Response ID ANON-6DA8-G5DK-X

Submitted to Consultation Regulation Impact Statement: Commercial energy efficiency provisions
Submitted on 2024-07-01 22:35:06

Privacy Collection Statement

1 Important: Please ensure that you have read and understood the below statements before proceeding

Yes, I have read and understood the privacy collection statement.

2 By making a submission on this consultation you agree to the collection of the information you provide in your submission; and the use and disclosure of the information you provide in your submission as outlined above.

Publish response

Personal Information

3 What is your name?

Name:
Trevor Lee

4 What is your email address?

Required:
trevor.lee@exemplary.com.au

5 Please select your State or Territory

State or Territory:
ACT

6 What is your organisation? (if applicable)

What organisation are you in? (if applicable):
Exemplary Energy

7 Which best describes your industry sector?

Specialist - energy efficiency

If other, please specify:

Statement of the problem (pages 17 to 37)

8 Has the case for changes to the commercial energy efficiency provisions in the NCC been adequately established in the CRIS?

No (please explain your answer below)

Please provide information to support your response below::

Our overriding concern is that all of the simulations done to validate the proposed changes to Section J are unreliable because the CSIRO's multiple erroneous files were used for that very sensitive purpose.

At the very least, a sensitivity analysis is required to establish the size and direction of the error that these simulations incurred.

The J1V3 proposal is based on "CSIRO Projected Weather Files" (actually climate files) for building energy modelling, all of which have multiple time off set errors making the simulation results potentially misleading and counterproductive. ABCB proposes this data as mandatory for the NCC 2025 changes. However, we addressed this issue twice, well over two years ago: (CSIRO timing offset error in several weather elements (2022-04-21*) and Solar data timing error skews simulation results (2022-01-17+) and in peer reviewed work since then^. We have re-checked the files for future climate scenario RCP 8.5 on 2050. Alas, the timing offset errors remain despite the CSIRO knowing about their errors for over two years.

* https://exemplary.energy/2022/04/21/timing-offset-error-in-several-weather-elements/

+ https://exemplary.energy/2022/01/17/a-critical-review-of-the-csiro-weather-and-climate-data-part-2-of-3/

^ e.g. Tarquini, Lee and Ferrari (2022). "Quality Assurance of Available Meteorological Data" in Proceedings of the 2022 Asia Pacific Solar Research Conference (copy uploaded for reference)

Objectives and options (pages 38 to 48)

9 Are there any non☐regulatory options that meet the stated objectives and address the problems set out in Chapter 2 that should be considered?

Unsure

Please provide information to support your response below: :

10 Should the mandatory provision of electric vehicle (EV) charging facilities in commercial buildings be considered as a separate option (rather than bundled together with other proposed requirements)?

Unsure

Please explain your answer and provide additional evidence below::

11 Are there any challenges to implementing any of the proposed options?

Unsure

Please provide specific and relevant data to support your view:

Approach to impact analysis (pages 49 to 76)

12 Is the approach to measuring the costs and benefits of each option (including the input assumptions/parameters used) appropriate?

No

If no, please explain your answer and provide evidence below::

See my response to Q8.

13 Are there any (positive or negative) impacts that have not been adequately covered in the cost-benefit analysis?

Unsure

If yes, please explain what they are and what is the appropriate approach to evaluate them:

14 Do you have any data regarding the baseline assumptions, especially the below?

Please provide information to support your answer below::

data:
No file uploaded

15 Is there any additional evidence (or data) that could be used to estimate the extent to which modelled energy savings tends to over☐estimate or under☐estimate actual energy savings?

Yes

If yes, please provide any evidence to support your response:

See my response to Q8.

16 Some studies suggest that, for buildings where there are additional costs to comply with the proposed minimum energy efficiency requirements, they are likely to decline over time. Do you have any data or evidence to support the application of a 'learning rate' in the cost-benefit analysis?

No

If yes, please indicate what you would consider an appropriate learning rate and to what building elements it should apply, along with any evidence to support your response.:

17 How do you think proposed energy efficiency changes will affect the safety (including safety from fire) and health, amenity and accessibility?

Q17a - Effect on safety (including safety from fire):

Q17a - Effect on health:

Q17a - Effect on amenity:

Q17a - Effect on accesibility:

Please provide any evidence to support your response.:

18 Are you aware of any specific electricity network impacts should be considered in the analysis, in addition to those implicitly measured by the electricity pricing?

Yes

If yes, please provide the specifics of the impacts, and any information to support them.:

See my response to Q8. The simulation results are out by 1 hour every day; so the peak demand predicted by the simulations will always also be out by 1 hour.

19 Do you think if there is an increase in compliance costs such as training costs in addition to the normal continuing professional development requirements?

Unsure

If yes, by how much?:

Building-level impacts (pages 77 to 93)

20 Are the cost estimates presented in this chapter reasonable?

Q20a - Stringency 1 (Table 5.1-5.4):
Unsure

Q20a - Stringency 2 (Table 5.5-5.7):
Unsure

Q20a - Stringency 3 (Table 5.8-5.11):
Unsure

Q20a - Mandatory electric vehicle charging (Table 5.12-5.14):
Unsure

Please expand on your answer. If you selected no or other, what are your alternative estimates and the basis for those estimates?:

See my response to Q8. The simulation results are out by 1 hour every day; so the peak demand predicted by the simulations will always also be out by 1 hour.

21 Building-level modelling suggests that, for some buildings, complying with the proposed minimum energy efficiency requirements will cost less (compared with the existing minimum requirements in the NCC), while also significantly reducing energy consumption. Do you agree with these findings from the building-level modelling?

Unsure

If yes, please provide information on what prevent building owners/designers from adopting this win-win outcome. If no, please explain your reason. :

22 Which of these factors below do you consider plausible/implausible explanations for the outcome described above?

Q22a - Requirement to insulate internal walls removed, which will reduce costs without compromising energy performance.:
Neutral/Don't know

Q22a - Reduced size of HVAC system due to more efficient façade.:
Plausible explanation

Q22a - Size of HVAC system reduced due to lower thermal loads and changes to HVAC efficiency provisions (e.g. J6D11, J6D5).:
Plausible explanation

Q22a - Using darker windows to comply at lowest cost.:
Neutral/Don't know

Please provide information to support your answer (including other explanations not listed) below::

23 Achieving compliance with the proposed changes to the NCC may require some design changes to some buildings. How likely are each of these design changes in different type of building?

Q23a - Small hotels/motels:

Q23a - Large hotels:

Q23a - Small office:

Q23a - Medium office:

Q23a - Large office:

Q23a - Strip retail:

Q23a - Big box retail:

Q23a - Large hospital ward:

Q23a - School classrooms:

Q23a - Aged care facility:

Please provide information to support your answer:

24 Are the cost estimates of EV charger installation for internal and external car parks appropriate (especially the annual maintenance costs) as reported in tables 5.12 through 5.14 in the CRIS?

Not Answered

If no, can you provide alternative estimates? :

25 The net zero carbon ready building provisions (under Option 3) give owners/designers a choice to either: design/construct a dual-fuel building with additional PV capacity to offset greenhouse gas GHG emissions from gas consumption; or design/construct a fully-electric building. Please rank the following factors in order of importance for influencing that decision, with 1 being the most important

Q25a - Lowest upfront cost:

Q25a - The feasibility of installing ground mounted PV panels:

Q25a - The aesthetic impact of ground mounted solar panels:

Q25a - Lowest expected operating costs (including the relative cost of gas and electricity:

Q25a - Lowest GHG emissions:

Q25a - Expectations about future policy settings to encourage electrification:

Aggregate impacts (pages 94 to 118)

26 The sensitivity analysis considers future electrification, uptake of PV in the base case, regulation period, building and equipment life, discount rate, realisation rate, learning rate, and different assumptions about social cost of carbon and energy pricing. Does it cover the most important factors?

Yes

Can you suggest any other sensitivities and/or alternative values to existing sensitivities to consider, and explain why?:

27 Do you agree with the estimates of EV sales induced by the proposed options in the chart 6.24 (page 114) of the CRIS?

Not Answered

Please provide any evidence to support your response.:

28 In response to the proposed net zero carbon ready buildings option, we assume that: half of the buildings that would have been dual-fuel under current NCC provisions will choose the dual-fuel option (with expanded PV systems to offset emissions from gas consumption); and the other half will choose the fully-electric option. Is this a reasonable assumption?

Yes

Q28b - Share of building choose the dual fuel option:

Please provide any evidence to support your response.:

Final question

29 Are there any other comments you would like to make in relation to the analysis in the CRIS?

No

Additional comments:

Fie Upload:
2022_APSRC_Quality_Assurance_of_Avaialable_Meteorological_Data_v2.pdf was uploaded