RESPONSE TO:

ENERGY SAVINGS SCHEME CONSULTATION PAPER

2020-2021 Rule Change (June 2021)

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Friday, 23 July 2021

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Q1: Agree. It seems reasonable.

Q2: No, cannot foresee.

Q3: Yes. That seems to cover the proposed exceptions.

Q4: Yes. It is just a clarification in the definitions.

Q5: Agree with the adoption of AEER/ACOP in the determination of cooling and heating energy use, however the Rule change proposes *Reference Energy Use* to be calculated using baseline AEER/ACOP from tables D16.2 and D16.3, but requires *Energy Use* to be the value of energy use on the ZERL, or if it does not have a ZERL, to use equations D16.4 and D16.5, which in turn are *not* using AEER/COP, but the Power Input instead. That these parameters are related is well understood, but on the basis that the relevant baseline reference is AEER/ACOP, and that there is a minimum improvement threshold which relates to an improvement in AEER/ACOP, it is better to adjust equations D16.4 and D16.5 to be consistent with the form of equations D16.2 and D16.3.

Q6: No. The 20% AEER/ACOP minimum improvement threshold is too high for many product classes. Take for example air-to-air single split, whether ducted or non-ducted, in the capacity range 19.5 – 20.5 kW. The reference AEER is 3.1, meaning that the new unit would need to have an AEER of 3.72. Note that there are no air-to-air units in that capacity class on the GEMS register which score higher than 3.49. The minimum improvement threshold needs to be lowered, especially for systems above certain capacities. We suggest 20% for systems below 5kW and 10% for systems above 5 kW.

Q7: No. See question 6.

Q8: No, not at all. Bad design and behaviour exist in every industry, however it is not going to be *driven* by these activities. In fact, these activities are quite likely to improve the quality of the goods and services delivered to customers as there are more stakeholders involved in each delivery, with ACPs involved who are primarily responsible in the delivery of these activities. Air-conditioning industry in this segment of the market is known to largely rely on relatively generic load calculations which are (and have been) often an overestimation of the true cooling/heating load. We believe that it is unlikely that systems are undersized, more likely that systems are equally sized, or slightly upsized (not so much over-sized) which may be the result of a re-estimation of the cooling load. Note that it is not unreasonable to think that design temperatures have increased over time due to climate change, temperature records being broken almost every year, greying of the population, and other factors. Worth noting that new air conditioners have much better capacity control (inverters, VRF etc.) when compared to older systems. Even when a system is upsized, it will run to match the load with corresponding energy use i.e., not extra energy use. Only if installed capacity is dramatically oversized might there be a concern, but the market is extremely price conscious / sensitive. As such, under-sizing is extremely unlikely, over-sizing is unlikely, some upsizing may occur which is not unreasonable and will not undermine energy savings considering much better capacity controls. This is an area where we believe the ESS need not add requirements.

Q9: This equipment requirement should be reviewed as per response to question 8. Up-sizing of equipment is not unreasonable in many cases. No additional measures should be considered.

Q10: Good initiative but it should not be made a *requirement* that A/C units must be demand response enabled to calculate energy savings as this would conflate peak demand savings and energy savings, which are obviously two different things. Moreover, A/C units which are not demand response enabled at the time of installation can become demand response enabled later.

Q11: Yes, agreed.

Q12: There certainly is a market for them but we are not able to quantify that within the time provided. Suffice it to say that many residential apartment buildings and office towers use water-cooled air-conditioning for example.

Q13: We are HEER accredited to undertake air conditioning upgrades, but it is difficult to find projects in adequate size and quantity to make it a commercially viable pursuit. It is not obvious that the proposed changes are going to change that much.

Q14: Yes, incentives are too low to effectively drive change, especially in single dwelling implementations.

Q15: The Rule change proposes Reference Energy Use to be calculated using baseline AEER/ACOP from tables F4.2 and F4.3 but requires Energy Use to be the value of energy use on the ZERL, or if it does not have a ZERL, to use equations F4.4 and F4.5, which in turn are not using AEER/COP, but the Power Input instead. That these parameters are related is well understood, but on the basis that the relevant baseline reference is AEER/ACOP, and that there is a minimum improvement threshold which relates to an improvement in AEER/ACOP, it is better to adjust equations F4.4 and F4.5 to be consistent with the form of equations F4.2 and F4.3. Moreover, F4 should include implementations which involve centralised units and units servicing common areas of Class 2 buildings.

Q16: See response to question 6.

Q17: See response to question 8.

Q18: See response to question 10.

Q19: We are IHEAB accredited to undertake air conditioning upgrades, but it is difficult to find projects in adequate size and quantity to make it a commercially viable pursuit. It is not obvious that the proposed changes are going to change that much.

Q20: Yes, incentives are too low to effectively drive change, especially in single site implementations.

Q21: Nothing to contribute.

Q22: Nothing to contribute.

Q23: Nothing to contribute.

Q24: Yes, agreed.

Q25: Yes, agreed.

Q26: Yes, agreed.

Q27: The average hot water use, per person, used for the baseline and activity energy consumption calculations is 45 L/day, which harmonises with the VEU approach for their equivalent activities. At 45 L/day, it appears that the medium baseline for replacing electric water heater with a heat pump water heater is based on 3 people in a household. Considering that the market for heat pump water heating systems is made up mostly of detached and semi-detached dwellings housing families and house share arrangements, it seems appropriate to weight the baseline consumption accordingly. Four people per household would seem a more realistic base case for the activity, where baseline consumption would be closer to 45 MWh.

Q28: No. Bad design and behaviour exist in every industry, but it is not going to be *driven* by these activities. In fact, these activities are quite likely to improve the quality of the goods and services delivered to customers as there are more stakeholders involved in each delivery, with ACPs involved who are primarily responsible in the delivery of these activities. Worth noting that it is not that obvious that upsized systems will use more energy, everything else being equal, i.e., to heat the same quantity of water. Increased energy consumption is chiefly driven by increased hot water consumption. Moreover, customers are extremely price conscious / sensitive, the incentive is so small, it does not make oversizing attractive. Lowest cost is what is going to drive uptake. We believe that this is an area where the ESS need not add requirements.

Q29: Unlikely based on the tariff alone. – e.g., 1 kWh of electric heat at a peak only use rate would cost, say 27c which may have a Controlled Load at 14c per kWh. On a TOU tariff it might cost 53c during peak hours, 25c during shoulder hours, and 18c during off-peak hours, for a weighted average rate across the TOU of 28c. A heat pump would only need, say 0.3kWh to deliver 1 kWh of heat, which would cost 8c to 8.5c depending on the tariff. Even in an extreme case, where all water heating was previously done during off-peak, but the new heat-pump does all water heating during the 53c/kWh peak period, each kWh of heat is still being delivered at 16c, which is still less than the 18c it used to cost for that kWh of heat to be delivered during off-peak. Note that bills can of course go up if hot water consumption itself goes up dramatically, but costs are still being saved compared to the baseline equipment.

Q30: Unsure.

Q31: Unsure. The incentives may not be attractive enough.

Q32: To drive change, the cost gap needs to be closed. Increasing ESC values will contribute to that, but equally, cost of participation needs to be low, and the ESC numbers need review.

Q33: Yes.

Q34: Yes, noting that an application-based approach will have a place too.

Q35: Yes, C&I would cover what might be needed in a residential building. For the avoidance of doubt, the same range of heat pumps installed in residential apartment buildings are not necessarily appropriate for all C&I applications.

Q36: Unsure.

Q37: Unsure.

Q38: No, 15 years is more appropriate.

Q39: No, for similar reasons as outlined under Q8 and Q28. Moreover, C&I has more stakeholders involved, often with independent advice attached.

Q40: No.

Q41: Unsure.

Q42: Unsure. The incentives may not be attractive enough.

Q43: No feedback.

Q44: See response to Q32.

Q45: If harmonising means more streamlining, lower costs, and greater benefits as a result, then yes.

Q46: Yes.

Q47: See response to Q45.

Q48: Not at this moment.

Q49: Nothing further at this moment.

Q50: Yes. We understand this to clarify that forward creation of ESCs under the NABERS baseline method must be based on a Historical Baseline NABERS Rating, not on a Benchmark rating as per table A20 of schedule A.

Q49 (51?): Unsure.

Additional comments:

Revision of equipment requirement for HEER Activities E5 & E13 is necessary. The Equipment Requirements state that the new end-user-equipment must be a “LED Luminaire - Linear Lamp”. Replacement of panel fittings is one of the most popular activities under HEER scheme and most of the LED panels are approved by IPART as “LED Luminaire – Recessed”. Please consider clarification in the relevant sub-clauses.