

Custom Energy Consultants

A Strategic Approach To Clean Buildings

Michael James
Custom Energy Consultants



Presentation Outline

- Education on Clean Buildings
- How 3 Owners Have Approached Clean Buildings
- Specific Building Examples
- County Best Practices

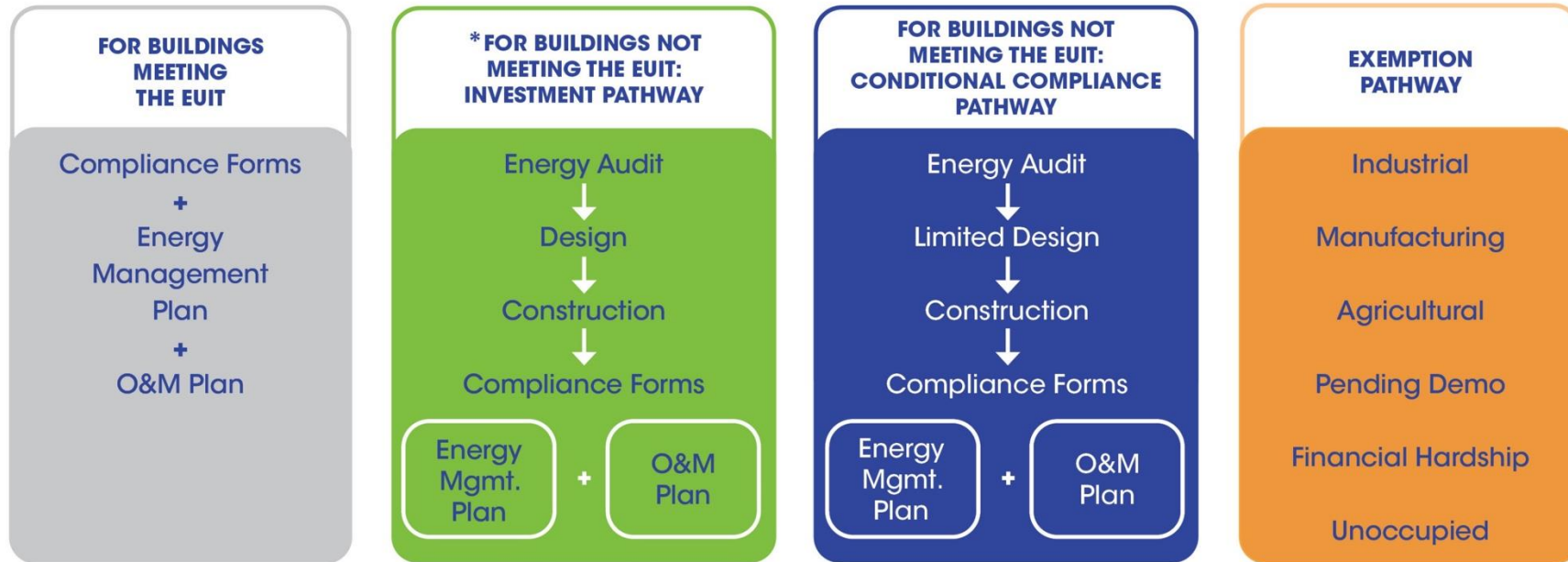
Education on Clean Buildings

Common Misunderstandings

- Investment is the Only Path
- Owners Can Easily Self-Perform
- New Buildings are Compliant
- My Building Complies; I'm Done
- It's Cheaper to Pay the Fines

The Four Compliance Pathways

All Eligible Buildings > 50,000 SF:
Determine Energy Use Intensity Target (EUI) Benchmark Using the Energy Star Portfolio Manager



* RISK: Fine if EUI is not met (or use Path 3)

Timeline for Demonstrating 12 Months of Compliance



Energy Star Portfolio Manager

- Determine wnEUI



 Not currently eligible for ENERGY STAR Certification

[Change Metrics](#)

Weather Normalized Site EUI (kBtu/ft²)

Current: 64.8
(13.94% lower than median.)

Baseline: 71.8
(12.83% lower than median.)

Summary Details **Energy** Water Waste & Materials Goals Design

Meter Summary

2 Energy Meters Total
2 - Used to Compute Metrics

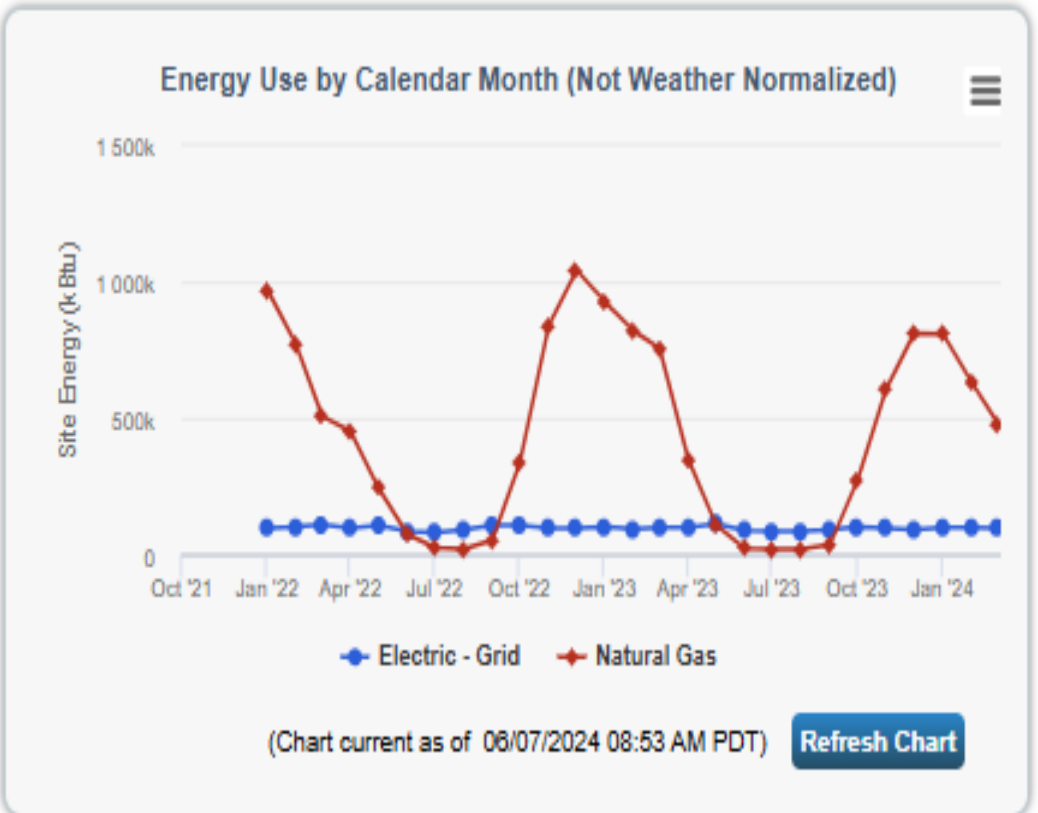
[Add A Meter](#)

Current Energy Date
mars 31, 2024

[Enter Your Bills](#)

Five Ways to Enter Bill Data

1. Manual ([Instructions here](#))
2. Manual (Instructions here)



EUI_t Calculation

- Determine EUI_t
- EUI_t vs. Actual

Washington state building ID							
County	Spokane						
County parcel number(s)							
Portfolio manager property ID number							
Property name							
Parent property name							
Address 1 (street)							
Address 2							
City	Spokane						
State	WA						
Postal code							
County	Spokane						
Climate Zone	5B						
Gross Floor Area	87,809						
Building Activity Type	Gross Floor Area	Fractional Floor Area	Activity Energy Target (EUI _t)	Weekly Hours	Operating Shifts Normalization Factor	Space (EUI _t)	More recently built buildings Space (EUI _t)
K-12 School (Elementary/middle school)	69,369	0.79	50	50 or less	0.9	36	30.2
K-12 School (Elementary/middle school)	18,440	0.21	50	51 to 167	1.1	12	9.8
		0.00					
		0.00					
		0.00					
		0.00					
		0.00					
		0.00					
		0.00					
Building Totals	87,809	1.00				47.1	40.0

Compliance Forms

Tier 1 Compliance Pathways and Associated Forms			
Exemption	Meeting the EUI ^t	Investment Criteria	
		with a measurable EUI	without a measurable EUI
<ul style="list-style-type: none"> • Form H¹ • Supporting Documentation² (minimum 2) 	<ul style="list-style-type: none"> • Form A¹ • Form B¹ • Form C¹ • Operations and Maintenance Program(O&M)² • Energy Management Plan (EMP)² • O&M Reporting Tool³ • EMP Reporting Tool³ 	<ul style="list-style-type: none"> • Form A¹ • Form B¹ • Form C¹ • Form D² • Form F² • Operations and Maintenance Program² • Energy Management Plan² • O&M Reporting Tool³ • EMP Reporting Tool³ 	<ul style="list-style-type: none"> • Form A¹ • Form B¹ • Form C^{1,4} • Form D² • Form F² • Operations and Maintenance Program² • Energy Management Plan² • O&M Reporting Tool³ • EMP Reporting Tool³

¹ Built into Portal Workflow

² The whole document shall be uploaded into the portal.

³ The O&M and EMP Reporting Tools are documents required for early compliance applications.

⁴ Enter a Reason Statement in Form C describing why an EUI cannot be measured for the building.

Energy Management Plan



CLEAN BUILDINGS
PERFORMANCE STANDARD

Energy Management Plan Reporting Tool

Overview:

This form contains a list of the Energy Management Plan's reporting requirements and must be submitted to comply with the Clean Buildings Performance Standard (CBPS). By completing this form, the *building owner* and *qualified person* attest that the energy management plan complies with the CBPS. ***This document is for reporting purposes only and does not take the place of a complete Energy Management Plan as required by the CBPS.***

Please reference the [Clean Buildings Performance Standard](#) integrated document for all requirements pertaining to the standard. For more information, visit the official Clean Buildings website at www.commerce.wa.gov/buildings or email questions to buildings@commerce.wa.gov.

Operations & Maintenance Plan



CLEAN BUILDINGS
PERFORMANCE STANDARD

Operations and Maintenance Reporting Tool

Overview:

The Operations and Maintenance (O&M) program is part of the Energy Management Plan. The O&M program shall be implemented in accordance with Section 6 and Normative Annex L and must be implemented 12 months prior to the mandatory compliance date.

This form contains a list of the O&M program reporting requirements and must be submitted to comply with the Clean Buildings Performance Standard. By completing this form, the *building owner* and *qualified person* attest that the O&M program complies with the Clean Building Performance Standard (CBPS). *This document is for reporting purposes only and does not take the place of a complete O&M program as required by the CBPS.*

Please reference the [Clean Buildings Performance Standard integrated](#) document for all requirements pertaining to the standard. For more information, visit the official Clean Buildings website at www.commerce.wa.gov/buildings or email questions to buildings@commerce.wa.gov.

Qualified Person

Building Personnel					
A building owner can play any role* defined in the standard	Building Owner Holds ultimate responsibility to ensure their building complies with the Clean Buildings Performance Standard.				
Each of these roles can overlap Building Manager	Building Manager	Building Operator	Energy Manager	Qualified Person*	Qualified Energy Auditor*

Qualified Energy Auditor*	Qualified Person*
<p>A person acting as the auditor of record having training, expertise and three years professional experience in building energy auditing and any one of the following:</p> <ul style="list-style-type: none"> • A licensed professional architect or engineer. • An energy auditor/assessor/analyst certified by ASHRAE or the Association of Energy Engineers (AEE) for all building types. <p><u>Responsibilities:</u></p> <ul style="list-style-type: none"> • Completion of an energy audit in accordance with Section 8 of the standard • Completion and submittal of an audit summary in accordance with Annex Z • Verify energy savings calculations of each EEM • Verify that the combined savings of multiple EEMs accounts for interactive effects • Review the commissioning report and certify that the EEMs are functioning as intended (may also be performed by the Qualified Person) • Certify that the energy savings of the package of EEMs meets or exceeds projected energy savings in accordance with Section 9 	<p>A person having training, expertise and three years professional experience in building energy-use analysis and any of the following:</p> <div style="border: 2px solid red; padding: 5px;"> <ul style="list-style-type: none"> • A licensed professional architect or engineer in the jurisdiction where the project is located • A person with Building Operator Certification (BOC) Level II by the Northwest Energy Efficiency Council • A certified commissioning professional • A qualified energy auditor • A certified energy manager (CEM) in current standing, certified by the Association of Energy Engineers (AEE) • An energy management professional (EMP) certified by the Energy Management Association. </div> <p><u>Responsibilities:</u></p> <ul style="list-style-type: none"> • Determine whether or not the building seeking compliance has an energy use intensity target (EUI_t) • Establish the energy use intensity target (EUI_t) • Submit forms as specified in Normative Annex Z documenting compliance • State in writing on Form A that the Energy Management plan and Operations and Maintenance program requirements have been developed, implemented and maintained • Review the commissioning report and certify that the EEMs are functioning as intended (may also be performed by the Qualified Energy Auditor) • Signature on Form A

Qualified Auditor

Building Personnel					
A building owner can play any role* defined in the standard	Building Owner Holds ultimate responsibility to ensure their building complies with the Clean Buildings Performance Standard.				
Each of these roles can overlap Building Manager	Building Manager	Building Operator	Energy Manager	Qualified Person*	Qualified Energy Auditor*

Qualified Energy Auditor*

A person acting as the auditor of record having training, expertise and three years professional experience in building energy auditing and any one of the following:

- A licensed professional architect or engineer.
- An energy auditor/assessor/analyst certified by ASHRAE or the Association of Energy Engineers (AEE) for all building types.

Responsibilities:

- Completion of an energy audit in accordance with Section 8 of the standard
- Completion and submittal of an audit summary in accordance with Annex Z
- Verify energy savings calculations of each EEM
- Verify that the combined savings of multiple EEMs accounts for interactive effects
- Review the commissioning report and certify that the EEMs are functioning as intended (may also be performed by the Qualified Person)
- Certify that the energy savings of the package of EEMs meets or exceeds projected energy savings in accordance with Section 9

Qualified Person*

A person having training, expertise and three years professional experience in building energy-use analysis and any of the following:

- A licensed professional architect or engineer in the jurisdiction where the project is located
- A person with Building Operator Certification (BOC) Level II by the Northwest Energy Efficiency Council
- A certified commissioning professional
- A qualified energy auditor
- A certified energy manager (CEM) in current standing, certified by the Association of Energy Engineers (AEE)
- An energy management professional (EMP) certified by the Energy Management Association.

Responsibilities:

- Determine whether or not the building seeking compliance has an energy use intensity target (EUI_t)
- Establish the energy use intensity target (EUI_t)
- Submit forms as specified in Normative Annex Z documenting compliance
- State in writing on Form A that the Energy Management plan and Operations and Maintenance program requirements have been developed, implemented and maintained
- Review the commissioning report and certify that the EEMs are functioning as intended (may also be performed by the Qualified Energy Auditor)
- Signature on Form A

Exemption Pathway

- Compliance Form H

EXEMPTION PATHWAY

Industrial

Manufacturing

Agricultural

Pending Demo

Financial Hardship

Unoccupied

Meets EUI Pathway

- Compliance Forms A-C
- Energy Management Plan
- O&M Plan

**FOR BUILDINGS
MEETING THE EUI**

Compliance Forms

+

Energy
Management
Plan

+

O&M Plan

Investment Pathway

- Energy Audit
- Construction Project
- Compliance Forms
- Energy Management
- O&M Plan
- RCx Example

*** FOR BUILDINGS NOT MEETING THE EUI:
INVESTMENT PATHWAY**

Energy Audit



Design



Construction



Compliance Forms

Energy
Mgmt.
Plan

+

O&M
Plan

Conditional Compliance

- Energy Audit
- **Optimized Bundle**
- Compliance Forms
- Energy Management
- O&M Plan
- RCx Example

**FOR BUILDINGS NOT
MEETING THE EUI: CONDITIONAL
COMPLIANCE PATHWAY**

Energy Audit



Limited Design



Construction



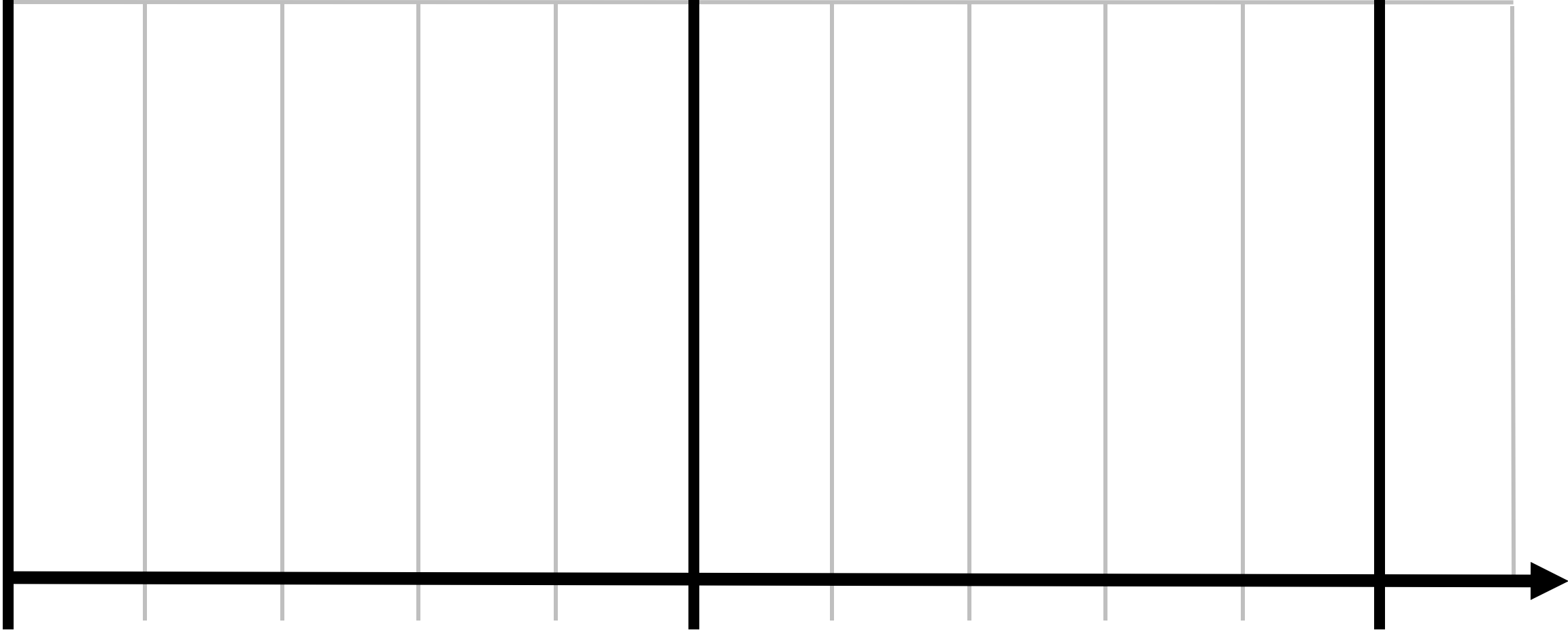
Compliance Forms

Energy
Mgmt.
Plan

+

O&M
Plan

Compliance Timeline

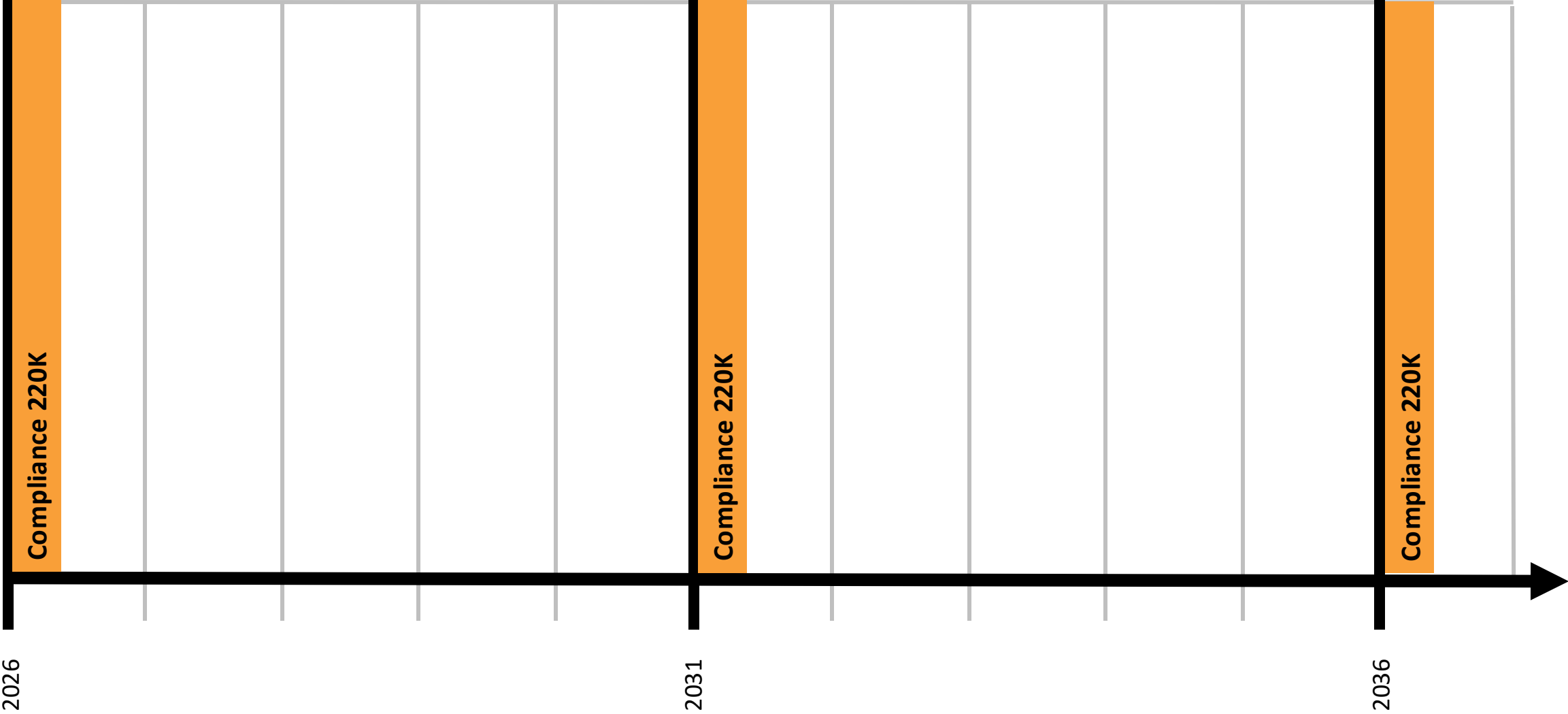


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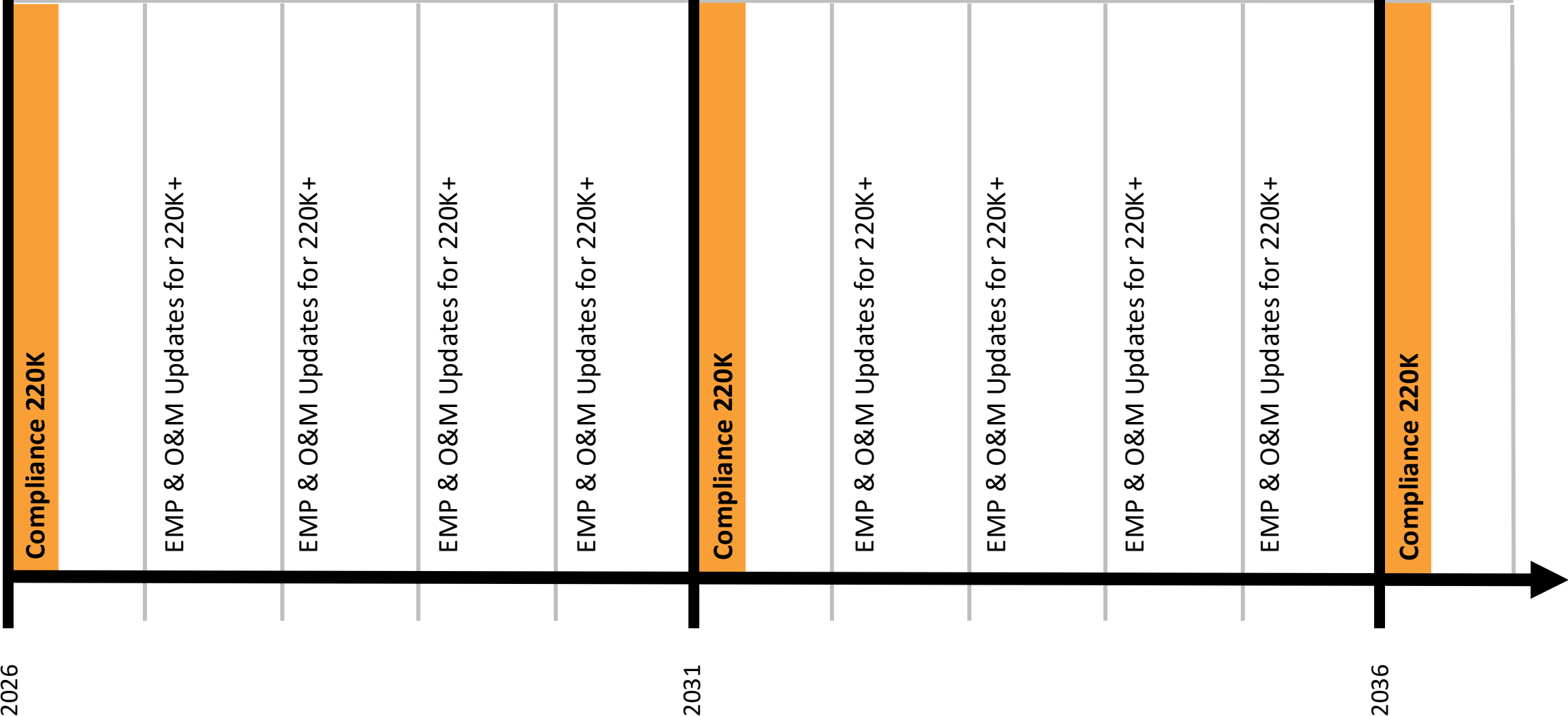
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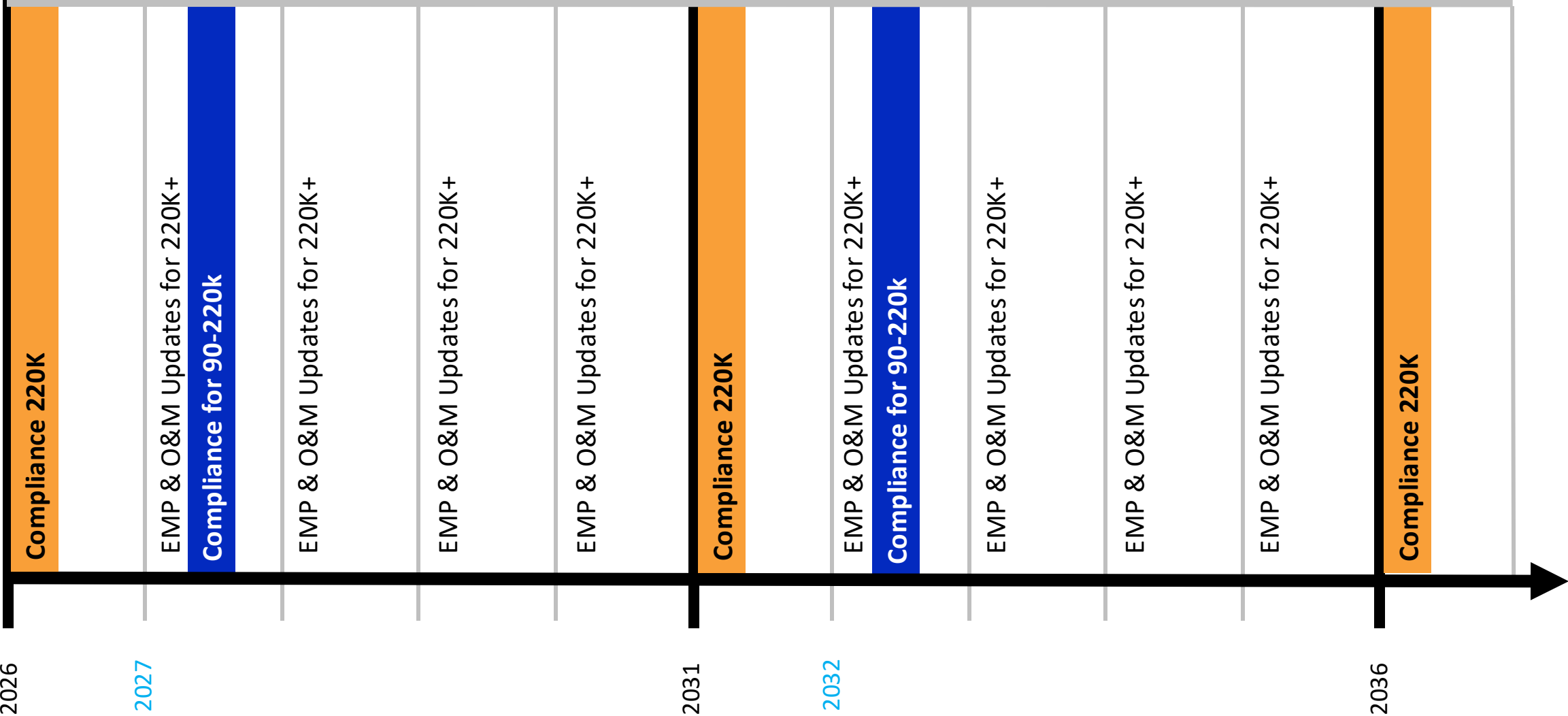
Compliance Timeline



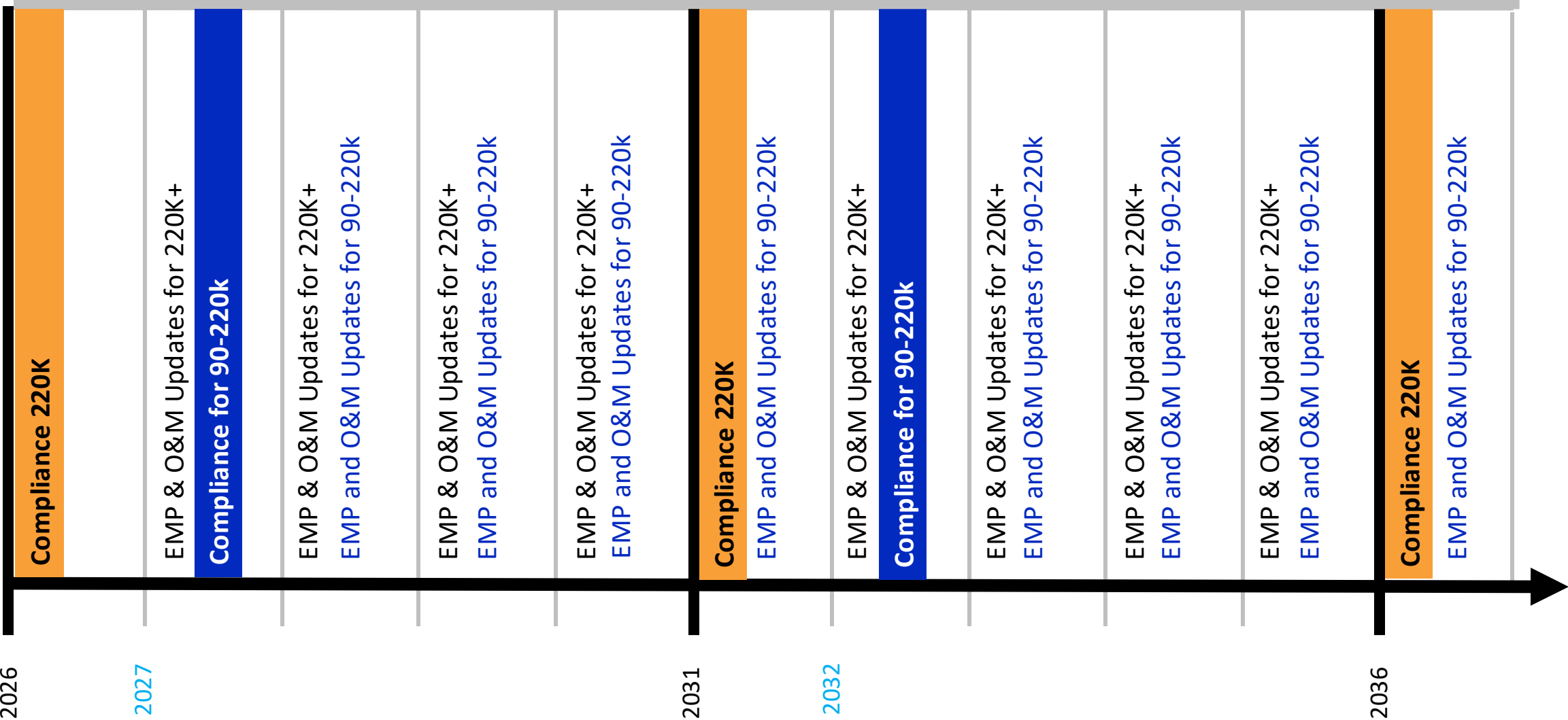
Compliance Timeline



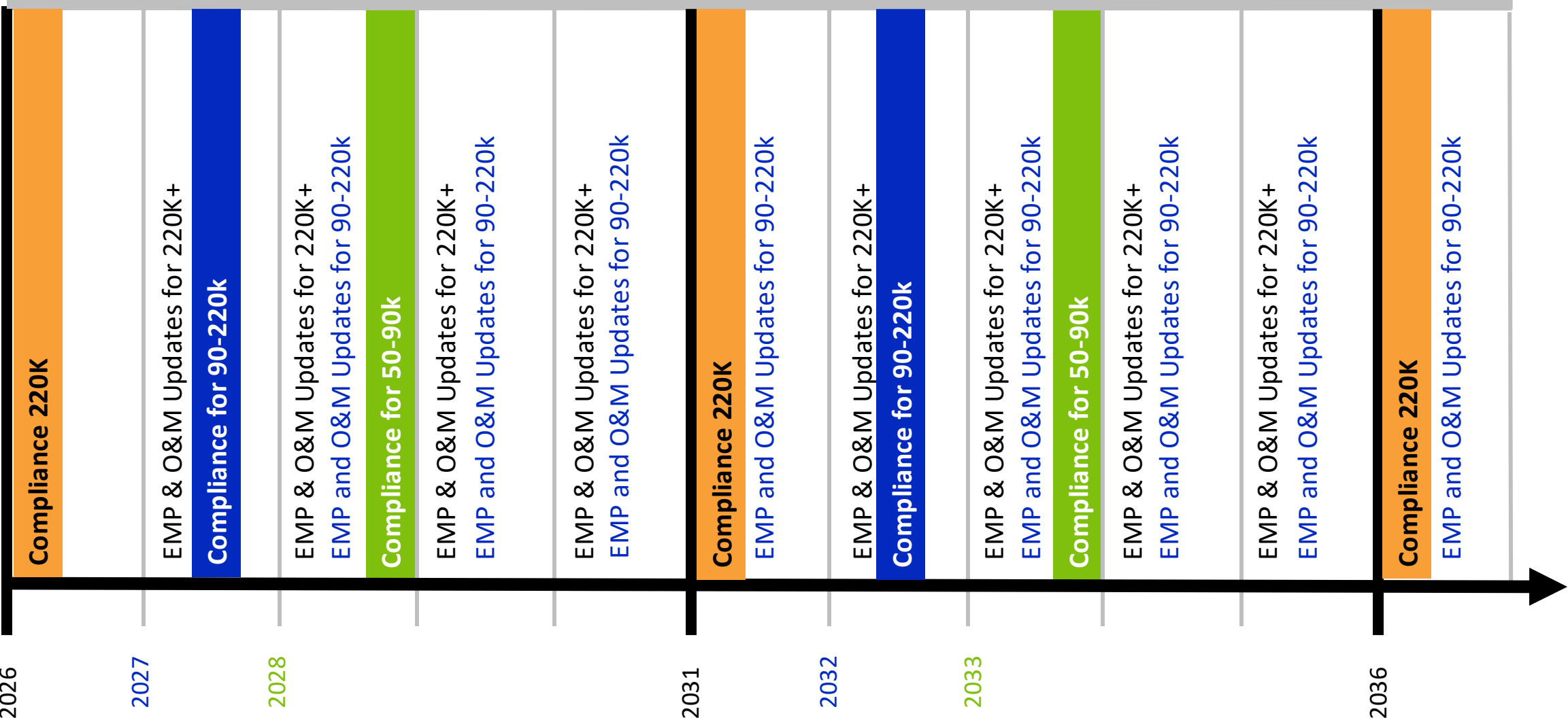
Compliance Timeline



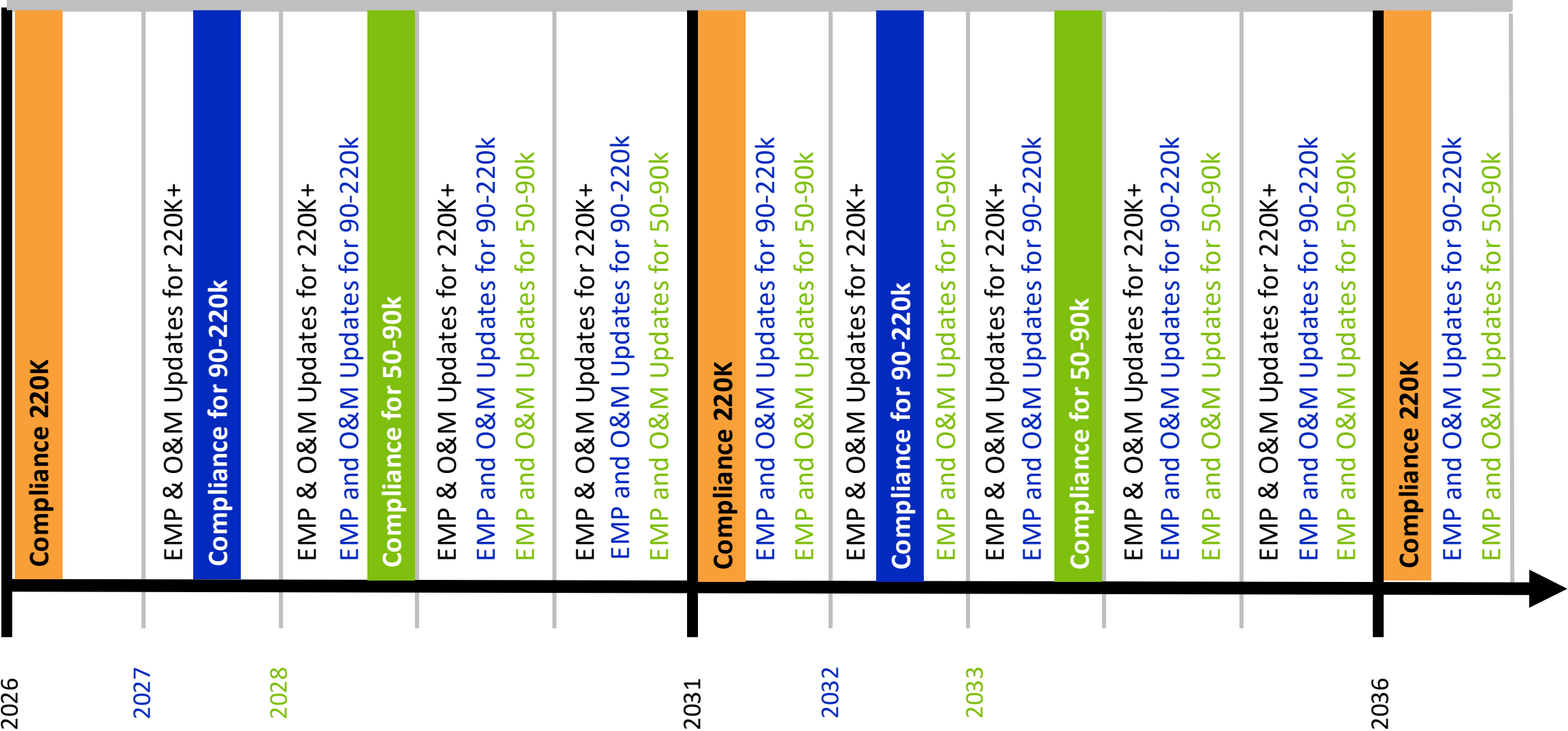
Compliance Timeline



Compliance Timeline



Compliance Timeline



Approach to Clean Buildings

- Ignore and pay fines
- In house
- Outsource
- Combination of in house and outsource

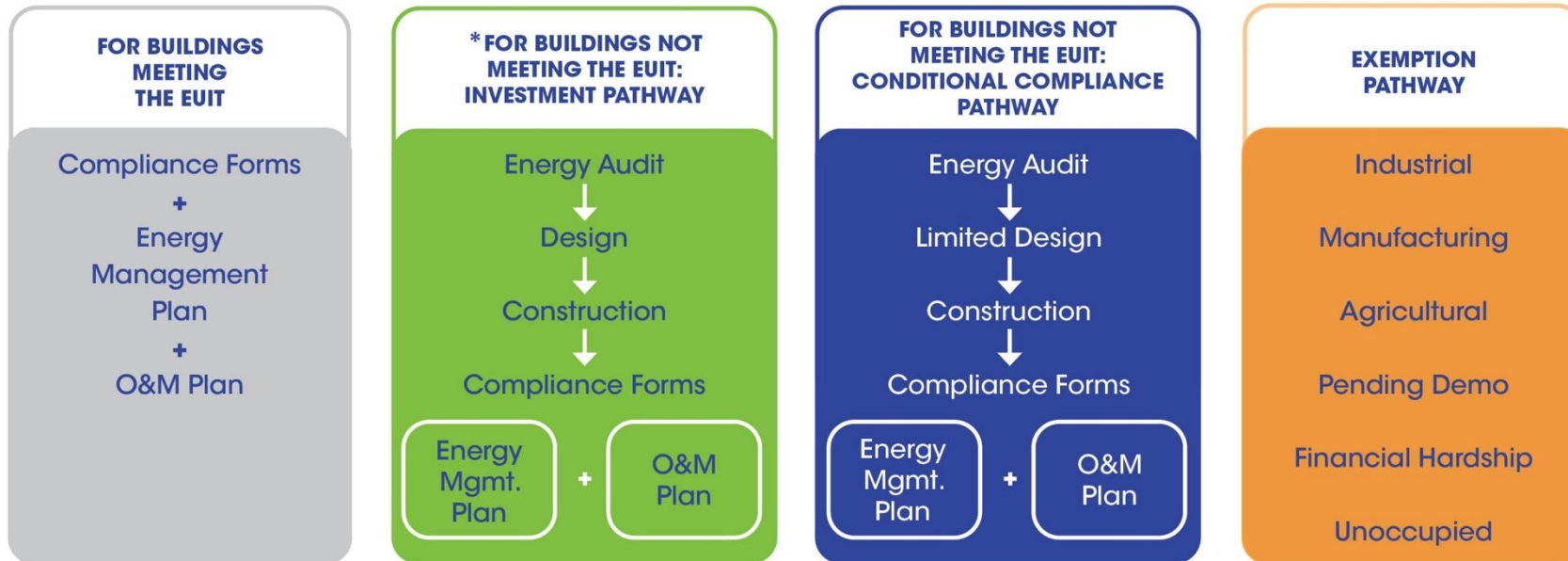
Non-Compliance (Ignore)

Gross Floor Area (GFA)	Days out of compliance
4,697,464	1825

Refuse to Comply	Base \$	Incurred fee per days out of compliance ⁴	Total Assessed Penalty ⁶
Penalties for building owners that choose to pay the fine rather than pursuing compliance.	\$240,000.00	\$7,046,196.00	\$7,286,196.00

The Four Compliance Pathways

All Eligible Buildings > 50,000 SF:
Determine Energy Use Intensity Target (EUI_t) Benchmark Using the Energy Star Portfolio Manager



* RISK: Fine if EUI_t is not met (or use Path 3)

Timeline for Demonstrating 12 Months of Compliance



Benchmarking

250 Sacajawea	141,658	Pass	36.0 / 41.6 / 86.5%
252 Salk	149,041	Pass	38.0 / 41.8 / 90.9%
255 Shaw	157,992	Pass	34.6 / 42.3 / 81.8%
303 Ferris	309,724	Pass	49.1 / 49.8 / 98.6%
320 Shadle Park	286,764	Pass	45.5 / 49.1 / 92.7%
467 On Track Academy	52,791	Pass	33.8 / 40.8 / 82.8%
105 Arlington	56,322	Fail	59.6 / 46.9 / 127.1%
111 Bemiss	52,543	Fail	56.7 / 46.5 / 121.9%
129 Finch	74,495	Fail	55.2 / 47.1 / 117.2%
137 Grant	53,807	Fail	54.9 / 47.4 / 115.8%
139 Hamblen	53,923	Fail	56.5 / 47.1 / 120.0%
159 Linwood	79,364	Fail	45.5 / 40.0 / 113.8%
161 Logan	54,011	Fail	57.7 / 47.3 / 122.0%
165 Longfellow	53,227	Fail	57.5 / 47.2 / 121.8%
168 Moran Prairie	53,657	Fail	61.6 / 47.1 / 130.8%
175 Regal	57,844	Fail	98.7 / 55.6 / 177.5%
187 Stevens	53,714	Fail	57.3 / 47.2 / 121.4%
191 Westview	61,481	Fail	62.8 / 47.1 / 133.3%
197 Willard	53,299	Fail	66.2 / 47.2 / 140.3%
210 Chase	114,226	Fail	61.0 / 49.4 / 123.5%
260 Garry	105,973	Fail	68.7 / 49.0 / 140.2%

305 Lewis and Clark	306,987	Fail	59.8 / 48.5 / 123.3%
315 Rogers	245,329	Fail	54.6 / 50.0 / 109.2%
405 Spokane Montessori	87,809	Fail	70.2 / 47.1 / 149.0%
470 Skill Center	109,496	Fail	57.2 / 50.0 / 114.4%
485 Libby Center	65,875	Fail	91.0 / 49.0 / 185.7%
909 District Warehouse	110,010	Fail	55.0 / 33.6 / 163.7%
107 Audubon	53,428	Fail	47.6 / 46.5 / 102.4%
121 Cooper	53,563	Fail	52.0 / 47.2 / 110.2%
133 Garfield	53,148	Fail	53.3 / 47.2 / 112.9%
147 Hutton	80,924	Fail	48.3 / 47.1 / 102.5%
157 Lincoln Heights	57,161	Fail	49.1 / 47.1 / 104.2%
181 Roosevelt	53,319	Fail	50.4 / 47.2 / 106.8%
183 Sheridan/Scott	51,113	Fail	52.7 / 47.3 / 111.4%
193 Whitman	54,922	Fail	50.0 / 47.1 / 106.2%
198 Woodridge	51,521	Fail	50.6 / 47.2 / 107.2%
310 North Central	269,471	Fail	50.7 / 49.8 / 101.8%
901 Admin Bldg Pkg Lite	55,654	Fail	59.6 / 55.4 / 107.6%
414 Bryant Campus	6,590	Exempt	/ /
421 MAP Ann	7,784	Exempt	/ /
908 Nevada Warehouse	2,006	Exempt	/ /
951 ITSC Bldg	19,550	Exempt	85.6 / 100.0 / 85.6%

School Name Number	GSF	Path	wnEUI / EUI / % over
101 Adams	34,861	Tier 2	94.1 / 47.1 / 199.8%
108 Balboa	31,006	Tier 2	61.9 / 47.1 / 131.4%
148 Indian Trail	26,639	Tier 2	88.2 / 47.1 / 187.3%
153 Lidgerwood	48,254	Tier 2	60.4 / 47.1 / 128.2%
167 Madison	35,833	Tier 2	/ 47.1 /
199 Wilson	45,963	Tier 2	45.6 / 40.0 / 114.0%
408 The Community School	26,081	Tier 2	/ /
412 Pratt		Tier 2	/ /
925 Old Jeff	41,426	Tier 2	/ /
113 Browne	54,120	Pass	37.0 / 47.1 / 78.6%
131 Franklin	76,862	Pass	31.6 / 40.0 / 79.0%
145 Holmes	52,643	Pass	45.2 / 47.1 / 96.0%
151 Jefferson	69,986	Pass	43.8 / 47.1 / 93.0%
169 Mullan Road	70,918	Pass	44.5 / 47.1 / 94.5%
177 Ridgeview	50,338	Pass	41.7 / 47.1 / 88.5%
203 Glover	151,659	Pass	34.8 / 41.4 / 84.1%
220 Yasuhara	149,321	Pass	33.7 / 41.6 / 81.0%
230 Flett	144,635	Pass	16.5 / 41.4 / 39.9%

Finding the Right Help

- Verify Approach & Motives



Three Owner Examples

- Example 1: Many Buildings
- Example 2: Eight Buildings All Tier 1, All Failing
- Example 3: Three Tier 1, Two Tier 2

Example 1: Many Buildings

- Hire consultant to benchmark
- Categorize buildings
 - Tier 1 – Passing
 - Tier 1 – Failing
 - Tier 2
 - Exempt
- Prioritize Audits/Forms/EMP/O&M based on Compliance Timeline
- Secure Audit Funding
- Identify Optimized Bundle in all buildings
- Plan for and budget Implementation

Benchmarking

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220 Yasuhara	149,321	Pass	33.7 / 41.6 / 81.0%
230 Flett	144,635	Pass	16.5 / 41.4 / 39.9%

Example 2: Eight Buildings

- Select consultant to benchmark
- Secure Audit Funding
- Prioritize Audits/ Forms/ EMP/ O&M based on Compliance Timeline
- Identify Optimized Bundle in all buildings
- Plan for and budget Implementation

Example 3: 3 Tier 1, 2 Tier 2

- Benchmark in house
- Use last of ESSER funds
- Complete Tier 1 Early Adopter Incentive Application
- Secure Audit Funding
- Prioritize Audits/ Forms/ EMP/ O&M based on Compliance Timeline
- Identify Optimized Bundle in all buildings
- Plan for and budget Implementation

Three Building Examples

- Meeting the EUIt
 - Building 1
- Failing by Less Than 15%
 - Building 2
- Failing by More than 15%
 - Building 3

Building 1

- Meeting EUIt
- EMP
- O&M Plan
- Forms A-C
- Portal/Submit



Building 2

- Barely Failing EUIt
- Self-Implement
- EMP
- O&M Plan
- Forms A-C
- Portal/Submit



Building 3

- Failing EUIt
- ASHRAE 2
- Optimized Bundle
- Verify Savings
- EMP/O&M
- Forms A-F
- Portal/Submit



County Best Practices

- Verify Benchmarking
- ***Get the Right Help!***
- Engage Commerce
 - Technical
 - Funding
- Secure Audit Funding (if applicable)

Thank you!!!

For more information, find us here:

www.customenergyconsultants.com

