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# Comments on Oil and Gas Emissions in the NO<sub>2</sub> ISA Presented to CASAC

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# Regulation of NO<sub>x</sub> Emissions from the Oil and Gas Sector

- Section 2.3.10 of the ISA presents a very simplistic overview of oil and gas NO<sub>x</sub> emissions.
- “The oil and gas production sector is an increasing source of NO<sub>x</sub>, with 2008 emission estimates of 400,000 tons nationally”.
- The ISA should point out that oil and gas represent **2.3 percent of total NO<sub>x</sub> emissions nationally (EPA 2008)**.
- EPA has already implemented performance regulations reducing NO<sub>x</sub> emissions from engines (natural gas fired or diesel). Engines are the dominant NO<sub>x</sub> source in the oil and gas production sector. Current and pending regulations include:
  - RICE MACT NESHAP , Subpart ZZZZ
  - NSPS Subpart IIII
  - Existing RICE MACT SI Engine NESHAP 2010 Amended Rule
  - Existing Engine NESHAP Settlement
  - Final Diesel Existing Engine NESHAP
  - Consolidated Engine Final Rule NSPS, Subpart JJJJ and Amendments to NESHAP, Subpart ZZZZ



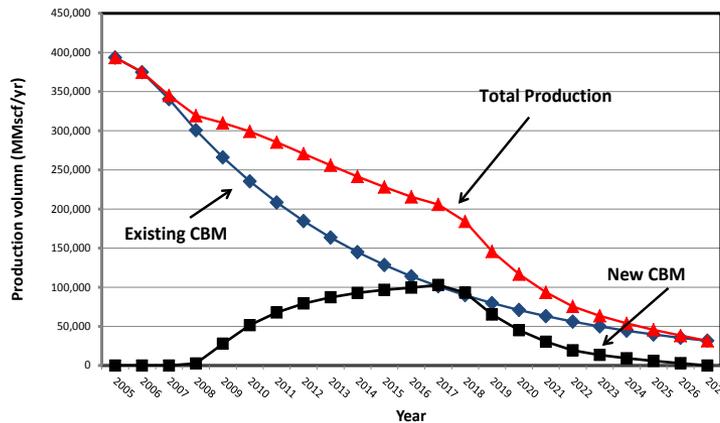
# Air Quality Impacts of Oil and Gas

- Drilling rig engines have a limited life span (~10 years) and are continually repowered with new engines that have current levels of emission control.
- Current Federal major source and State minor source air quality preconstruction regulations have the ability to lower emission limits below performance standards.
- The ISA presents several examples of potential air quality impacts of oil and gas NO<sub>x</sub> emissions
- The cited oil and gas impacts should be replaced a quantitative analysis such as the source apportionment analyses from the WRAP WESTJump modeling analysis

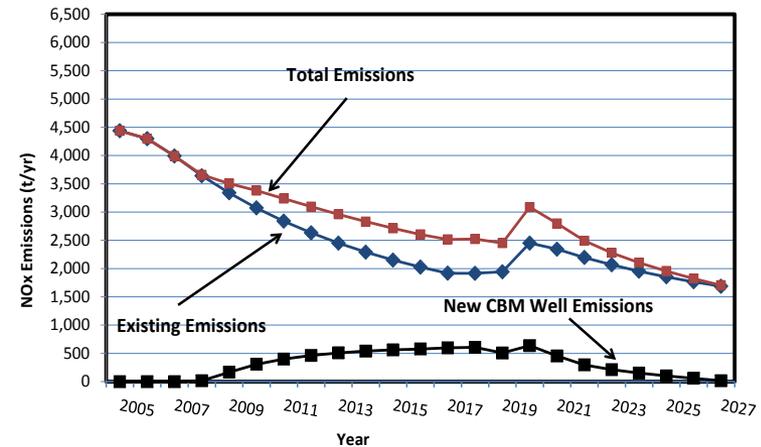


# Example: NO<sub>x</sub> emissions from compressors over time

Estimated Production Volume by Year for a CBM Project



Projected NO<sub>x</sub> Emissions for a CBM Infill Project



1. Graphs are from the Southern Ute PEA for infill development in a coal bed methane (CBM) field in Southern Colorado (AQRM 2009).
2. Because of low reservoir pressure, CBM gas requires more compression to produce the gas than what is needed to produce conventional natural gas (graphs are worst case example in terms of compression needs).
3. The slight increase in emissions in the year 2020 results from a change in system pressure in response to production decline.
4. Future year NO<sub>x</sub> does not equal current NO<sub>x</sub> + new well NO<sub>x</sub> (the typical method for estimating future year emissions).

**Conclusion – Both total production and NO<sub>x</sub> emissions will decrease even though additional wells are drilled.**