

SB 1371 (R.15-01-008) NATURAL GAS LEAK ABATEMENT WORKSHOP

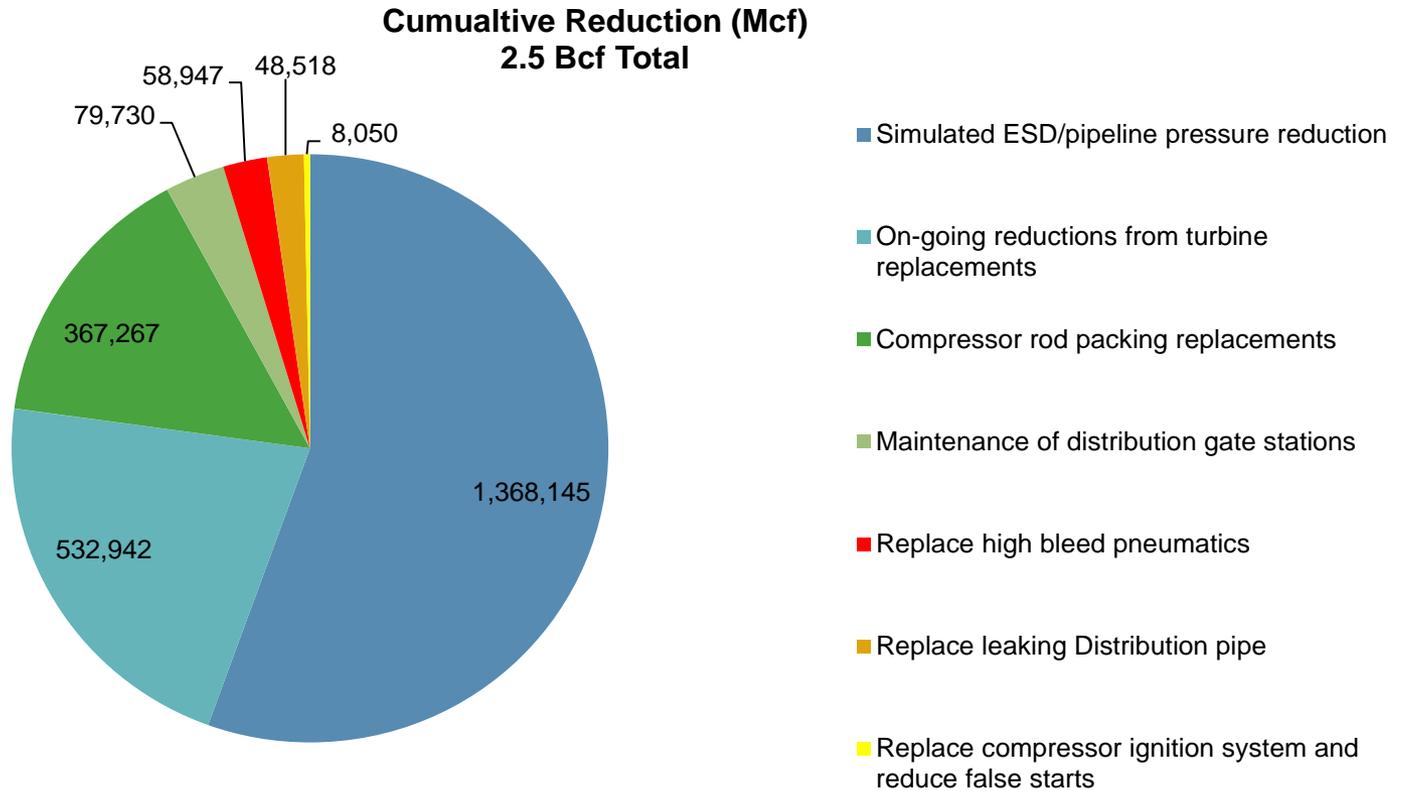
Targets, Compliance and Enforcement

What are the Objectives?

- » Achieve a 40% reduction from 1990 levels.
 - Based on the NG STAR framework, SoCalGas has reduced cumulative emissions by 2.5 Bcf since 1990.

- » How do we go beyond that 40%?
 - The basis for a baseline must be well-defined with meaningful metrics.
 - If 2015 is the baseline, there needs to be a phased-in implementation approach that applies metrics to assess progress year-over-year.

A Look Back into SoCalGas' Efforts Since the 1990s

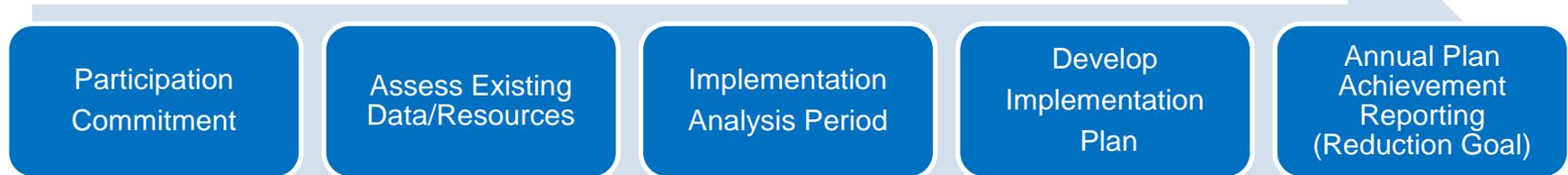


Develop Sound Basis for Targets

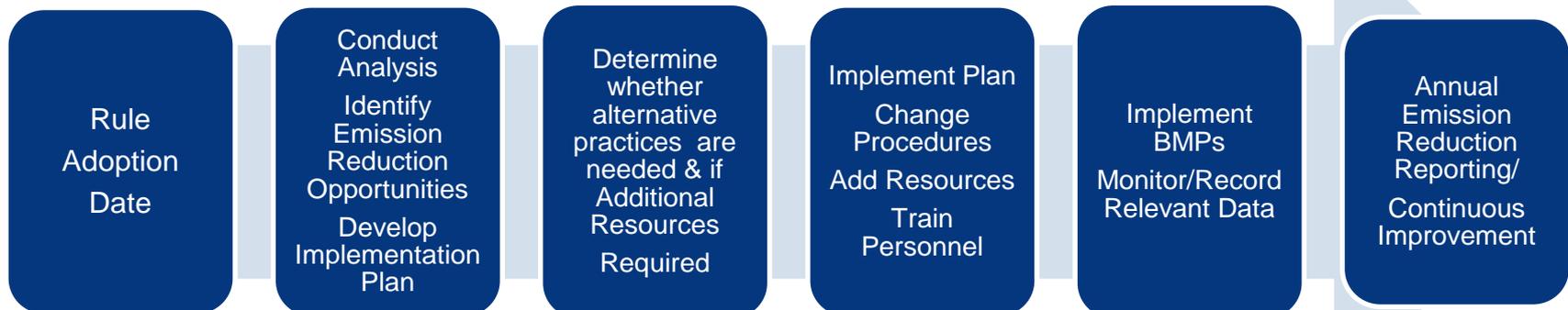
- » Reporting framework is quickly evolving, but gaps remain in some areas before a sound basis exists for overall reported emissions
 - Factors for customer meters and regulator stations versus leak detection and repair data
 - AB32 Subpart W restrictions on using repair date for emission end point
 - Differences between operator data, practices, and engineering estimates
- » Metrics must account for upward pressures on methane emissions. Challenges include:
 - Integrity, reliability, and safety-driven activities, i.e. PSEP, TIMP, DIMP
 - Annual system growth
 - Changes in activities that drive changes in reported emissions
- » Establishing a framework would help serve as a basis for determining how progress is measured year-over-year within each emission source category.

Leverage Existing Models to Phase-In Implementation and Enforcement

EPA Methane Challenge Model (Existing BMPs)- 5 Year Sunset

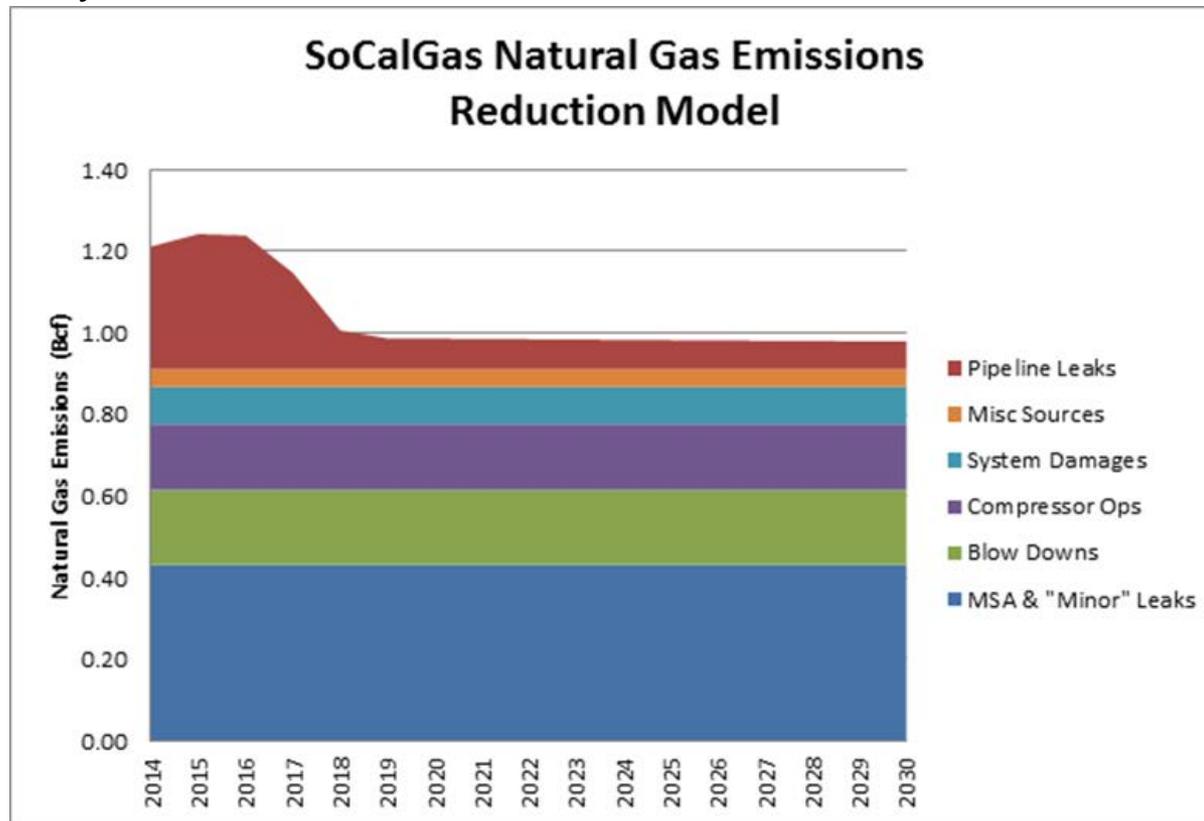


Proposed SB 1371 Model



Looking Forward: How Further Reductions Can be Met by 2030

- » For SoCalGas, if all other sources remain at the same level, elimination of the leakage backlog over time is projected to reduce total natural gas emissions by approximately 20%.



Moving Forward: Continue to Apply “Continuous Improvement” Philosophy

» For example, customer meters emissions reduction:

Gas consumption data analytics results through December 31, 2015

Findings from completed field visits	Number of field visits	Percent
Total field visits generated by consumption analytics awareness	953	
Hot water leaks where the hot water heater was in continuous demand	286	30.0%
Gas leak found by SoCalGas field technician	138	14.5%
Gas or hot water leaks corrected by the customer as a result of SoCalGas field visit	209	21.9%
Gas services closed by SoCalGas field technician due to excessive registration, awaiting resolution	317	33.3%
Abnormal gas usage resulting from a pool heater being used for the first time in 12 months or longer	3	0.3%

See SoCalGas Advanced Meter Annual Report. Available at https://www.socalgas.com/regulatory/documents/a-08-09-023/SoCalGas_Advanced_Meter_Semi_Annual_Report_FEB2016.pdf

Moving Forward: Continue to Apply “Continuous Improvement” Philosophy

- » Continue implementing strategic pipeline replacement of “leak-prone” pipelines
- » Identify best practices and new technologies that can further reduce methane emissions
- » Continue to fund and participate in research projects that will result in technology solutions for emissions reduction

Develop a Framework that Works for Both Larger and Smaller Operators (SDG&E as a Small Operator Example)

- » SDG&E system is 16% of total SDG&E/SoCalGas system miles
- » SDG&E's 2014 reported emissions were only 8% compared to what SDG&E/SoCalGas reported; however:
 - SDG&E has no underground storage
 - SDG&E represents 7% of SDG&E/SoCalGas transmission pipeline mileage
- » SDG&E's adjusted estimated emissions are about 18% lower than SoCalGas'
 - SDG&E has no unprotected steel pipelines
 - SDG&E has no leakage backlog

Agenda:

Questions and Answers

- » Question: How should the targets be set up?
 - Focus on reduction of known emissions that are achievable by additional resources, implementation of alternative practices, or new technologies
 - Allow each operator to focus first on alternative(s) that will yield the greatest emissions reduction
 - Establish basis for implementation timeframe (consistent with Scoping Question #9)
 - Consider impact on customer rates
- » Question: Should there be interim targets?
 - Yes, by assessing year-over-year progress.
- » Question: How does your company plan to prioritize emission reductions in disproportionately impacted communities?
 - Methane emissions are a global issue
 - Low-income customers would be disproportionately impacted in rates if reduction measures are not cost-effective

Key Take-Aways

- » **Previous reduction efforts** must be considered in setting any reduction goals and targets;
- » Build a **framework** for consistent reporting from the various methane emissions sources to increase industry knowledge and **to create a basis** for future reduction efforts;
- » Recognize that **changes in reporting** requirements do not necessarily translate into actual changes in system emissions;
- » Identify **affordable practices** that can help reduce methane emissions even further; and
- » Create a **mechanism** that encourages system operators to identify methane emissions reduction opportunities that are **affordable**.