

AHRI

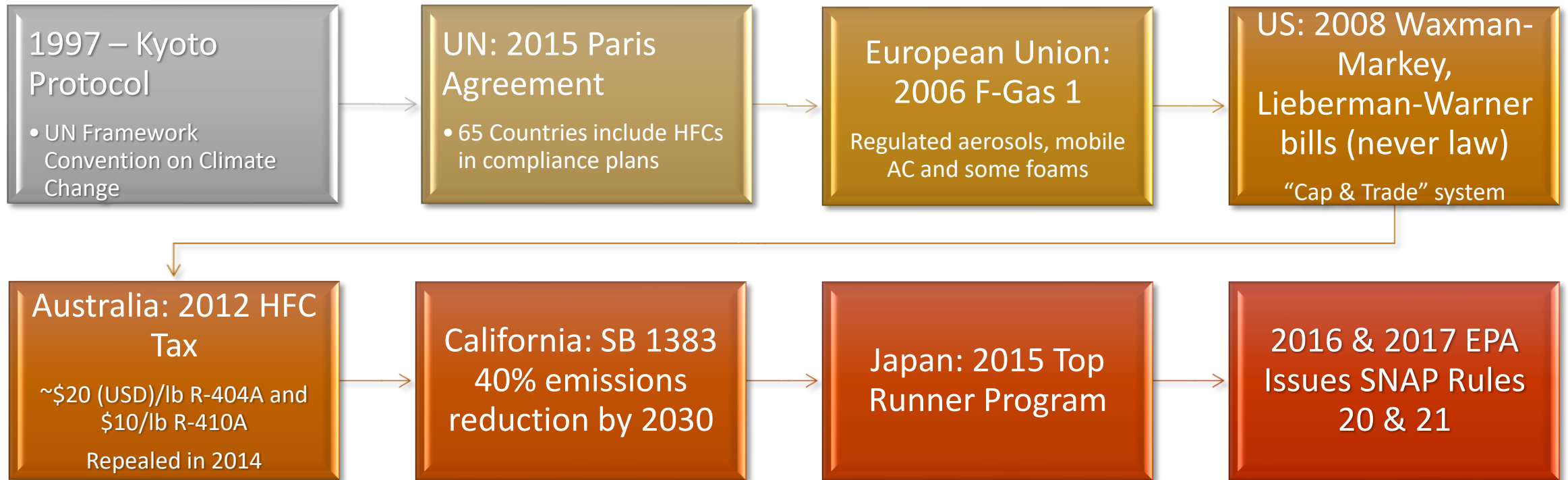
Climate-Motivated Refrigerant Transition

April 10, 2019

New Jersey Clean Air Council
Public Hearing

Allison Maginot – Director, State Government Relations
Lauren MacGowens – Lead Regulatory Advisor, Refrigeration Technology
Helen Walter-Terrinoni – Vice President, Regulatory Affairs

The World Is Regulating High Global Warming Potential HFCs



Various countries started regulating HFCs on different schedules

Bottom Line: Industry agreed that a universal system under the Montreal Protocol was best

SNAP 20 Vacated in part by DC Circuit (Feb. 2018)

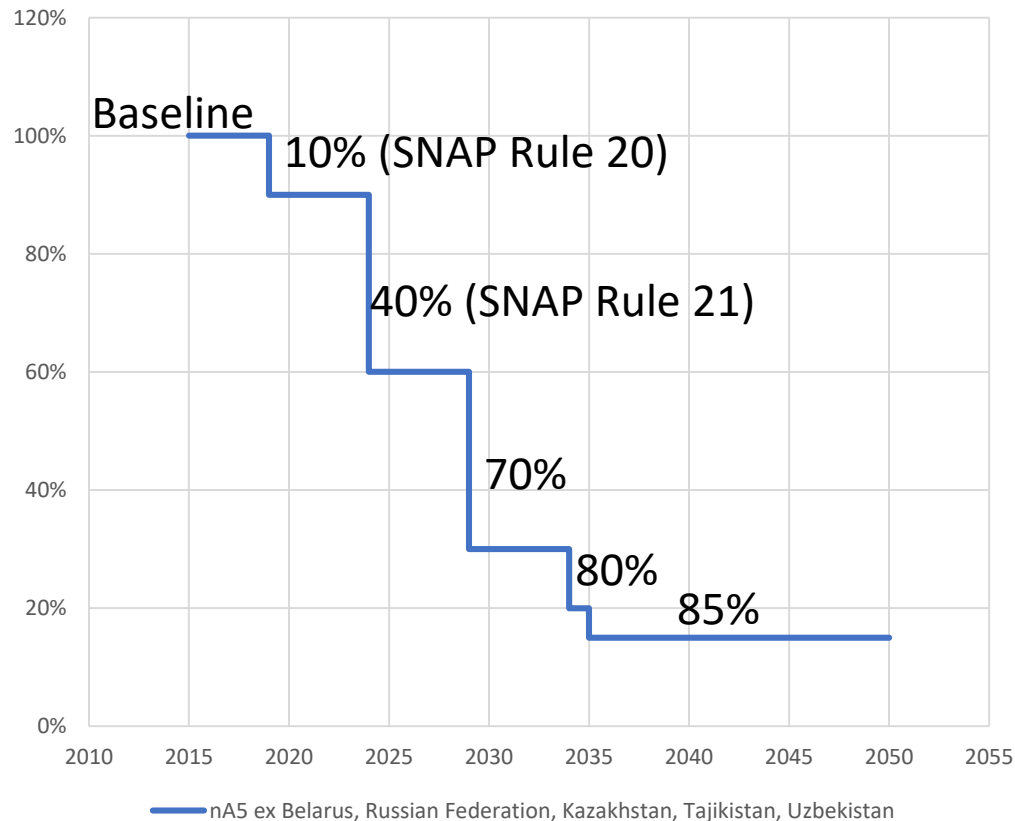
- Applies to ODSs only
- Rewrite expected in Q2 2019

SNAP 21 Vacated (2019)

- Vacated April 5, 2019

Montreal Protocol HFC Phasedown in United States

Kigali Amendment to the Montreal Protocol
HFC Phasedown Schedule as % of Baseline



Bottom Line:

SNAP Rules 20 & 21 and Section 608 Refrigerant Management HFC Rule provided a roadmap to the first 2 steps of the HFC phasedown

Due to litigation, that federal roadmap is no longer clear

EPA SNAP Rule 20

- “Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes under the Significant New Alternatives Policy Program”
- Final rule published July 20, 2015
- 2016 litigation regarding authority to regulate HFCs under SNAP based on GWP
- 2017 DC Circuit ruled EPA under SNAP only had authority to regulate replacements for ODSs

Banned High GWP Alternatives in End Uses:	Effective Date
Supermarket Systems (Retrofitted)	July 20, 2016
Supermarket Systems (New)	January 1, 2017
Remote Condensing Units (Retrofitted)	July 20, 2016
Remote Condensing Units (New)	January 1, 2018
Stand-Alone Retail Food Refrigeration Equipment (Retrofitted)	July 20, 2016
Stand-Alone Medium-Temperature Units with a compressor capacity below 2,200 Btu/hour and not containing a flooded evaporator (New)	January 1, 2019
Stand-Alone Medium-Temperature Units with a compressor capacity equal to or greater than 2,200 Btu/hour and Stand-Alone Medium-Temperature Units containing a flooded evaporator (New)	January 1, 2020
Stand-Alone Low-Temperature Units (New)	January 1, 2020
Vending Machines (Retrofitted)	July 20, 2016
Vending Machines (New)	January 1, 2019



EPA SNAP Rewrite

January 2018, the DC Circuit Court of Appeals voted against rehearing the case related to SNAP Rule 20. SNAP Rule 20 was partially vacated per the Court's mandate.

- EPA has authority to regulate HFCs as acceptable or unacceptable replacements for ozone depleting substances. The Court specifically directed EPA to provide relief to manufacturers already using HFCs.
- EPA will not enforce SNAP Rule 20 related to HFCs until the rule is re-written to comply with the Court's decision.
- EPA is re-writing applicable regulations through a new rulemaking process which generally takes approximately 6-18 months. First stakeholder meeting was May 2018; proposed rule will likely be published mid-2019

EPA SNAP Rule 21

- “Protection of Stratospheric Ozone: Significant New Alternatives Policy Program New and Changed Listings”
- Final rule published December 1, 2016

End Use	Effective Date
Cold Storage Warehouses (New)	January 1, 2023
Retail food refrigeration – refrigerated food processing and dispensing equipment (new)	January 1, 2021
Centrifugal chillers (new)	January 1, 2024
Positive displacement chillers (new)	January 1, 2024
Household refrigerators and freezers	January 1, 2021



Bottom Line:
EPA is reworking SNAP Rule 20.

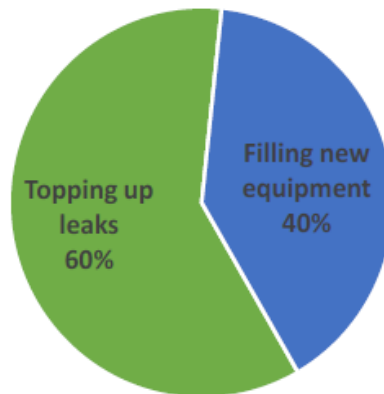
SNAP Rule 21 was vacated by the US Circuit Court of Appeals April 5th. The EPA will issue a guidance document in response to the court’s decision, clarifying how it will implement the decision, but will likely rework the rule.

United Nations Environment Program Fact Sheet

- Most significant global issue is leaky stationary refrigeration and air conditioning equipment

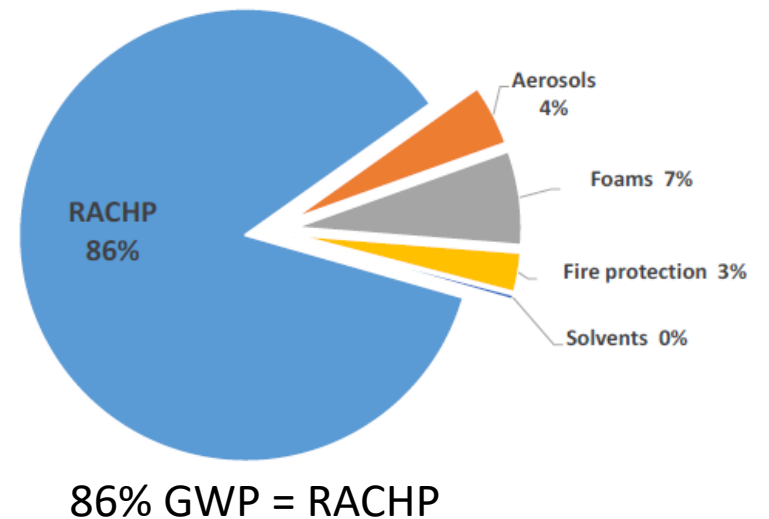
Global: ~52% of GWP services leaking equipment

Figure 6: HFC use for topping up leaks in RACHP



60% of the 86% = topping up leaks = 52%

Figure 4 Markets using HFCs, % of tonnes CO₂ 2012



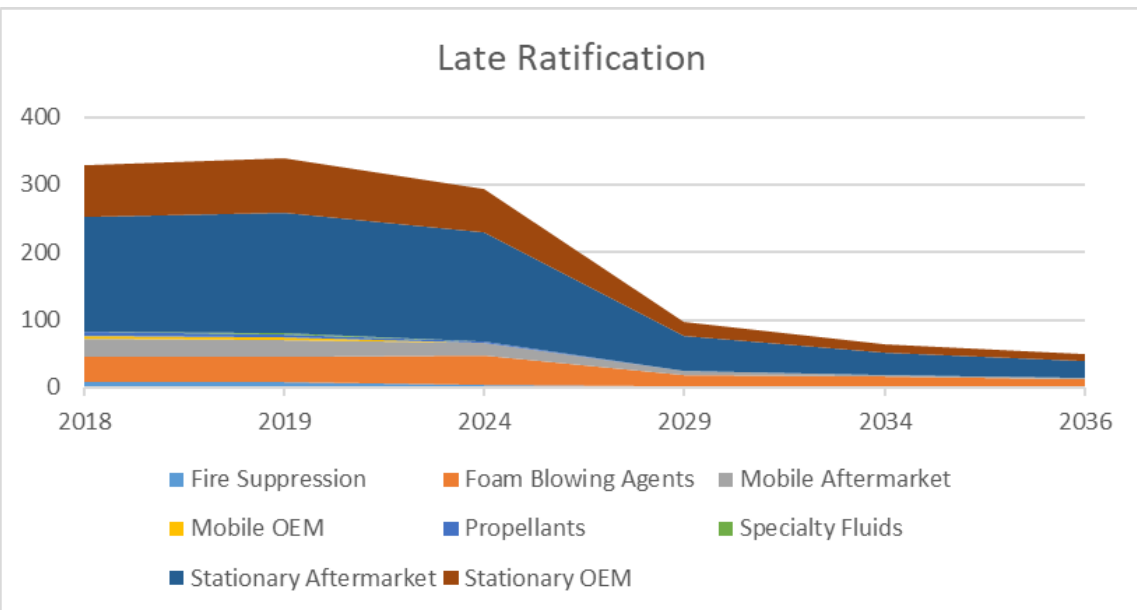
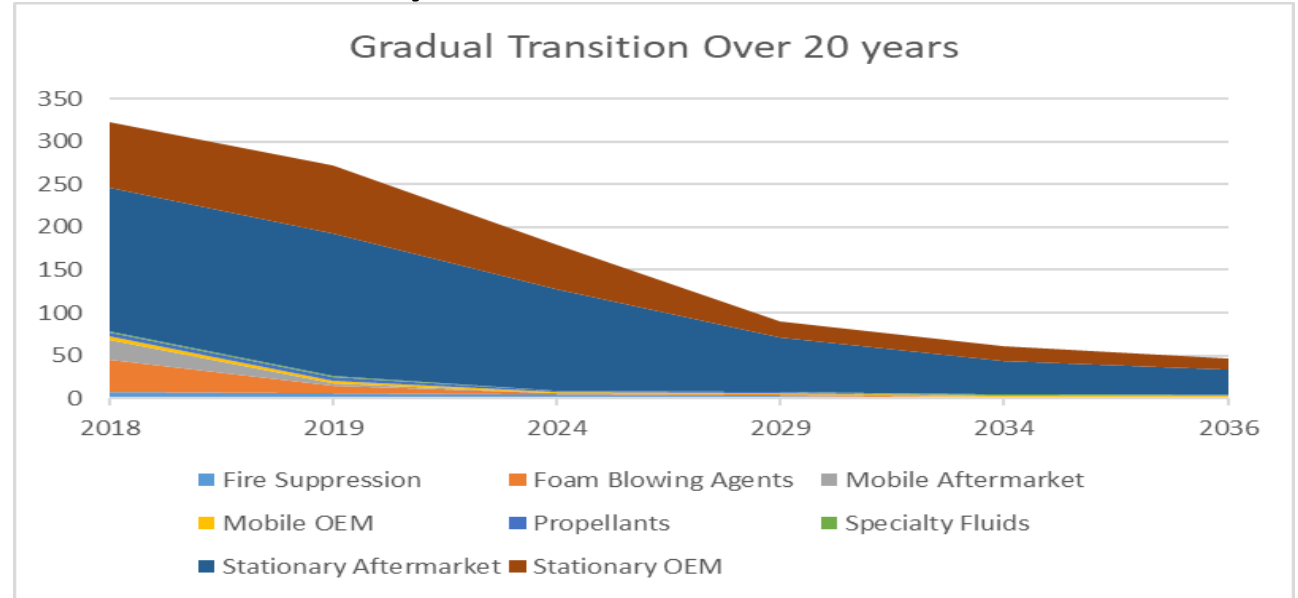
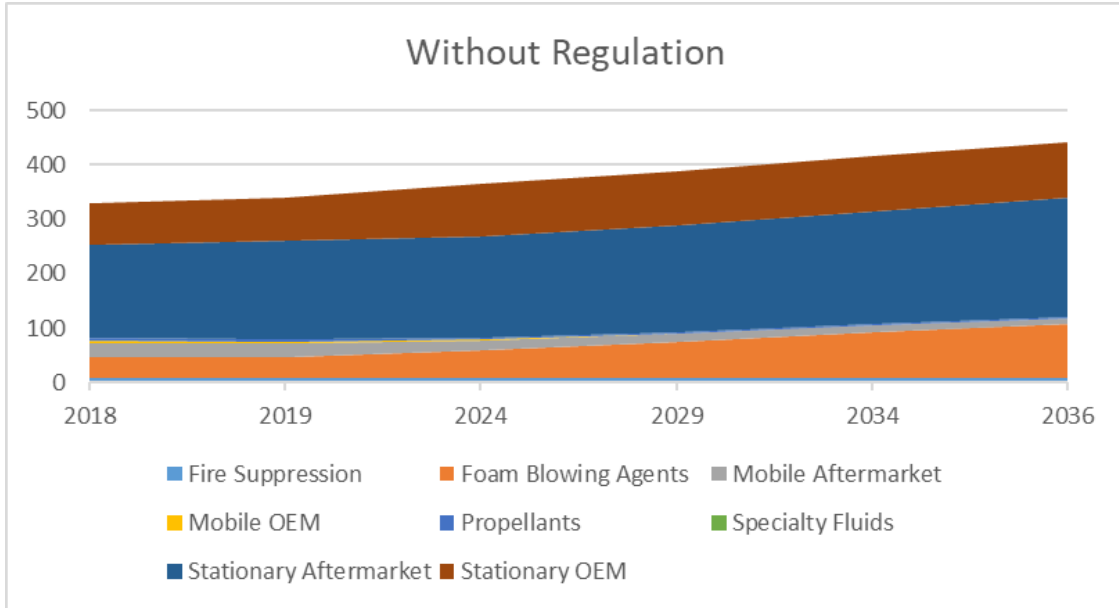
Section 608 Refrigerant Management

- **TECHNICIAN CERTIFICATION**
- **REFRIGERANT LEAKS:** AC and refrigeration equipment with 50 lb or more are subject to specific EPA requirements for leak repair
- **REFRIGERANT RECOVERY**
- **SAFE DISPOSAL**
- **RECLAMATION**
- **RECORDKEEPING**
- **REFRIGERANT SALES RESTRICTION**

Bottom Line:

- Leak reduction requirements and refrigerant management policies are an important part of compliance with the Kigali Amendment
- EPA is writing a new proposed rule regarding applicability to HFCs

How do we achieve an orderly transition?



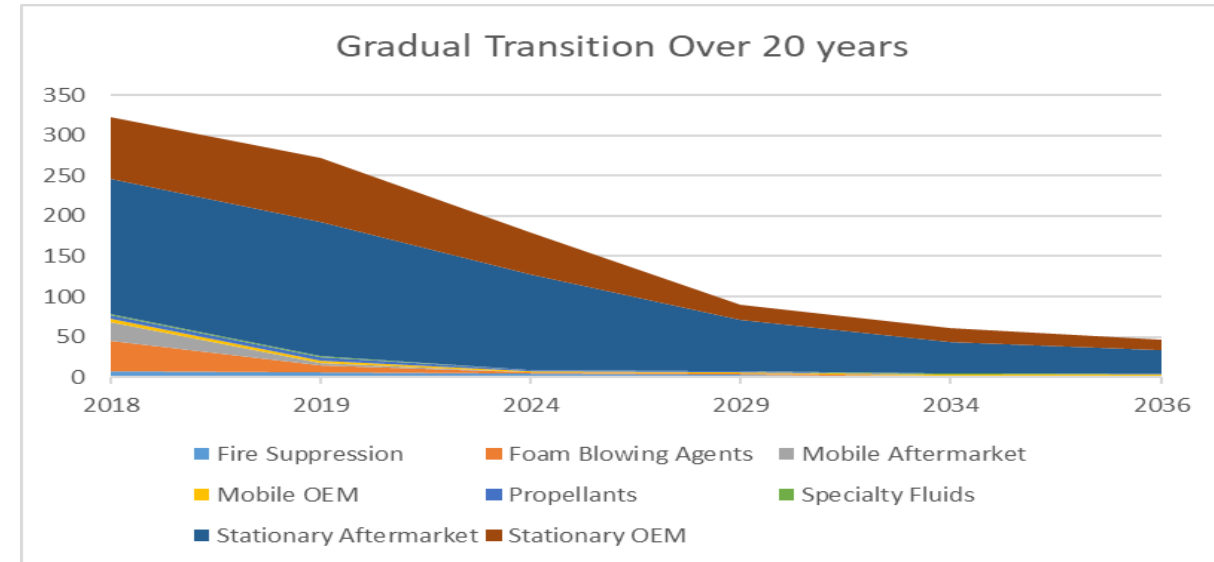
Bottom Line:
Regulations now minimize the cliff-like impact of late ratification

What are the next challenges to minimize?

- Preserve GWP long-term
- Servicing equipment beyond 2035
 - Reclaim
 - Leaking equipment **MUST** be addressed
 - Need more stability for reclaimers

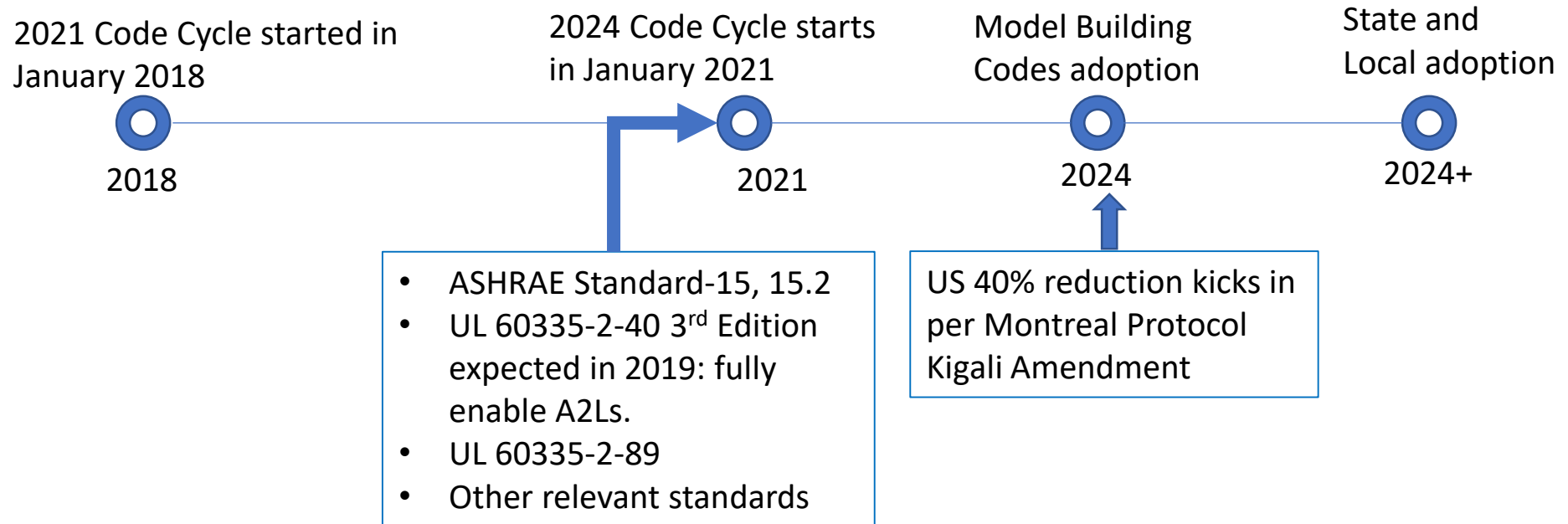
Safely enable low GWP refrigerants

- Safety: end-to-end supply chain (shipping, training, certification, installation, maintenance)
- All incidents investigated
- Standards and codes*
- Enforcement



Code Revision Timeline

The use of next generation refrigerants requires safety standard adoption through codes.



Next Steps