



RAP

Energy solutions
for a changing world

EPA's Clean Power Plan (CPP): How Will it Work and Will it Be Upheld?

Environmental and Energy Study Institute (EESI)

Rayburn House Office Building, Washington, DC

April 8, 2015

Presented by
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Introduction



- The Regulatory Assistance Project (RAP) is a global, non-profit team of energy experts, mostly veteran regulators, advising current regulators on the long-term economic and environmental sustainability of the power and natural gas sectors. (www.raponline.org)
 - *Non-advocacy; no interventions*



- Ken Colburn is a Senior Associate at RAP. His experience as an air quality regulator came as Air Director for the State of New Hampshire and as Executive Director of NESCAUM.

Overview

- Setting aside the hype
- Issues and ideas on how the CPP will work
 - Final rule hits “reset button”
 - States get “first crack”
 - Not a “SIP”
 - Beyond the building blocks
 - Consider integrated approaches; co-benefits
 - Consider multi-state approaches
 - Federal enforceability
 - What will the Federal Plan look like?
- Key takeaways

Setting Aside the Hype

Can Carbon Kick-Start The Next Capex Cycle?

We see the next wave of capex in the utility industry driven by the forthcoming regulation of carbon emissions in the US. While this has long been lamented by many utilities and states alike, we see the EPA's forthcoming finalization of 111(d) rules which regulate existing sources carbon emissions as legally binding under the Supreme Court's *Mass. v. EPA* decision. We see many industry participants as actively acknowledging the way forward on carbon and advocating with the EPA for a palatable approach. Simultaneously impacted parties are preparing action plans for their state utility commissions and EPA's alike. State environmental regulators will become substantially more important, with responsibilities rivaling those of the PUCs, effectively dictating resource adequacy considerations as they unveil their respective State Implementation Plans (SIPs) in coming years (two-year process following the final release of regulations this summer). We look for carbon to increasingly become the defining issue for US Utilities in 2H15, particularly with MATS retirements and retrofits largely 'achieved'. The question is really when and what capex becomes a reality, with timing the real question.

If you're not **5** **1** **3** **4** **2** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100** **101** **102** **103** **104** **105** **106** **107** **108** **109** **110** **111** **112** **113** **114** **115** **116** **117** **118** **119** **120** **121** **122** **123** **124** **125** **126** **127** **128** **129** **130** **131** **132** **133** **134** **135** **136** 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US Electric Utilities & IPPs

Does MATS Really Matter?

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Recent industry buzz around Supreme Court hearings of EPA regs is misled

With many industry participants increasingly speculating over whether the Supreme Court will uphold the EPA's Mercury and Air Toxics Standards (MATS) regulations, we wanted to emphasize we see little in immediate practical implications on power markets arising from a scenario where the Supreme Court overturns MATS. Rather, with the current gas price environment, it virtually ensuring limited run times on coal plants, particularly of the App. capacity which are primarily impacted by these regulations, we do not think coal assets will elect to continue operations. Moreover, few have cleared PJM's capacity market, and will not have the opportunity to do so via incremental – as such we believe many of these units will be cash flow negative. Even if units were to extend their life, this would largely be through the Summer period. For more on the latest state of coal-to-gas switching, please see our 3/23 note, 'Coal's Gritty Outlook'.

What about the timeline? Might be too late too.

Moreover, with the MATS regulations set to take effect shortly, a ruling in June from the Supreme Court could yet be 'too late' for many of the units to avoid compliance. We think this uncertainty only adds to the potential continued operations. Lastly, with many plants already having indicated their intentions to retire to staff, local permitting authorities, and other grid entities, we believe there is momentum behind many of the contemplated retirements. Among the largest NAPP generators, FirstEnergy, has suggested there is little they could do to delay processes already underway. The exception could yet be plants in politically integrated states with greater latitude. Ultimately, with resource adequacy already in place, we believe few will opt to do so.

What about cost though – could there be more than meets the eye?

The bigger message around the case relates to whether the EPA should explicitly incorporate economic cost-benefit into its review process rather than simply in a separate executive order mandate in the 'Regulatory Impacts Assessment'. While the technical term would suggest the rules are required to be 'appropriate', formally requiring a cost calculation (even if seemingly unrealistically low in our view) would appear to nominally satisfy this requirement. For example, cost impact of \$9.6Bn from these regulations was determined. We see the change as form over substance in the current case, but could prove an angle for opponents of EPA's forthcoming implementation of rules regulating carbon emissions under 111(d) for existing sources, citing the exceptionally meaningful economic impacts. We are generally biased to believe the Supreme Court sides with an agency rulemaking, but see the wider implications from categorically forcing the introduction of economic cost-benefit analyses as potentially having wide ranging implications.

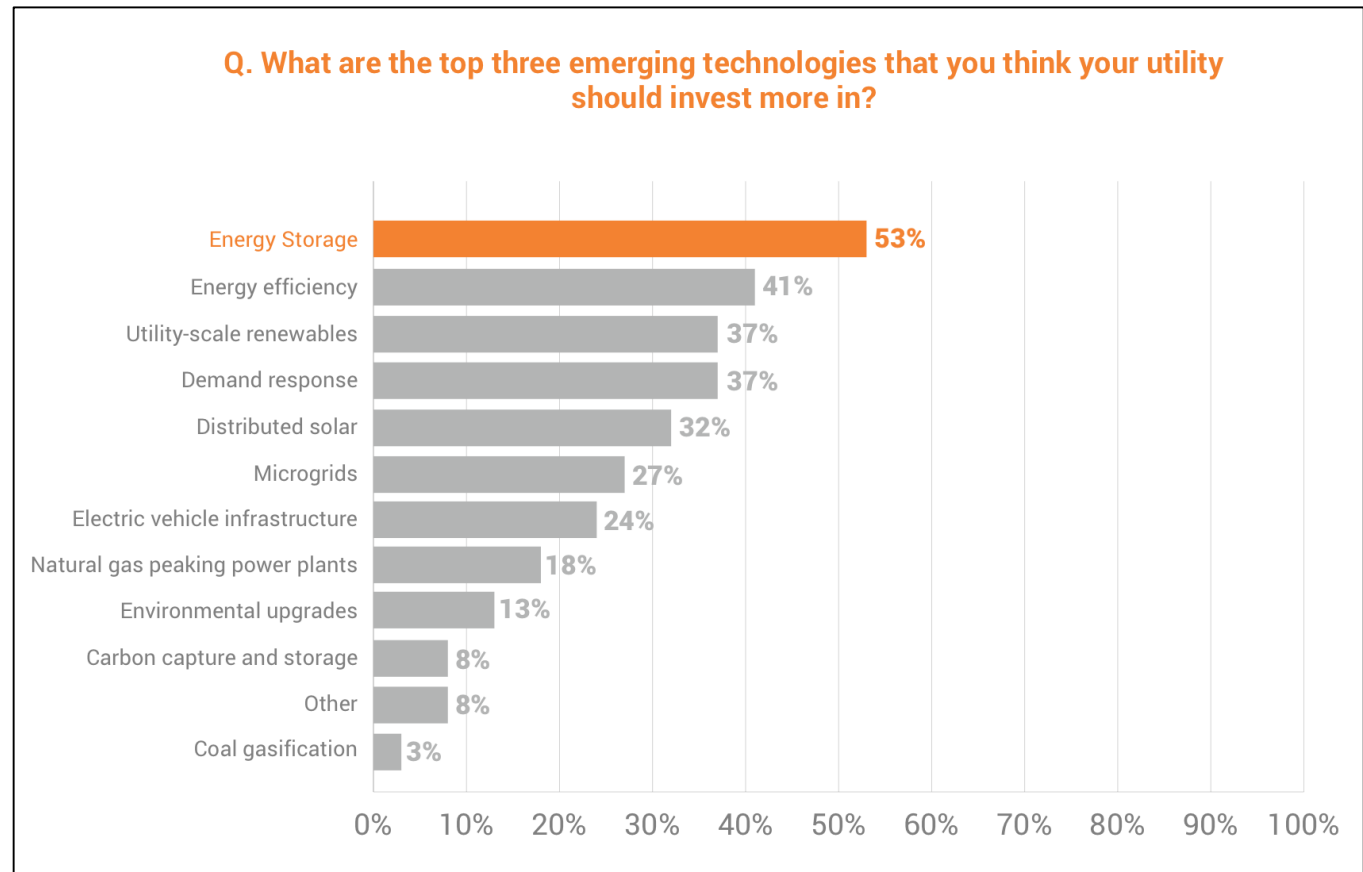
For further reference see our note December 1st, 'Adding Cost to the EPA Equation' when the case was initially taken up.

Setting Aside...

...with the current gas price environment virtually ensuring limited run times on coal plants, we do not think many coal assets will elect to continue operations. Moreover, few have cleared PJM's capacity market...

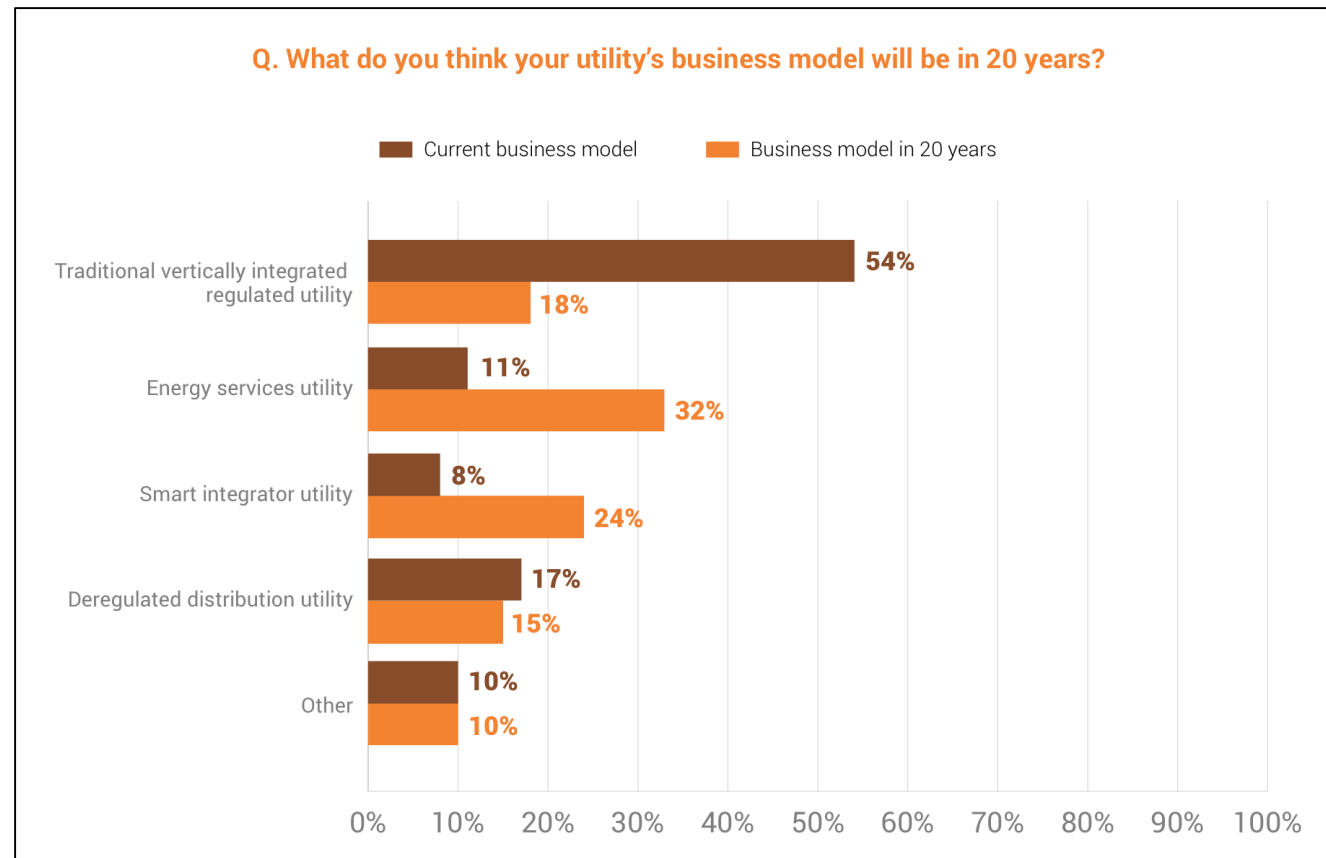
...with resource adequacy plans already in place, we believe few will opt to [delay retirement].

The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer



Source: Utility Dive, State of the Electric Utility 2015

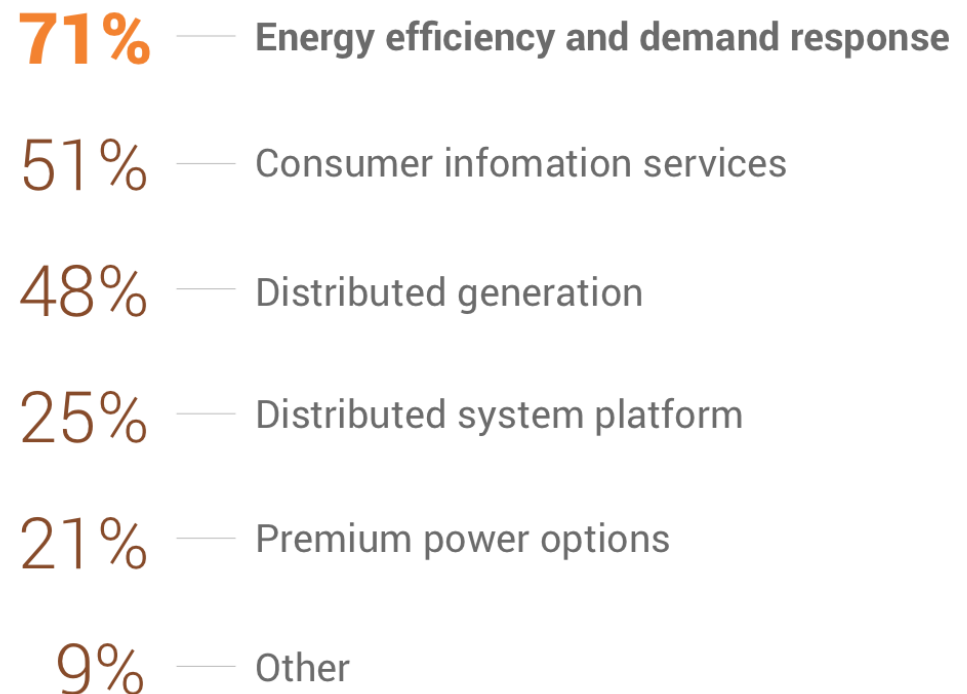
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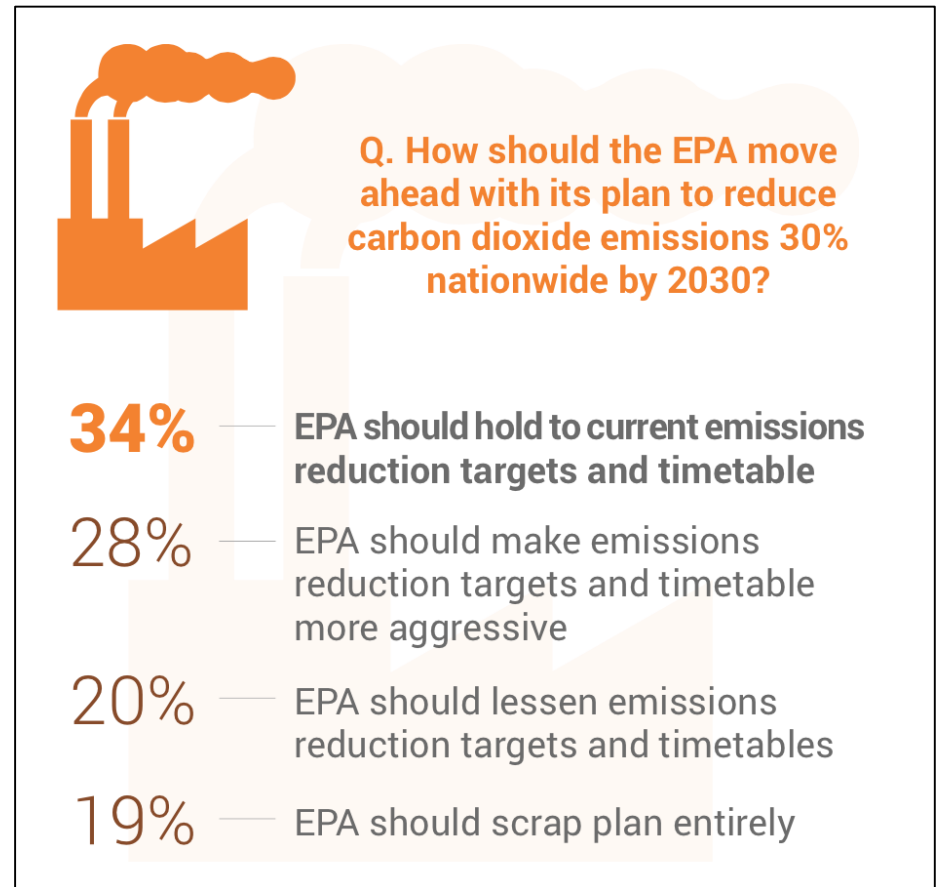
The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer

Q. What new business models is your utility developing?



Source: Utility Dive, State of the Electric Utility 2015

The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer



Source: Utility Dive, State of the Electric Utility 2015

The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer

*Elected officials
may want to
exercise caution
in positioning
their states
against these
industry trends...*

Source: Utility Dive, State of the Electric Utility 2015

CPP Rule Finalization Hits “Reset Button”

- BSER “goes away”
- States get a target, and a clean sheet
- EPA moves into “approve” mode (or not)
- ...and imposes the Federal Plan if necessary



- *Essentially, uncharted waters*

States Get “First Crack” at Implementation...



...but it may be possible to have too much flexibility

...and 111(d) Is Not a § 110 SIP

- “Similar” ≠ identical
 - Little state experience
 - Cost/useful life considerations
 - Measures, timing, contents of state plans
 - Multi-state options
 - Federal response when a state plan is deficient



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Energy solutions
for a changing world

It's Not a SIP: Opportunities and Implications for State 111(d) Compliance Planning

Authors

Christopher James and Kenneth Colburn

Introduction

Chief among them is that unlike Section 110, the CPP offers broad flexibility for states to identify and implement

Some states may approach 111(d) compliance planning as though it were a SIP, but they may endure higher costs, fewer options, and less innovation as a result.

of the states if they constrain their 111(d) planning to SIP approaches.

1 42 U.S. Code § 7411 (d) (1).

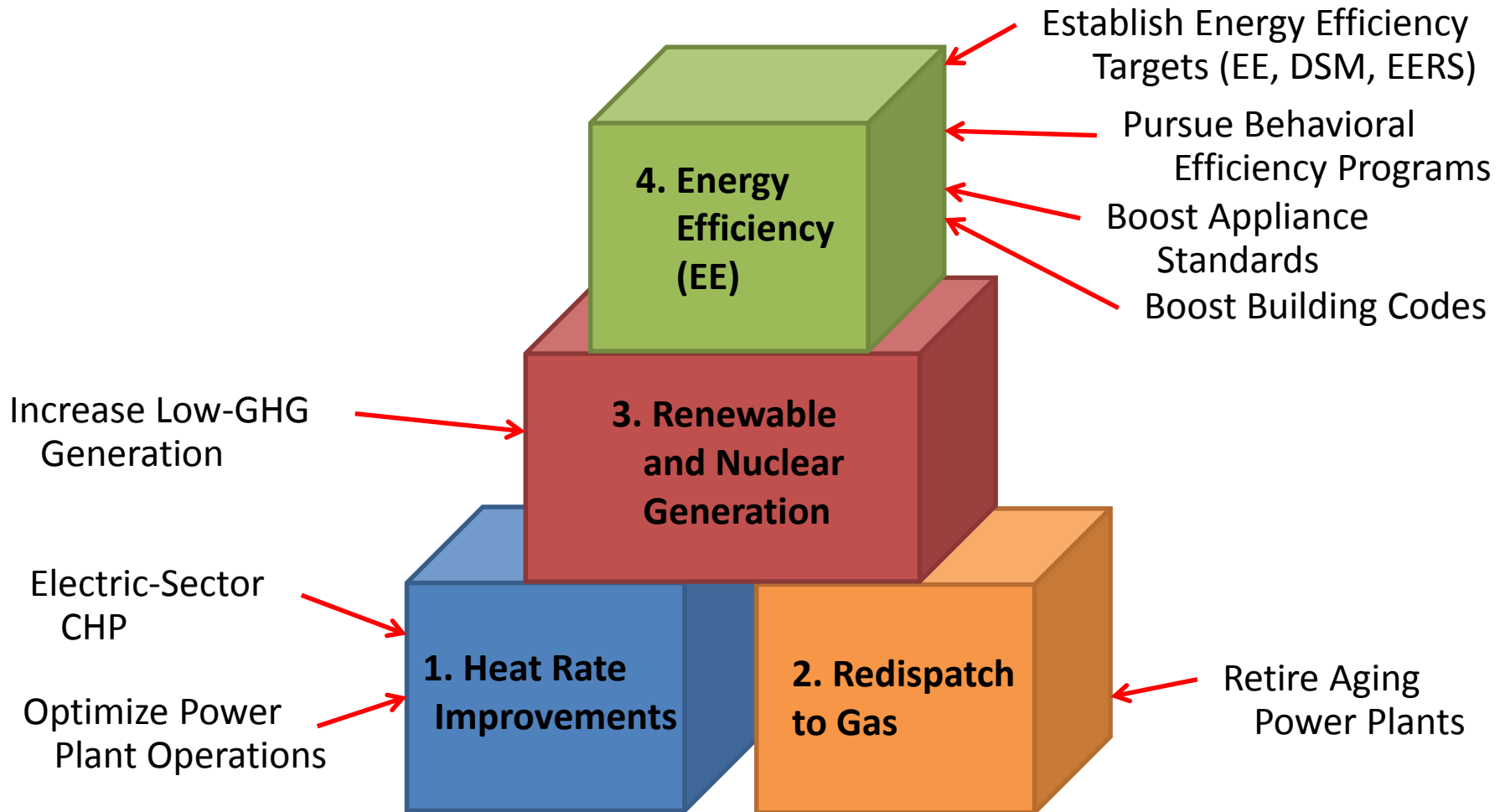
www.raponline.org/document/download/id/7491

CPP Planning Necessitates New Partnership Among State Regulators

	Authority to Adopt Emission Reduction Requirements ?	Authority to Approve Cost Recovery from Ratepayers?
PUCs/PSCs	No	Yes
DEPs/DEQs	Yes	No

“State environmental regulators will become substantially more important, with responsibilities rivaling those of the PUCs, effectively dictating resource adequacy considerations as they unveil their respective ~~State Implementation Plans (SIPs)~~ in coming years.” (UBS, 2015)

Flexibility: EPA's Building Blocks



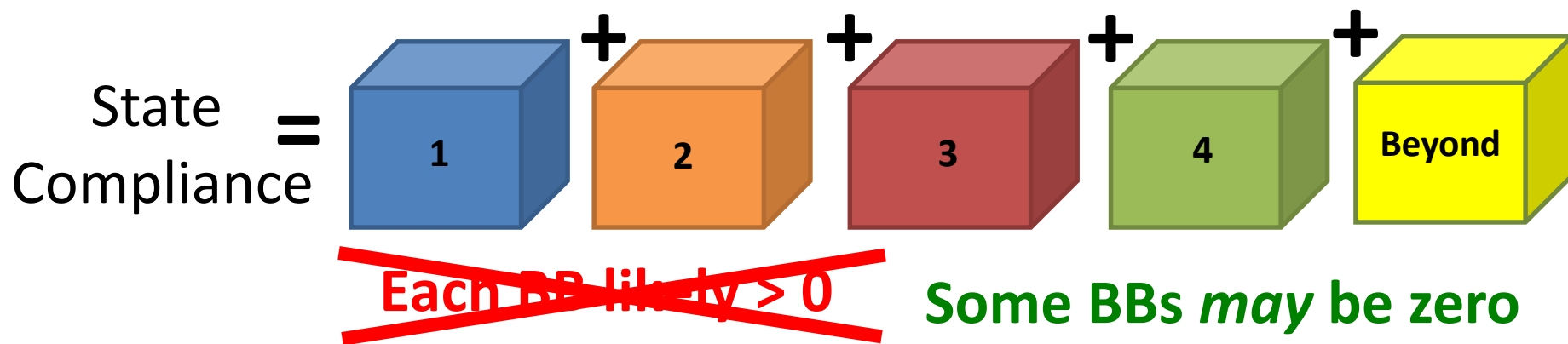
But Many Other Technology & Policy Options Exist

- Optimize Grid Operations
- Reduce Losses in the T&D System
- Privately-delivered Energy Efficiency
- Encourage Clean Distributed Generation
- Revise Capacity Market Practices
- Improve Utility Resource Planning
- Adopt Cap-and-Invest Programs (e.g., RGGI)
- Adopt Environmental Dispatch or a “Carbon Adder”
- Tax Carbon Dioxide Emissions (“price-based” vs. rate/mass)
- Water Conservation

*“Menu of
Options” coming
from the National
Association of
Clean Air
Agencies (NACAA)
later this spring*

State 111(d) Compliance Plans: The Actual Opportunity

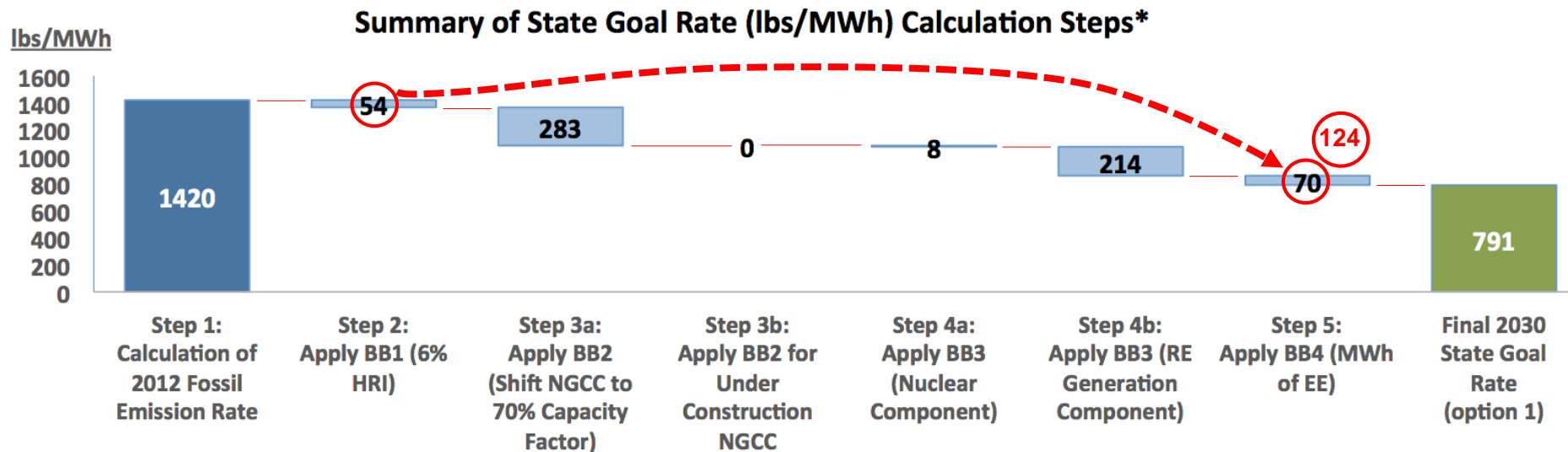
~~Conventional Wisdom:~~ **Actual Opportunity:**



Keys:

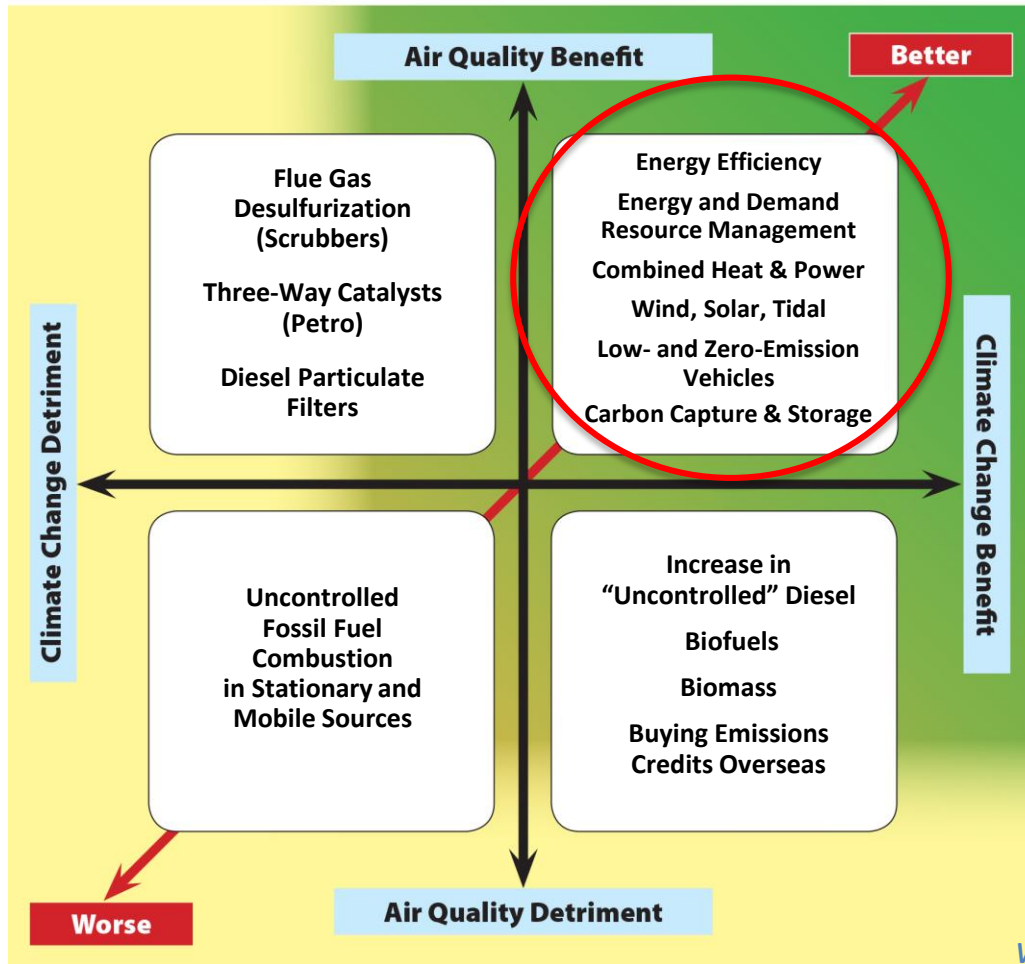
- States can think outside the “Building Block Box”
- Better to seek ‘approval’ than to ask permission

Example: Boost EE to Ease Requirements on Coal Plants in Texas?



Consider Co-Benefits as Well as Carbon & Cost

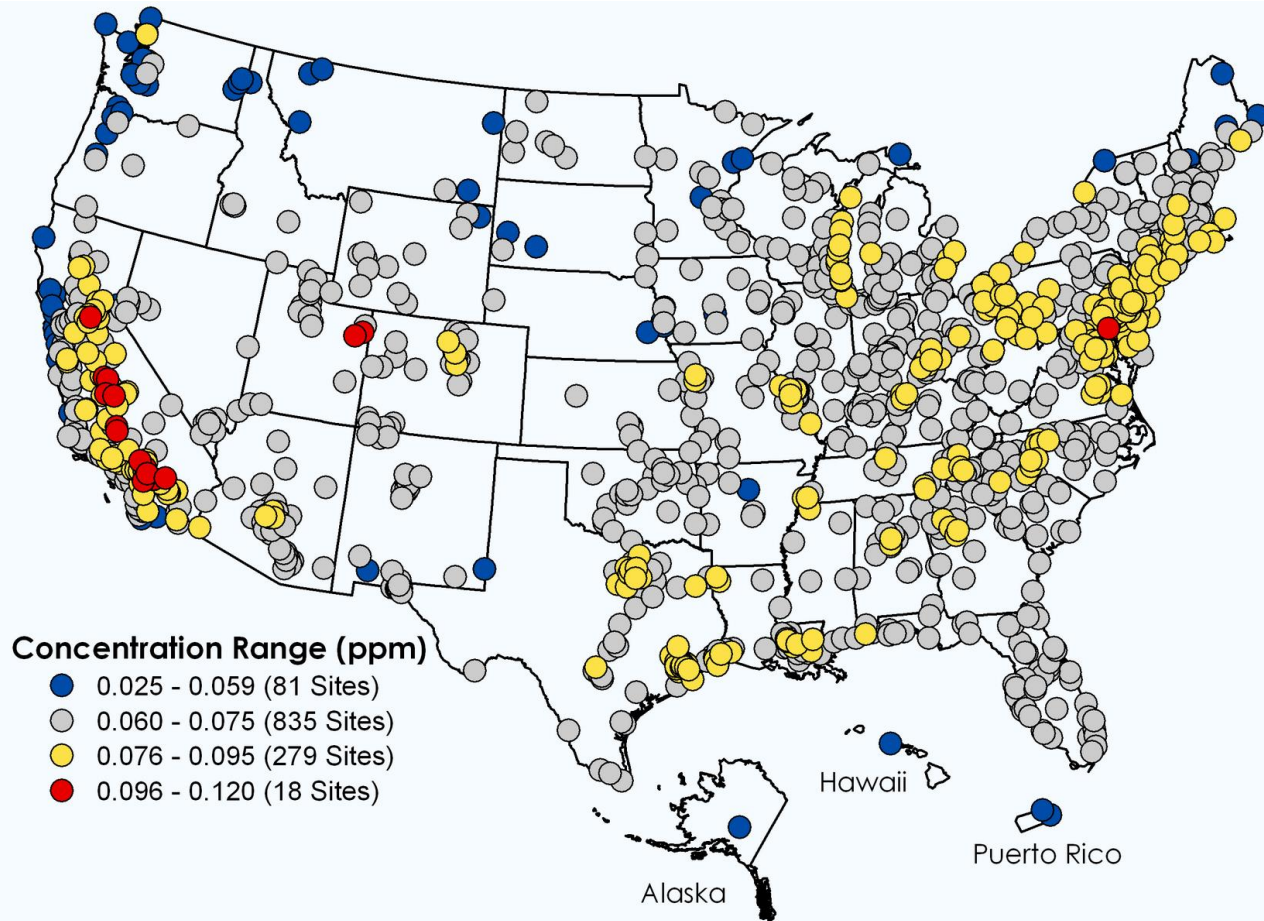
Air Quality and Climate Change Trade-Offs and “Co-Benefits”



- Good 111(d) choices can help air quality; good air quality choices can help 111(d) compliance
- Ditto for increasing **water** concerns
- Integrated multi-pollutant, multi-media approach can lower cost, risk (**IMPEAQ**)

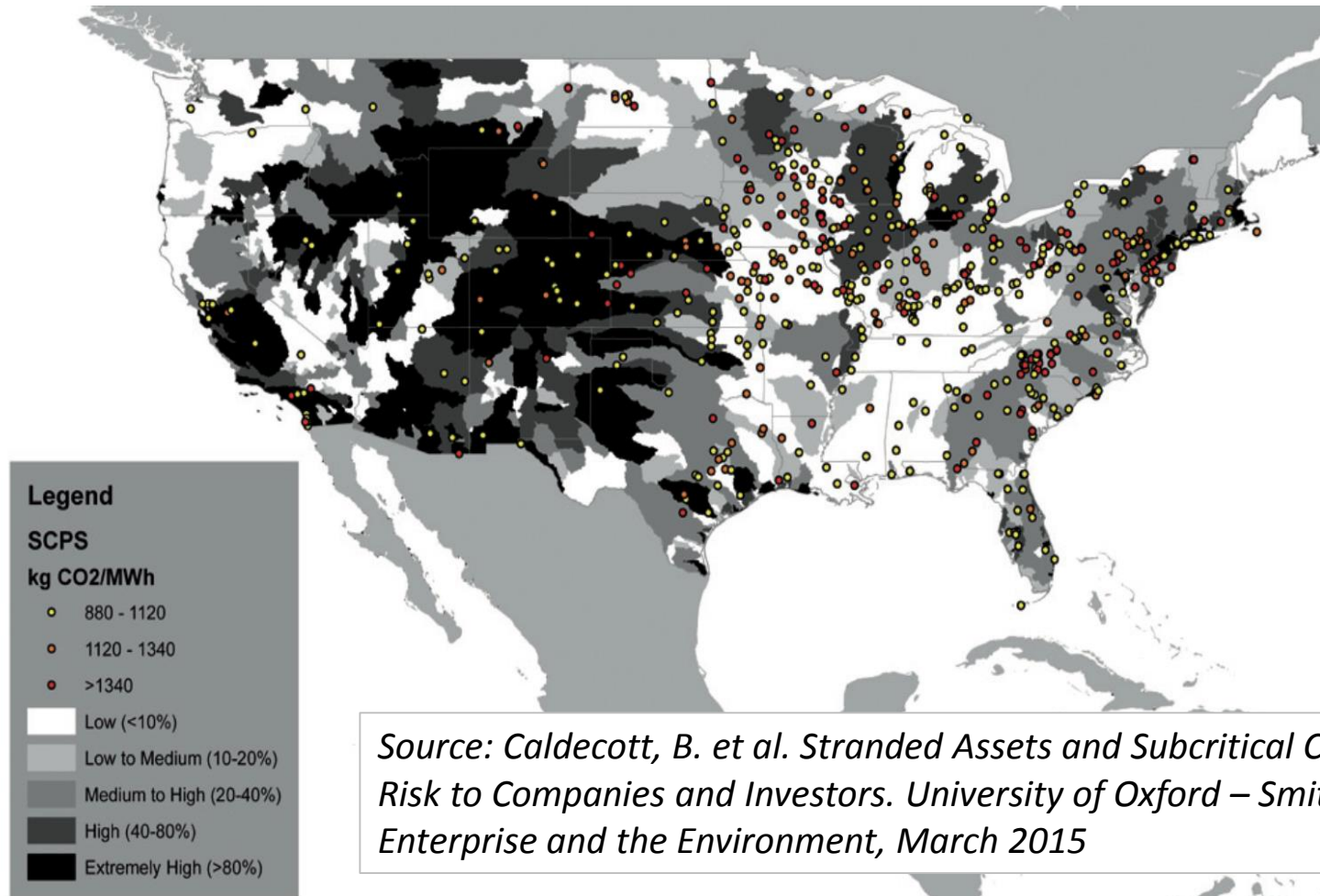
www.raponline.org/document/download/id/6440

Ozone Concentrations, 2010



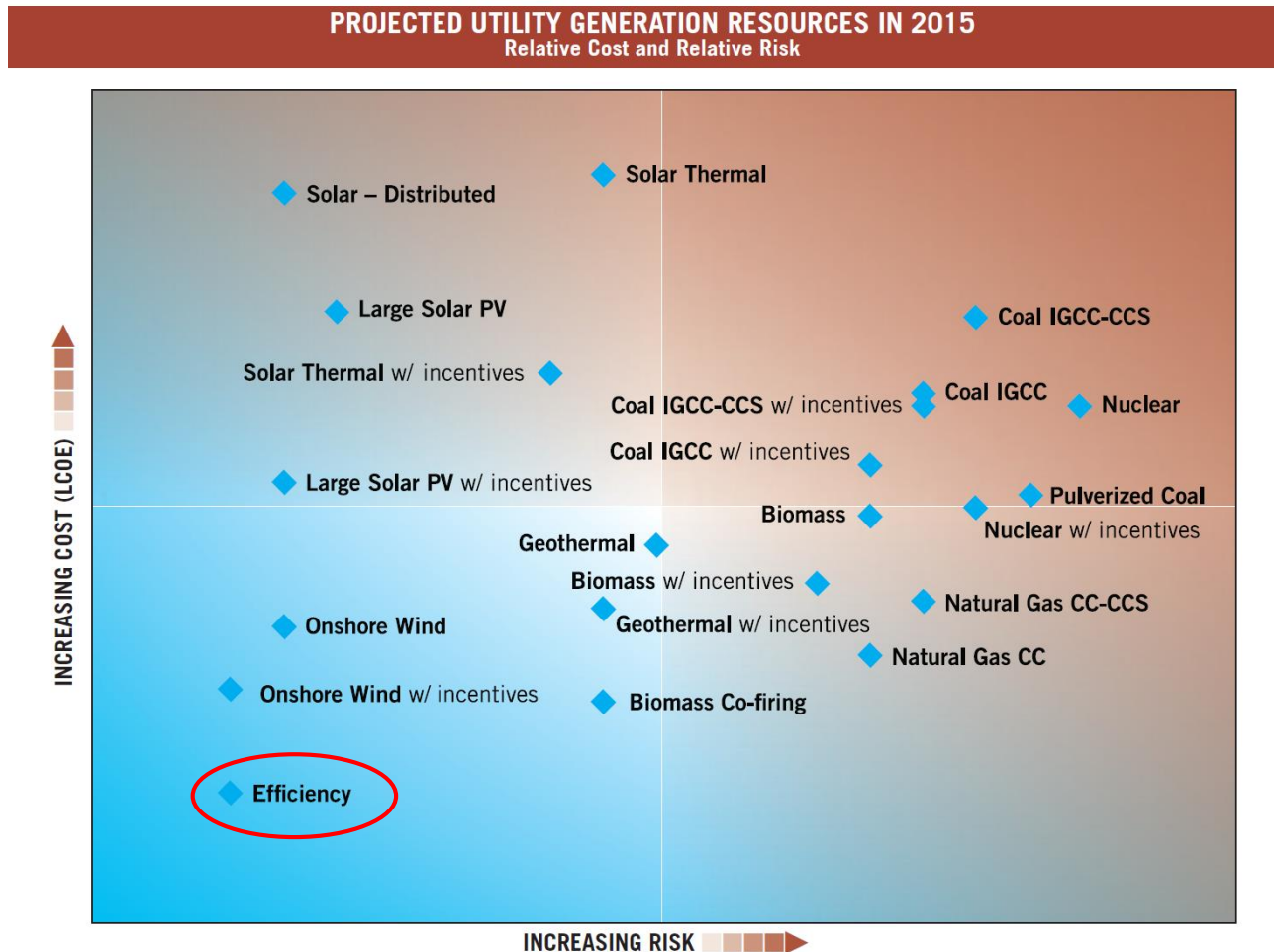
EPA Clean Air Science Advisory Committee (CASAC) is considering 60-70 ppb range for new NAAQS

Subcritical Coal Units vs. Water Stress



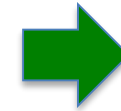
Source: Caldecott, B. et al. Stranded Assets and Subcritical Coal: The Risk to Companies and Investors. University of Oxford – Smith School of Enterprise and the Environment, March 2015

...And Costs & Risks Generally

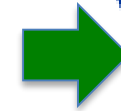
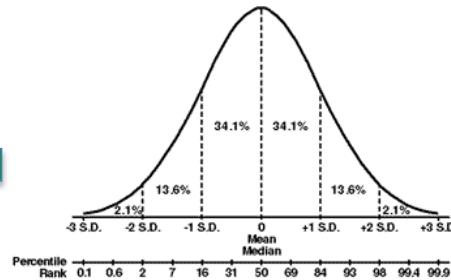


Source: CERES, *Practicing Risk-Aware Electricity Regulation: What Every State Regulator Needs to Know*, 2012

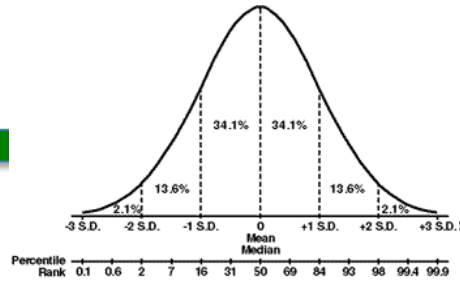
Quantifying EE Emissions Reductions: Apply a “Mobile Source Analogy”



Clean Air SIP



Clean Air SIP



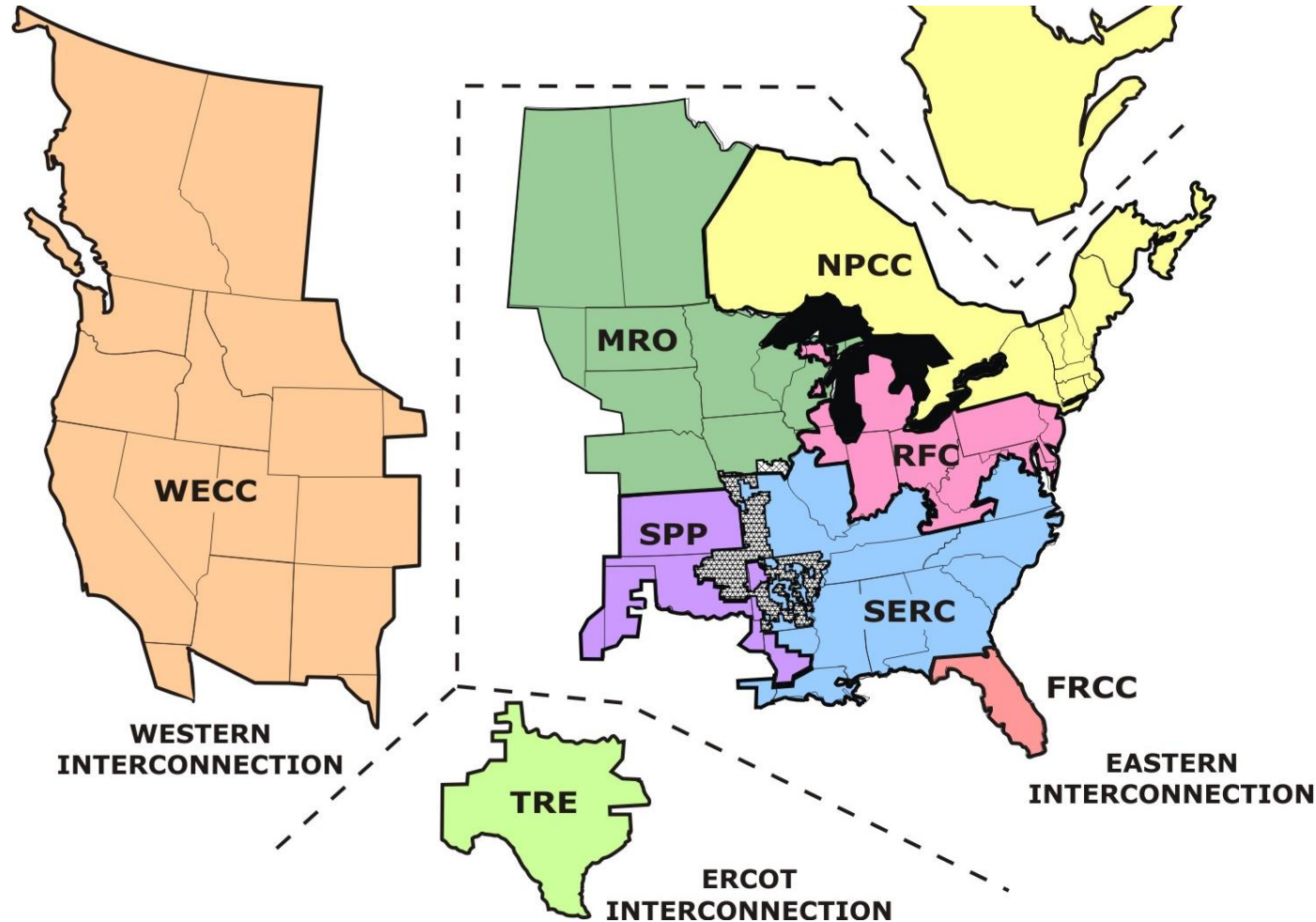
Clean Air SIP

Other Ways to Simplify EE Emissions Quantification

1. “Deemed Energy Savings” for good EE programs...
 - *Why not “Deemed Emission Reductions” too?*
2. “AP-42 Emission Factors” hierarchy approach...
 - *Why not apply to EE emissions reductions?*
3. *Modeling*: EPA provides the MOVES model for states to assess vehicle emissions...
 - *Why not a similar model for EE (AVERT?)*

REMEMBER: § 111(d) is NOT a SIP; EPA has far greater flexibility than under § 110

Consider Multi-State CPP Plans

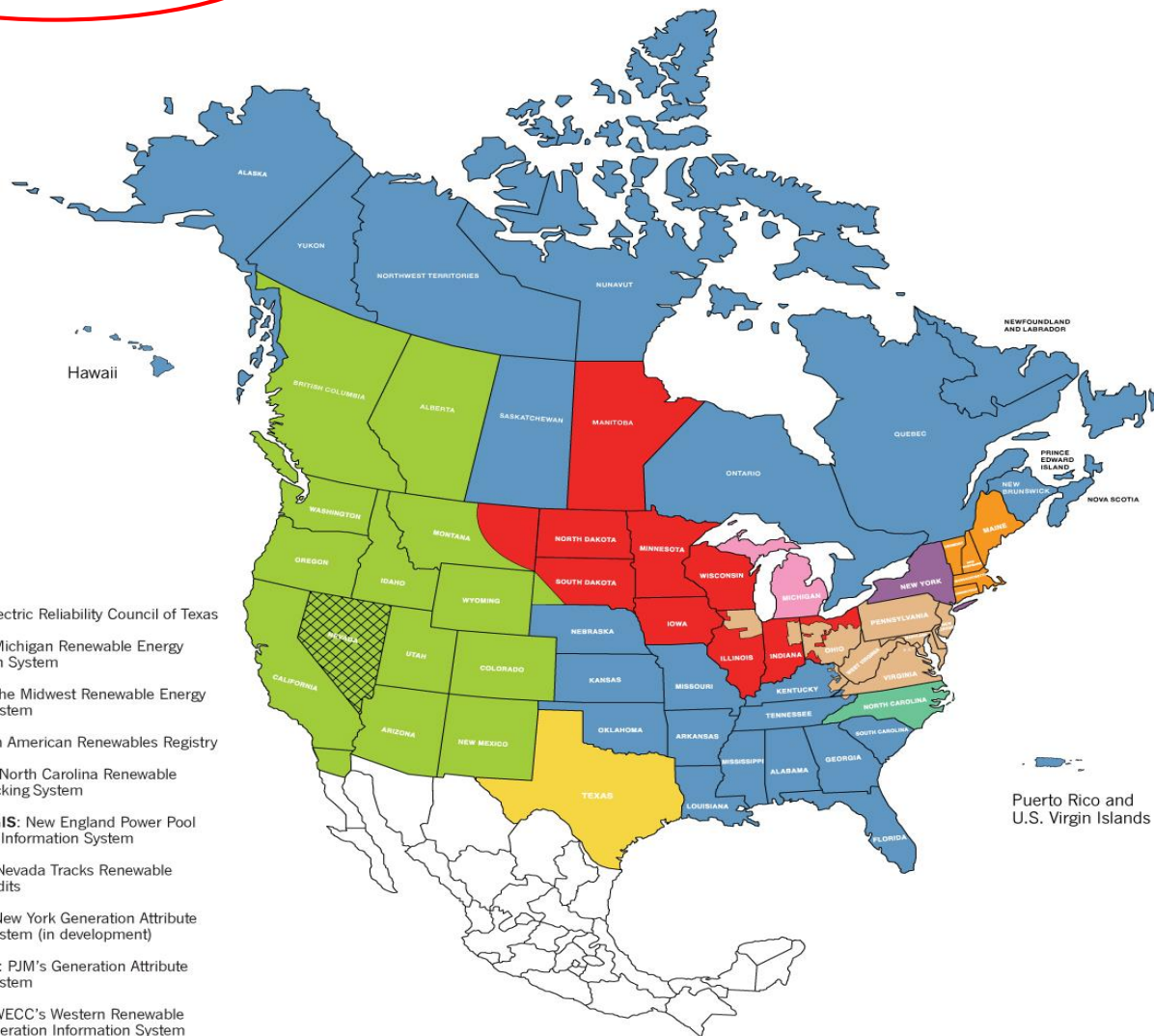


- Larger “market” areas = lower costs
- Align with Electricity Control Areas?
- Collaborate on a “*modular*” basis (EE, RE)?

EE & REC Tracking Systems

KEY

- ERCOT:** Electric Reliability Council of Texas
- MIRECS:** Michigan Renewable Energy Certification System
- M-RETS:** The Midwest Renewable Energy Tracking System
- NAR:** North American Renewables Registry
- NC-RETS:** North Carolina Renewable Energy Tracking System
- NEPOOL-GIS:** New England Power Pool Generation Information System
- NVTREC:** Nevada Tracks Renewable Energy Credits
- NYGATS:** New York Generation Attribute Tracking System (in development)
- PJM-GATS:** PJM's Generation Attribute Tracking System
- WREGIS:** WECC's Western Renewable Energy Generation Information System



Federal Enforceability

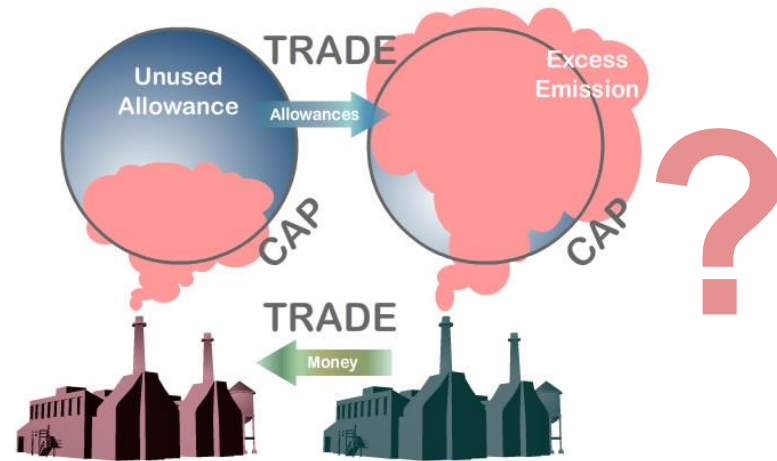
- “EPA will take over your state energy efficiency programs!”
- Could EPA? Would EPA? Has EPA?
 - Maybe; No; No
- What does actually occur?
 - EPA determines deficiency; notifies state
 - Gives opportunity to correct
 - Implements federal plan (no takeover)
 - *Consider: 20-year Boston Harbor clean up*



Clean
Air
Act
§ 110
SIPs
vs.
§ 111

What Will the Federal Plan Look Like?

- Nobody knows, but...
 - States relinquish their “first crack” rights
- EPA is freed from adherence to BSER blocks
- EPA unlikely to do a different plan for each state
 - i.e., could develop and administer one plan applicable to all subject states
- Like, perhaps, a mass-based cap & trade system?
- Does “Just Say No” help EPA get there?



Numerous Other Issues

- Revised “glide path” (interim goal)?
- Different treatment of nuclear units?
- Multi-year baseline option?
- Different treatment of EE and RE?
- A “safety valve”?
- Others?

*Don't expect final rule to answer all questions;
no one has ever done this before...*

Key Take-Aways: Help Your States...

- Recognize that 111(d) is not a SIP
- Think outside the “Building Block Box”
- Think integrated (ozone/particulates, water, risk co-benefits)
- Think regional (multi-state)
- Think least-cost, least-risk
 - Changing industry raises specter of stranded-costs
- “Ask not what it needs to be; ask what you want it to be”

Thank You for Your Time and Attention

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts focused on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies to:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
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