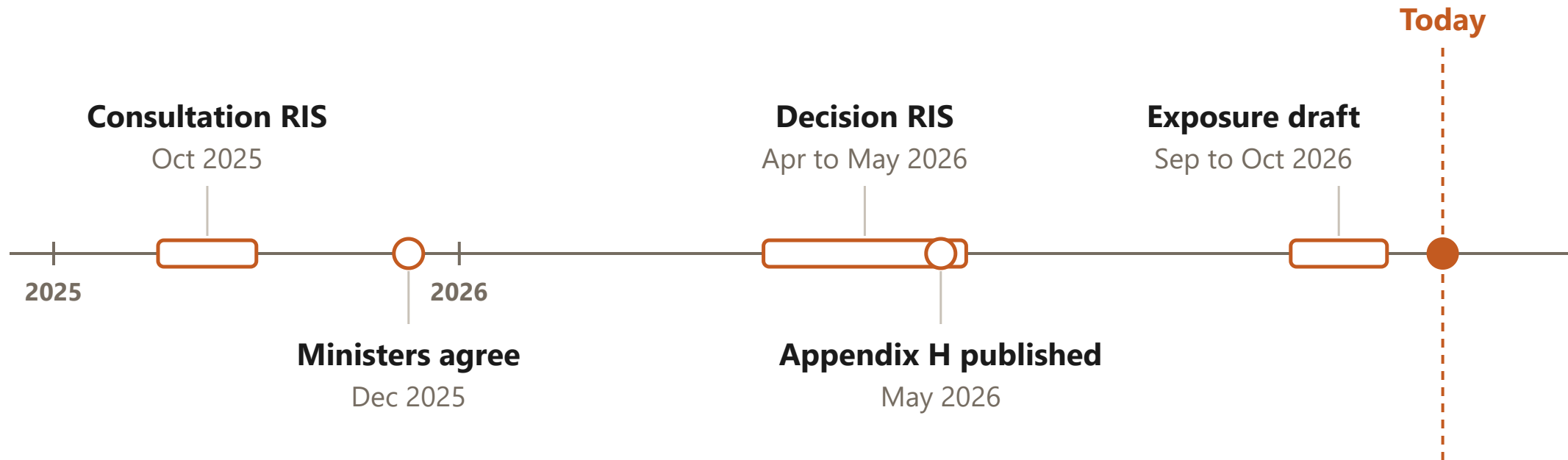
- 06 The Certified Launch Platform

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# MEPS and GEMS in Brief

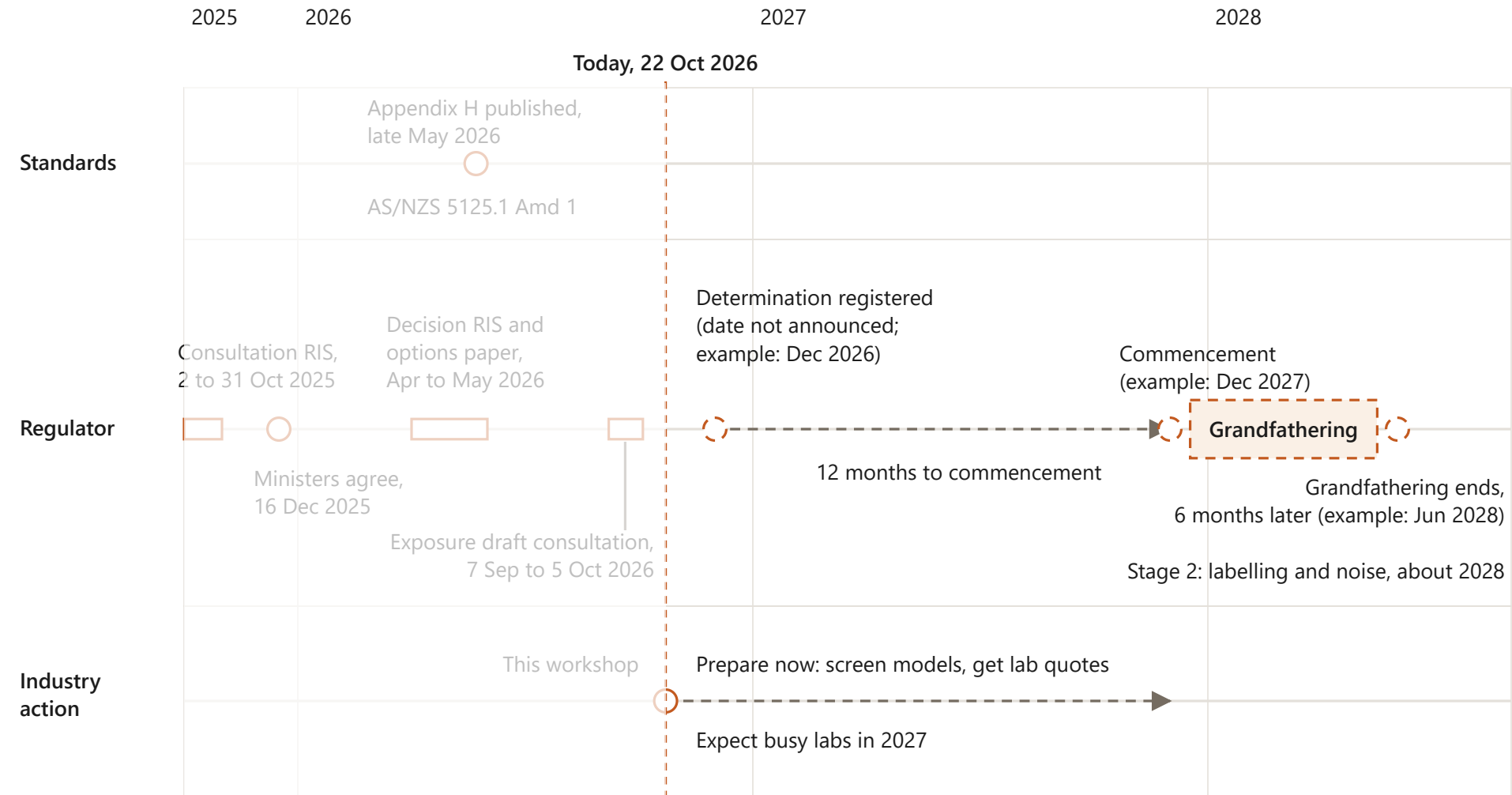
- GEMS Act sets minimum performance for products supplied in Australia
- Stage 1: COP of 2.0 or more at 9°C
- Measured with AS/NZS 5125.1 Appendix H
- Cold (1°C) and hot (19°C) testing voluntary
- Stage 2, about 2028: labelling and noise

# Timeline to Date



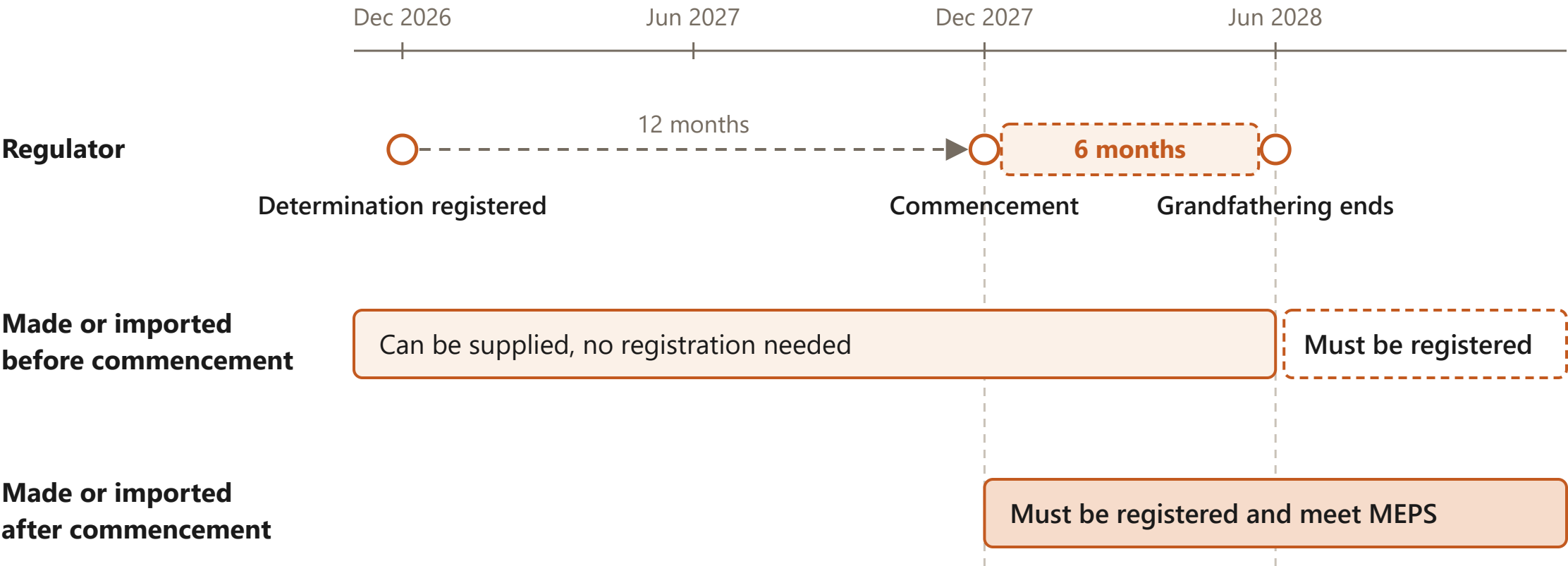
Sources: Decision RIS (Apr 2026), guidance document, Appendix H front page.

# What Happens Next



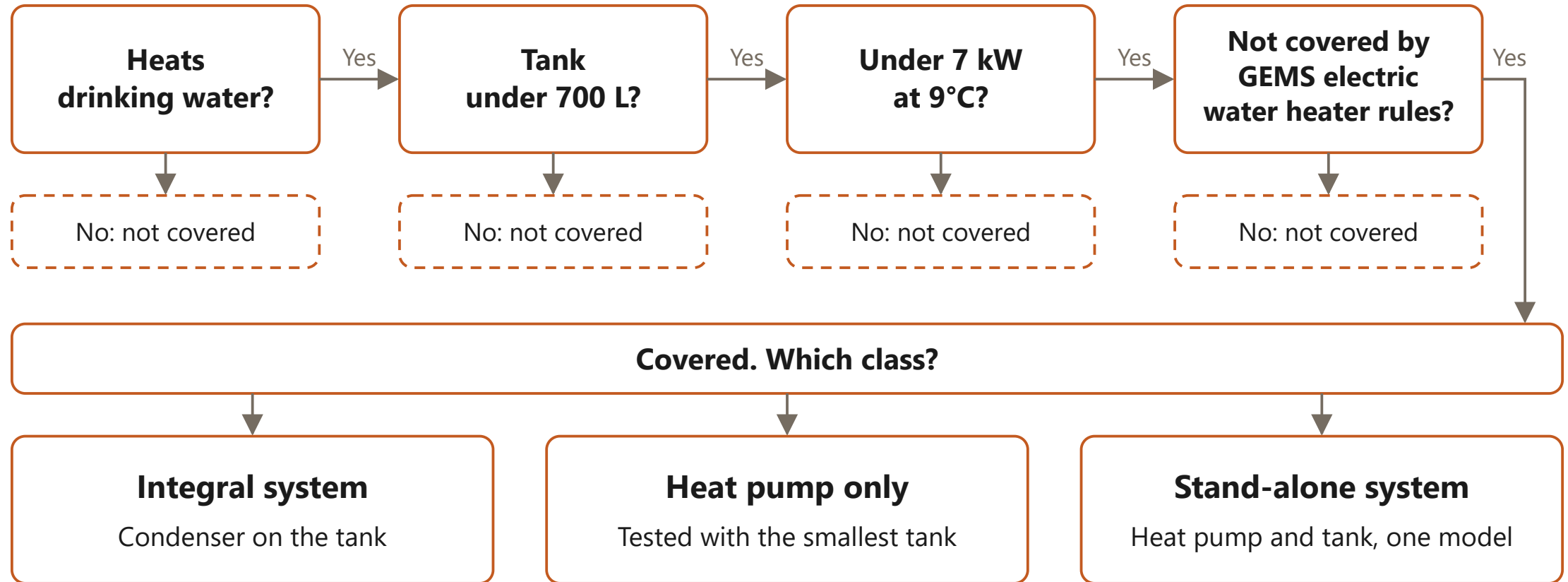
Sources: Decision RIS (Apr 2026), guidance document, exposure draft ss2 and 13, Appendix H front page.

# Grandfathering of Existing Stock

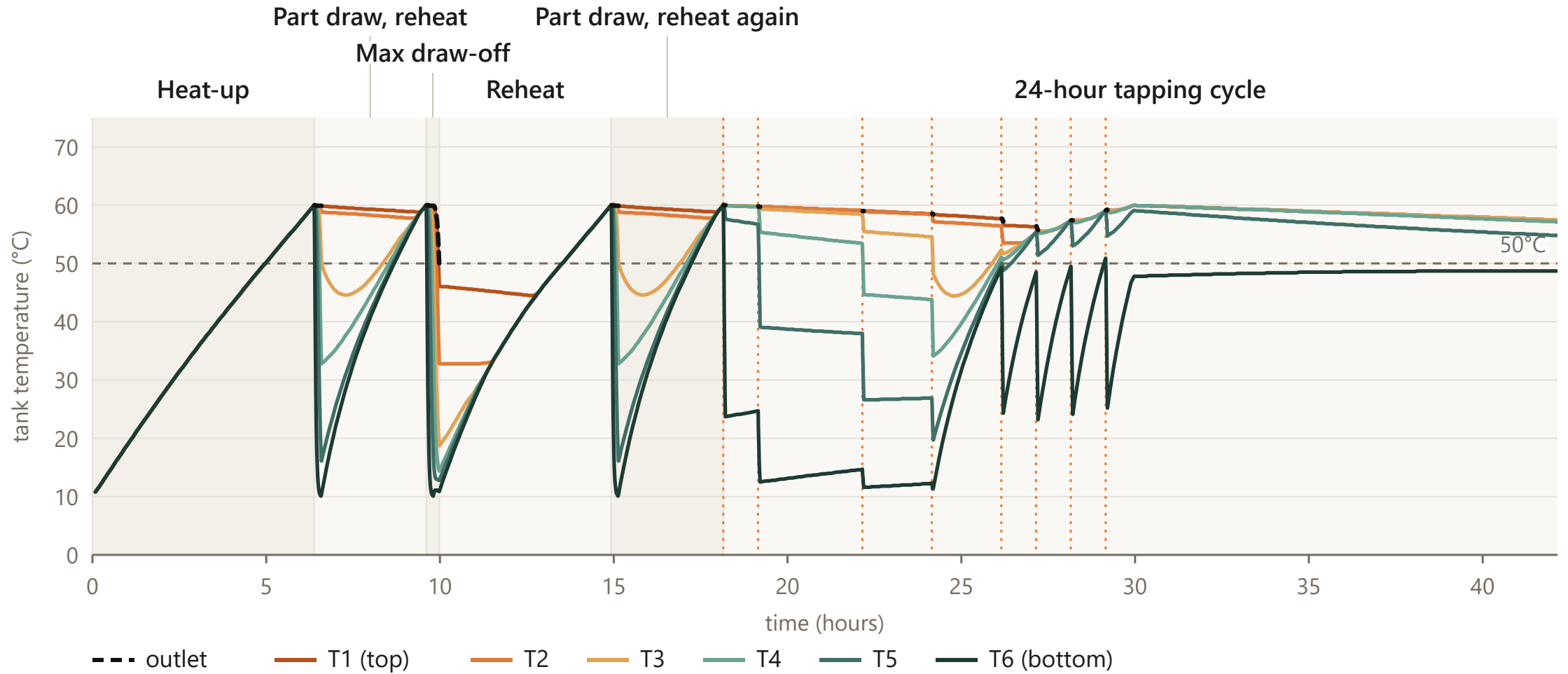


Dates are examples: no date has been announced. Open question: how stock in transit is treated.

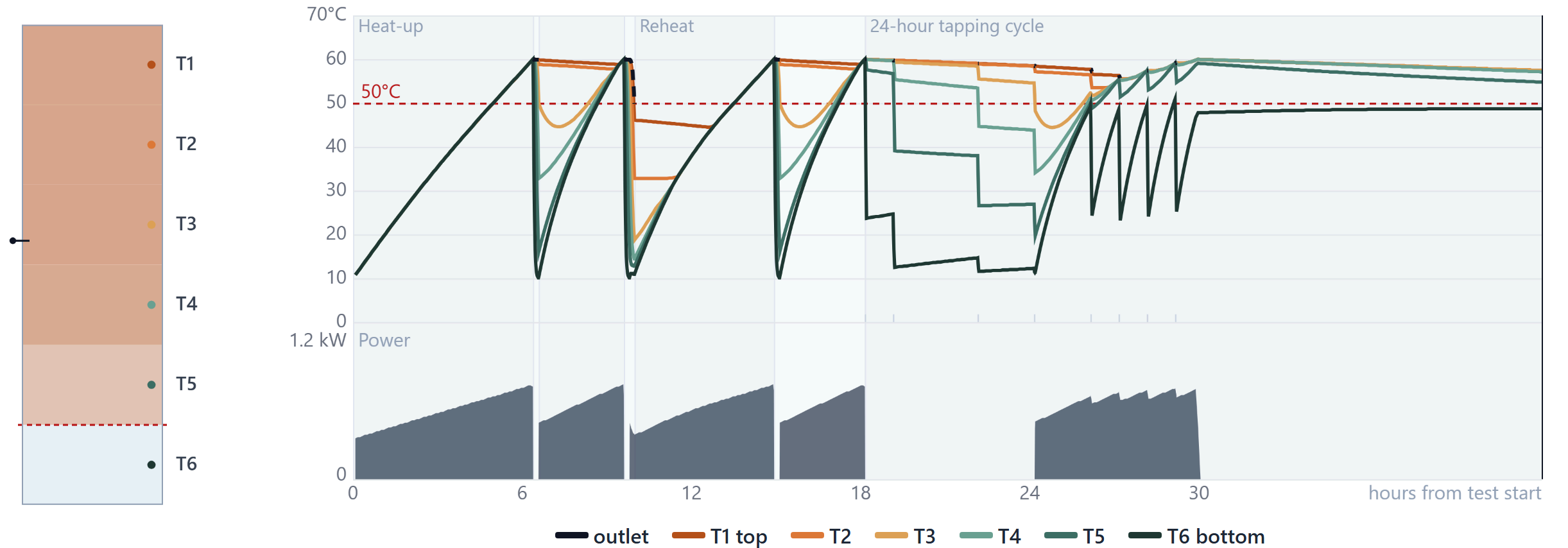
# Scope and Product Classes



# Appendix H Test Sequence



24-hour tapping cycle



▶ Play

↺

42.2 h of 42.2 h

0.5×

1×

2×

4×

V50

261.1 L

RECHARGE TIME

297 min

LOAD SIZE CAP

5

DAILY COP

3.07

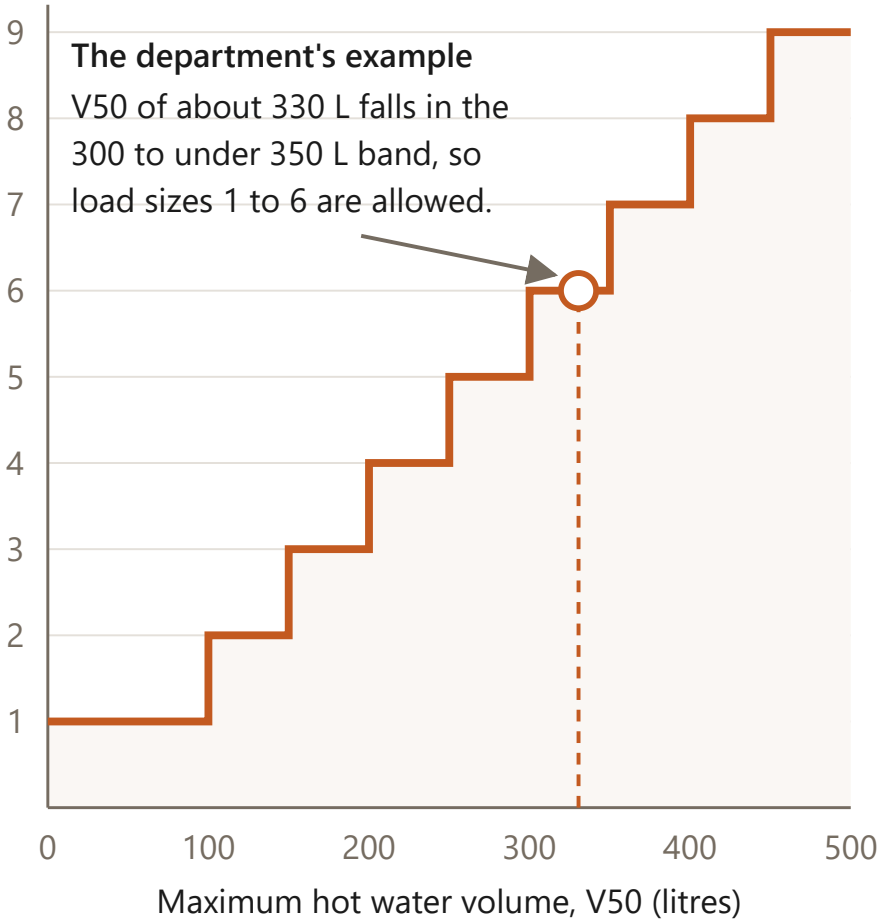
# What GEMS Adds to Appendix H

- Adjustable set point: tested at 60°C, or as close as it gets
- Load size capped by V50 (Table 15)
- Declared values cannot be better than the lab results
- Results, operating modes and test settings disclosed with the product
- Hot or cold not tested: shown as "Not rated"
- Registration number visible in adverts, online too



Table 15, Maximum Load Size

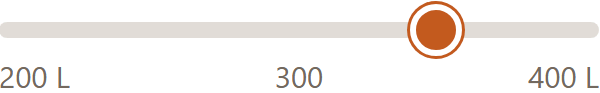
Highest declared load size allowed



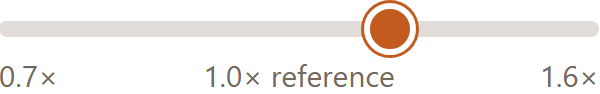
| Column 1<br>Item | Column 2<br>Maximum hot water volume           | Column 3<br>Declared load size |
|------------------|------------------------------------------------|--------------------------------|
| 1                | less than 100 litres                           | 1                              |
| 2                | 100 litres or greater but less than 150 litres | 1, 2                           |
| 3                | 150 litres or greater but less than 200 litres | 1, 2, 3                        |
| 4                | 200 litres or greater but less than 250 litres | 1, 2, 3, 4                     |
| 5                | 250 litres or greater but less than 300 litres | 1, 2, 3, 4, 5                  |
| 6                | 300 litres or greater but less than 350 litres | 1, 2, 3, 4, 5, 6               |
| 7                | 350 litres or greater but less than 400 litres | 1, 2, 3, 4, 5, 6, 7            |
| 8                | 400 litres or greater but less than 450 litres | 1, 2, 3, 4, 5, 6, 7, 8         |
| 9                | 450 litres or greater                          | 1, 2, 3, 4, 5, 6, 7, 8, 9      |

# Design Trade-Offs: Tank Size and Compressor Size

TANK VOLUME 350 L



COMPRESSOR SIZE 1.3x



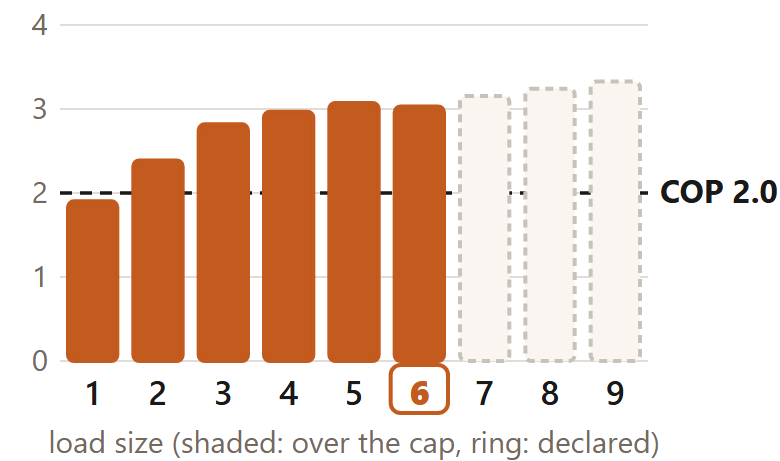
TEST CONDITION Average 9°C



APPENDIX H RESULT, AVERAGE 9°C



24 H COP AT EACH LOAD SIZE



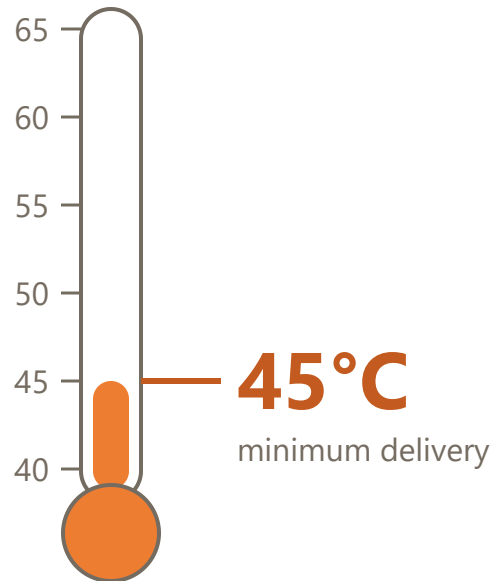
CERTIFICATES (AS/NZS 4234, LOAD SIZE 2)

|      | Zone 3 | Zone 4 | Zone 5 |
|------|--------|--------|--------|
| STC  |        |        | 32     |
| VEEC |        |        | 9      |
| ESC  |        |        | 27     |

# Minimum Delivery Temperature (MDT): 45°C and 50°C

## Incentive schemes

AS/NZS 4234 annual model



### Test

Computer model,  
8,760 hours

### Settings

The product's  
own defaults

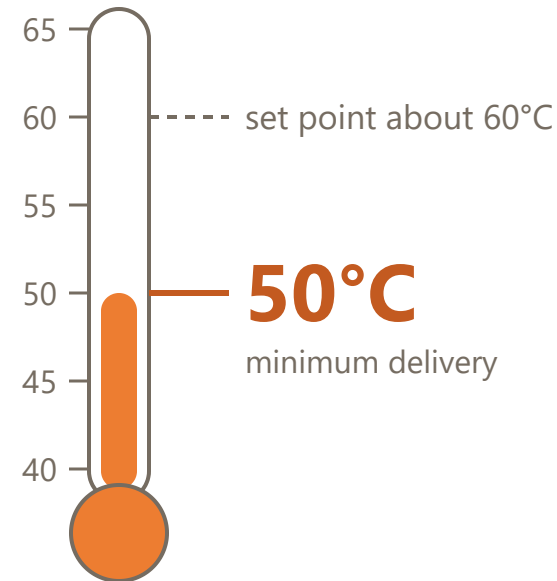
### Gives

STC, VEEC  
and ESC

Two  
separate  
tests

## MEPS

AS/NZS 5125.1 Appendix H



### Test

Laboratory test,  
about two days

### Settings

Fixed by the  
standard

### Gives

V50, recharge  
time and COP

As it stands, scheme submissions stay at 45°C. MEPS settings do not have to match your scheme modelling.

In MEPS, 50°C ends the maximum draw-off (V50) and applies to all eight draw-offs in the 24-hour cycle.

# Families of Models

One test can cover up to 10 models, if they share:

The same energy performance

The same components, controls and modes

and an equivalent tank:

Sensor positions

Inlet and outlet

Height to width

Heat loss

Volume

One test covers the whole family

**Model A**

Base model

**Family at risk**

**Model B**

Another colour

**Family at risk**

**Model C**

Another brand

**Family at risk**

**Model D**

Another brand

**Family at risk**

**Model E**

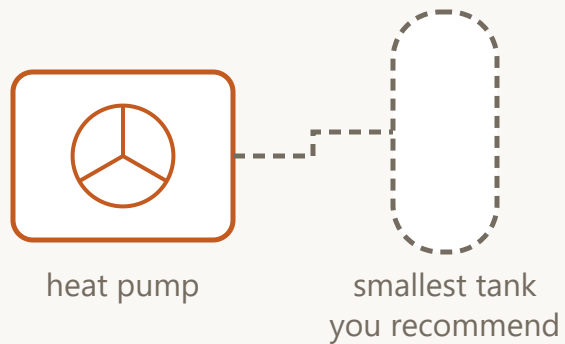
Another colour

**Fails a check test**

A different tank volume is a different family, with its own test.

# Registering Stand-Alone Systems

## Sell the heat pump alone

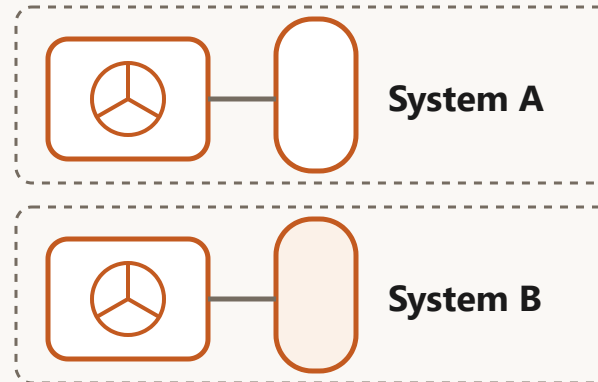


**1 test**

Register as  
Heat pump only

Result  
Smallest tank result

## Sell fixed combinations

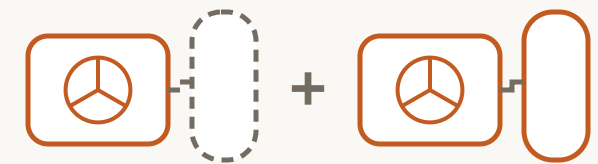


**1 test each**

Register as  
Each system

Result  
Heat pump exempt

## Sell both



**Both sets of tests**

Register as  
Both

Result  
Both registrations

# Choosing Which Models to Test

- Start with the models you sell most and want eligible
- Group identical products into one family
- Different tank sizes usually mean separate tests
- Screen the range first: V50 and COP prediction
- Test the key and borderline models

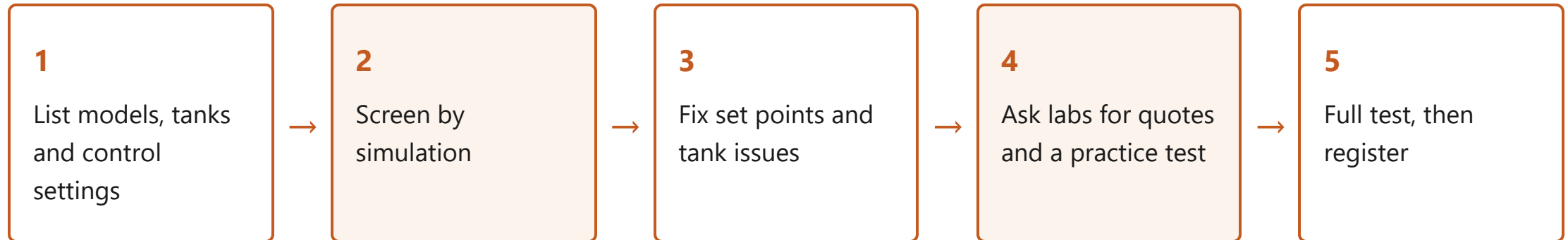


# Labs, Time and Cost

| Question      | What we know                                                     | Source                          |
|---------------|------------------------------------------------------------------|---------------------------------|
| Accreditation | Not required for registration                                    | Guidance document               |
| Check testing | Results must be replicable                                       | Guidance document               |
| Time          | 1 to 2 weeks a model                                             | EnergyAE estimate               |
| Cost          | \$15,000 to \$25,000+ AUD a model, one condition; more for three | EnergyAE estimate               |
| Labs          | VIPAC, CVC, Intertek and potentially more (TBC)                  | Labs have told us they can test |



# Preparation Plan



# Questions and next steps

**Alastair McDowell** · Director, EnergyAE

[alastair.mcdowell@energyae.com](mailto:alastair.mcdowell@energyae.com) · [energyae.com](https://energyae.com)

Recording and written answers will follow

MEPS simulator: [energyae.com/resources/meps-testing-simulator](https://energyae.com/resources/meps-testing-simulator)

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EnergyAE Ltd (NZ) / EAE Pty Ltd (AU) · HPWH compliance modelling, TRNSYS simulation, scheme registration.

Exploratory. The determination is an exposure draft, not law, and Table 15 values may change. The Appendix H simulation is not yet validated against laboratory data.