

Nationwide House Energy Rating Scheme (NatHERS)

Department of Industry, Science, Energy and Resources



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Acknowledgement of Country

We acknowledge that we meet today
on many Aboriginal lands.

We acknowledge the traditional
custodians of the lands and
we show our respect for elders past,
present and emerging through
thoughtful and
collaborative approaches
to our work.





NatHERS - Current and Future

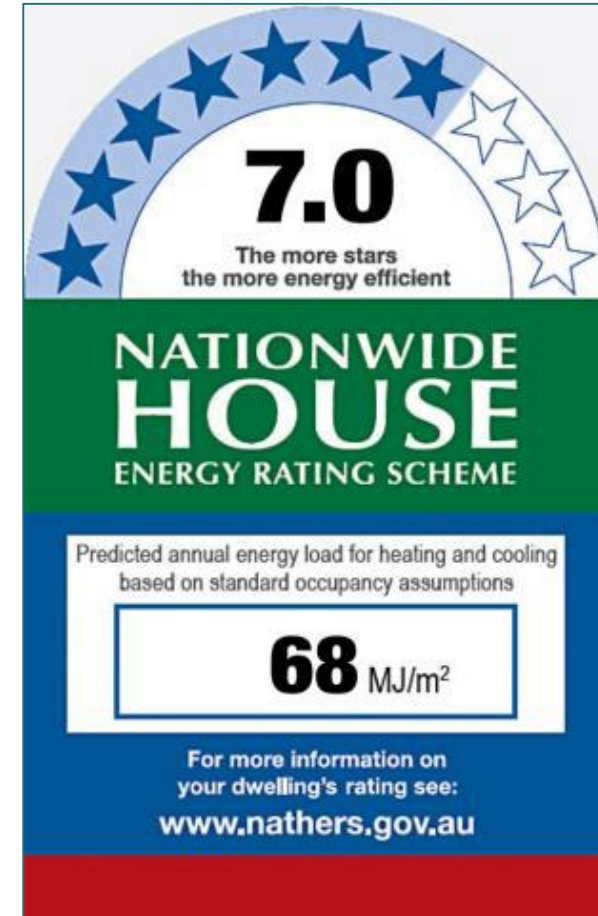
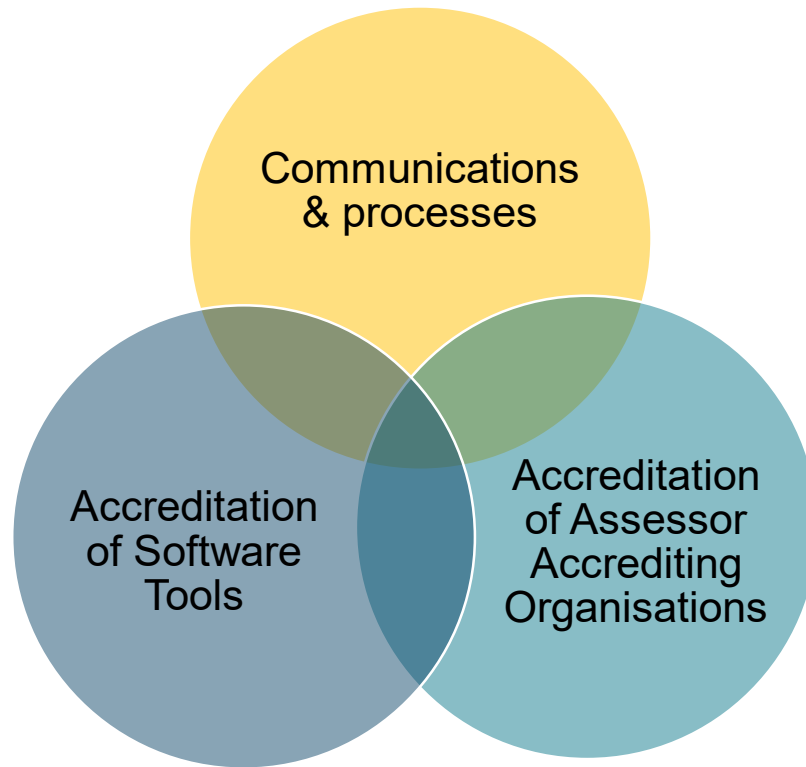
Current Scheme

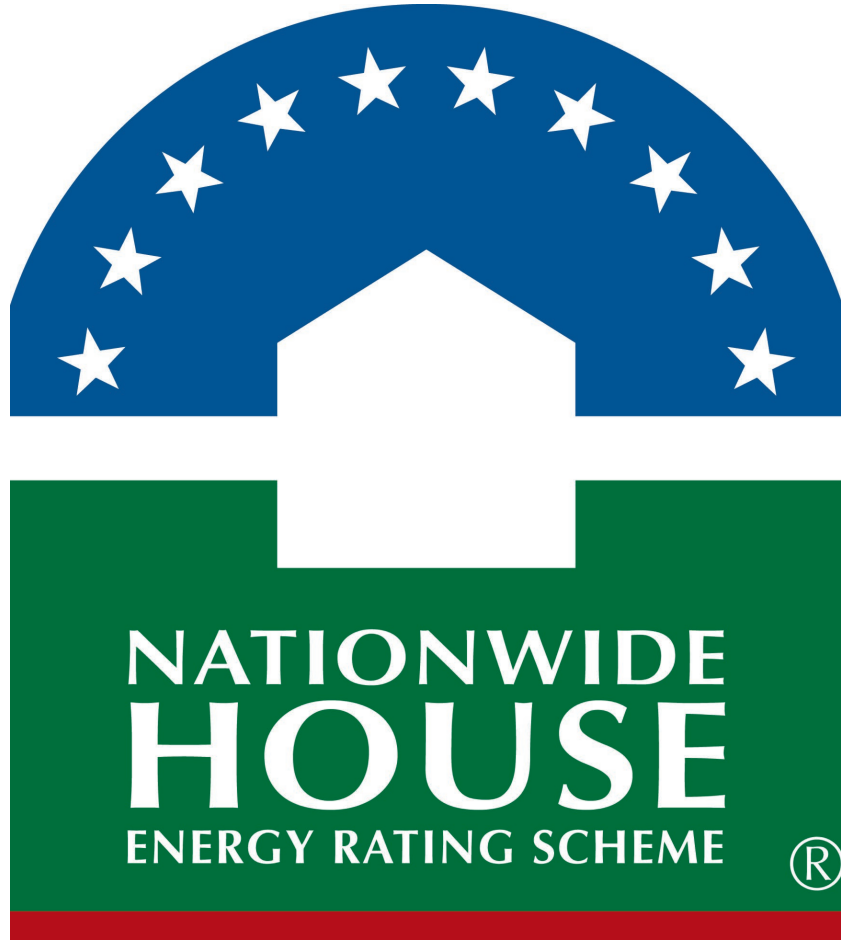
- Thermal Assessments

Changes to NatHERS

- Trajectory for low energy buildings
- Thermal changes
- Whole of Home expansion

NatHERS Framework



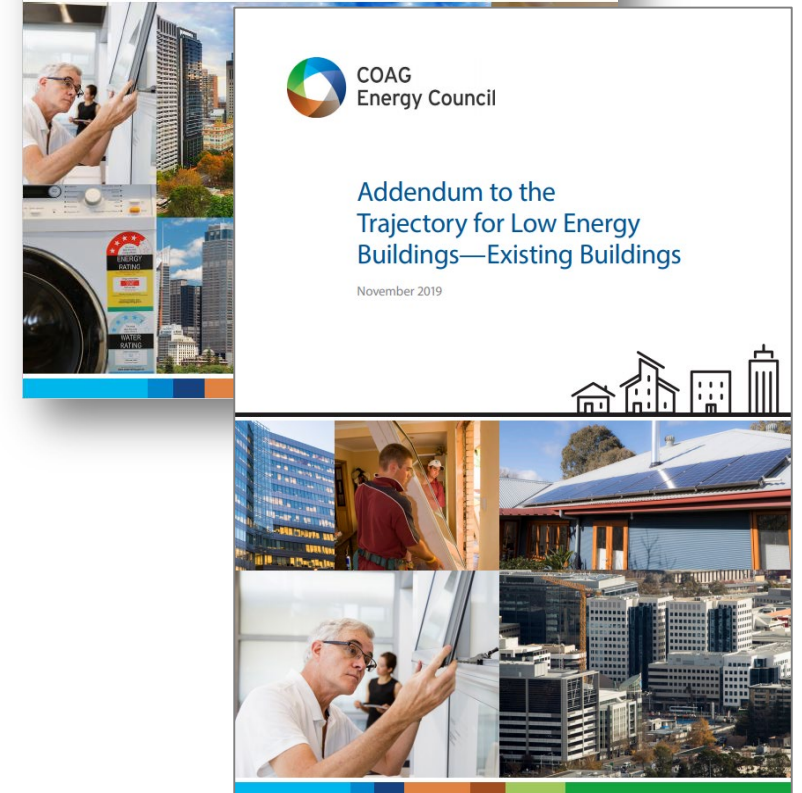
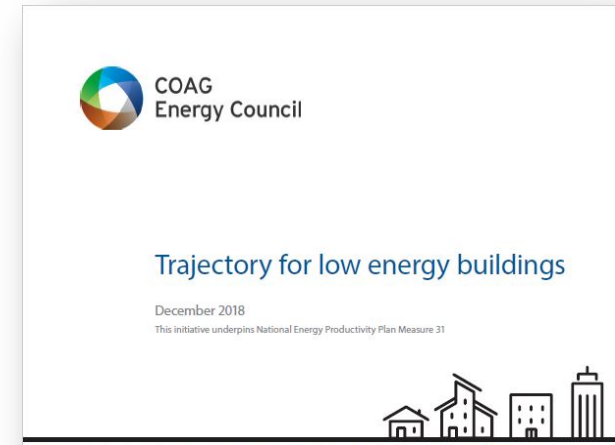


Changes to NatHERS

- Trajectory for low energy buildings
- Thermal changes
- Whole of Home expansion

Trajectory for Low Energy Buildings

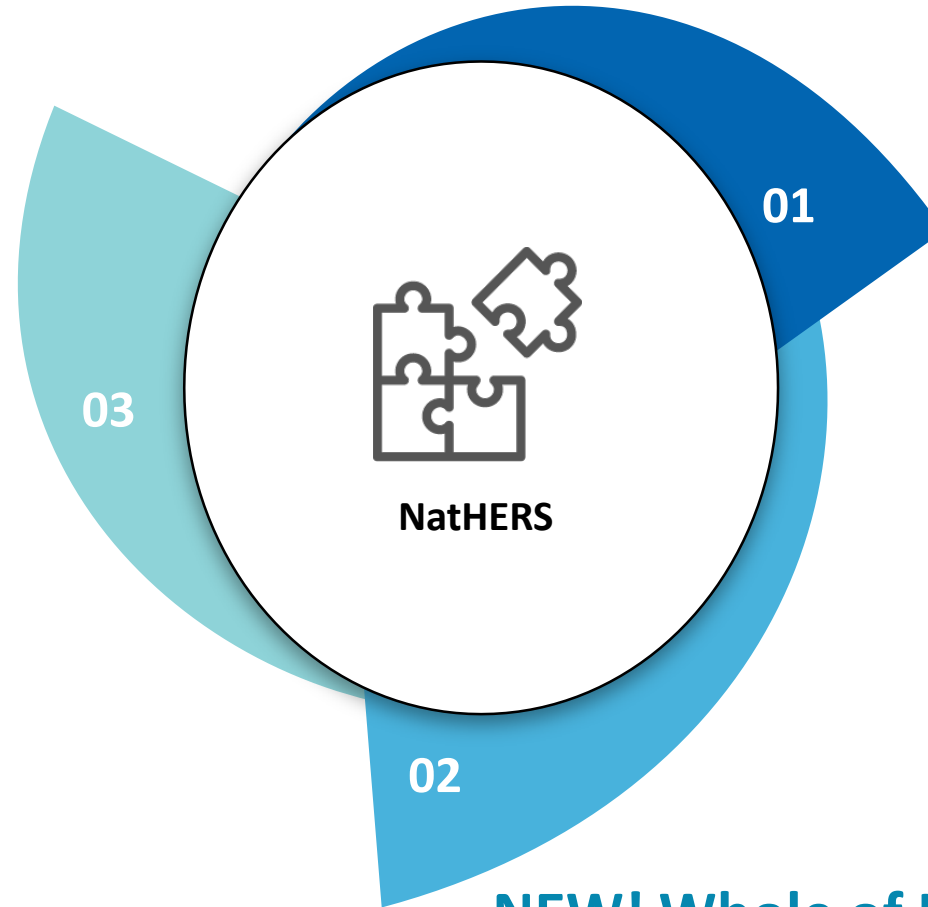
- A national plan to help achieve zero energy (and carbon) ready buildings
- Increase energy efficiency provisions in the National Construction Code (NCC) 2022
- Expand NatHERS to offer whole-of-home tools to support the NCC
- Deliver a home energy rating framework for existing homes that leverages NatHERS



NatHERS is changing

NEW! In Home

Assessment for existing homes using an 'in home' assessment process and provision of recommendations for improvements

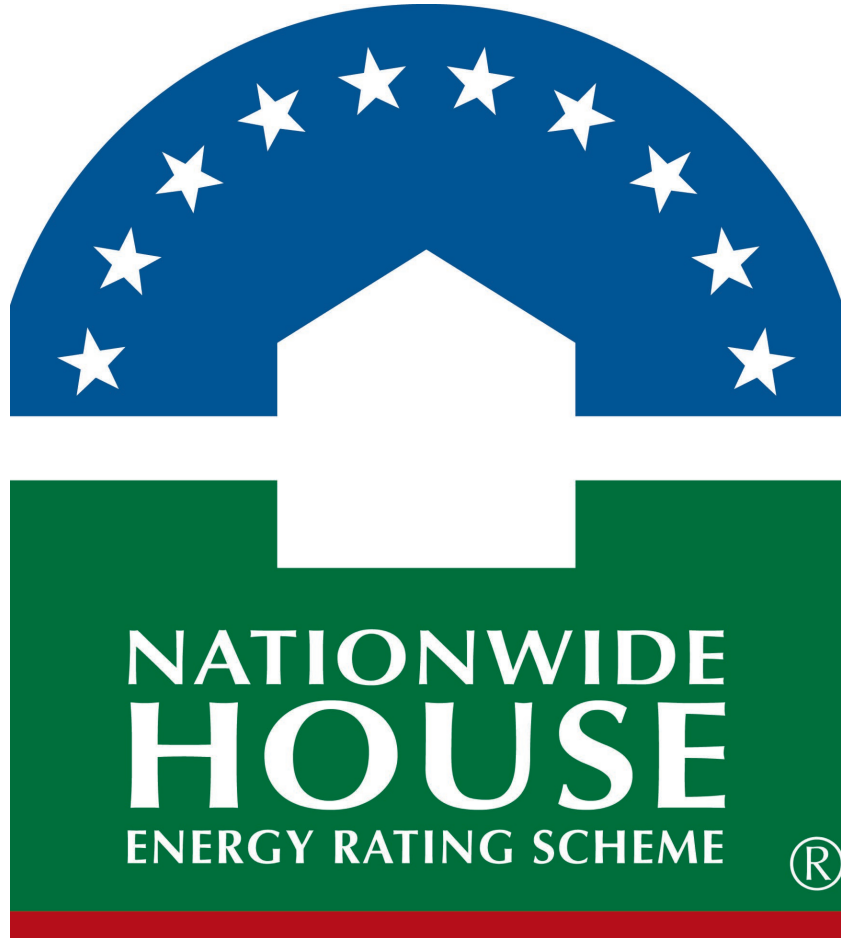


Updates – Thermal

Assessment of the home's thermal performance and star rating for new homes

NEW! Whole of Home

Assessment of the home's appliances and solar PV and a new whole of home rating



Thermal Changes

Climate files & star bands

Heating & cooling load limits

Thermal bridging

Climate Files and Star Bands

New Climate Files

- More recent and accurate weather data from 1990 to 2015
- New files cover all 69 Climate Zones across Australia

New Star Bands

- Minimise impact of new climate files
- Majority of home types will have, on average, zero change to their star rating



Heating Cooling Load Limits

Updated ABCB Standard – NatHERS heating and cooling load limits

- Provide limits for proposed 7 stars
- Accommodates new NatHERS star bands

Improved linkages with NatHERS

- Automatic look-up function in software
- Certificate modifications to show split load limits next to predicted heating and cooling loads

Thermal performance star rating

X.X
The more stars the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

YYYY.Y MJ/m²
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:
www.nathers.gov.au

Thermal performance (MJ/m²)
Limits taken from ABCB Standard 2019.1

	Heating	Cooling
Modelled	0000.0	0000.0
Load limits	0000.0	0000.0

Load limit settings

Floor Type (lowest living area)	[Type]
NCC Climate Zone 1 or 2	[Y/N/NA]
Outdoor Living Area	[Y/N/NA]
Outdoor Living Area Ceiling Fan	[Y/N/NA]

Thermal Bridging

Objective:

- ❖ To improve the accuracy of predicting the thermal resistance of the building envelope
- Metal framed construction to match the thermal performance of timber
- NatHERS able to assess thermal bridging impacts, as per ABCB requirements





Whole of Home Performance Ratings



Key updates for NCC 2022



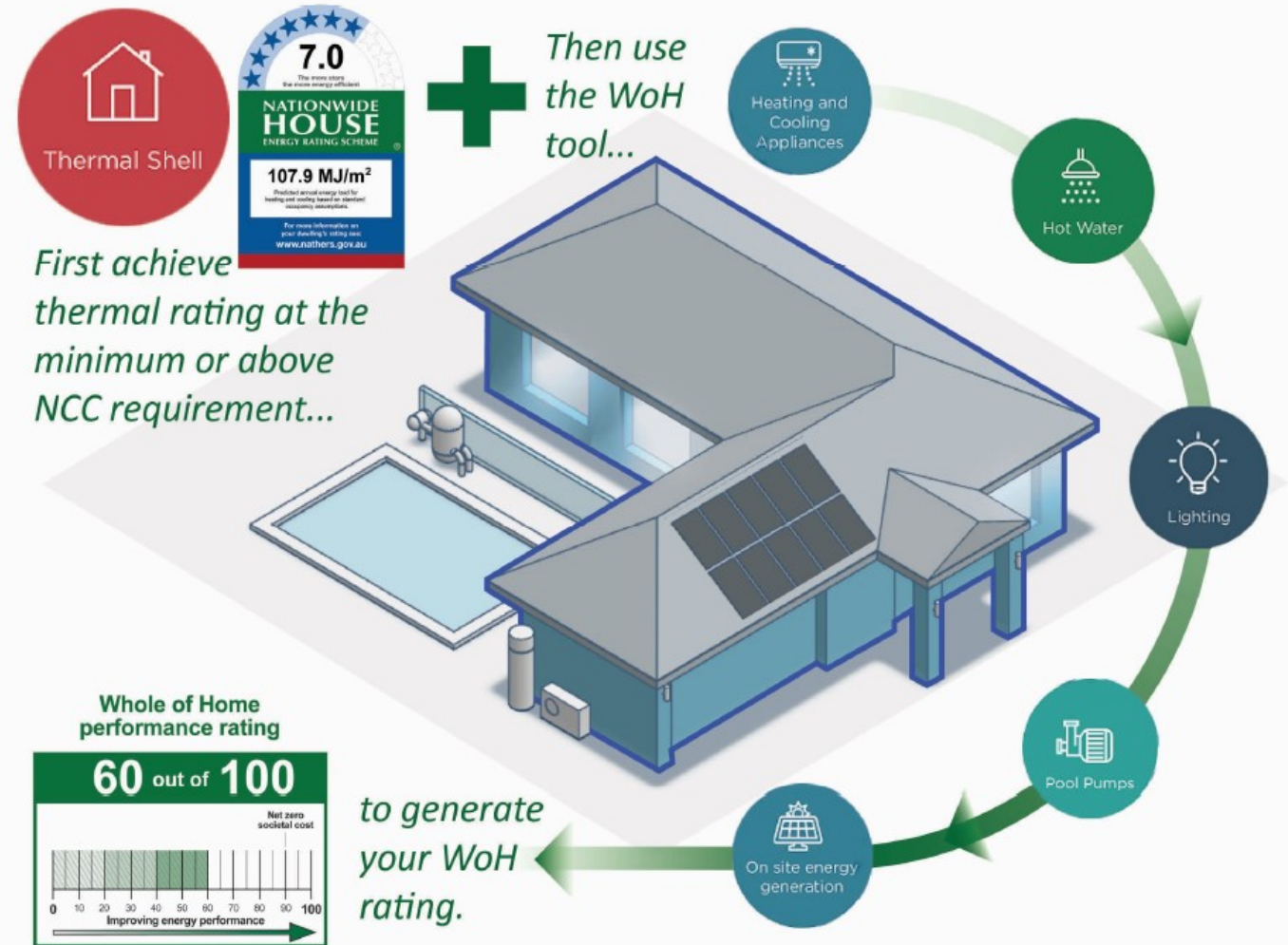
New rating tool and Certificate



New schedules and checklists

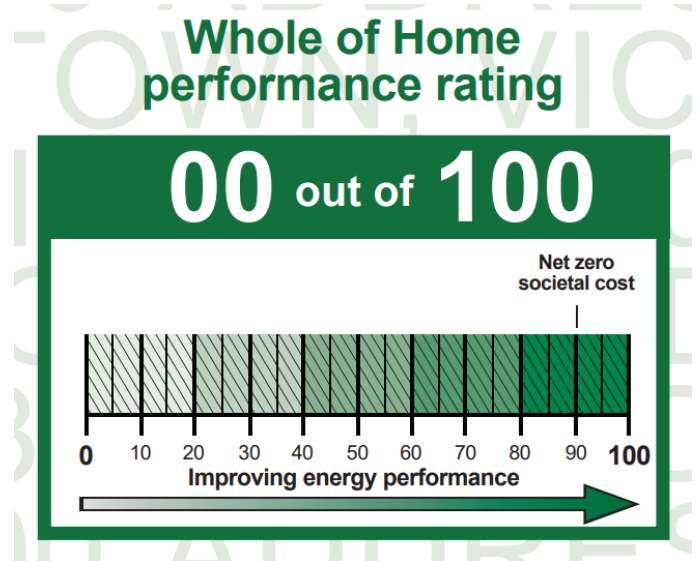
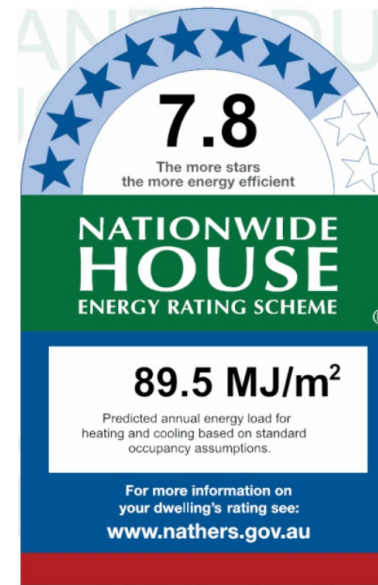
NatHERS expansion to Whole of Home

- NatHERS is being expanded to support energy performance assessments and ratings of all major energy uses in the home.
- Alignment with proposed NCC 2022 scope has been the priority.
 - heating and cooling
 - water heating
 - pool and spa pumps
 - lighting; and
 - on-site energy generation.



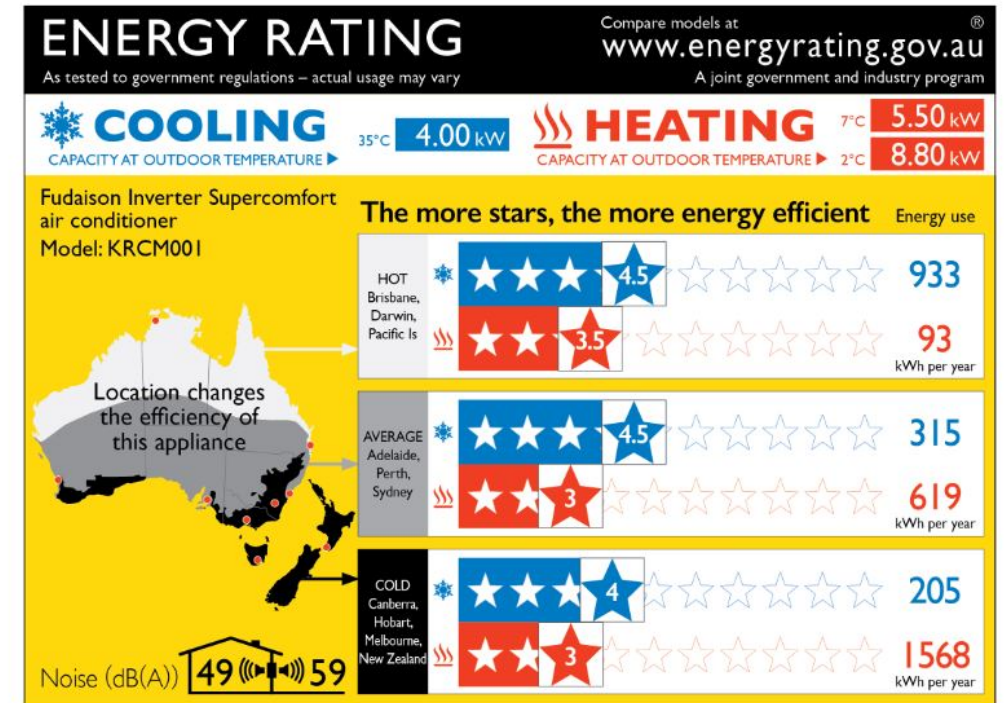
NatHERS ratings

- Simple and easy to understand
- Compare the performance of different home designs when building or designing a new home or buying or renting an existing home.
- Find the best design suited to the climate, residential block and needs of the home owner
- Design and build homes that have little to no energy bills
- Easily see how the design meets or exceeds the minimum standards



Meeting the energy budget

- Trade-off between different technologies and appliance efficiencies
- Install efficient heating and cooling and/or water heating systems
- Use efficient lighting
- Offset your energy use by installing on-site energy generation
- The NatHERS tools help builders, designers and consumers maximise their choices in designing an energy-efficient home.



NatHERS Software Tools



Four tools are currently accredited under NatHERS to deliver consistent thermal star ratings: used for new build compliance



Two new Whole of Home rating tools have been endorsed under NatHERS and are available for the NCC 2022 public comment draft



New certificate features

- Whole of home performance rating

The rating scale ranges from

0 to 100:

10 is low performance and 100 world-leading.

The range in a 0-100 scale allows for high and very high performing homes to be differentiated from those meeting minimum compliance.

- Schedules for appliances, on-site renewable energy and battery systems

Nationwide House Energy Rating Scheme
NatHERS Certificate No. #000000000-00

Generated on [date] using [software and version]
[other boilerplate text other boilerplate text other boilerplate text other boilerplate text other boilerplate text other boilerplate text]

Property

Address [00 Street, Suburb, State/Territory, Postcode]
Lot/DP [number]
NCC Class* [number]
Type [new/renovation/existing]

Plans

Main plan [plan number, version & date]
Prepared by [name of preparer of plans]

Construction and environment

Assessed floor area (m²)*
Conditioned* 000.0
Unconditioned* 0.0
Total 0.0
Garage 0.0

Exposure type [exposure]
NatHERS climate zone [number, town/suburb]

NCC Requirements

BCA provisions [Volume 1/Volume 2]
State/Territory variation [Yes/No]

Accredited assessor

Name [assessor name]
Business name [business name]
Email [email address]
Phone [00 0000 0000]
Accreditation No. [0000 000 000]
Assessor Accrediting Organisation [name of Assessor Accrediting Organisation]
Declaration of Interest [declaration]

Thermal performance star rating

X.X
The more stars the more energy efficient

NATIONWIDE HOUSE ENERGY RATING SCHEME

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Whole of Home performance rating

00 out of 100

Net zero societal cost

Improving energy performance

Verification

To verify this certificate, scan the QR code or visit [Hstar-dev.azurewebsites.net/Generate?p=MialcPjqJ.]
When using either link, ensure you are visiting hstar-dev.azurewebsites.net

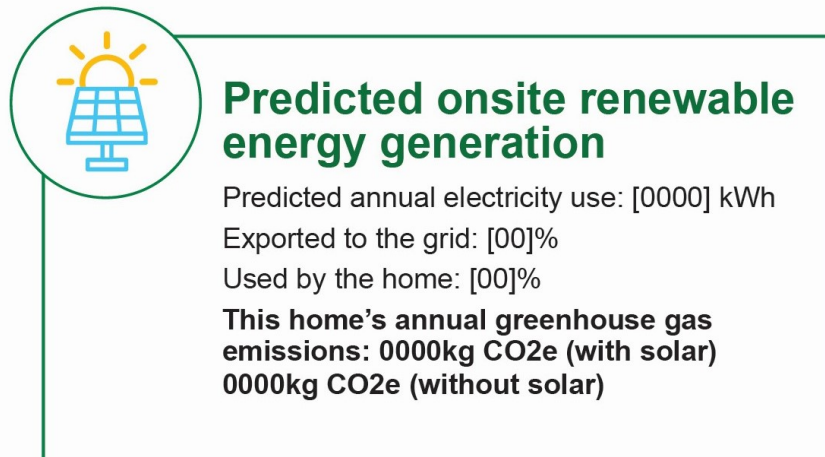
National Construction Code (NCC) requirements
[This section is to be updated with NCC code requirement wording when confirmed]

* Refer to glossary.
Generated on [date] using [software] for [address]

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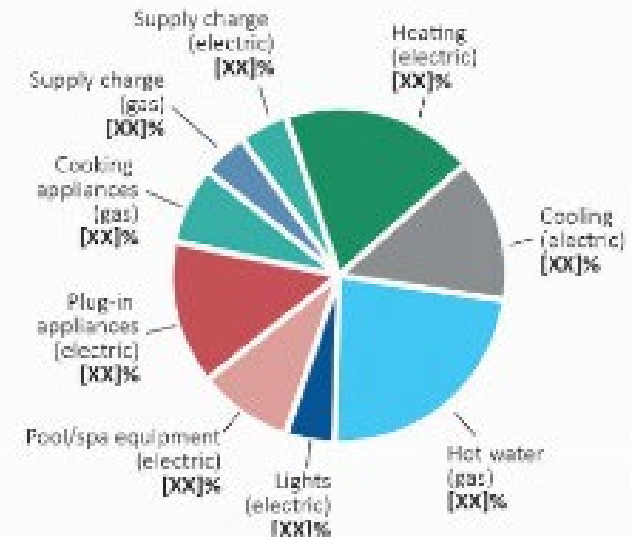
Additional certificate features

- Supporting information on the homes:
 - Renewable energy contribution
 - Greenhouse gas emissions, cost and energy consumption breakdown for the energy uses in the home



Cost

Shows the contribution each appliance has on the home's overall annual energy cost.



New checklists and schedules

[#000000000-00] NatHERS Certificate 0.0 Star Rating and 00 Whole of Home Rating as of [Date]

Certificate check

The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.

Genuine certificate check

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thermal performance check

Windows and glazed doors

Does the window size and location shown on the NatHERS-stamped plans or installed, match what is shown in Window and glazed doors and Roof window schedule, type and performance tables on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown in the Window and glazed door and Roof window type and performance table on this Certificate?			<input type="checkbox"/>	<input type="checkbox"/>

External walls

Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or installed, match what is shown in the External wall type table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the external wall shade (colour) match what is shown in the External wall type table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Floor

Does the floor insulation R-value shown on the NatHERS-stamped plans or installed, match what is shown in the Floor type table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or installed, match what is shown on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Ceiling

Does the ceiling insulation R-value shown on the NatHERS-stamped plans or installed, match what is shown in the Ceiling type table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Roof

Does the external roof shade (colour) match what is shown in the Roof type table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Apartment entrance doors (NCC Class 2 assessments only)

Does the 'External Door Schedule' show apartment entrance doors? Please note that an 'external door' between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Exposure*

Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is 'exposed' or a top floor high-rise apartment is 'protected'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Heating and Cooling Load Limits*

Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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* Refer to glossary.
Generated on [date] using [software] for [address]

Appliance schedule

Note: A flat assumption of 5W/m² is used for lighting, therefore lighting is not included in the appliance schedule.

Appliance Type	Location	Fuel Type	Minimum Efficiency/ Performance	Recommended Capacity
Cooling system				
Cooling system	Kitchen/Dining/Living	Ducted Heat Pump Air Conditioner	00	00
Cooling system	Bedroom 1	Ducted Heat Pump Air Conditioner	00	00
Cooling system	Bedroom 2	Ducted Heat Pump Air Conditioner	00	00
Cooling system	Bedroom 3	Ducted Heat Pump Air Conditioner	00	00
Heating system				
Heating system	Kitchen/Dining/Living	Ducted Heat Pump Air Conditioner	00	00
Heating system	Bedroom 1	Ducted Heat Pump Air Conditioner	00	00
Heating system	Bedroom 2	Ducted Heat Pump Air Conditioner	00	00
Heating system	Bedroom 3	Ducted Heat Pump Air Conditioner	00	00
Hot water system				
Hot water system	-	Gas instant	0 star	
Pool pump				
Pool Pump	-	Single Speed Pressure Cleaner with Main Filtration Pump	00	00

* Refer to glossary.
Generated on [date] using [software] for [address]

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Opportunities for industry

Some of the benefits to expanding NatHERS:

- Allows a **choice of tools**
- Supports a **variety of programs**
- **Technical notes** and **assessor handbooks**
- **Training** made available to become Whole of Home assessors



Benefits for industry and households

The expansion of NatHERS is being designed to support industry and householders make informed choices about how they can move towards zero energy (and carbon) ready buildings. The expansion is positioned to support:

1

Provide a clear pathway for the future of bespoke & volume builds across Australia



2

Provides opportunities for industry to invest in new and emerging energy & sustainability technologies



3

Supports delivery of higher quality, long term sustainable builds at more efficient cost



4

Provides cost-effective energy assessments for both industry & consumers



5

Measures how to meet & exceed the new minimum compliance standards





In Home Extension

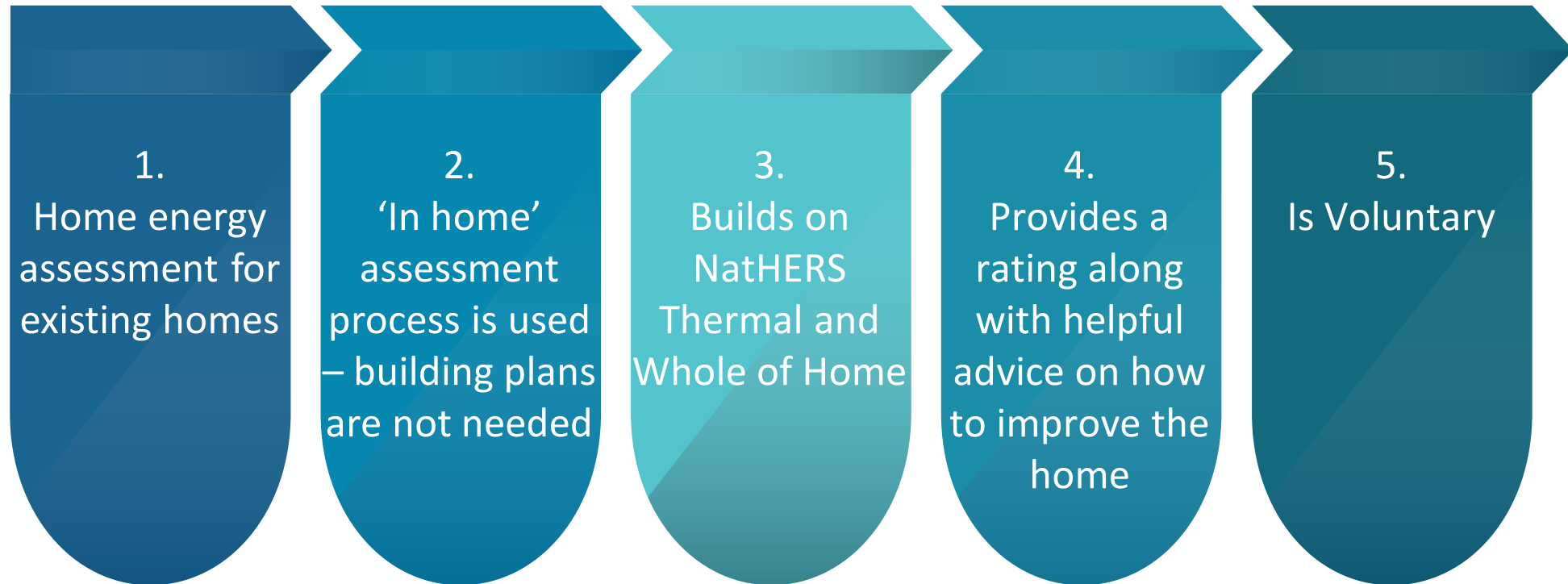
What is NatHERS In Home

How NatHERS In Home is being established

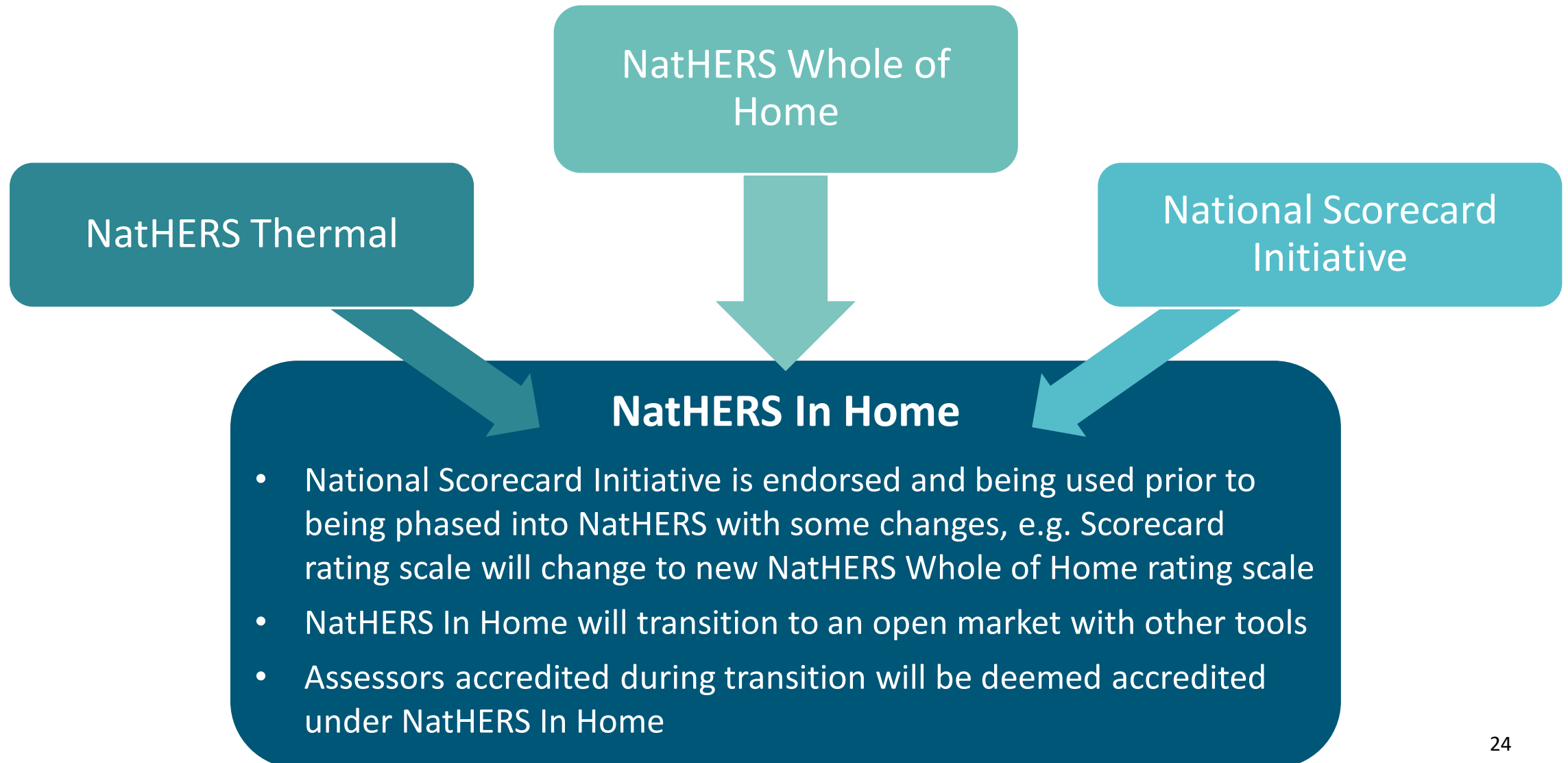
New NatHERS In Home Certificate

Benefits of NatHERS In Home

What is NatHERS In Home?



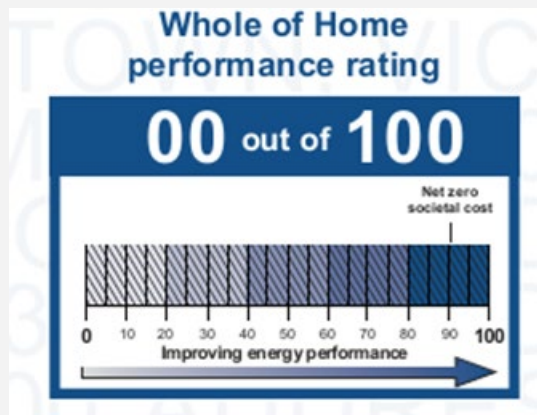
How NatHERS In Home is being established



New NatHERS In Home Certificate

Rating

- Will use the Whole of Home performance rating from 0 to 100:
 - 0 is low performance and 100 world-leading

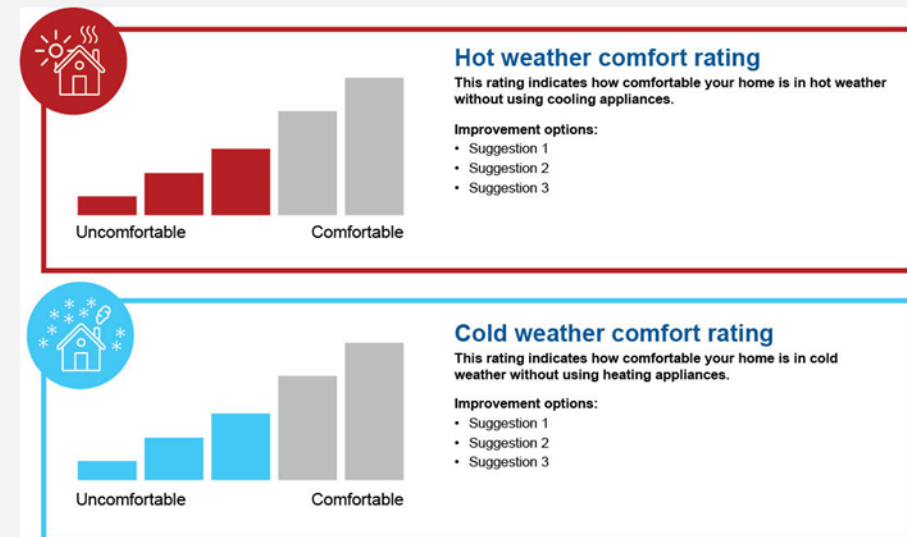


Information

Will have information about thermal, appliances, on-site renewable energy and battery systems.

Differences from NatHERS Whole of Home

- Colour and layout
- Information about how energy efficiency can be improved
- Additional rating for 'thermal comfort' during hot and cold weather extremes



Benefits of NatHERS In Home

The extension of NatHERS to existing homes using an 'in home' assessment process will:

1

Provide 9 million existing homes with a reliable and comparable energy rating



2

Provide information to help Australians choose a more energy efficient home when buying or renting or renovating



3

Increase consumer awareness of sustainable and healthy homes, and energy cost savings



4

Will help households save energy, reduce energy bills and greenhouse gas emissions, and have a comfortable home

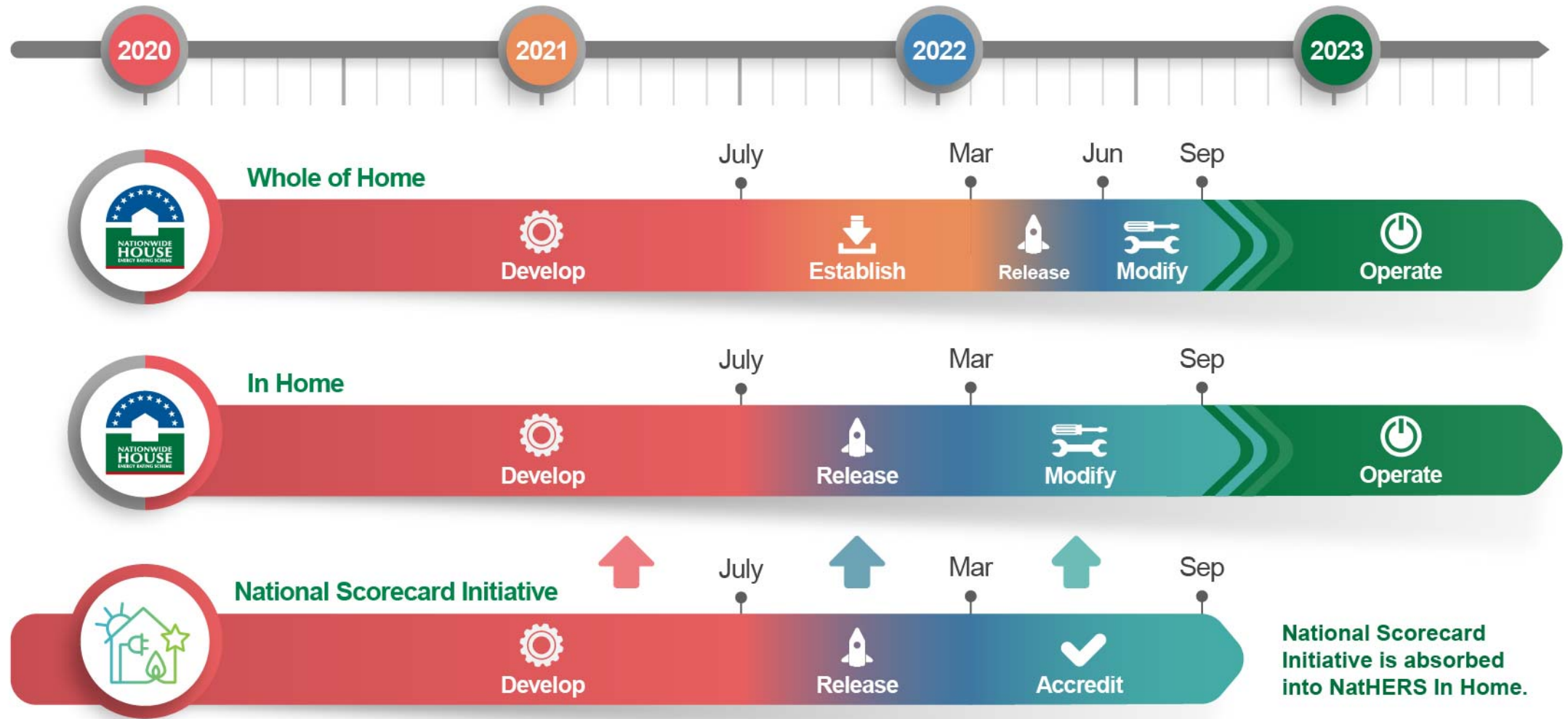


5

Provide a foundational element for enabling other policies to be implemented



NatHERS Development Timeline



*NatHERS Thermal remains operational with modifications taking place during the above time frame.

Have your say and stay updated

Survey: consult.industry.gov.au/improving-nathers

Newsletter: www.nathers.gov.au/news

Email: admin@nathers.gov.au