



Australian Government



Improving the Nationwide House Energy Rating Scheme (NatHERS)

CONSULTATION SUMMARY REPORT

April 2022

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EXECUTIVE SUMMARY

For almost 30 years the Nationwide House Energy Rating Scheme (NatHERS) has provided energy performance information and ratings, to support the delivery of comfortable, energy efficient homes to Australian homeowners.

NatHERS helps people buy, build or renovate a home with better energy performance, by guiding smarter design and building choices, such as changing the position of a home on a block, or using higher-rated insulation or windows. This creates homes which are more comfortable to live in, more climate resilient and cheaper to run.

NatHERS assessors use a 10 star system to measure the energy efficiency of a home based on its building shell, local climate and design. A high star rating means a home is comfortable to live in and cheaper to run. A low star rating means a home is less comfortable to live in and will have higher energy costs.

In 2020-21, around 90 per cent of all new residential building approvals nationally used NatHERS to show compliance with the National Construction Code (NCC). NatHERS is administered by the Department (the 'NatHERS Administrator'), on behalf of the states and territories.

Changes to NatHERS

In 2019 Energy Ministers agreed the Trajectory for Low Energy Buildings and the Addendum to the Trajectory for Low Energy Buildings – Existing Buildings. The '*Trajectory*' identified opportunities to improve the energy efficiency of Australia's residential buildings sector.

Key changes to NatHERS were recommended including:

- NatHERS should be expanded to offer nationally accredited Whole of Home tools to enable verification of NCC requirements.
- Tools should be delivered that support improvements being made to existing homes. A home energy rating framework for existing homes should leverage the NatHERS framework and accommodate rating tools.

These changes are designed to help households reduce energy bills and to better support industry to adopt best practice construction and technologies.

'In Home assessments will help the householders to manage their energy consumption and better promote their dwelling when they want to sell it.'

PUBLIC COMMENT

NatHERS consultation

Since the '*Trajectory*' was announced in 2019 there has been ongoing consultation with all key government and industry stakeholders about the proposed changes to NatHERS. In November 2021 a five week public facing survey and consultation launched asking all stakeholders for their final considerations relating to the changes.

The following content was promoted during this period:

- Discussion paper and survey
- A series of Whole of Home documents covering: analysis, training and accreditation, calculation methods, an example rating and draft certificates
- Overview papers outlining key changes to: star bands, climate files, thermal bridging and heating and cooling load limits
- An instructional video on the Whole of Home Benchmark Tool
- Specific documents on the In Home proposals including a pathway for training and accreditation, testing methodologies and a technical note
- Two webinars held during the consultation covering key changes to regulation and technical aspects for industry
- A social media ad campaign promoting the consultation (via Linked In) targeting industry and peak bodies

Who we heard from?

Sixty seven (67) survey responses and seventeen (17) submissions were received during the NatHERS public consultation period (10 November – 16 December). In addition, webinars were held on 18 November and 22 November, with 110 and 155 participants respectively. A separate event for NatHERS Assessor Accrediting Organisations (AAOs) was also held in December.

Activity	Responses/Attendees
Submitted surveys	67
Written submissions	17
Webinar 1: NatHERS Overview and Changes to Legislation	110
Webinar 2: NatHERS Technical Overview	155

The survey responses were largely from NatHERS and Scorecard assessors (37%), which reflects the work the Assessor Accrediting Organisations (AAOs) undertook to promote the consultation. Survey responses were also received from architects and designers, energy efficiency consultants, building certifiers and surveyors, government officials, AAOs, builders and others involved with the building sector.

Submissions were received from industry bodies including:

- Green Building Council of Australia (GBCA)
- Australian Sustainable Built Environment Council (ASBEC)
- Property Council of Australia (PCA)
- Australian Pipelines and Gas Association (APGA)
- Rheem
- Air-conditioning and Refrigeration Equipment Manufacturers Association of Australia (AREMA)
- Master Electricians Australia (MEA)
- Stiebel Eltron.

All responses were included in the analysis of the consultation. You can read the submissions on the Consultation Hub [website](#).

'One of the difficult things for an assessor at the moment is the multitude of ways of assessing extensions across a number of states and territories. This is a good step forward to ensure that a common list of things is checked.'

PUBLIC COMMENT

WHAT WE HEARD

Overall responses were supportive of the proposed changes to NatHERS. Feedback emphasised the importance of maintaining and improving the thermal performance for buildings, and support for the expansion and extension of assessments to the Whole of Home and established properties.

Outlined below are some key consultation themes relating specifically to thermal updates, and the proposed Whole of Home and In Home mechanisms.

NatHERS updates

There is general support for the introduction of the 2022 thermal bridging updates and the proposed Reference Meteorological Year (RMY) climate files. Stakeholders did ask that these files be regularly updated. There were also queries regarding the potential for incorporating future RMY climate files using the Intergovernmental Panel on Climate Change (IPCC) representative concentration pathways (RCP's).

A number of requests asked for technical improvements to thermal performance modelling, especially in the areas of air tightness and Class 2 buildings. A few responses indicated confusion regarding how the tool models internal thermal mass and how changes of external wall paint colour are managed or compensated for. A request was made for easier and more accurate modelling of green roofs.

Whole of Home changes

Stakeholders requested that NatHERS assessments remain fuel and technology neutral and adapt to emerging technologies as they become available. Submissions also noted the need to define the scope of the Whole of Home assessment. Some responses highlighted that NatHERS may have impacts on outcomes and stringency in the NCC, and that any updates to the Scheme will need to account for this.

There were also questions regarding when during the building cycle a NatHERS rating would be required, and how homes that either had no appliance information, or did not need a Whole of Home assessment at that particular stage would be handled.

Other key feedback included:

- A request for transparency in how the Whole of Home rating and underlying metric is calculated, along with technical questions regarding the calculation of hot water energy consumption
- Proposals for NatHERS to consider allowing the purchase of Green Power as a way to improve a rating
- A question on how NatHERS could reward designs that exceed the 7-star thermal shell minimum in the NCC
- Support for inclusion of information in the certificate on thermal comfort, appliance efficiency and on-site energy production to support consumer choice and decision making
- Suggestions for additional appliances and technologies that could be accounted for by NatHERS.

'Hopefully will encourage people to improve their homes ratings reducing the environmental impacts.'

PUBLIC COMMENT

In Home assessments

Feedback from respondents overwhelmingly referenced regulations to mandate the use of NatHERS In Home ratings, as the most important action needed to drive the uptake of NatHERS assessments by industry.

Ensuring consistency in outcomes between an In Home and a Whole of Home assessment was also highlighted as an important issue. Any adaptations made for assessments and methods between software tools should ultimately deliver a consistent rating if applied to either a new or an established home.

Some NatHERS stakeholders requested a technology neutral approach to considering energy costs and emissions intensity.

Other key feedback included:

- Concerns that NatHERS In Home does not cater for apartments
- In Home certificates should include information on energy use and emissions which is currently incorporated on the Scorecard Certificate
- Suggestions that In Home assessments should be more specific to individual householders' occupant behaviour rather than based on assumed metrics currently used in NatHERS
- Suggestions that NatHERS In Home certificates include information about costs and payback periods for energy efficient upgrades.

There was also a range of comments on the proposed plan for In Home assessor training and accreditation. Some key points included:

- The need to ensure governance, including auditing and disciplinary elements are clear and that AAOs are able to manage the quality assurance of accredited assessors
- The skill set for In Home assessors is different to current desktop assessors and the training and accreditation needs to ensure assessors are adequately prepared.

'The more training the better as I would like to be able to help people improve their homes whether new or existing.'

PUBLIC COMMENT

WHAT WE ARE DOING

The NatHERS public consultation was a chance to take on board views relating to the extension and expansion of the Scheme. The NatHERS Administrator has assessed all of the key issues raised by stakeholders and has addressed the main concerns and questions raised below.

The findings from this consultation are being used to update the NatHERS technical documents, and will also inform the development of the [NatHERS Strategic Plan](#).

NatHERS updates

The RMY climate file updates use the best available data while also correcting long standing errors from the previous RMY climate files. The NatHERS Administrator understands the importance of maintaining up-to-date climate files and has committed to reviewing them regularly to ensure they are accurate and current.

The NatHERS Administrator notes the [CSIRO's Ag Climate Data Shop website](#) hosts free predictive climate files that can be used to test the resilience of house designs.

Work is currently underway to improve thermal performance modelling relating to air tightness and Class 2 buildings. The NatHERS team and CSIRO are working together to investigate options and undertake further research to address concerns raised during the consultation.

Information on green roof materials is being added to the NatHERS Material Library including Scoria and Bottom Ash. Some commercial tools are also looking at ways to more easily model green roofs.

Further research is also being considered in relation to the thermal mass of cabinets, benchtops and loose furniture which are currently not considered in the NatHERS rating.

Discussions have taken place across agencies regarding resilience and the types of resources that can be shared and built upon. The NatHERS team welcomes further contributions and ideas on building resilience and will look to set up future workshops on this topic. The outcomes of these workshops will also inform the development of the next [NatHERS Strategic Plan](#).


Whole of Home changes

An updated Technical Note and Handbook are being developed. These will provide guidance where information is unknown or unavailable at the time of an assessment. Importantly these documents will also include advice relating to updating assessments where appliance choices were made after the certificate is produced.

In relation to rewarding plus 7-star thermal shell designs, reducing the thermal load by going beyond 7-stars, will also reduce the energy required for heating and cooling. In turn this results in a better NatHERS Whole of Home rating. As NatHERS is a deemed-to-satisfy pathway, exceeding the minimum rating specified, in whatever fashion, will be considered to have satisfied the performance requirement. This is similar to NatHERS thermal allowing people to use lower R-values than those specified in the Thermal DTS tables as long as the building achieves the minimum star rating and relevant load limits.

Research into energy pricing across the country is underway which will support discussions regarding the most appropriate factors to apply in the Whole of Home rating.

The hot water calculation method has now been updated following meetings between the NatHERS team, industry and the consultants who developed the method.



'I have passion for the industry and want to be a part of it.'

PUBLIC COMMENT

Ongoing evaluation of NCC impacts will be considered if and when updates to Whole of Home are required. This will reflect the same process currently followed for ongoing changes for NatHERS thermal. These processes ensure there is alignment of the Deemed to Satisfy (DTS) elemental pathway and the NatHERS DTS pathway.

The NatHERS team is currently developing a thermal-only certificate to account for buildings where a Whole of Home assessment has not been undertaken.

In Home assessments

NatHERS In Home will also take a technology neutral approach in parallel with Whole of Home. It is proposed that the recommendation section of the certificate will suggest both gas and electric upgrades best suited to the home being assessed. This will be considered in more detail during dedicated workshops with relevant stakeholders.

Complete alignment between Whole of Home and In Home ratings is the long term goal. However, in the short term 100 per cent alignment may be challenging. Ongoing research will collate data to evaluate what changes will be required to best align the two ratings.

The NatHERS Administrator acknowledges there are current gaps in relation to In Home assessments for apartments and detached residential dwellings that need addressing. In apartment blocks central hot water, heating, cooling and ventilation, lifts and lighting are currently not factored into an assessment. The In Home Technical Note was revised to clearly reflect this. For the time being, in-unit energy use will be assessed, excluding any shared or central services. Further work will be undertaken to address these gaps with relevant stakeholders.

NatHERS In Home will continue to work with the Scorecard team, Registered Training Organisations (RTOs), AAOs, Artibus Innovation and other key stakeholders to define the educational requirements for NatHERS In Home assessors. Work will also continue on the handover of training and accreditation to RTOs and AAOs (including quality assurance and disciplinary actions).

In Home assessments will remain behaviour neutral and be based on the average person's thermal comfort and energy use in order to allow 'like-for-like' comparisons between homes. The certificate can then be used for multiple purposes including disclosure of energy efficiency at the point of sale or lease, green financing and government programs.

In Home recommendations will not include specific information about possible upgrade costs and payback periods. Dedicated advice on costs is challenging and there are significant differences across regions, jurisdictional programs, time, tariffs and other variables.

Inclusion of energy and emission information in the In Home certificate is being considered in line with Whole of Home recommendations and will be discussed further with stakeholders.

'...when purchasing a new property or a 20 year old property the energy rating assessment information must be comparable.'

PUBLIC COMMENT

Additional feedback and ideas

Currently there are no plans to change climate files from historical to projected in regulatory mode for NatHERS. Such a change would be a significant cross-jurisdiction and cross-portfolio undertaking, noting that NCC requirements are the responsibility of Building Ministers.

What occurs once a building is complete and during its life cycle are outside the scope of the current Scheme. Comments of this nature that were noted in this consultation have been passed onto the Australian Building Codes Board (ABCB). These comments will be considered by the ABCB in conjunction with other feedback on the NCC 2022 Public Comment Draft, and associated Consultation Regulation Impact Statement (RIS).

The idea of green power agreements for home owners was raised in the feedback. The NatHERS Administrator has no means of enforcing such agreements, and is currently not considering this as a pathway for compliance. NatHERS is primarily an energy efficiency comparison tool, and the purchase of green power could allow low-performance buildings to appear to have high ratings, only for the energy supplier to be changed and the benefits of the high rating not be delivered.

The idea of integrating home energy management systems was also highlighted. This would rely heavily on accurate information regarding individual behaviour and interaction with energy markets. This would require major change in the way the modelling (including in CSIRO's Chenath Engine) is conducted and requires significant research. Currently this is out of scope for NatHERS but the incorporation of these systems may be considered in the future. Any additional research required would need to be considered as part of the development of the next **NatHERS Strategic Plan**.

Imposing limits on energy use for buildings was suggested but this lies within the remit of the NCC and checking whether buildings comply with legislation is the responsibility of the states and territories. The NCC 2022 RIS is looking at the costs and benefits of applying an energy budget to new homes, in line with the **Trajectory**'.

The related impacts of embodied energy are currently also out of scope for NatHERS but this may be reviewed and considered in the future.

The idea of mandating energy ratings also featured in feedback. The NatHERS Administrator would not be responsible for introducing mandatory ratings for established homes. However, the Commonwealth is working with state and territory governments on a **draft National Framework for Disclosure of Residential Energy Efficiency Information**. Once finalised this will provide harmonised settings for state and territory governments to consider should they seek to implement disclosure schemes.

'The NatHERS assessment should be promoted as a powerful aid to design and specification decisions not just regulatory compliance...'

PUBLIC COMMENT

NEXT STEPS – WHERE TO NOW?

The 'Improving the Nationwide House Energy Rating Scheme' consultation has outlined a need for more targeted and regular communication to help stakeholders better understand the Scheme.

To support this objective, assessor training, more accurate ratings, and a comprehensive suite of 'Worked Examples' is currently under development. Four examples are expected to be available in June, with the possibility to expand the suite in the future. Each example pack will include:

- A drawing set of design documentation and specifications
- Instructions on how to model the design in one of the NatHERS accredited software tools
- Suggested improvements to increase the energy star rating to 7 stars
- Software rating file.

The NatHERS team has regular monthly meetings with AAOs, and will be running a series of assessor training and accreditation workshops during 2022 covering the In Home and Whole of Home streams.

Work with the Victorian based Scorecard team is ongoing, to ensure a smooth handover of assessor training and accreditation for In Home, as well as an updated Technical Note and Software Accreditation Protocol. The In Home certificate is still being reviewed considering consumer feedback. A business case is also under development to test the feasibility and viability of current assessor arrangements.

Additional outreach activities with software providers, and various industry and peak bodies are also planned. These activities will coincide with the NCC 2022 Thermal and Whole of Home updates, and the introduction of In Home assessments. The NatHERS Stakeholder Consultative Group and Technical Advisory Committee will consider the finalisation of the expansion of NatHERS including how feedback received through this process will be addressed.

Market research via nationwide surveys and focus groups will continue to test and inform various elements of NatHERS communication, including a future national marketing strategy and the In Home and Whole of Home certificates.

With ongoing support from industry the NatHERS Administrator will continue to work closely with key stakeholders to expand to Whole of Home and support the NCC 2022. Close coordination of work will also continue across the three areas of NatHERS to ensure consistency.

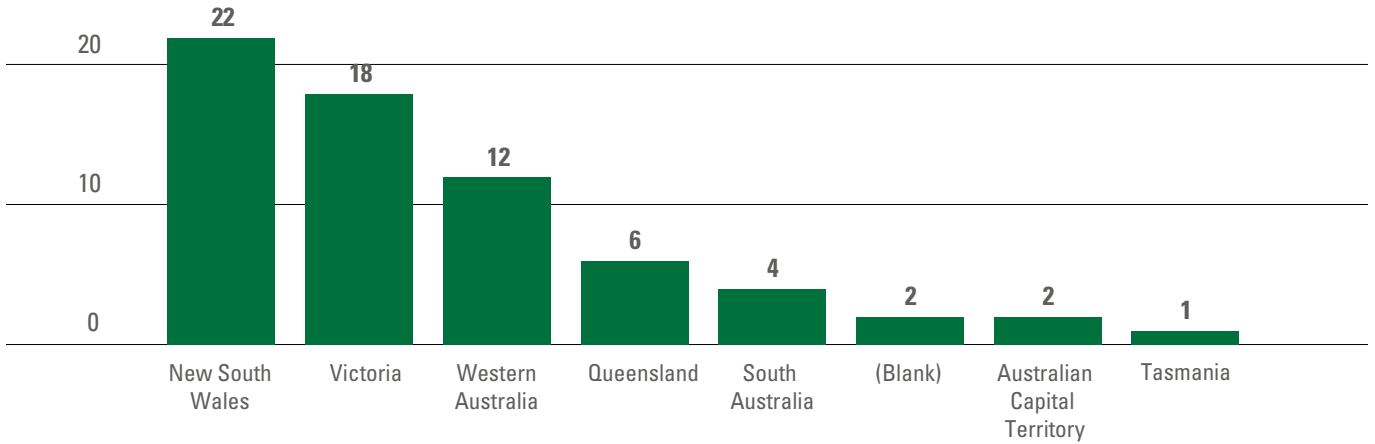
Members of the NatHERS team are available to speak at industry events, and workshops. Please email any requests to: admin@nathers.gov.au

'It allows home owners to make informed decisions based on an accredited program and actual data. It will ensure home owners prioritise sustainability initiatives when purchasing, renovating or building a new home.'

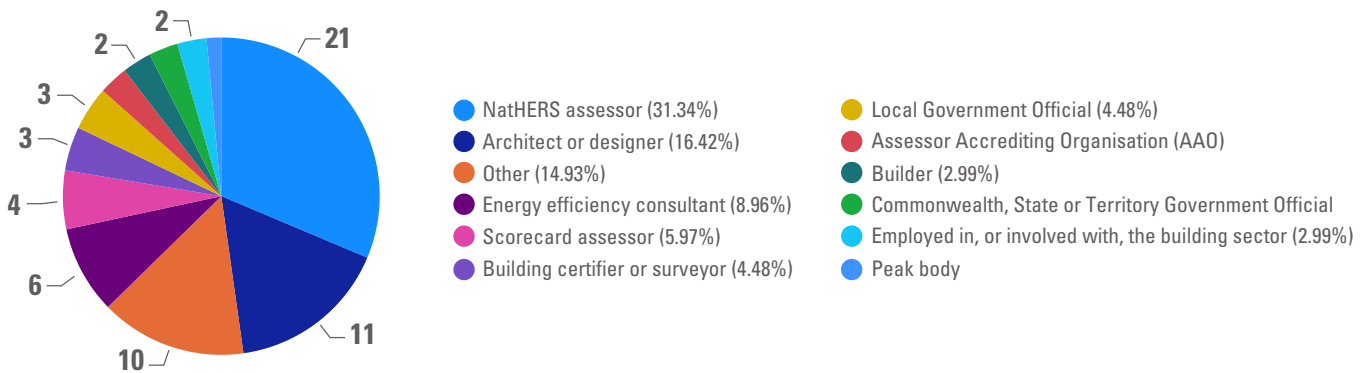
PUBLIC COMMENT

APPENDICES – KEY DATA

Responses by state and territory

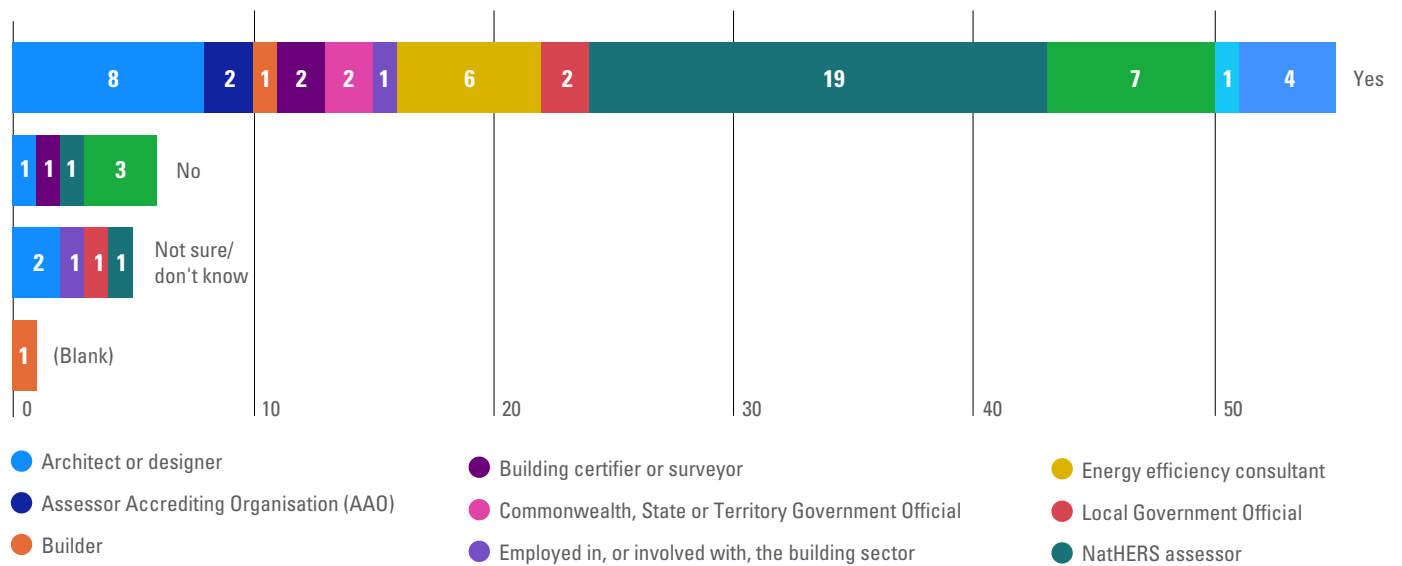


Breakdown of Organisations



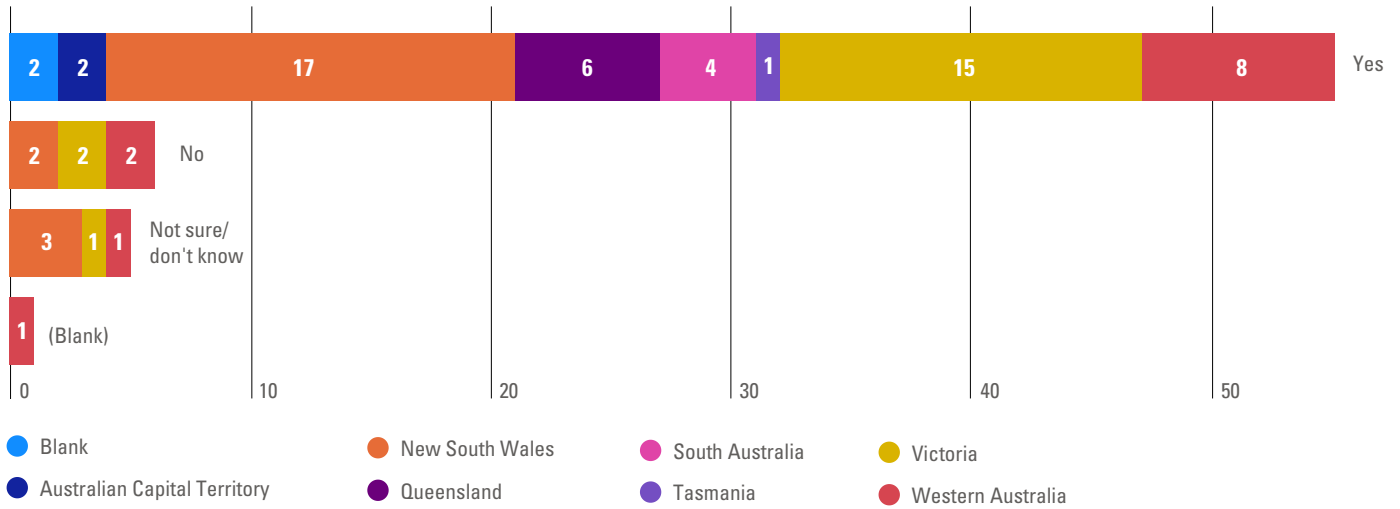
Do you agree with the proposal that NatHERS has separate Certificates for different assessment types?

By sector

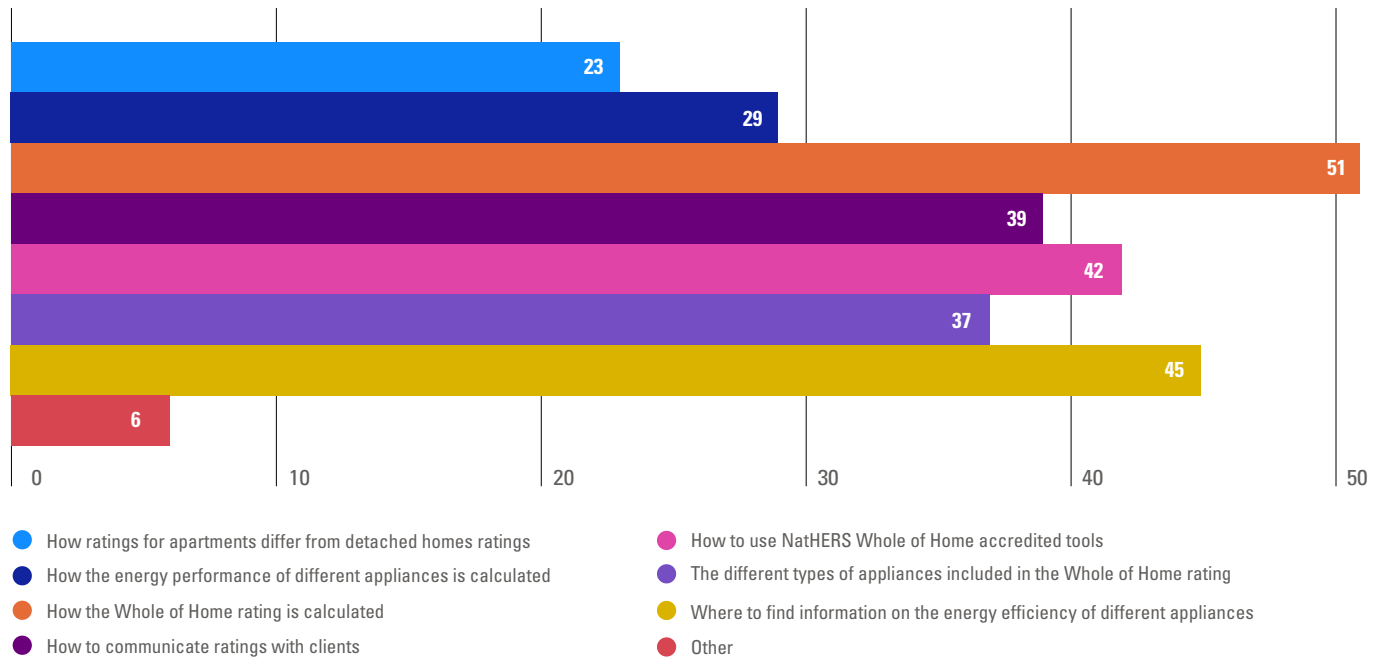


Do you agree with the proposal that NatHERS has separate Certificates for different assessment types?

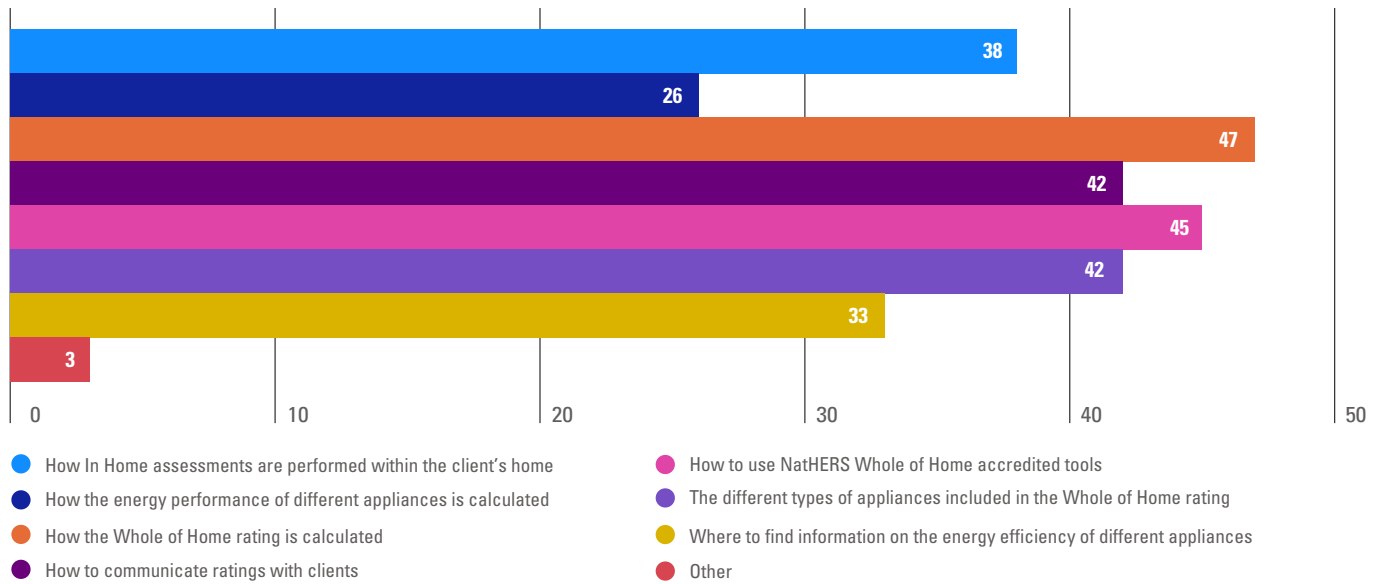
By State/Territory



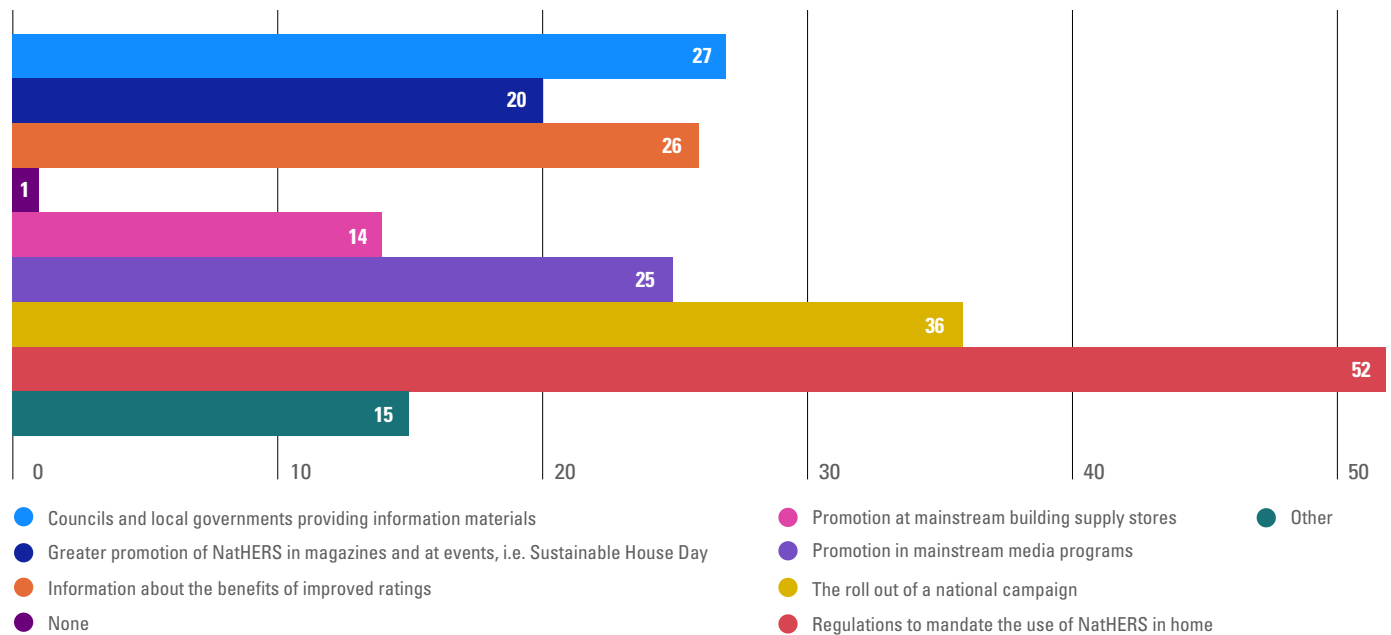
What additional information, resources and training do you think is important for your industry to implement NatHERS Whole of Home assessments?



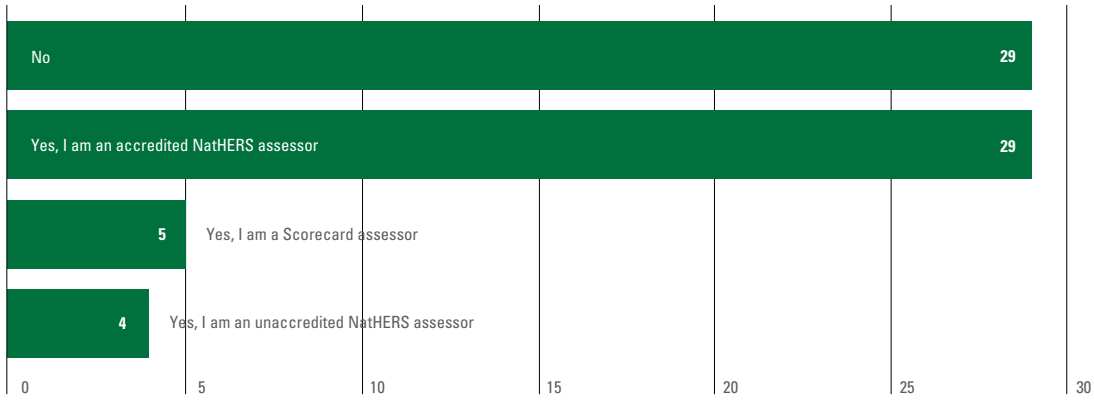
What additional information, resources and training do you think is important for your industry to impliment NatHERS in Home assessments?



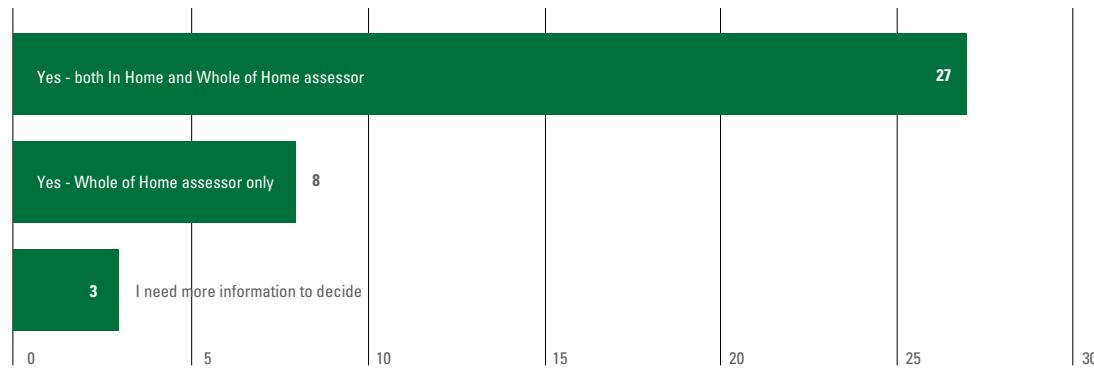
What do you think are the most important information, resources or outreach actions needed to increase the uptake of NatHERS assessments (Thermal, Whole of Home and In Home) by industry?



Are you a current residential building energy assessor?



If given the opportunity, will you up-skill to become a NatHERS Whole of Home assessor and /or a NatHERS In Home assessor?



Do you support the proposal that there is a training pathway for assessors with practical experience but no formal training?

