

**Scoping Meeting for
District Rules 4306 and 4320
Boilers, Steam Generators, and Process
Heaters Greater than 5.0 MMBtu/hr**

December 5, 2019

webcast@valleyair.org

Rule 4306 and Rule 4320 Overview

- These rules apply to any gaseous fuel- or liquid fuel-fired boiler, steam generator, or process heater with a total rated heat input greater than 5 MMBtu per hour
- Boilers are external combustion equipment used to produce hot water or steam
- Process heaters are combustion equipment that transfer heat from combustion gases to liquid or gas process streams
- Steam generators are external combustion equipment that convert water to steam; most commonly used in thermally enhanced crude oil production



Image credit: US EPA, 2013

Where do Boilers, Steam Generators, and Process Heaters Operate?

- These units are used at the following facility types in the Valley:
 - Oil and gas production facilities
 - Petroleum refineries
 - Food processing operations
 - Schools, Universities
 - Correctional facilities
 - Hospitals
 - Livestock husbandry operations (dairies, cattle feedlots, etc.)
 - Electrical utilities
 - Manufacture and industrial facilities

Current Rule 4306 and Rule 4320 Requirements

- Rule 4306 establishes specific NO_x limits for many categories of boiler/steam generator/process heater units
 - NO_x limits must be met in order to legally operate in the District
 - Facilities generally control emissions from these sources through combustion modification or exhaust gas treatment
- Rule 4320 establishes more strict NO_x limits for units in this source category. Operators are given three options to comply:
 - Meet the specified emission limits, or
 - Pay an emissions fee annually to the District, or
 - Comply with the low-use provision (fuel limit of ≤ 1.8 billion Btu/yr)
- Through these rules, NO_x emissions from these sources already reduced by 96%

Boilers, Steam Generators, and Process Heaters > 5 MMBtu/hr Emissions Inventory (tons per day)

Annual Average							
Year	2013	2017	2019	2020	2022	2023	2024
PM2.5	1.24	1.15	1.12	1.10	1.06	1.04	1.02
NOx	1.80	1.47	1.39	1.35	1.26	1.22	1.18

Additional Emission Reductions Needed

- Valley's challenges in meeting federal air quality standards unmatched due to unique geography, meteorology, and topography
- Substantial emission reductions needed to achieve PM_{2.5} standards – need to go beyond already strict limits
- Commitment in *2018 PM_{2.5} Plan* to evaluate further emissions reduction opportunities from sources including boilers, steam generators, and process heaters
 - Reduce NO_x emissions by lowering the NO_x emission limits and lowering the more stringent Advanced Emission Reduction Option (AERO) limit for specific classes and categories of units

Potential Emission Reduction Opportunities

- Boilers and process heaters > 5.0 MMBtu/hr to ≤ 20 MMBtu/hr
 - Lower current emissions limitations of 6 ppmv (enhanced) and 9 ppmv (standard) to a new limitation as low as 2.5 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment
- Boilers and process heaters > 20 MMBtu/hr
 - Lower current emissions limitations of 5 ppmv (enhanced) and 7 ppmv (standard) to a new limitation as low as 2 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment
- Oil field steam generators > 5.0 MMBtu/hr to ≤ 20 MMBtu/hr
 - Lower current emissions limitations of 6 ppmv (enhanced) and 9 ppmv (standard) to a new limitation as low as 3.5 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment

Potential Emission Reduction Opportunities (cont'd)

- Oil field steam generators > 20 MMBtu/hr
 - Lower current emissions limitations of 5 ppmv (enhanced) and 7 ppmv (standard) to a new limitation as low as 2 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment
- Oil field steam generators < 50% PUC quality gas
 - Lower current emissions limitations of 12 ppmv (enhanced initial) and 9 ppmv (enhanced final) to a new limitation as low as 3.5 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment
- Petroleum refinery boilers/process heaters > 5.0 MMBtu/hr to ≤ 20 MMBtu/hr
 - Lower current emissions limitations of 9 ppmv to a new limitation as low as 3 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment

Potential Emission Reduction Opportunities (cont'd)

- Petroleum refinery boilers/process heaters > 20 to ≤ 110 MMBtu/hr
 - Lower current emissions limitations of 6 ppmv to a new limitation as low as 3 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment
- Petroleum refinery boilers/process heaters > 110 MMBtu/hr
 - Lower current emissions limitations of 5 ppmv to a new limitation as low as 3 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment
- Petroleum refinery boilers/process heaters $< 50\%$ PUC quality gas
 - Lower current emissions limitations of 9 ppmv to a new limitation as low as 3 ppmv, with Advanced Emission Reduction Option to allow for advanced technology development and deployment

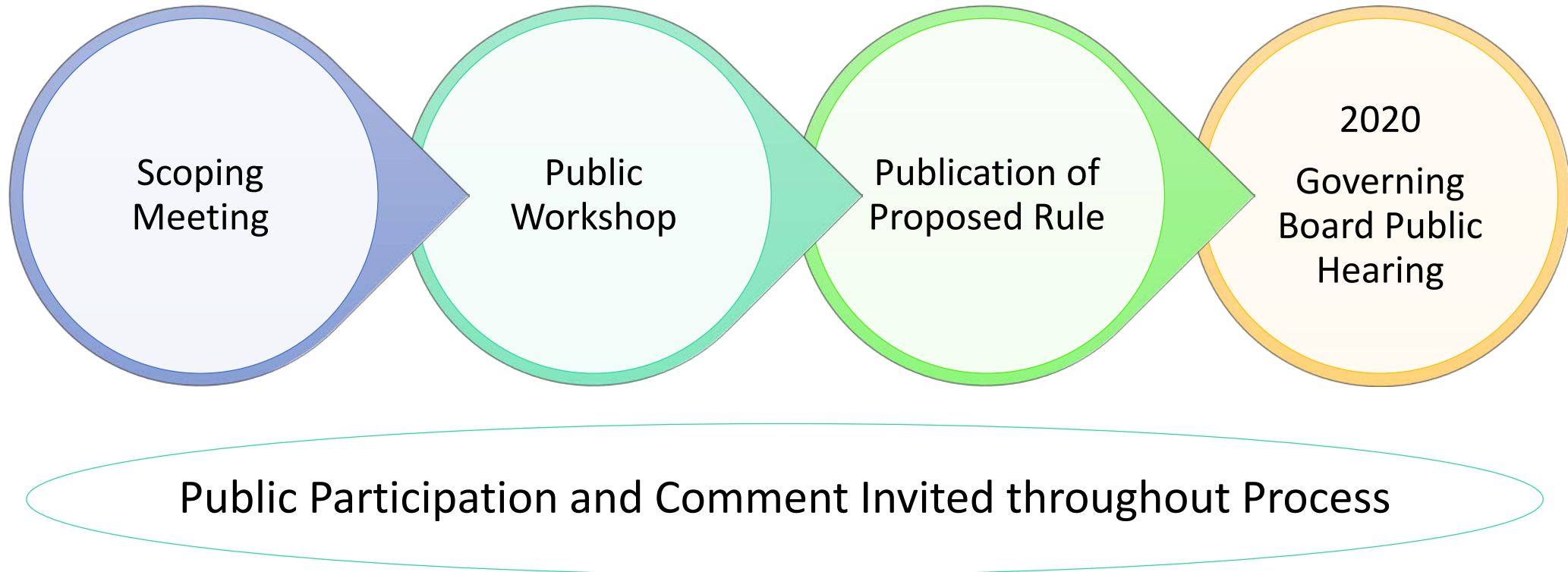
Timeline for Rule Amendment Process

Public Process Begins	Action Date	Implementation Begins	Anticipated Emission Reductions
2019	2020	2024	To be refined through rulemaking process

Socioeconomic Impact Analysis for Rule 4306 and Rule 4320

- Socioeconomic Impact Analysis will be conducted by independent consultant to analyze impacts of proposed regulation on Valley economy
- Recent Request for Proposals (RFP) to select consultant
 - RFP closed November 27, 2019
 - District staff expect to select a consultant by end of 2019
 - Analysis to begin Quarter 1, 2020
- Results of analysis to be publicly available and included with proposed rule amendment package

Next Steps: Public Engagement Process for Rule 4306 and Rule 4320 Amendments



Contact

Contact: Ross Badertscher

Mail: San Joaquin Valley APCD
1990 E. Gettysburg Ave
Fresno, CA 93726

Phone: (559) 230-5812

Fax: (559) 230-6064

Email: ross.badertscher@valleyair.org

Listserv: [http://lists.valleyair.org/mailman/listinfo/
boilers_and_heaters](http://lists.valleyair.org/mailman/listinfo/boilers_and_heaters)

Open Discussion and Input

webcast@valleyair.org