Cost-effectiveness in R. 15-01-008

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How did we get here?

- Working group identified best practices
- Staff evaluated all practices using available data
- Staff made recommendations
“All of the **mandatory requirements** have been proposed because they are either considered a **crucial element to the success** of the program (e.g., compliance, programs, training, etc.) or because they will detect or mitigate the **largest volume of methane** emitted and leaked (blowdowns, threaded fittings, graded and ungraded leaks, uncontrolled releases of methane). **They also appear to be cost-effective**, based on current utility experience or projected commercial cost (if still in R&D).”
MMBPs are Essential to Success

• EDF concurs with Staff that the MMBPs are cost-effective as a portfolio

• The cost-effectiveness requirements can be met while setting a baseline of BPs for California

• EDF proposes that once the full set of MMBPs are found to be cost effective for California as a whole, there is a rebuttable presumption that they are cost effective for all regulated entities
  – To ensure flexibility and affordability to ratepayers

*Rebuttable presumption – Once approved by CARB and CPUC, burden is on utilities to show credible evidence to the contrary
Use a Portfolio Approach to Evaluate Cost-effectiveness

• Portfolio: view mandatory best practices as group, not individually

• Comprehensive: consider all costs and benefits from a societal perspective

• Avoid atomism
  – Misses societal values, notably social cost of methane
  – Misses non-market values, such as reliability gains and safety benefits
Holistic Cost-effectiveness Framework: Values to Include

• Traditional utility costs
• Reduced gas lost to leakage
• Avoided social costs of methane
• Safety improvements
• System reliability improvements
• Other values as appropriate
Legislative Considerations

• SB 1383
  - 39730.5. “the state board shall approve and begin implementing the comprehensive short-lived strategy developed … to achieve a reduction in the statewide emissions of methane by 40 percent … below 2013 levels by 2030.”

• AB 197
  - 38562.5 “the state board shall … consider the social costs of the emissions of greenhouse gases.”
Cost-effectiveness Is Just One Measure of Good Policy

- Efficiency
- Fairness
- Incentives to innovate
- Potential for unintended consequences
- Enforceability
- Government capacities
- Agreement with moral precepts

Consider Non-market Values

- **Private Leak Repair Costs**
  - Capital
  - Labor
  - Legal & regulatory

- **Private Benefits**
  - Gas (energy) purchases
  - Storage & delivery capacity
  - Regulatory compliance
  - IOU shareholder profits
  - Proximate health & ecosystem impacts

- **Social Costs**
  - External private and environmental impacts
  - Option values
  - Existence values
SCM in Context

• SCM is a small change in comparison to wholesale prices
  – Small % of current prices
  – Within range of historic variation
  – Prices are at historic lows

• Social costs are real costs
  – Low-income ratepayers likely to be most affected by climate change
  – Principle of intergenerational equity
## Other Regulations Including SCM

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<tr>
<th>Date</th>
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<td>18 Sep-15</td>
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<td>proposed</td>
<td>Oil and Natural Gas Sector: Emission Standards for New and Modified Sources. 80 FR 56593.</td>
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<td>8-Feb-16</td>
<td>BLM</td>
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<td>Waste Prevention, Production Subject to Royalties, and Resource Conservation. 81 FR 6615.</td>
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<td>23-Feb-16</td>
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<td>Environmental Impact Statements; Availability, etc.: Grand Mesa, Uncompahgre, and Gunnison National Forests; Colorado; Federal Coal Lease Modifications COC-1362&amp;COC-67232. 81 FR 8899.</td>
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<td>3-Jun-16</td>
<td>EPA</td>
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<td>Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources. 81 FR 35823.</td>
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<td>Standards of Performance for Municipal Solid Waste Landfills. 81 FR 59331.</td>
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<td>Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. 81 FR 59275.</td>
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Social Cost Should Not Be Ignored in Rulemaking with a Purpose of Minimizing Social Costs

- The purpose of this rulemaking should not be lost in the details

- We must ensure that the required best practices achieve all requirements of the law
  - They must be the maximum technologically feasible
  - And cost-effective
  - While obtaining the overall goal of minimizing emissions
Qualitative Evaluation of Best Practices

• EDF agrees with Staff analysis that the recommended practices are crucial to the success of the program and likely cost-effective under the proposed framework.

• Qualitative analysis can and should be used in addition to strict cost and emissions data analysis.
Mandatory BPs are Likely Cost-effective

- Company policies – methane is a potent GHG; it should be prevented from escaping; policies implementing best practices; procedural documents that include steps to effectively reduce methane emissions; maintaining records; developing procedures for stopping the uncontrolled release of natural gas; keeping records … etc..
  - Incorporating best practices into regular business practices is essential to successfully reducing methane emission
BPs Continued…

• Training employees to ensure they know how to implement best practices and to the importance of minimizing methane emissions
  – The compliance framework will not be successful if the people responsible for implementing it are not trained on how to implement it and why reducing emissions is important

• A three-year leak survey cycle
  – Already implemented by some utilities for safety purposes
  – Will allow utilities to know of and then repair leaks years sooner
Benefits of Advanced Leak Detection Technology

• Mobile mounted leak detection and mapping
  – Finds 80% more leaks in 40% of the time
  – Distribution leaks are in the top three sources of emissions
  – Expands the field of vision so that customer meter leaks could be found without going on to customer property
  – Necessary to ensure that all emissions are accounted for
  – Provides transparency to ratepayers
Benefits of Data to Prioritize Repair/Replacement

• PSE&G
  – Applied a grid method to prioritize pipe segments for replacement.

• Con Ed – using the CSU algorithm EDF found:
  – 6% of leaks are responsible for more than 1/3 of all emissions
  – Fixing largest 15% of leaks removes 50% of emissions
  – Fixing largest 1/3 of the leaks removes 70% of the emissions.
  – Fixing largest 50% of leaks removes 80% of emissions

• New study from Stanford finds that nationwide 5% of leaks responsible for greater than 50% of emissions
  – http://pubs.acs.org/doi/abs/10.1021/acs.est.6b04303
Find It/Fix It Policy

- Distribution leaks are in the top 3 emission sources for all utilities.
- Setting timelines for Grade 3 leak repair ensures that utilities continue to improve practices and that backlogs do not accrue again.
- Shortening timelines for Grade 2 leak repairs will lessen the amount of emissions from a large category of leaks.
Spatial Analytics as a BP

• Predictive leak modeling incorporating spatial analytics and model outputs in DIMP risk model and capital replacement

• Case Study by PWC
  – Over three times greater leak avoidance
  – Over three times greater replacement rate
  – Over four times greater avoided O&M costs
EDF Proposed Framework for Evaluation

• CPUC and CARB evaluate cost-effectiveness of the portfolio of BPs including all benefits
  – e.g., social cost of methane, system reliability, and safety improvements

• CPUC and CARB determine the MMBPs that must be included in each regulated entities compliance plan

• If necessary, individual entities rebut the cost-effectiveness presumption for specific BPs by providing credible evidence
Next Steps for R. 15-01-008

• A consensus/precise wording of the best practices is recommended
  – Parties work together on the BPs with ambiguity
  – May need a decision by the CPUC if consensus not achievable for all BPs

• Utilities provide must cost analysis of all MMBP’s based on precise wording + individual voluntary measures

• ARB and CPUC should evaluate costs across the state to determine if the program is cost-effective