



National Electrical Manufacturers Association

Representing Electrical and Medical
Imaging Equipment Manufacturers
www.nema.org

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Submitted via email to Docket #10-BSTD-01

Ms. Karen Douglas
Commissioner
California Energy Commission
1516 Ninth Street
Sacramento, California
95814

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NEMA Concerns Regarding Upgradable Setback Thermostat Requirements and Title 24 Proposals

The National Electrical Manufacturers Association (NEMA) appreciates the opportunity to bring the following concerns to your attention. This letter is in follow-up to our unanswered letter of November 10, 2011.

As you may know, NEMA is the association of electrical equipment manufacturers, founded in 1926 and headquartered in Arlington, Virginia. Its member companies manufacture a diverse set of products including power transmission and distribution equipment, lighting systems, factory automation and control systems, and medical diagnostic imaging systems. Worldwide annual sales of NEMA-scope products exceed \$120 billion. These comments are submitted on behalf of NEMA Thermostat companies.

Regarding the subject proposal for “Upgradable Setback Thermostats” (USTs) we have additional concerns that are presented in the attachment and we ask that the CEC consider them.

Thank you for your consideration of these concerns. In your reply to these matters and for any questions regarding these issues, please contact Alex Boesenberg of NEMA at 703-841- 3268 or alex.boesenberg@nema.org.

Sincerely,

Kyle Pitsor
Vice President, Government Relations

Attachment

NEMA Concerns Regarding Upgradable Setback Thermostat Requirements and Title 24 Proposals

Background

As we previously noted, proposals are being developed by Investor-Owned Utilities (IOUs) and CEC staff which center around the development and requirement of a new device which has been termed an “Upgradable Setback Thermostat (UST)” in new construction homes (Title 24). The intent of this measure is to allow a simple programmable thermostat to be upgraded later with radio communications capability and enhanced functionality by inserting a radio module into a pre-provided port, thus allowing for ‘smart’ communications and interaction. This upgrade would permit participation in demand response and other energy-related programs. NEMA continues to have several objections and concerns regarding this subject.

NEMA’s Concerns

1. **Intellectual Property:** In our unanswered letter of November 10, 2011, we raised several points about patents in this area and asked for an investigation and reply, which has not yet been received. We again stress our concerns in this matter regarding existing and pending UST related intellectual property that may;
 - a) Impede innovation for manufacturers of USTs
 - b) Force industry license fees on manufacturers of USTs
 - c) Have been developed with real or perceived conflict of interest between the CEC and its advisors

Additionally, we would like to understand how intellectual property related to patents still under revision with the U.S. Patent Office will be addressed by the CEC.

It is the NEMA position that all of these issues should be addressed BEFORE any title code proposals on this subject are permitted to be made.

2. **Certification:** Besides our concerns previously noted regarding the lack of standards for this solution, we add our concern that this lack of standards not only complicates the development of proprietary UST solutions, but also leads to a certification problem as these solutions are developed. The lack of standards for protocols and interfaces of USTs leads directly to certification challenges. The UST certification process and its extent are unclear and not documented. Will the CEC define a certification process for every embedded radio type approach in the industry and if so how? Due to these certification challenges, the UST solution in the draft proposal cannot be effectively implemented even if the IP issues and brand-specific proprietary issues can be worked out.
3. **Feasibility:** In examining the CASE study¹, which forms the basis of the justification for the UST approach, NEMA notes several flaws:
 - a) The financial arguments hinge not only on manufacturers being ABLE to develop USTs but that also nearly 100% of USTs installed will be utilized at their full potential. Put another way, the CASE study cost justification and payback models appear to assume 100% participation in UST upgrades. This defeats CEC’s stated position that homeowners may elect to not upgrade USTs and decline participation in demand response and other energy savings programs. The option to decline participation is central to the UST approach; however the affordability arguments only seem to justify the increased cost if 100% of owners participate. These two parameters are in direct conflict. Payback for an un-upgraded

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http://www.energy.ca.gov/title24/2013standards/prerulemaking/documents/current/Reports/Nonresidential/HVAC/2013_CASE_NR_Upgradable_Setback_Thermostats_Sept_2011.pdf

- UST will be similar to a standard programmable thermostat but at a higher first-cost. A UST cost model of less-than-100% participation must be developed and agreed upon.
- b) The CASE study cites "Of the units deployed 93 % receive the signal". While we are not confident in the assumption that the 2005 SCE study² will apply to all California in practice, we would argue that to achieve such a response rate state-wide many installations would need to be fitted with radio repeaters. No additional cost impact was included in the CASE study for these devices. Furthermore, the demand response energy savings justification also ignores any percentage of non-participating (non-upgraded) USTs.
 - c) The cost model also assumes a 15 year service life for the thermostats deployed. However, the reference cited for that life prediction is 13 years old and we believe is not applicable to the vast majority of HVAC thermostats in this domain. A new, correct service life must be agreed upon.

Given the above issues the CASE study cost modeling is incorrect and new NPV analysis must be performed.

Actions requested

NEMA requests that CEC investigate the above and answer the following questions:

- 1) Have reviews for patent and other intellectual property (IP) issues been performed and if so what were the findings? If not, when will they take place? How/will CEC address patents in application before issuing UST 45-day language?
- 2) Certification: How will the CEC further document and specify the certification process before the 45 day language is issued in order to ensure USTs can be effectively implemented?
- 3) Feasibility: An immediate re-analysis of the cost-versus-payback portions of the CASE study must be carried out with clear justification with respect to the Warren-Alquist Act. The cost model must also take into account the additional costs associated with radio reliability and performance as well as a realistic service life.

Conclusions

The above new concerns along with standing, unresolved concerns cause NEMA to remain in a position to be strongly against the draft Upgradeable Setback Thermostat proposals at this time and we again request that these be withdrawn from this code cycle. NEMA remains committed to work with the CEC to address UST issues and to work towards developing a proposal for later submission that addresses industry's procedural and technical concerns.

²http://sites.energetics.com/MADRI/toolbox/pdfs/pricing/rlw_2005_energysmart_thermostat_small_commercial.pdf
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