



Nationwide House Energy Rating Scheme

Strategic Plan 2015-2018

August 2015

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Foreword

The Nationwide House Energy Rating Scheme (NatHERS) was an initiative of the former Ministerial Council on Energy (MCE) and now falls under the responsibilities of the COAG Energy Council. NatHERS is overseen by the Buildings Committee of the Council's Energy Working Group (EWG), a body which includes representatives of the Commonwealth, State and Territory governments. The Commonwealth Department of Industry, Innovation and Science is the National Administrator of NatHERS.

This Strategic Plan has been developed by jurisdictions in collaboration with stakeholders to establish a clear and focused strategy for progressing NatHERS.

The Plan outlines the context in which NatHERS operates, the overall vision for NatHERS, its core mission and values, and broad objectives. Each objective includes a list of actions to be achieved out to 2018. Implementation of most of the actions is primarily the responsibility of the NatHERS Administrator but broader actions are listed here to ensure all participants in the Scheme are aware of and can work together towards the agreed outcomes, subject to available financial resources, cost-sharing arrangements and future Budget processes.

This Plan is designed to be a living document that will evolve over time as actions are completed and new issues and circumstances arise.

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1. Purpose of the Strategic Plan

The purpose of this Strategic Plan is to communicate the objectives and supporting actions for NatHERS for the period 2015 to 2018 in order to:

- ensure that jurisdictions have an agreed approach to the future directions of NatHERS;
- facilitate shared understanding, collaborative working arrangements and communication between jurisdictions and stakeholders to achieve the objectives of the Plan; and
- provide a reference for work prioritisation and resourcing decisions made by the NatHERS Steering Committee and the NatHERS Administrator.

2. Background

2.1 What is NatHERS?

NatHERS was initiated in 1993 to provide a standardised, government directed approach to rating the thermal performance of Australian homes, based on modelling software that had been developed by the CSIRO over many years previously. A 'second generation' of the NatHERS software was released in 2006 to provide increased functionality.

Given the Australia-wide operation of the housing industry and the shared involvement of the Commonwealth, states and territories in the setting and implementation of building regulations, NatHERS was established as a national scheme involving all jurisdictions in its management.

NatHERS does not own or control its own software tools. Instead, it accredits software which meets the Scheme's requirements of being able to estimate the annual heating and cooling energy load of a dwelling's design that would be required to keep it at a comfortable temperature for its occupants, using standard occupancy assumptions. The software does this by modelling the effects of heat flow through the building fabric, taking into account factors such as the building's location, orientation, glazing, construction details and the impact of air movement on internal comfort conditions. The software attributes a star rating between zero and 10 (with 10 stars being for buildings which require virtually no additional heating or cooling to be comfortable) to the dwelling based on the estimated total annual energy load for the climate zone where the house is located.

NatHERS accredited software can be used to comply with certain building regulations including the energy efficiency (thermal performance) requirements for houses and apartments in the National Construction Code (NCC). The success of NatHERS is contingent upon accurate, consistent and reliable ratings being achieved through ongoing enhancement and validation of the rating software, the correct use of tools by assessors and quality assurance of ratings.

2.2 Why is NatHERS needed?

Households currently account for around eight percent of Australia's net energy consumption¹. Governments have recognised that the long-lasting nature of buildings means that the housing being built now will influence Australia's energy consumption for decades to come and that it is cheaper to incorporate energy efficiency at the time of construction rather than retrofitting later. NatHERS contributes to Australia's energy productivity by supporting initiatives to reduce energy demand from the residential sector and providing financial benefit to householders through reduced heating and cooling costs.

Building energy efficiency standards began to be introduced by a number of State and Territory Governments in the 1990s. In 2003, minimum energy efficiency standards for residential dwellings based on NatHERS star ratings were first incorporated into the Building Code of Australia (BCA)² as it was recognised that one centrally administered national program can minimise regulatory costs and improve regulatory consistency.

The NCC performance requirements for energy efficiency can be achieved through several building solutions, with the use of NatHERS software being the preferred assessment method. The ability of NatHERS software to reduce the complex thermal modelling for residential buildings to a simple star rating has provided a useful and flexible mechanism for governments to identify and promote energy efficient homes and set minimum building standards for designers, assessors, certifiers and builders to apply.

2.3 NatHERS Coverage

Around 70 percent of new houses and apartments are currently being rated using a NatHERS tool to show compliance with the NCC³. NatHERS software is recognised by industry practitioners to provide a more flexible method to achieve building code compliance than the NCC's elemental Deemed-to-Satisfy method. NatHERS software can rate dwellings in any part of Australia as it includes weather data from 69 climate zones. However there is no data available on how many new dwellings are rated in each climate zone.

Three software tools are currently accredited by NatHERS – FirstRate5 produced by Sustainability Victoria and BERS Pro produced by Solar Logic which share most of the market, and AccuRate produced by CSIRO which is used by a smaller number of assessors.

2.4 Role of Commonwealth, States and Territories

The Commonwealth Government is the National Administrator of NatHERS on behalf of the States and Territories. This function currently sits with the Department of Industry, Innovation and Science. The National Administrator acts on behalf of the jurisdictions who provide direction to the Administrator through the Buildings Committee of the Energy Working Group of the COAG Energy Council. The role of the National Administrator includes:

- Development and maintenance of NatHERS Protocols and procedures;
- Management of upgrades to the Chenath engine;
- Accreditation of software;
- Approval of Assessor Accrediting Organisations;

¹ *Australian Energy Statistics*, BREE 2014,

² The BCA became Volumes One and Two of the NCC in 2011.

³ Estimate made by the NatHERS Administrator based on numbers of assessments performed by accredited assessors.

- NatHERS website maintenance;
- Communication with industry, government and consumer stakeholders;
- Policy development on NatHERS and related issues.

NatHERS is an administrative program and has no legislative basis. Decisions made by the NatHERS Steering Committee and the Administrator are not binding on jurisdictions. States and territories are responsible for the application of NatHERS in their own jurisdiction to meet their specific circumstances such as the accreditation of assessors or of software tools.

The use of NatHERS software to show compliance with the NCC is given legal effect by relevant legislation in each state and territory. This legislation prescribes or “calls up” the NCC to fulfil any technical requirements which have to be satisfied when undertaking new building work, including energy efficiency standards. This means the states and territories are able to vary the technical provisions of the NCC to suit their own circumstances.

2.5 Role of Assessor Accrediting Organisations

NatHERS does not accredit Assessors directly but approves Assessor Accrediting Organisations (AAOs) under a Protocol that requires AAOs to:

- ensure accredited assessors meet minimum qualification requirements and adhere to a code of conduct;
- undertake quality assurance checks of a sample of ratings done by accredited assessors and provide remedial advice where errors are found;
- provide and monitor continuing professional development undertaken by accredited assessors;
- provide technical support to accredited assessors;
- provide avenues for dealing with consumer complaints about assessors;
- provide reports to the NatHERS Administrator.

In June 2014 there were 970 accredited assessors across two AAOs – the Association of Building Sustainability Assessors (ABSA) and the Building Designers Association of Victoria (BDAV). Over 50 percent of these Assessors are based in Victoria and around 20 percent are in NSW. There are also an unknown number of non-accredited assessors as not all jurisdictions require assessors to be accredited to perform assessments for building approval purposes.

3. Vision for NatHERS

The vision for NatHERS is to support the improvement of the energy efficiency of Australian residential buildings through the availability of scientifically valid, cost effective and, reliable thermal performance rating tools. . NatHERS can be integrated across the building design, compliance, construction and renovation cycle.

4. Objectives

NatHERS will pursue the following objectives over the life of this Strategic Plan:

- 1) **Governance and program management** – NatHERS will improve the effectiveness and efficiency of its management and create clear roles and responsibilities and decision-making processes in the areas of governance, operating procedures, protocol setting and administration, risk management, and stakeholder engagement.
- 2) **Accreditation of rating tools** – the consistency of NatHERS accredited tools with the benchmark software will be improved and all updates of software will be managed in a way that provides certainty and sufficient time to adjust for software providers, assessors and the housing industry.
- 3) **Encouraging research and development** - the benchmark software and the accredited software tools will have improved functionality and ability to accurately model building thermal performance.
- 4) **Industry skills and capability** - the skill levels, competency and consistency of assessors will be improved, and designers, certifiers and builders will be informed about the appropriate use of rating tools.
- 5) **Monitoring and evaluation** – mechanisms will be put in place to monitor and evaluate the scheme, including the use of the software, the validity of ratings and performance of assessors.

5. Values

NatHERS will operate with the values of:

- **Integrity** – the administration of NatHERS will be performed in an ethical, professional, impartial and transparent manner;
- **Quality** – NatHERS will strive to ensure that the rating tools it accredits are technically robust, accurate and reliable and that assessors use the tools correctly;
- **Collaboration** – NatHERS will inform and seek out the views of stakeholders on current and proposed actions to ensure that it remains relevant, useful and effective for their needs;
- **Leadership** – NatHERS will strive to be on the leading edge of thermal performance rating tools within Australia and internationally in term of its scientific validity and its facilitation of more energy efficient housing;
- **Social responsibility** – NatHERS will serve the public good by enabling the use of energy efficiency rating software that can be trusted by designers, builders and home buyers to identify more comfortable and energy efficient homes.

6. Current Challenges and Opportunities

To meet the vision and objectives of the Strategic Plan, the actions included in this Plan take into account a number of changes within NatHERS that have been occurring over the last two years which present both challenges and opportunities. In particular:

- The introduction of new versions of accredited NatHERS tools from October 2014, including changes to the Chenath Engine, a new windows module and the introduction of the universal certificate. The software providers have also moved to an online pay-per-certificate system, driven by the need to change from a product-based to a certificate-based licence to recover the costs of improving software functionality and accuracy and to adequately maintain and support the software.
- the introduction of the Certificate IV in NatHERS Assessment as the minimum qualification for existing and new accredited assessors has contributed to a decline in the number of accredited assessors. In addition, most jurisdictions do not require assessors who perform assessments for building approval purposes to be accredited. This is leading to many accredited assessors who perform a limited number of assessments likely to drop their accreditation rather than undertake the Certificate IV.
- There is a lack of consolidated data on the energy ratings being performed across Australia and the features of new housing that is contributing to these ratings. This is hampering policy analysis and development regarding NatHERS and residential building energy efficiency in general. However, the introduction of the online pay-per-certificate system will over time create a repository of data on submitted assessments.
- The NCC is undergoing regulation reforms and the alignment between the NCC and NatHERS is changing, with potentially a more structured and longer transition for the upgrading of NatHERS software where used for NCC compliance. There are also likely to be expanded pathways for verifying compliance with the NCC energy efficiency requirements which do not require the use of NatHERS software.

At the same time, there are a number of industry and social trends that NatHERS needs to be cognisant of:

- the demand from homebuyers on governments and industry for more sustainable housing is unlikely to diminish and is likely to increase due to increased energy costs, households' desire for thermal comfort, and public concerns about climate change;
- there is increasing consumer concern about whether housing once built complies with its original building approval including its expected energy efficiency. Housing that is underperforming compared to its original rating, or the original rating was incorrect, can cost homebuyers and tenants more in energy costs than what would be expected. The National Energy Efficient Buildings Project (NEEBP) was initiated by the Commonwealth, state and territory governments in 2013 to address concerns about systemic non-compliance with the energy efficiency requirements in the NCC;
- NatHERS software needs to take account of the continuing scientific advances on building thermal modelling, and the new building materials and techniques that are regularly entering the market;
- the increasing use of computer aided design (CAD) for building design and documentation, growing cloud-based computing capacity, and the pressure on assessors to minimise assessment costs is placing demands on the integration and useability of NatHERS software,

- The number of Class 2 (apartment) dwellings is increasing relative to detached housing, particularly within the established areas of capital cities. These types of developments present different challenges to designers, assessors and builders due to different thermal performance characteristics and construction types.

There has also been public discussion in recent years about the possibility of developing a 'whole of house' energy efficiency standard and rating scheme that incorporates the building fabric and fixed appliances and equipment and that could be expanded to cover other sustainability elements such as water use, e.g. the proposal in the 2009 National Strategy on Energy Efficiency to develop a National Building Energy Standard-Setting, Assessment and Rating Framework. Given that governments are currently developing a National Energy Productivity Plan, the Strategic Plan has not considered widening NatHERS beyond its current focus on the thermal performance of the building fabric.

7. Actions

7.1 Improving governance and program management

Action	Deliverable	Timeframe	Participants
Governance			
a) Review NatHERS governance and decision-making process (Current governance structure is set out at Appendix A).	A revised administrative and governance arrangements document published on NatHERS website	Paper to EWG December 2015	NatHERS Administrator (NA) Buildings Committee (BC)
b) Finalise MOU with the Australian Building Codes Board (ABCB) on the working relationship between NatHERS and ABCB in relation to NatHERS software and its referencing in the NCC.	New MOU with ABCB	December 2015	NA ABCB
c) Have annual reviews of this Strategic Plan and update accordingly	Annual report to BC on implementation of Strategic Plan	First review report in July 2016	NA BC
Engaging stakeholders			
d) Develop a stakeholder engagement and communications plan to promote the benefits of NatHERS and to make all stakeholders and end-users aware of NatHERS developments	A communications plan	Final plan by August 2015	NA BC
e) Develop a six-monthly NatHERS e-newsletter for public distribution	E-newsletter produced every November and May	First issue November 2015	NA
f) Manage and update the NatHERS website	Up-to-date, accessible and comprehensive website	Ongoing	NA
g) Identify opportunities to promote NatHERS in relevant publications and forums (details to be put in Comms Plan)	Positive articles and references to NatHERS in the public domain	Ongoing	NA BC
h) Hold annual stakeholder workshop to review progress on the Strategic Plan (linked to review of Plan)	Stakeholder workshop	May 2016	NA BC

Operating procedures			
i) Revise and implement the Standard Operating Procedures for NatHERS administration tasks undertaken by the NatHERS administrator.	Standard Operating Procedures in place and used	Feb 2016	NA
Compliance			
j) Register the NatHERS name as a trademark alongside the existing trademark of the NatHERS logo to allow action to be taken against instances of misrepresentations of NatHERS ratings and endorsements	Name registered with IP Australia	August 2015	NA
k) Prepare a targeted awareness program for building certifiers about the role of the NatHERS universal certificate in building compliance	Communications plan and material	December 2015	NA BC
Technical Advisory Committee			
l) Revise the terms of reference (TOR) for the Technical Advisory Committee (TAC)	New TOR for the TAC	August 2015	NA BC
m) Appoint new TAC members	TAC meeting organised	October 2015	NA

7.2 Accreditation and updating of rating tools

Action	Deliverable	Timeframe	Participants
Software Accreditation Protocol			
a) Review and update the NatHERS Software Accreditation Protocol to provide certainty to software developers and users about the process for the updating and release of NatHERS accredited tools	New Protocol published on the NatHERS website	December 2015	NA BC
b) Implement clear consultation times to introduce new versions or changes to the NatHERS tools.	New Protocol includes agreed consultation timeframes.	December 2015	NA BC

Future Software Updates			
c) Release dates for software to align with the NCC dates, with a standard transition period.	Software timing dates and transition periods stated in the Protocol.	Implemented as required	NA BC ABCB
d) Plan next update of software to include: new climate files and other changes as agreed by the Steering Committee.	New update of NatHERS software implemented.	2017 at the earliest (depending on significance of change)	NA BC TAC ABCB
Technical Notes			
e) Develop a standard procedure and timetable for review and updating of the Technical Notes, and provide a suitable notice period to assessors of when changes will come into effect.	Procedure and Timetable developed in alignment with the Software Accreditation Protocol	March 2016	NA BC TAC

7.3 Research and development

Action	Deliverable	Timeframe	Participants
Software tools			
a) Review the universal assessment certificate in response to the experience of assessors and certifiers and the results of NEEBP phase 2 projects.	Amendments to the assessment certificate format if required.	Start March 2016	NA BC AAOs Software providers
b) Encourage consistency in use of software tools by all assessors through investigating how internal rule and logic checks and help information from the Technical Notes can be incorporated into the software.	Work with software providers to see what is viable. Incorporate any changes in the next version of NatHERS tools.	Start early 2016.	NA TAC Software providers
Benchmark software			
c) Obtain agreement with CSIRO regarding the maintenance and further development of the Chenath engine.	New MOU between the NatHERS Administrator and CSIRO	August 2015	NA CSIRO

d) Research on the impacts to ratings from proposed expansion of the number of climate zones and update of climate files (and inform if a formal RIS is necessary)	Preliminary Impact Analysis undertaken and presented to BC and EWG. Next steps agreed upon by EWG	July/August 2015 onwards	NA BC EWG CSIRO
e) Look at design features and software settings for apartments as a growing sector of residential building,	Incorporated in the work program of the TAC	2016	NA TAC
f) Set priorities for technical improvements to software tools, incorporation of new products and associated research requirements	List of prioritised software development projects	Updated quarterly after TAC meetings	TAC NA
Collaboration			
g) Collaboration with other interested institutions to review the assumptions of the NatHERS benchmark software and the validity of its outputs.	Incorporated in the work program of the TAC	2016/17	NA TAC CSIRO
h) Liaise with the CRC for Low Carbon Living and leverage off relevant projects.	Working relationship established and developed	Ongoing	NA TAC BC CRC LCL

7.4 Improving assessor skills and capability

Action	Deliverable	Timeframe	Participants
Certificate IV in NatHERS assessment			
a) Investigate impact and potential solutions if necessary to address take-up of Certificate IV by assessors	Paper presented to the BC	March 2016	NA BC AAOs RTOs
b) Evaluate the effectiveness of the Certificate IV in association with relevant qualification bodies and including active engagement from the assessor industry	Reform of the Certificate IV where necessary to better match competency requirements with industry needs.	To commence 2017	NA BC AAOs TAC RTOs

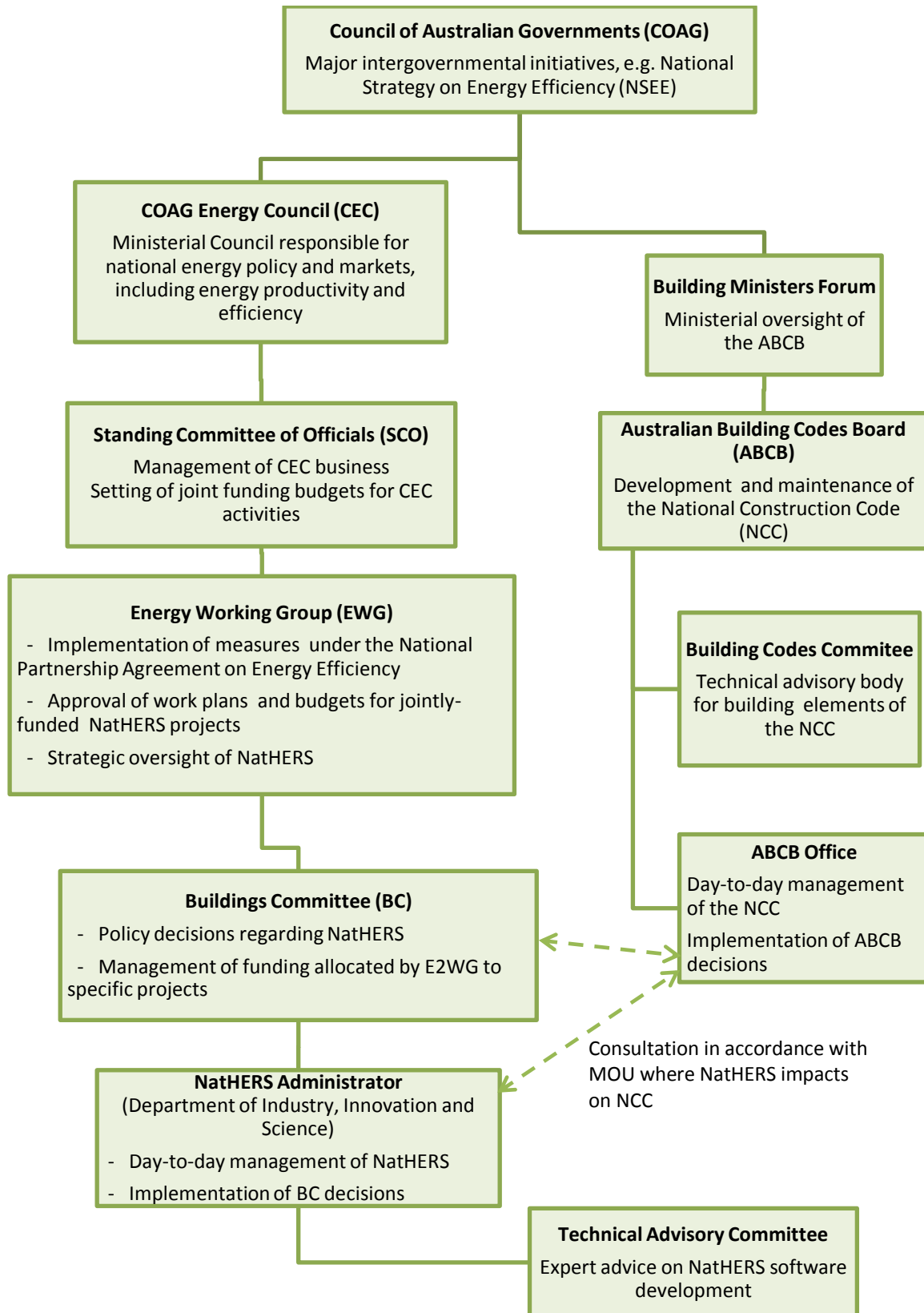
Assessor skills			
c) Review the findings and develop strategies to address issues related to NatHERS that were raised in the National Energy Efficient Building Project phase one report and the phase two projects.	Paper presented to the BC	March 2016	NA South Australia BC ABCB AAOs
d) Conduct another assessor benchmark study to measure level of assessor skills and capability and any change since the 2014 study.	Benchmark study undertaken and results reported to BC	2016/17	NA AAOs
e) Investigate options to do QA reviews of assessments done by non-accredited assessors (e.g. through the software portals)	Paper presented to the BC	2 nd half 2016	NA BC Software providers
AAO responsibilities			
f) Complete current update of the AAO Protocol	New version of the AAO Protocol released	July 2015	NA AAOs
g) Investigate means for electronic linking of AAO assessor accreditation details and QA requirements with NatHERS software portals	Automatic checking of assessor accreditation validity and level 1 QA of ratings when certificates produced by software portals	2 nd half 2016	NA AAOs Software Providers
h) Review the requirements for continuing professional development (CPD) to ensure they are contributing fully to improving assessor skills	Update of AAO Protocol with revised CPD requirements	2 nd half 2016	NA AAOs

7.5 Monitoring and evaluation

Action	Deliverable	Timeframe	Participants
Data			
Undertake a scoping study into the development of a national ratings dataset, to provide jurisdictions and stakeholders with up-to-date and comprehensive information on new dwellings being constructed around Australia.	Data management Issues paper for consideration by BC	December 2015	NA BC Software providers AAOs

Monitoring and evaluation			
Develop a set of Key Performance Indicators (KPIs) to measure scheme effectiveness and administration.	KPIs developed	October 2015	NA BC
Publish an annual report on the outcomes of NatHERS against the KPIs and including statistics from software providers and AAOs.	Annual report published on website	Annually from September 2016	NA BC

Appendix A – Outline of current NatHERS Governance Structure



Glossary

AAO: Assessor Accrediting Organisation, which is an organisation that accredits Assessors in accordance with the Protocol for Assessor Accrediting Organisations.

ABCB: the Australian Building Codes Board.

AccuRate: The commercial software tool developed by CSIRO comprising a graphical user interface and the Chenath Engine.

Assessment: a thermal performance simulation performed using NatHERS software of a residential building (NCC Class 1, 2, 4 and attached Class 10a buildings only) conducted by an Assessor for regulatory purposes.

Assessment Certificate: an official certificate bearing the NatHERS logo produced by an Assessor from the NatHERS software detailing key data from the assessment and relevant specifications for the residential building.

Assessor: a person accredited by an AAO to use NatHERS software to estimate the thermal performance of buildings for regulatory purposes.

BC: The Buildings Committee of the EWG.

Benchmark Assessment: an assessment done by an Assessor of one or more standardised plans where the rating result has already been calculated, to check the accuracy of the Assessor's rating and competency in software operation.

Benchmark Software: the most recently accredited combination of the Chenath Engine and AccuRate graphical user interface developed by CSIRO.

CAD: computer-aided design software used by architects, engineers, drafters, artists, and others to create precision two-dimensional (2-D) or three-dimensional (3-D) drawings, technical illustrations and models.

Chenath Engine: the CSIRO-developed thermal calculation engine that predicts hourly heating and cooling energy requirements for residential buildings. CSIRO maintains the Chenath Engine and licenses the engine to software tool providers.

CPD: Continuing Professional Development which provides a mechanism for assessors to maintain and improve skills and knowledge.

Jurisdiction: the relevant state or territory government department or regulatory authority.

NatHERS: the Nationwide House Energy Rating Scheme.

NatHERS Steering Committee: the Energy Working Group (EWG) of the Council of Australian Governments (COAG) Energy Council. It is responsible for oversight, strategic direction, and policy for NatHERS. EWG comprises officials from Commonwealth, State and Territory agencies with responsibility for energy efficiency policy. The EWG has established a Buildings Committee which oversees the NatHERS work program.

NatHERS software: a software tool, with a designated name and version number, that is accredited by the Scheme as complying with the current version of the NatHERS Software Accreditation Protocol.

NatHERS Administrator: the body that is appointed by the NatHERS Steering Committee to administer NatHERS in consultation and agreement with jurisdictions and relevant government agencies. The NatHERS Administrator is currently the Energy Productivity Branch of the Commonwealth Department of Industry, Innovation and Science.

NCC: the current version of the National Construction Code.

QA: the quality assurance process for checking whether Assessments have been done correctly in accordance with the NatHERS Technical Notes and any other requirements placed on Assessors.

Regulatory Mode means the operation of NatHERS software when completing an Assessment for achieving compliance with a particular jurisdiction's implementation of the NCC or their own particular building regulations.

RTO: Registered Training Organisation as defined by the Australian Qualifications Framework.

Software Provider: An entity that owns or has the legal right to sell or licence the use of a NatHERS accredited software tool.

Technical Notes: Documents issued by NatHERS which describe the correct procedures for entering a building's characteristics into NatHERS software in regulatory mode.