

Oregon Department of **ENERGY**

EO 20-04
Implementation:
Energy Code
Stakeholders

Facilitator: Roger Kainu
December 12, 2022
1:30-3:00pm



Agenda

Topic	Lead	Action	Time
Intro	ODOE staff	Share meeting description	5 min
Commercial code adoption	BCD staff	Review of key elements and dates	10 min
Q/A	All	Question and answer time	5 min
ASHRAE training	BCD staff	Discuss new 90.1-2022	10 min
Q/A	All	Question and answer time.	5 min
Federal funding summary	ODOE staff	Share updates on funding, grants, tax credits and deductions	20 min
Q/A	All	Question and answer time	5 min
2022 Biennial Energy Report	ODOE staff	Share 2022 report	5 min
Joint Taskforce on Resilient Efficient Buildings	ODOE staff	Update on taskforce progress	5 min
Q/A	All	Question and answer time	5 min
2023 ORSC code committee	BCD	Results of committee work	5 min
2023 ORSC Process Update	BCD	Share process updates	5 min
Q/A	All	Question and answer time	5 min
Wrap-up	ODOE staff	Determine action steps and announce next meeting – March 14, 2022	5 min

Status of Commercial Adoption Rule

- Rulemaking Hearing - Dec. 20th @ 9:30am
- Key Elements
 - Within 180 days of the *publication* of the most recent ASHRAE 90.1, BCD shall *provide notice* to CIEB that the Oregon Energy Efficiency Specialty Code (OEESC) adoption process will begin
 - Within 90 days of the DOE's *Final Determination*, or no later than one year after initial publication of the most recent 90.1 edition, whichever comes first, BCD shall present a new OEESC (ASHRAE 90.1) to the CIEB
 - All subject to the availability of COMcheck software
 - Effective Jan 1st, 2023
- Expected 90.1-2022 Publish date – End of December 2022
 - IECC 2024 Publication date
- **Tentative CIEB 2023 Meeting Dates – Feb TBD, June 13, and Oct 17**

ASHRAE Training

Seminar: What's New in 90.1-2022

- Sunday, 2/5 from 5 – 6:30 pm. [See event](#). ASHRAE staff intend to cover:
 - Envelope requirements (updated air leakage rates, introduction of thermal bridging criteria)
 - Mechanical (a new compliance option titled the Total System Performance Path)
 - Lighting (updated LPDs, recommended practices, and new horticultural lighting requirements)
 - ECB (expanded guidance on modeling with performance curves, demonstration of alternative metrics),
 - Prescriptive requirements for on-site renewable energy
 - Energy Credits.

Federal Funding Summary

- Infrastructure Act & Jobs Act (IIJA)

- Inflation Reduction Act (IRA)

INFLATION REDUCTION ACT: PROVISIONS RELATED TO BUILDINGS

Bill Section	Funding (Billions)	Description	Timeline
<i>Rebates and Direct Funding</i>			
50121	\$4.3	Home Energy Performance-Based, Whole-House Rebates (HOMES)	When available, for projects completed on or before 9/30/2031
50122	\$4.5	High-Efficiency Electric Home Rebate Program (HEEHRA)	When available through 9/30/2031
50123	\$0.2	State-based Home Energy Efficiency Contractor Training Grants	When available through 9/30/2031
50131	\$1.0	Building Energy Codes (Assistance for Latest and Zero Building Energy Code Adoption)	When available through 9/30/2029
60103	\$27.0	EPA Greenhouse Gas Reduction Fund	To distributing orgs. by 9/30/2024
<i>Tax Credits and Deductions</i>			
13301	--	Extension, Increase, and Modification of Nonbusiness Energy Property Credit (25C)	2023–2032 (under old rules in 2022)
13302	--	Residential Clean Energy Credit (25D)	2022-2034 (battery storage amendment begins in 2023)
13303	--	Energy Efficient Commercial Buildings Deduction (179D)	Changes effective in 2023
13304	--	Extension, Increase, and Modifications of New Energy Efficient Home Credit (45L)	2023–2032 (under old rules in 2022)

HOME ENERGY PERFORMANCE-BASED, WHOLE HOUSE REBATES – “HOMES”

\$4.3 Billion total funding

	Energy Savings Type		
	Modeled	Modeled (LMI)	Measured
Minimum Energy Savings Level 1	20-34%		15% or greater
	\$2,000 per home/dwelling unit, or \$200,000 per building, up to 50% of project cost	\$4,000 per home/dwelling unit or \$200,000 per building, up to 80% of project cost	Scaled payment rate per kWh saved, or kWh-equivalent saved, equal to \$2,000 for a 20 percent reduction of energy use per single-family home or dwelling unit, as applicable, for the average single-family home or multifamily building in the State, up to 80% of project cost
Minimum Energy Savings Level 2	35% or greater		
	\$4,000 per home/dwelling unit or \$400,000 per building, up to 50% of project cost	\$8,000 per home/dwelling unit or \$200,000 per building, up to 80% of project cost	Scaled payment rate per kWh saved, or kWh-equivalent saved, equal to \$4,000 for a 20 percent reduction of energy use per single-family home or dwelling unit, as applicable, for the average single-family home or multifamily building in the State, up to 80% of project cost

HOMES Program Implementation

- Funding distributed through State Energy Offices (ODOE)
- State Energy Offices to submit application with a plan to implement HOMES rebate program, including a plan to:
 - 1) Save energy based on calibrated energy model (BPI 2400 standard)
 - 2) Use open-source measurement and verification software to determine energy use before and after retrofit
 - 3) Value savings based on time, location, or GHG emissions
 - 4) Document quality and completion with certificate provided to homeowner detailing work performed and projected energy savings
 - 5) Provide contractor with \$200 rebate for each home located in a disadvantaged community

- State energy office may increase rebate amounts for LMI households
- State energy office may use up to 20 percent of grant amount for planning, administration, or technical assistance
- No “double dipping” across federal grants for the same upgrades
- “Disadvantaged Community” definition to be determined by US DOE
- Low- or Moderate-Income Household (LMI) means less than 80 percent of the median area
- For the larger HOMES Rebate for multifamily buildings, half of households must meet the Area Median Income (AMI) requirement.

HOMES Program Other Notes

HIGH-EFFICIENCY ELECTRIC HOME REBATES “HEEHRA”

\$4.275 Billion + \$0.225 billion for tribes

High-Efficiency Electric Home Rebate		
	Requirement	Rebate caps
Overall	Household <150% AMI	\$14,000
Overall % of measure cost		50% except 100% for households <80% AMI
Equipment		
Heat pumps	ENERGY STAR electric	\$8,000
Heat pump water heaters	ENERGY STAR electric	\$1,750
Stove, cooktop, range, or oven		\$840
Heat pump clothes dryer	ENERGY STAR electric	\$840
Components		
Insulation and air sealing	ENERGY STAR	\$1,600
Electric panels/load service centers		\$4,000
Electric wiring		\$2,500

+ up to \$500 incentive for installers/contractors

HEEHRA Program Implementation

- Funding distributed through State Energy Offices (ODOE) and through Tribes
- A State energy office or Indian Tribe seeking a grant under the program shall submit to the Secretary an application that includes an implementation plan that:
 - Verifies income eligibility of eligible entities seeking a rebate
 - Allows rebates for qualified electrification projects at the point of sale
 - Prevents “double-dipping” between federal grant programs for the same project
 - Meets other requirements determined by US DOE

- State energy office or Tribe may use up to 20 percent of grant amount for planning, administration, or technical assistance
- The term “low- or moderate-income household” means an individual or family the total annual income of which is less than 150 percent of the median income of the area in which the individual or family resides

*(*note: this is a different threshold than the HOMES program)*

HEEHRA Program Other Notes

- “Eligible entity” means—
 - (A) a low- or moderate-income household;
 - (B) an individual or entity that owns a multifamily building not less than 50 percent of the residents of which are low- or moderate-income households; and
 - (C) a governmental, commercial, or nonprofit entity carrying out a qualified electrification project on behalf of an entity described in (A) or (B).

- “Qualified electrification project” means a project that

- Includes the purchase and installation of electric equipment

electric heat pump water heater	electric load service center
electric heat pump for space heating and cooling	insulation
electric stove, cooktop, range, or oven	air sealing and materials to improve ventilation
electric heat pump clothes dryer	electric wiring

- With respect to these appliances, the purchase of which is carried out:
 - As part of new construction
 - To replace a non-electric appliance; or
 - As a first-time purchase with respect to that appliance; and
- Is carried out at, or relating to, a single-family home or multifamily building

HEEHRA Program

Other Notes

STATE-BASED HOME ENERGY EFFICIENCY CONTRACTOR GRANTS

\$200 million

- Funding is to provide training and education to contractors involved in the installation of home energy efficiency and electrification improvements
- A State may use the funding
 - to reduce the cost of training contractor employees;
 - to provide testing and certification of contractors
 - to partner with nonprofit organizations to develop and implement a State program
- States may use up to 10 percent of funding for administrative expenses

BUILDING ENERGY CODES

ASSISTANCE FOR LATEST AND ZERO BUILDING ENERGY CODE ADOPTION

\$1 Billion total

Latest Building Energy Code - \$330 million

- Grants to assist states and units of local government that have authority to adopt building codes to adopt building code(s) that meet or exceed:
 - Residential buildings: 2021 International Energy Conservation Code
 - Commercial buildings: ANSI/ASHRAE/IES Standard 90.1–2019
- To implement a plan to achieve full compliance with these codes, including active training and enforcement and compliance rate measurement

Zero Energy Code - \$670 million

- Grants to assist adoption of building code(s) that meet or exceed:
 - Residential and Commercial Buildings: the zero energy provisions in the 2021 International Energy Conservation Code or an equivalent stretch code
- To implement a plan to achieve full compliance with these codes, including active training and enforcement and compliance rate measurement

GREENHOUSE GAS REDUCTION FUND

\$27 billion total

- Discretion for US EPA on implementation
- Not directly specified for buildings, but could be part of eventual projects funded
- Invest in clean energy technologies via green banking
- **Zero-emission technologies - \$7 billion**
- **General assistance grants – 11.97 billion**
- **Low-income and disadvantaged communities - \$8 billion**
 - Dedicated funding for assistance and investment that benefits low-income and disadvantaged communities

TAX CREDITS AND DEDUCTIONS

25C NON-BUSINESS ENERGY PROPERTY / ENERGY EFFICIENT HOME IMPROVEMENT CREDIT

25C Tax Credit		
	Requirement	Rebate caps
Overall	Tax liability	\$1,200 per year (with exceptions)
Overall % of measure cost		30% (includes labor to install equipment but not for components)
Equipment		
Heat pumps	Highest CEE Tier	\$2,000
Heat pump water heaters	Highest CEE Tier	\$2,000
Central AC, water heater, furnace, or boiler	Highest CEE Tier	\$600
Biomass (wood) stove or boiler	> 75% HHV Efficiency	\$2,000
Components		
Insulation and air sealing	IECC (most recent version in effect 2 years prior)	\$1,200
Windows and skylights	Energy Star Most Efficient	\$600 total
Doors	Energy Star	\$500 total (\$250 per door)
Electric panels/load service centers	Meets NEC, load capacity not less than 200 amps, installed with qualifying energy efficiency improvement/property	\$600
Measures		
Energy Audit	IRS to specify	\$150

Expands and extends the non-business energy property credit through 2032

HHV=higher heating value. Highest Consortium for Energy Efficiency (CEE) Tier does not include an “advanced tier.” Oil furnaces and hot water boilers have additional phased-in eligibility criteria



25D RESIDENTIAL CLEAN ENERGY CREDIT

- Extends 2034 the Section 25D credit through 2034, which allows taxpayers to claim a credit for qualified residential energy efficient property purchases
- Credit to be phased out:
 - Through 2032: 30 percent
 - 2033: 26 percent
 - 2034: 22 percent
- Battery storage with capacity of at least 3 kWh is eligible for the credit

Extends credit through 2034, with phaseout

179D ENERGY EFFICIENT COMMERCIAL BUILDINGS DEDUCTION

- Modifies, expands, and extends this deduction
- Minimum efficiency improvement reduced to 25 percent
- Base deduction \$0.50 per square foot, with increases for additional efficiency up to \$1.00 per square foot
- Bonus deduction \$2.50 per square foot (if prevailing wage and apprenticeship requirements are met), up to \$5.00 per square foot
- ASHRAE Standard 90.1 reference now based on the version in effect no later than four years prior to the placed-in-service date.
- Expansion allows deductions to be allocated to any non-profits, tribal properties, and REITs, and designers of buildings for non-tax paying entities

Extends, expands
deduction

45L NEW ENERGY EFFICIENT HOME CREDIT

- Provides contractors with tax credits for housing units built or remodeled to energy efficient specifications
- Bonus credit for multifamily units if construction meets prevailing wage requirements

Extends, expands
credit through
2032

Home Type	Efficiency Standard	Base Credit	Bonus Credit
Single-Family	Energy Star Single-Family New Homes Program	\$2,500	N/A
Single-Family	US DOE Zero Energy Ready Home Program	\$5,000	N/A
Manufactured Homes	Energy Star Manufactured Homes National Program	\$2,500	N/A
Multifamily Homes	Energy Star Manufactured National and Regional Program	\$500 / unit	\$2,500 / unit
Multifamily Homes – Zero-Energy Ready	DOE Zero Energy Ready Home Program	\$1,000 / unit	\$5,000 / unit

OTHER IRA PROVISIONS

- 48C Tax credits for manufacturers
- Advanced Industrial Facilities Deployment Program
- Additional funding for programs in Rural areas

Biennial Energy Report

- 2022 BER
 - [Introduction — Energy Info \(oregon.gov\)](#)
- Opportunities in existing buildings - Policy Brief
 - <https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Biennial-Energy-Report.pdf#page=521>

Joint Taskforce on Resilient Efficient Buildings

- Joint Taskforce on Resilient Efficient Buildings
 - [Resilient Efficient Buildings Task Force 2021-2022 Interim - Oregon Legislative Information System \(oregonlegislature.gov\)](#)

Results of 2023 ORSC Code Committee

- Chapter 11 is done
- Update on process
- Committee decisions are complete
- Language is cleaned up
- If deeply buried – one other thing
- Future – may have two things
- Latest on ERI

2023 ORSC Process Update

- BCD's Draft Chapter 11 & Proponent Energy Proposals were presented to the RMSB Code Committee in October 27th and November 3rd
 - BCD's Draft Chapter 11: Achieves the Goal of EO 17-20 – ZERH Equivalent Performance
 - Proponents Energy Proposals: Accentuate or go beyond ZERH – Code Committee recommended some to RMSB
 - **Next Step: RMSB Meeting on January 11th, 2023**
- Remainder of 2023 ORSC – Reviewed November/December
 - Solar Ready Moved to Section R324

Highlights of BCD Draft 2023 ORSC

- Additional Measure #7 (Window Area 12%) - Deleted
- HVAC System - Inside Thermal Envelope
 - Includes FAU
 - Deeply buried duct exception remains
 - Requires an extra Additional Measure to be selected
- Air Sealing - Stringency increased
 - Blower door testing option from 4.0 ACH50 to 3.25 ACH50
 - Additional Measure #8 from 3.25 ACH50 to 2.75 ACH
- Smart Thermostat required
 - Does not require internet connection & exceptions for smaller systems

Additional Revisions - 2023 ORSC

- RMSB Code Committee - Recommended adding an ERI compliance path
 - ORSC Section NA1109 Alternative Systems Analysis (ASA) Deleted
 - ERI target #'s under review with a Ceiling/Floor set.
- CFIS Proposal
- Ducts Inside Language – Cleaned up and added options
- BCD asked for Home Size Proposals, but received none.

BCD continues to be on track to meet the goals set in EO 20-04.

➤ Collaboration will be key to a balanced, effective energy code in the 2026 and 2029 ORSC versions. Point system? Home size?

Meeting Wrap-up



- Recording will be available
- Action items identified and distributed
- Next meeting date – March 14, 2023
- Any questions, please send to:

Roger.Kainu@Oregon.Gov

- Meeting materials:

<https://www.oregon.gov/energy/Get-Involved/Pages/Energy-Code-Stakeholder-Panel.aspx>

- BCD:

<https://www.oregon.gov/bcd/Pages/index.aspx>