



Notice of Permanent Rule Effective April 1, 2021

Energy provisions of Oregon Structural Specialty Code ANSI/ASHRAE/IES Standard 90.1-2019 adoption

Purpose of the rule:

The purpose of these rules is to amend the energy provisions of the 2019 Oregon Structural Specialty Code (OSSC), previously based on ASHRAE Standard 90.1-2016, to adopt ASHRAE Standard 90.1-2019 with additional Oregon amendments. This iteration of the energy provisions is named the 2021 Oregon Energy Efficiency Specialty Code (OEESC).

Citation:

Amends OAR 918-460-0500

This rule is effective April 1, 2021.

Background:

When the 2019 Oregon Structural Specialty Code was adopted on Oct. 1, 2019, the division committed to return to the Construction Industry Energy Board to adopt the next iteration of ANSI/ASHRAE/IES Standard 90.1 with minimal amendments. The division, through the move to ASHRAE 90.1 as the basis for the commercial energy provisions, planned subsequent adoption of the most recent edition of ASHRAE 90.1 as updated standards became available. The purpose of this early adoption is to have a more efficient code in place faster and maintain Oregon's leadership in energy efficient construction codes. Minimal amendments also allow use of the COMcheck software and ZERO Code Calculator.

On Jan. 12, 2021, the division held a public meeting to update the public on the ASHRAE 90.1-2019 adoption process. The meeting addressed minor revisions and discussed the process for integration of ASHRAE 90.1-2019 into the Oregon Structural Specialty Code.

The division proposed adoption of ASHRAE Standard 90.1-2019 at the February 9, 2021, Construction Industry Energy Board meeting. The board reviewed the adoption of the ASHRAE Standard 90.1-2019 with minimal Oregon amendments, and found that any additional cost was necessary for the health and safety of the occupants or the public or necessary to conserve scarce resources. The board approved adoption of ASHRAE Standard 90.1-2019 with Oregon amendments by unanimous vote at its February 9, 2021, meeting.

The division held a public hearing on the amendment of the energy provisions of the Oregon Structural Specialty Code on March 17, 2021, and accepted public comment until March 19, 2021. The division considered all testimony that it received in finalizing the energy provisions of the Oregon Structural Specialty Code. A summary of the testimony received as well as the division's response is included in an attached document.

Summary:

These rules adopt the 2021 OEESC, Chapter 13 provisions of the 2019 OSSC. The 2021 OEESC becomes effective April 1, 2021, but does not become mandatory until after the phase-in period ends on Sept. 30, 2021. During the phase-in period, use of the 2019 Oregon Zero Energy Ready Commercial Code or the 2021 OEESC is permitted.

A full listing of significant changes to the energy provisions made by these rules can be found on the Building Codes Division website at: [Oregon.gov/bcd/codes-stand/Documents/21oeesc-summary-matrix.pdf](https://oregon.gov/bcd/codes-stand/Documents/21oeesc-summary-matrix.pdf)

The 2021 Oregon Energy Efficiency Specialty Code can also be found on the division website at: [Oregon.gov/bcd/codes-stand/Documents/2021oeesc.pdf](https://oregon.gov/bcd/codes-stand/Documents/2021oeesc.pdf).



Code adoption information and other resources are available on the OEESC code adoption webpage at Oregon.gov/bcd/codes-stand/Pages/oeesc-adoption.aspx.

Contact: If you have questions or need further information, contact Mark Heizer, Mechanical and Energy Code Specialist, at 503-373-0205, or mark.r.heizer@oregon.gov.



OFFICE OF THE SECRETARY OF STATE
SHEMIA FAGAN
SECRETARY OF STATE

CHERYL MYERS
DEPUTY SECRETARY OF STATE



ARCHIVES DIVISION
STEPHANIE CLARK
DIRECTOR

800 SUMMER STREET NE
SALEM, OR 97310
503-373-0701

PERMANENT ADMINISTRATIVE ORDER

BCD 5-2021
CHAPTER 918
DEPARTMENT OF CONSUMER AND BUSINESS SERVICES
BUILDING CODES DIVISION

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& LEGISLATIVE COUNSEL

FILING CAPTION: Amends energy provisions of the Oregon Structural Specialty Code

EFFECTIVE DATE: 04/01/2021

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CONTACT: Laura Burns
503-373-0226
laura.l.burns@oregon.gov

1535 Edgewater St. NW
Salem, OR 97304

Filed By:
Laura Burns
Rules Coordinator

AMEND: 918-460-0500

NOTICE FILED DATE: 02/11/2021

RULE SUMMARY: These rules adopt the 2021 OEESC, Chapter 13 provisions of the 2019 OSSC. The 2021 OEESC becomes effective April 1, 2021, but does not become mandatory until after the phase-in period ends on Sept. 30, 2021. During the phase-in period, use of the 2019 Oregon Zero Energy Ready Commercial Code or the 2021 OEESC is permitted.

CHANGES TO RULE:

918-460-0500

Energy Provisions of the Oregon Structural Specialty Code ¶¶

- (1) The energy provisions of the Oregon Structural Specialty Code are adopted pursuant to OAR chapter 918, division 8, and shall be known as the Oregon Energy Efficiency Specialty Code.¶¶
- (2) Effective ~~October~~ April 1, 2021~~9~~, the energy provisions of the 2019 Oregon Structural Specialty Code are the ~~American Society of Heating, Refrigerating and Air-Conditioning Engineers~~ Oregon Energy Efficiency Specialty Code shall consist of ANSI/ASHRAE/IES Standard 90.1-2016~~9~~ with additional Oregon amendments; and ~~are~~ published by the Building Chapter 13 of the Oregon Structural Codes Division and available on the Division's website, and shall be known as the 2021 Oregon Energy Efficiency Specialty Code.¶¶
- (3) For the purposes of implementing a phase-in period for the energy provisions 2021 Oregon Energy Efficiency Specialty Code, Chapter 13 of the 2019 Oregon Structural Specialty Code, Chapter 13 of also known as the 2014~~9~~ Oregon Structural SpeZero Energy Ready Commercial Code, is adopted for the period beginning ~~October~~ April 1, 2021~~9~~ and ending ~~Decem~~ October 31, 2021~~9~~.¶¶
- (4) During the phase-in period established in subsection (3) use of the energy provisions in Chapter 13 of this rule, use of the 2019 Oregon Zero Energy Ready Commercial Code ofr the 2021~~9~~ Oregon Structural Specialty Code or the energy provisions in Energy Efficiency Specialty Code is permitted to comply with Chapter 13 of the 2014 Oregon Structural Specialty Code is permitted.¶¶
- (5) Code requirements in effect at the time a plan review or permit application is filed controls the construction

under the application unless the applicant agrees to be controlled by subsequent changes.¶¶

(6) All references and code provisions adopted in this rule, in OAR chapter 918, or in any specialty code adopted thereunder to the Oregon Energy Efficiency Specialty Code mean the energy provisions of the Oregon Structural Specialty Code ~~found~~referenced in Chapter 13 of the Oregon Structural Specialty Code.¶¶

[Publication: Publications referenced are available from the agency.]

Statutory/Other Authority: ORS 455.020, ORS 455.030, ORS 455.110, ORS 455.505, ORS 455.511

Statutes/Other Implemented: ORS 455.110, ORS 455.511



Oregon

Kate Brown, Governor

Department of Consumer and Business Services

Building Codes Division

1535 Edgewater Street NW

P.O. Box 14470

Salem, OR 97309-0404

503-378-4133

Fax: 503-378-2322

oregon.gov/bcd

March 31, 2021

Responses to testimony received regarding adoption of the 2021 Oregon Energy Efficiency Specialty Code – ASHRAE Standard 90.1-2019

This document summarizes the significant data, views, and arguments contained in the hearing.

The purpose of this summary is to create a record of the agency's conclusions about the major issues raised during the period for testimony on the proposed rules.

The proposed amendments to the rules were announced in the Secretary of State's Oregon Bulletin dated March 2021. On March 17, 2021, a public rulemaking hearing was held virtually as announced at 9:30 a.m. from the Building Codes Division, "division", 1535 Edgewater St. NW, Salem, Oregon. Tyler Glaze, from the Building Codes Division, was the hearings officer. The record was held open for written comment through March 19, 2021.

The division considered all testimony that it received in finalizing this rule. A summary of the testimony received as well as the division's response is below:

Tonia Sorrell-Neal – International Masonry Institute

Our concern is different options you are considering will leave our industry behind, and will have a financial impact to our industry. Over the past several years, this council passed an amendment that allowed the state to benefit from the natural thermal elements a CMU mass wall has. Some building types have different insulation needs, and requiring additional insulation actually works against the mechanical systems, costing more to the owner. The loss of the mass wall exemption in Oregon will result in a loss of jobs. We can support the adoption of 90.1 with amendments, including amendments to the mass walls.

We can also support [Statewide Alternate Method] of the 2021 edition of the IECC, this is really our first choice. The *Comcheck* option is helpful, but it is limited in the ability to accurately evaluate the thermal performance of concrete masonry mass walls, so it doesn't help maintain market share for these businesses. The mass wall has many positive benefits to the built environment, without driving up costs.

Division response: Thank you for your testimony. The division cannot revise the code at this time without additional Construction Industry Energy Board approval. There is a six-month phase-in period through Oct. 1, 2021, for ASHRAE Standard 90.1-2019. During this time, Statewide Alternate Method (SAM) 19-01 is still available for use. This allows time for additional consideration by the board to address your concerns. The board may reconsider code amendment options or alternate methods to address these concerns before the 2021 OEESC is mandatory. The 2021 International Energy Conservation Code (IECC) has more restrictive requirements for mass walls than ASHRAE Standard 90.1-2019 and would require code amendment to equate to the exception language.

Adam Hutchinson – Masonry Institute of Washington

We are not opposed to the adoption of ASHRAE [Standard] 90.1-2019 with amendments to the OSSC, however we are concerned with what will happen to the IECC compliance path. We request that this be maintained in some manner. Concrete masonry walls are unique in that they provide a building owner with thermal mass properties,

fire resistance, durability and resilience. From an energy efficiency standpoint, masonry buildings perform very well for certain commercial applications.

MIW does not want to see previously approved code provisions lost in the transition to ASHRAE 90.1. We do not believe it was the intent of the board to remove this state amendment, which has been successful over the last few code cycles, and no evidence was provided for its removal. The Northwest Concrete Masonry Organization did a study of different wall choices for a gymnasium. Using ASHRAE, a proposed mass wall utilizing the current amendments, had only a 1.6% difference in energy costs than an interior-insulated code-based wall, which has a payback period of approximately 240 years, significantly longer than the life of the building.

When ASHRAE evaluates costs, they use national construction costs, not Oregon costs. When detailed whole-building analysis is completed using local weather and construction data, it is found that concrete masonry walls permitted by SAM 90.1 are cost-effective. Given concrete masonry's durability and low maintenance, concrete masonry is a better choice than insulated walls.

We propose the following:

- Update SAM 19-01 to the 2021 IECC maintaining Oregon amendments. This IECC code used the more stringent insulation criteria of ASHRAE 90.1 and IECC 2018, and would allow Oregon to have the most efficient code as an option.
 - If the SAM is not maintained, we support ASHRAE 90.1 with the following amendment (These are the same amendments currently in the IECC):
 - Add footnote B to table 5.5-4 and Footnote C to 5.5-5 that states: “Mass walls shall meet the heat capacity requirement. Integral insulated concrete block walls complying with ASTM C 90 with all cores filled shall be considered compliant, when meeting both of the following:
 - 1) at least 50% of cores shall be filled with vermiculite or equivalent fill insulation, and
 - 2) the wall encloses the following building types: gymnasium, auditorium, church chapel, arena, kennel, manufacturing plant, indoor swimming pool, pump station, water and wastewater treatment station, storage facility, restroom and concessions, mechanical and electrical structures, storage areas, warehouse, storage, and retail, and motor vehicle facility.

Division response: Thank you for your testimony. The division cannot revise the code at this time without additional Construction Industry Energy Board approval. There is a six-month phase-in period through Oct. 1, 2021, for ASHRAE Standard 90.1-2019. During this time, Statewide Alternate Method (SAM) 19-01 is still available for use. This allows time for additional consideration by the board to address your concerns. The board may reconsider code amendment options or alternate methods to address these concerns before the 2021 OEESC is mandatory.

Matt Elizer – Bricklayers and Allied Craftworkers, Local 1 Oregon

Oregon has done a great job recognizing that one size does not fit all. The mass wall amendment allows construction of limited building types that make up many of the projects we build. The loss of the amendment will impact many of our employment opportunities. The amendment has been thoroughly vetted in previous years, and believe its exclusion in this round was unintentional. I am asking you to work with us to maintain mass wall code amendments, and include mass walls in the construction economy.

Division response: Thank you for your testimony. The division cannot revise the code at this time without additional Construction Industry Energy Board approval. There is a six-month phase-in period through Oct. 1, 2021, for ASHRAE Standard 90.1-2019. During this time, Statewide Alternate Method (SAM) 19-01 is still available for use. This allows time for additional consideration by the board to address your concerns. The board may reconsider code amendment options or alternate methods to address these concerns before the 2021 OEESC is mandatory.

Eric Lacey – Responsible Energy Codes Alliance

We support the latest editions of the model codes including ASHRAE. I speak in support of ASHRAE adoption. We support it based on the additional energy savings and modernization, but also more consistency between ASHRAE and IECC, especially with fenestration and SHGCs, which will be frame material neutral. All of these will lead to energy savings which will be good for Oregon citizens.

We also recommend that Oregon allow use of the 2021 IECC, which include improvements to the thermal envelope and fenestration, making the 2021 IECC as efficient, or more so, than ASHRAE. Given that most states adopt both, it will make Oregon consistent with other states. ASHRAE adopted updated climate zone maps in 2016, and IECC adopted those in 2021 as well.

We support adoption of ASHRAE wholeheartedly, but we ask that Oregon consider in the future allowing 2021 IECC as a path.

Division response: Thank you for your testimony. The board may consider whether to have an alternate compliance path for use of the 2021 IECC in the future.

Jason Ellis – Merit Electrical

During the last code cycle, the IECC was allowed as an alternate to the ASHRAE [Standard] 90.1 standard for energy code compliance, and our office used that alternate to avoid the requirement for controlled receptacles and electrical energy monitoring because of the added cost, and no foreseeable payback. We see and appreciate the exception for the controlled receptacle requirement, and a better envelope or lower lighting power density appears to be a reasonable tradeoff. Back to the Electrical Energy Monitoring requirement, we would like to see this requirement removed from the energy provisions of the OSSC for the following reasons:

- 1) From our experience with as a Design Build Electrical Contractor the first item to be removed from a LEED score card tends to be the Measurement and Verification point because it is very cost prohibitive. [sic]. In order to implement one of these systems there is the added metering equipment and software. In addition, it typically means additional feeders and panelboards to at least partially separate the systems, even if a hybrid approach of metering separate panels and metering individual circuits on panelboards is implemented.
- 2) There are many building types beyond the exceptions that really would not benefit from this requirement. Take a mid-rise apartment building as one of many examples. The common area is well over 10,000 sf, so the exemption does not apply. Does it really matter if the interior lighting is metered separate from the interior lighting? There might only be 4-6 exterior luminaire. Between corridors, and amenity spaces with occupancy sensors, there really isn't much if any adjustability in the lighting system so the owner really can't do much with the data to save energy. The same goes for common area HVAC in a multifamily project. There really isn't much plug load to amount to much energy use.
- 3) Another example of not being a benefit of the requirement is that many building owners have no use for the information, or do not know how they could use it, and flat out don't want it.
- 4) Many jurisdictions do not enforce this provision of the code, but will not provide anything in writing that exempts it.
- 5) The Cost associated with these New Measurements will make or break some Developers/Owners budgets and will discourage them from building. This will not only hurt the economy but in our Market of Portland this will hurt the affordable and displaced housing crisis. We work with a lot of the affordable housing developers and they do a great job of working with ETO and providing energy efficient building. They also try to put money in to the areas that help the people they are serving. By adding additional cost to the projects, they will not be able to direct their funds to the benefits of the clients they serve.

Granted, there are some building owner that may find one or two of these metrics beneficial. Maybe certain building owners would benefit from knowing the HVAC power usage and could adjust set points and see what the impact would be. It seems like that ought to be more of a choice the owner makes, rather than it being a code required item for all buildings and respective owners.

I propose that this requirement is removed from the energy code.

Division Response: Thank you for your testimony. The division recognized some of the issues during the consideration of ASHRAE Standard 90.1-2019 as the mandatory code. The division was aware that the 2021 IECC may contain equal or more restrictive metering and outlet control. The division brought forward an Oregon-specific amendment to allow an alternative path to installing controlled outlets. This was approved by the board. The division cannot make further revisions to the code at this time without additional board approval. There is a six-month phase-in period through Oct. 1, 2021, for ASHRAE Standard 90.1-2019 during which the electrical monitoring requirements can be considered.

Harold Friberg – Masonry and Ceramic Tile Institute of Oregon

We are not opposed to the proposed adoption of 90.1-2019 with amendments as the energy provisions of the Oregon Structural Specialty Code. However, we are concerned about what will happen to the current alternate IECC compliance path permitted under SAM 19-01. It contains a state-specific amendment that is very important to the Union Mason Contractor's industry and we request that it be maintained in some manner.

The state-specific amendment for mass walls found in SAM 19-01 and previous energy codes, is limited in scope and only applies to certain building types where it has been demonstrated it is clearly not cost-effective to add additional insulation to integral-insulated concrete masonry walls. We cannot emphasize enough how important this code amendment is to the masonry construction industry in Oregon.

Over the years, this code amendment has allowed projects to benefit from the attributes of the integrally insulated mass wall. We are concerned that if the state-specific amendment for mass walls is not adopted as part of proposed ASHRE 90.1-2019 code, the masonry construction industry will incur many job losses without adequate justification.

We have learned the division's desire is to eliminate SAM 19-01; therefore, we would like to take this opportunity to propose the following:

1. Adopt ASHRAE 90.1-2019 with the following state-specific amendment taken from SAM 19-01:

- Add footnote (b) to Table 5.5-4 and footnote (c) to Table 5.5-5: (b/c)

Mass walls shall meet the heat capacity requirement. Integral insulated concrete block walls complying with ASTM C90 with all cores filled shall be considered compliant when meeting both of the following: 1) at least 50 percent of cores shall be filled with vermiculite or equivalent fill insulation, and 2) the structure encloses one of the following uses: gymnasium, auditorium, church chapel, arena, kennel, manufacturing plant, indoor swimming pool, pump station, water and wastewater treatment facility, storage facility, restroom/concessions, mechanical electrical structures, storage area, warehouse (storage and retail), motor vehicle service facility. Use of the COMcheck software would still remain an option when using the current amendment. The 90.1 required prescriptive U-factor for mass walls would simply be entered into the program for this deemed-to-comply wall system.

2. If 90.1-19 is not amended as proposed above, update SAM 19-01 to the 2021 IECC maintaining the current Oregon amendments. This latest IECC code used the more stringent insulation criteria of the 90.1-2019 and IECC 2018 and would therefore allow Oregon to have the most efficient code as an option. Additionally, maintaining an IECC alternate path provides northwest building designers with increased design flexibility.

Division response: Thank you for your testimony. The Building Codes Division ("division") cannot revise the code at this time without additional Construction Industry Energy Board (board) approval. There is a six-month phase-in period through October 1, 2021, for ASHRAE Standard 90.1-2019. During this time, Statewide Alternate Method 19-01 is still available for use. This allows time for additional consideration by the board to address your concerns. The board may reconsider code amendment options or alternate methods to address these concerns before the 2021 OEESC is mandatory.

Joe Hippler – Bear Electric

Rules Coordinator,

I understand this is the last day for comment on the adoption of the ASHRAE 90.1 2019 Zero Energy Code, and would like to give the perspective of an electrical contractor that specializes in design build, mid to large mixed use residential/commercial buildings. My focus is on the 8.4.3 energy monitoring provision:

- I have been budgeting the cost for this provision to Portland area developers for a rough order of magnitude of \$30K to \$70K for a midrise mixed use building between 6 & 7 stories, and 150 to 300 apartment units, but offering it as a deduct to use the 2018 IECC statewide alternate. Every owner had the same response. That this is a system they would never utilize, and that they can't compromise the use of lighting or mechanical systems for their tenants for safety concerns. All have went to the statewide alternate to not have to add the cost for a system that will not be utilized.
- With our states housing shortage and cost of housing being too prohibitive for many Oregon citizens, we should not be adding more cost to build, that will be passed on to the renter, or homeowner that will result in very little to no energy savings. If we want to be a national leader in energy savings, lets do it with a well thought out consideration of the affects it will have on all aspects of the affordability of housing, and quality of life.

Division Response: Thank you for your testimony. In the case of mixed-use structures, the exceptions for energy monitoring under Sections 8.4.3.1 and 8.4.3.2 may apply: Exceptions include, dwelling units, individual tenants under 10,000 sq.ft., and residential buildings with less than 10,000 sq.ft. of common area. These exceptions may apply to most, if not all of the structures you have described. The division cannot make further revisions to the code at this time without additional board approval. There is a 6-month phase-in period through October 1, 2021, for Standard 90.1-2019 during which the electrical monitoring requirements can be considered. The division is aware that the 2021 IECC may contain equal or more restrictive metering and outlet control and an alternate method for use of the IECC may have fewer exceptions.

Charles Bonfeld – Berg Electric

I just found that we were able to comment on the pending adoption of the new energy code ANSI/ASHRAE/IES 90.1-2019. While well intended, I feel that this code is adding a substantial and unnecessary financial burden to many projects, and in some instances leads to unintended safety consequences. The recent exception to allow IECC in lieu of ASHRAE, combined with confusion / lack of enforcement has lessened the impact on projects recently. We have been looking at the pending adoption in detail on several upcoming projects, and are finding it would provide little or no benefit on many of our projects.

Energy metering

- Multifamily mid-rise buildings- interior lighting would be required to be separately metered. This results in additional feeders / panels / metering components, increasing e-room sizes, etc. The owner sees no benefit nor does this provide any energy savings- the interior lighting levels will never be lowered for energy savings as it is desired to keep well-lit for safety and aesthetic reasons. The same with common area HVAC- while it may provide data letting them know the actual direct cost/ usage, it will not be put to any practical use.
- Metering of any system does not provide any benefit to the building or owner, it only adds cost and more restriction on rapidly escalating construction costs. Owners do not have use for the data it may provide, no viable options to generate any savings in the future, and have no desire for the implications.

Plug load control

- We have not seen that the real-world use of plug load control is providing any energy savings. It creates an inconvenience- monitors shutting off and needing to wait for them to restart, computers and phones not charging, etc. What ends up happening is NOTHING gets plugged into the controlled receptacles, and

they run out of space on non-controlled devices. This leads to extension cords and plug strips, giving no energy savings and creating an additional fire hazard.

- Lighting appears to be the biggest potential energy savings in an office setting. We are now nearly 100% LED with occupancy control and daylight harvesting. Huge energy savings are occurring in this area

Lastly is the complete confusion and inconsistency with enforcement. Construction costs are soaring already in all areas, but owners are seeing random projects with huge direct cost impacts and are facing a loss of leasable square footage (due to additional panels, feeders, metering equipment) on random projects. Where these systems can provide some benefit to the owner, building, end user- great, but the decision should be on the owner and not a blanket burden on every new building.

Division Response: Thank you for your testimony. The division recognized some of the issues during the consideration of 90.1-2019 as the mandatory code. For plug load control: The division brought forward an Oregon-specific amendment to allow an alternative path for installing controlled outlets. This was approved by the board. The division cannot make further revisions to the code at this time without additional board approval. There is a 6-month phase-in period through October 1, 2021, for Standard 90.1-2019 during which the electrical monitoring requirements can be considered. Regarding the confusion over code application and enforcement: The division has stated its intent to have a single code: ASHRAE 90.1, which provides for consistent application. The use of both the IECC and 90.1 was allowed during a single phase-in period until the construction community became familiar with the new format of using 90.1. Moving forward, the use of the IECC was intended to be dropped in favor of a single code for easier design, application and enforcement. This would mirror Oregon's prior stance when using the IECC as the base energy code, in which the division and board removed the alternate path under the IECC that allows use of 90.1. Our announced intent was to maintain the use of a single code. The use of the IECC as an additional path would not provide relief for these issues. The 2021 IECC may contain equal or more restrictive metering and outlet control. Removal of the alternate enforcement of two separate codes will result in more consistent code enforcement.

Greg Kohn – HK Electrical Engineers

There are numerous mandatory requirements in the 2019 ASHRE 90.1, referenced by OZERCC, that will be problematic, do not make logical sense, and some unsafe. Here are but four of them.

1. ASHREA 90.1-8.4.2. Switched Outlets. Requires top half of outlets in offices, conference rooms, printing/copy rooms, break rooms, classrooms, and modular furniture to be automatically turned off when occupants leave the room. What person would plug their computers, phone charges, copiers, printers, clocks, monitors, etc. into a plug that turn off when they step out of the room. Not many will. Instead most occupants will plug their devices into the unswitched plugs resulting in needing extension cords and multi-outlet assemblies to do so. These will be hazardous physically and will put most of the plugin loads on a few room plugs. In the end it will save an insignificant amount of energy.
2. AHSREA 90.1, 8.4.3.1. Sub-Metering. Requires HVAC, Interior lighting, exterior lighting, and receptacles loads to be separately meter and the recorded information for each stored for 3 years. This information will not be used to reduce consumption because most of those loads are needed for minimal operation and cannot be meaningfully reduced. The cost for the sub-metering is significant.
3. ASHREA 90.1, Table 9.6.1. Corridor Lighting. Requires corridor lighting to be automatically reduced by at least 50% when unoccupied. 95% of lighting installed in new buildings is LED. With LEDs high efficiency and needing occupancy sensors at a spacing of 30 feet in the corridors, the result is an occupancy sensor is needed to save 12.5 to 15 watts for part of the time. That does not include the energy to manufacture, ship, install occupancy sensor and its associated controls. Constantly turning light fixtures on and off can reduce a light fixtures life. Having to replaced fixtures early before their end of life further reduces the energy savings benefit to where it is does not make sense anymore.
4. ASHRAE 90.1, 9.4.1.2. Garage Lighting. Requires garage lighting to be automatically reduced to 30%. This is a safety issue. The code has already reduced the allowed watts and correspondingly the amount of light in

garages. Then to reduce in to a third of that is a safety hazard when mixing moving vehicles and pedestrians in the same area. Occupancy sensors do fail and they have blind spots especially in garages. Women do not like walking through a garage having low lighted niche areas.

Energy savings is good. It is important that the public sees that it is being done in a sensible way. The first-time people plug their important things into the automatically switched off top half of a receptacle, when they return in 20 minute most will say “that is a dumb energy saving requirement”.

Division Response: Thank you for your testimony. The division recognized some of the issues during the consideration of ASHRAE Standard 90.1-2019 as the mandatory code. For plug load control: The division brought forward an Oregon-specific amendment to allow an alternative path to installing controlled outlets. This was approved by the board. There are exceptions to sub-metering that apply to buildings less than 25,000 sq.ft. and most residential structures. The division cannot make further revisions to the code at this time without additional board approval. There is a six-month phase-in period through Oct. 1, 2021, for ASHRAE Standard 90.1-2019 during which the further concerns regarding any of the four areas can be considered by the board.