Laws and Regulations That Will Impact Your Energy Management Strategies

National Key Accounts Conference
October 24, 2018
San Antonio, TX
Steve Rosenstock, P.E.
Overview

- Information that you can use:
  - ICC Building Code Hearings Update
  - ASHRAE 90.1 Updates
  - Federal Laws and Regulations
  - Solar Energy (regulations and tariffs)
  - Tariffs (all other products)
  - State Laws / Regulations / Referendums
- Q & A
Overview (part 2)

- **Interactive question 1**: Dog or PHEV photos?
ICC Codes (1a)

- Final Action Hearings start today for:
  - Fire Code
  - Mechanical Code (Commercial & Residential)
  - Plumbing Code (Commercial and Residential)
  - General Building Code
  - Property Maintenance Code
  - Residential Code
  - Egress, Swimming Pool/Spa, Fuel Gas Code
Interactive Question 2:
Why am I talking about these “non-energy” codes?
ICC Codes (1c)

- Issues to be covered at final action hearings:
  - PV Systems
  - Battery Energy Storage
  - EV parking spaces
  - Exhaust fan controls
  - Plumbing fixture flow rates
  - Lighting
  - Space heating
Example 1, Property Maintenance Code:

- **602.2 Residential occupancies.** Dwellings shall be provided with heating facilities capable of maintaining a room temperature of 68°F (20°C) in all habitable rooms, bathrooms and toilet rooms based on the winter outdoor design temperature for the locality indicated in Appendix D of the IPC. Cooking appliances shall not be used, nor shall portable unvented fuel-burning space heaters be used, as a means to provide required heating.

- **Additionally, the installation of one or more portable space heaters shall not be used to achieve compliance with this section.**
Example 1, Property Maintenance Code:

- **Proponent Reason:** “This proposed change is submitted with the intent to bring the IPMC 602.2 verbiage in line with the current IRC R303.9 verbiage”.

Many people testified against the proposal. It passed the Committee by a vote of 9-0

- **Committee Reason:** “The committee agreed that this proposal brings the IPMC 602.2 verbiage in line with the current IRC R303.9 verbiage so that the I-Codes consistently address the installation of portable space heaters.”
ICC Codes (1f)

- There is a public comment to Disapprove. It takes a 2/3 vote to overturn the committee.
- It is being heard today.
- If approved, and if it is enforced, you will not be allowed to use space heaters in your building if your central system shuts down or needs repair.
Example 2, Int. Building Code - General

1204.1 General. Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings in accordance with Section 1204.2 or shall be provided with artificial light in accordance with Section 1204.3. Exterior glazed openings shall open directly onto a public way or onto a yard or court in accordance with Section 1205.

In Group E and I-4 occupancies, rooms intended to be used as classrooms or day care rooms shall be provided with natural light. Artificial light shall not be substituted for such required natural light.
ICC Codes (1h)

- In Group E and I-4 occupancies, rooms intended to be used as classrooms or day care rooms shall be provided with natural light. Artificial light shall not be substituted for such required natural light.
  - So night schools are banned?
  - Interior classrooms are banned?
  - No day care after sunset? (North Buildings in winter?)

Interactive Question 3: How did the committee vote on this issue? Approve or Disapprove?
Interactive Question 3: How did the committee vote on this issue? Approve or Disapprove?

Committee voted to disapprove (14-0 vote)

But, there is a Public Comment to “Approve as Submitted” that will be heard later today or tomorrow.
ICC Codes (1j)

- The IECC is used for commercial buildings in about 30 states (with ASHRAE 90.1 as an optional path).
- Hearing for the IECC will be held in the spring and fall of 2019.
- Any proposals are due by January 7, 2019.
- This will be your last opportunity to propose any changes for 3 years.
Issue 2 – ASHRAE 90.1
ASHRAE 90.1 (2a)

- ASHRAE 90.1 is working on changes for the 2019 version. In early August, EEI e-mailed you about:
  - Addendum BB: Interior lighting power densities for all commercial spaces (maximum allowed Watts/square foot or meter).
  - Addendum AV: Thermal bridges (buildings w/ balconies)
  - Addendum AW: Buildings with significant window area (or significantly higher window/wall ratios)
In early August, EEI e-mailed you about:

- **Addendum BE:** Buildings with Computer Room Air Conditioners (e.g., data centers, mixed-use buildings, etc.)

- **Addendum AX:** Buildings with significant number of 120 Volt receptacles (proposal deals with automatic receptacle controls)

- **Addendum BF:** Buildings with vestibules (proposal adds a new exception where air curtains are installed)


**ASHRAE 90.1 (2c)**

- **Interactive Question 4 (customers only):** How many of you remember receiving this e-mail from EEI?

- **Interactive Question 5 (customers only):** How many of you had a chance to discuss any of these issues in-house?

- **Interactive Question 6:** Did you file comments with ASHRAE on any of the proposals?
Impact:

Addendum BB on lighting was discussed at the 90.1 Interim meeting 2 weeks ago. There will be some modest changes based on comments.

For 2019, the modeling and lighting power densities were based on only using 100% LED fixtures, and no other technologies (HID, fluorescent, etc.) at all.

In the minimum 90.1 standard, for 2019, you are pretty much forced to use LED.
One other issue of note:

Renewable Energy Working Group is working on a proposal to:

Mandate that all new / renovated building that meet 90.1-2019 be required to install renewable energy systems on-site.

This would be in the prescriptive path (it is already a part of the performance path, with a cap on credit)

It will probably be voted on at the January 2019 meeting.
Issue 3 - Federal Laws/Regs
Federal Laws/Regulations (3a)

- In April, I discussed four recently passed laws:

  **Efficiency**
  - S 190 (PL 115-78) PASS Act, 11/2/2017
  - HR 518 (PL 115-115) EPS Improvement Act of 2017, 01/12/2018

  **Taxes / Tax Incentives**
  - HR 1 (PL 115-97) Tax Reform Act, 12/22/2017
  - HR 1892 (PL 115-123) Bipartisan Budget Act of 2018, 02/09/2018
October 2018 Update:

One new federal energy-related law has passed since then. It became law in April, 2018 (PL115-161).
- Ceiling Fan Energy Conservation Harmonization Act
- Fans and light kits standards have same start date Jan 2020

Nothing else has been revised or repealed.

Incentives that expired on 12/31/2017 are still expired.
- None of the numbers have changed.
Federal Laws/Regulations (3c)

- **Appliance Standards**
- Commercial Rooftop AC and HP units: Stage 1 increase in standards started on 1/1/2018
- Beverage Vending Machines: Increased standards start in January, 2019
- Commercial Pre-Rinse Spray Valves: January 2019
- Commercial / Industrial Pumps: New (1st time) federal minimum efficiency standards start in January, 2020
- Commercial Rooftop Warm Air Furnaces: Increasing standards as of January 2023
- Commercial Rooftop AC and HP Units: Stage 2 increase in standards on 1/1/2023
Federal Regulations (3d)

- **New** Federal appliance standards rulemakings have slowed down.
  - DOE has published an RFI on how to “smart” and “connected” appliances. Current regulations only look at “standby”, with no regard for smart functions.
  - There is a proposed rule at OMB on general service lamps.

- **Other rules are listed as “long terms actions”**.
  - But there is a federal law (EISA 2007) that requires *every* appliance standard to be reviewed every 6 years, for a new proposed rule or “no new standard”.

Federal Regulations (3e1)

- **Building Codes** - ASHRAE 90.1-2016 - published in October 2016.
  - DOE published their final positive determination on February 27, 2018. They determined that 90.1-2016 would save:
    - 8.3% energy cost savings, and
    - 6.8% site energy savings, compared to 90.1-2013.

- Since the DOE determination was positive, states have 2 years (February 27, 2020) to update their commercial building energy codes to meet or exceed 90.1-2016.
What is the current status? (note that states had until September 2016 to meet or exceed the 2013 version of ASHRAE 90.1 for commercial buildings)

(Source: https://www.energycodes.gov/status-state-energy-code-adoption as of 10/19/2018)

Under DOE’s method, “adoption is assessed based on a quantitative analysis of energy savings impacts within a given state”.

- In other words, they account for state amendments that alter or delete certain sections of adopted energy codes.
Commercial Buildings

(3e3)

Map of the United States showing energy efficiency levels for commercial buildings.
Federal Regulations (3e4)

- As of October 18, 2018, DOE has not published their determination of the residential portion of the IECC.
- More states use the IECC for commercial building energy codes than ASHRAE 90.1.
Transportation

EPA / NHTSA published the proposed rule for light duty vehicles in August, 2018.

This is an update to the rule that was finalized in October, 2012.

This rule will set fuel economy (CAFÉ) and tailpipe GHG emissions standards for Model Years 2021-2026.

Comments are due to EPA / NHTSA by this Friday, October 26, 2018.
Federal Regulations (3g)

- NHTSA Draft EIS graph shows 2 of 8 options being considered:

Figure 2.2.3-1. Historical CAFE Fuel Economy Requirements for Passenger Cars and Light Trucks through MY 2020 and Range of Projected EIS Alternative Standards through MY 2026

mpg = miles per gallon
Federal Regulations (3h)

- Interactive Question 7: Which Alternative would you recommend?
  - Alt 0 (previous version of the rule, rise to 47 MPG by 2025)
  - Alt 1 (“preferred option” in new rule, freeze at 37 MPG through 2026)
  - “Alt 0.5” (somewhere in-between)
Federal Regulations (3i)

- **Transportation Tax Credits**
  - **Tesla hit the 200,000 full EV tax credit cap in July.**
    - If you ordered a Tesla by 10/15/2018 and it gets delivered by 12/31/2018, you get the full $7,500 federal tax credit.
    - For Tesla cars delivered in the first half of 2019, the tax credit drops in half to $3,750. Then it drops to $1,875 in the 2nd half of 2019. Then it goes away for Teslas.

- **GM will be next to hit 200,000 mark (by December)**
  - Full tax credit for GM EV’s in first half of 2019
  - 50% reduction in the 2nd half of 2019 (then 75% reduction…)
Federal Regulations (3j)

- Refrigerant Issue – HFC’s
- HFC’s replaced CFC’s and HCFC’s in the 1990’s due to the Clean Air Act of 1990 and EPA SNAP program.
  - EPA Issued Rule 20/21 on replacing HFC’s in July, 2015, moving certain HFCs from the list of “safe” substitutes to the list of prohibited substitutes.
  - Sept 2015: Two Manufacturers filed a petition for review.
  - March 2016: Parties filed a first round of briefs in a D.C. Circuit Court of Appeals proceeding.
  - Oct 2016: Kigali Treaty on global HFC phaseout signed
Refrigerant Issue – HFC’s

- August 2017: The D.C. Circuit Court of Appeals ruled to vacate the EPA rule. “EPA’s novel reading of Section 612 is inconsistent with the statute as written. Section 612 does not require (or give EPA authority to require) manufacturers to replace non-ozone depleting substances such as HFCs.”


- May 2018: EPA holds stakeholder meeting on new rule.

- June 2018: Petitions filed with Supreme Court to review the DC Circuit Court Decision.
Federal Regulations (3I)

- **Refrigerant Issue – HFC’s**
  - June 2018: Petitions filed with Supreme Court to review the DC Circuit Court Decision.
  - August 2018: EPA asks Supreme Court not to take up appeal, and that it plans to propose a new rule.
  - October 9, 2018: Supreme Court denies petitions to review the case / decision.

- **Bottom Line:** The 2015 rule is not in effect.
Issue 4 - Solar Regs/Tariffs
Solar Regulations/Tariffs (4a)

- “Commence construction” date (2 options):
  - Starting physical work of a significant nature
  - Meeting the “5% safe harbor test” by incurring 5% or more of the total cost of the facility in the year that construction begins.
- Placed in Service date
  - Projects must be placed in service by 1/1/2024 to receive the full tax credit.
# Solar Regulations/Tariffs (4b)


<table>
<thead>
<tr>
<th>Date Construction Begins</th>
<th>Placed in Service Date</th>
<th>ITC Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1/1/2020</td>
<td>Before 1/1/2024</td>
<td>30%</td>
</tr>
<tr>
<td>1/1/2020 to 12/31/2020</td>
<td>Before 1/1/2024</td>
<td>26%</td>
</tr>
<tr>
<td>1/1/2021 to 12/31/2021</td>
<td>Before 1/1/2024</td>
<td>22%</td>
</tr>
<tr>
<td>Before 1/1/2022</td>
<td>On or after 1/1/2024</td>
<td>10%</td>
</tr>
<tr>
<td>On or after 1/1/2022</td>
<td>Any</td>
<td>10%</td>
</tr>
</tbody>
</table>
Solar Regulations/Tariffs (4c)

- What about solar + storage? Not addressed in this notice.
- The IRS has provided limited guidance on a case-by-case basis in 5 “private letter rulings” over the past seven years that only address if batteries are “storage devices” eligible for the ITC.
- The IRS did not address other types of storage in these rulings.
Solar + storage?

Additionally, the IRS took the view that:

- “Dual use” storage that can both transmit energy to and store energy from the grid, is only eligible for the ITC if, for a period of 5 years, at least 75% of the energy used on an annual basis to charge the storage device comes only from solar (or other qualifying) technology.

- The 75 percent requirement is not allowed to be met by averaging.

### Solar Tariffs (started in February 2018):

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff on Modules</td>
<td>30%</td>
<td>25%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>and Cells</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cells Exempt from</td>
<td>2.5 GW</td>
<td>2.5 GW</td>
<td>2.5 GW</td>
<td>2.5 GW</td>
</tr>
<tr>
<td>Tariff</td>
<td></td>
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</tr>
</tbody>
</table>
Solar Regulations/Tariffs (4d)

- Impact of tariffs?
- China had heavily subsidized their solar industry ($15.6 Billion in 2017)
- China changed their solar policies as of June 1, 2018.
  - Reduced feed-in tariffs for some existing projects
  - No feed-in tariffs for most other projects as of June 1, 2018.
  - Utility scale projects go through auctions to set power prices (lowest prices win).
- The changes were announced on May 31, 2018.
Average weekly solar panel price

(Cents per watt)

U.S.: 34.3¢
China: 26.4¢

U.S. tariffs go into effect

Source: PVinsights
@latimesgraphics
Solar Regulations/Tariffs (4f)

- “On May 31, China surprisingly slashed its solar subsidies and incentives. The sudden reduction in demand led to a global oversupply of solar panels that further fueled the price drop that began after the tariffs took effect in February.”

  “The upshot: Prices in the United States now are back where they were last summer and worldwide prices could tumble as much as 35% this year, analysts say.”


- Interactive Question 8: What are you seeing now for PV pricing?
Issue 5 – (other) Tariffs
## Tariffs (5a)

- Clothes Washers – “Large Residential” units. Impact?

<table>
<thead>
<tr>
<th></th>
<th>Year 1-2018</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 1.2 Million Imported Units</td>
<td>20%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>All subsequent finished imports</td>
<td>50%</td>
<td>45%</td>
<td>40%</td>
</tr>
<tr>
<td>Tariffs on Covered Parts</td>
<td>50%</td>
<td>45%</td>
<td>40%</td>
</tr>
<tr>
<td>Covered Parts Excluded from Tariffs</td>
<td>50,000 units</td>
<td>70,000 units</td>
<td>90,000 units</td>
</tr>
</tbody>
</table>
Tariffs (5b)

- Impact based on US Bureau of Labor Statistics data
- Laundry equipment in U.S. city average, all urban consumers, seasonally adjusted
Tariffs (5c)

- **China**
  - In March, 2018, President Trump announced $60 Billion worth of tariffs on Chinese imports.
  - In September, 2018, the US Government announced that tariffs on more than $200 Billion of items imported from China were going to increase.
  - September 24, 2018: Increase of 10%.
  - January 1, 2019: Increase of 25%.
Tariffs (5d)

- **Products affected** (2017 data from April 30, 2018 report jointly published by the Consumer Technology Association and the National Retail Federation entitled "Tariffs on Imports from China: The Estimated Impacts on the U.S. Economy"): 
  - Televisions (35.0%)
  - Monitors (31.7%)
  - Other Office Equipment (21.5%)
  - Motor Vehicle Parts (6.3%)
  - Household Appliances (16.9%)
Tariffs (5e)

- Of the 6,000 items on the list, here are more:
  - Window Air Conditioners
  - Central Air Conditioners
  - Refrigerators
  - Refrigerator/Freezers
  - Freezers
  - Clothes Dryers
  - Beverage Vending Machines
  - Air Compressors
  - Humidifiers
  - Dehumidifiers
  - Transformers (dry-type and liquid-filled)
  - Ovens and Ranges
  - Light bulbs (all types)
  - Lamp fixture parts
Tariffs (5f)

- The tariffs will also affect construction costs of buildings.
- According to NAHB special study published in Sept 2018 entitled The Residential Construction Impact of Levying Tariffs on an Additional $200 Billion of Chinese Imports, “Of the 6,000 items on ‘List 3,’ 463 are commonly used in residential construction and remodeling.”
Tariffs (5g)

- Based on published articles, the impact of the 10% tariff may be minimal.

- According to a 9/17/2018 article in the Los Angeles Times, [http://www.latimes.com/business/la-fi-trump-china-trade-war-20180917-story.html](http://www.latimes.com/business/la-fi-trump-china-trade-war-20180917-story.html), “the new 10% tariffs will be mitigated somewhat by the recent change in currency exchange rates. Since April, the U.S. dollar has appreciated by about 9% against the Chinese yuan, which means goods from China are cheaper when they are bought with U.S. dollars.”

- **Interactive Question 9**: Do you think the 25% tariffs will go into effect on January 1, 2019?
Issue 6 – State Laws / Regs / Refs
States are now actively making more energy policies.

June 2018: “Seventeen Governors in U.S. Climate Alliance Mark One-Year Anniversary with New Wave of Climate Actions”

Represent about 40% of the US population

Pledges include the following:
State Laws / Regs / Refs (6b)

- **Reducing Pollutants**: HFCs and methane (CA, NY)
- **Mobilizing Financing for Climate Projects**: “expand sustainable infrastructure financing opportunities and help advance new Green Banks.”
- **Grid Modernization**: “non-wires alternatives”
- **Appliance Efficiency Standards**: (CA, VT, NY)
- **Deploying Clean Transportation**: ZEV policies

Source: [https://www.usclimatealliance.org/publications/oneyearanniversary](https://www.usclimatealliance.org/publications/oneyearanniversary)
Energy Issues are on the ballot in November 2018:

- CA – Gas Tax Repeal
- AZ – 50% RPS
- NV – 50% RPS and energy regulation
- WA – Carbon Tax ($15 / ton, increase by $2 / year)
- CO – “Fracking” buffer zone regulations
- FL – Offshore drilling for natural gas and oil
California Updates

Title 24 2019 - approved in May, 2018, goes into effect on 1/1/2020.

Requires all new homes to have solar PV (2.7 – 5.5 kW).
- Exceptions for shading and other factors
- Allows builders to use community solar if approved by CEC
- Reduce size of PV system by 25% if you have on-site energy storage of a certain minimum size.
California Title 24 2019:

PV requirement: This is the first time that any minimum (non-green or non-stretch) building energy code has required:
- Building to produce electricity (and only electricity) not associated with emergency equipment
- Only produce electricity with PV panels
State Laws / Regs / Refs (6f)

- Why it is important: Recall the CEC policy goals:
  - Commercial buildings: “Zero Net Energy” by 2030
  - Current CA RPS = 33% by 2020, 50% by 2030

- SB 100 signed into law September, 2018
- Now RPS is 60% by 2030 (mandatory)
- Goal of “100% carbon free electricity” by 2045
Based on a CESA webinar in September 2018, for **2022**, the CEC is looking at:

- “Switching to a CO2 emission metric” instead of TDV
- “Focusing on high-rise residential – 4 stories and higher, and hotel/motel”
- “Selected nonresidential buildings – Retail, office, warehouse”

State Laws/Regulations (6h)

- California Appliance Rulemakings
- General Service Lighting
- California previously set standards for bulbs that produced 310 – 2,600 lumens, as well as standards for LED light bulbs.
- Now they are setting standards for lamps that produce 150-309 and 2,601-3,300 lumens.
- The new standards are proposed to go in effect on 1/1/2020.
State Laws/Regulations (6i)

- **California Appliance Rulemakings** – Title 20 Appliance Standards publication has been updated as of 10/1/2018 (“Final Express Terms”)
- Section 1605.3 shows state standards for appliances that are not federally regulated
- Example: Computers
## California Appliance Standards – Computers

### Table V-7

Energy Consumption Standards for Desktop Computers, Thin Clients, Notebook Computers, Mobile Gaming Systems, and Portable All-in-Ones

<table>
<thead>
<tr>
<th>Computer Type</th>
<th>For models manufactured on or after January 1, 2019, and before July 1, 2021, the measured annual energy consumption shall be less than or equal to the values below</th>
<th>For models manufactured on or after July 1, 2021, the measured annual energy consumption shall be less than or equal to the values below</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desktop Computers, mobile gaming systems, and thin clients with an ES of 250 or less</td>
<td>50 kWh/yr + applicable adders in Table V-8</td>
<td>50 kWh/yr + applicable adders in Table V-8</td>
</tr>
<tr>
<td>Desktop Computers, mobile gaming systems, and thin clients with an ES of more than 250 but no more than 425</td>
<td>80 kWh/yr + applicable adders in Table V-8</td>
<td>60 kWh/yr + applicable adders in Table V-8</td>
</tr>
</tbody>
</table>
# State Laws/Regulations (6I)

## Table V-8

List of Potentially Applicable Adders

<table>
<thead>
<tr>
<th>Function</th>
<th>Desktop Computer, Mobile Gaming System, and Thin Client Adder (kWh/yr.)</th>
<th>Notebook Computers and Portable All-In-One Adder (kWh/yr.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage device other than main storage device</td>
<td>3.5-inch Drive: 26</td>
<td>2.6 per storage device</td>
</tr>
<tr>
<td></td>
<td>2.5-inch Drive: 4.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid-State Drive (SSD): 0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid-State Hybrid Drive (SSHD): 1.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other: 26 per storage device</td>
<td></td>
</tr>
<tr>
<td>Integrated Display</td>
<td>For (d \leq 20): ((8.76 \times 0.35 \times (1 + \text{EP}) \times [(4.2r + 5.7)] \times 0.8)</td>
<td>8.76 \times 0.3 \times (1 + \text{EP}) \times [0.43r + (0.0263 \times A)]</td>
</tr>
<tr>
<td>Where:</td>
<td>For (20 &lt; d &lt; 23): ((8.76 \times 0.35 \times (1 + \text{EP}) \times [(4.2r + (0.02A) + 2.2)] \times 0.8)</td>
<td>(r=6) for resolutions greater than 6 megapixels.</td>
</tr>
<tr>
<td>&quot;d&quot; is the diagonal measurement of the display in inches.</td>
<td>For (23 \leq d &lt; 25): ((8.76 \times 0.35 \times (1 + \text{EP}) \times [(4.2r + (0.04A) - 2.4)] \times 0.8)</td>
<td>(\text{EP}=0.4) for displays with a color gamut</td>
</tr>
<tr>
<td>&quot;r&quot; is the megapixel resolution of the display.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;A&quot; is the viewable screen area in square inches.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EP=0 for displays that are not enhanced performance displays</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
State Laws/Regulations (6m)

For desktop computers:

Before July 1, 2021: EP=0.3 for displays with a color gamut support of 32.9% of CIELUV or greater (99% or more of defined sRGB colors); and EP=0.75 for displays with a color gamut support of 38.4% of CIELUV or greater (99% or more of defined Adobe RGB colors).

On or after July 1, 2021: EP=0.2 for displays with a color gamut support of 32.9% of CIELUV or greater (99% or more of defined sRGB colors); and EP=0.6 for displays with a color gamut support of 38.4% of CIELUV or greater (99% or more of defined Adobe RGB colors).
Interactive Question 10 (last one!):

Does your computer meet the 2019 California computer energy efficiency standard?
- Yes
- No
- Who knows?
Summary

- Federal laws / regulations: Status Quo.
- IECC proposals are due 1/7/2019; ASHRAE 90.1-2019 is making some big changes that you should review;
- For items affected by tariffs, consider purchasing before 12/31/2018, or before April 2019.
- Certain states (and cities) are getting much more aggressive on building codes and appliance standards. You need to be involved.
Q & A

- The floor is open!
The Edison Electric Institute (EEI) is the association that represents the U.S. investor-owned electric industry. Our members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia, and directly employ more than 500,000 workers. Safe, reliable, affordable, and clean electricity powers the economy and enhances the lives of all Americans.

The EEI membership also includes dozens of international electric companies as International Members, and hundreds of industry suppliers and related organizations as Associate Members.

Since 1933, EEI has provided public policy leadership, strategic business intelligence, and essential conferences and forums for the energy industry.

For more information, visit our Web site at www.eei.org.