

Assembly Bill 617: BARCT – Miscellaneous Combustion Units

Community Advisory Council
Santa Barbara County
Air Pollution Control District

Our Mission: To protect the people and the environment
of Santa Barbara County from the effects of air pollution.

Aeron Arlin Genet
Executive Director / Air Pollution Control Officer

Tim Mitro, Air Quality Engineer
August 23, 2023

@OurAirSBC  



Presentation Topics

1) Background Information

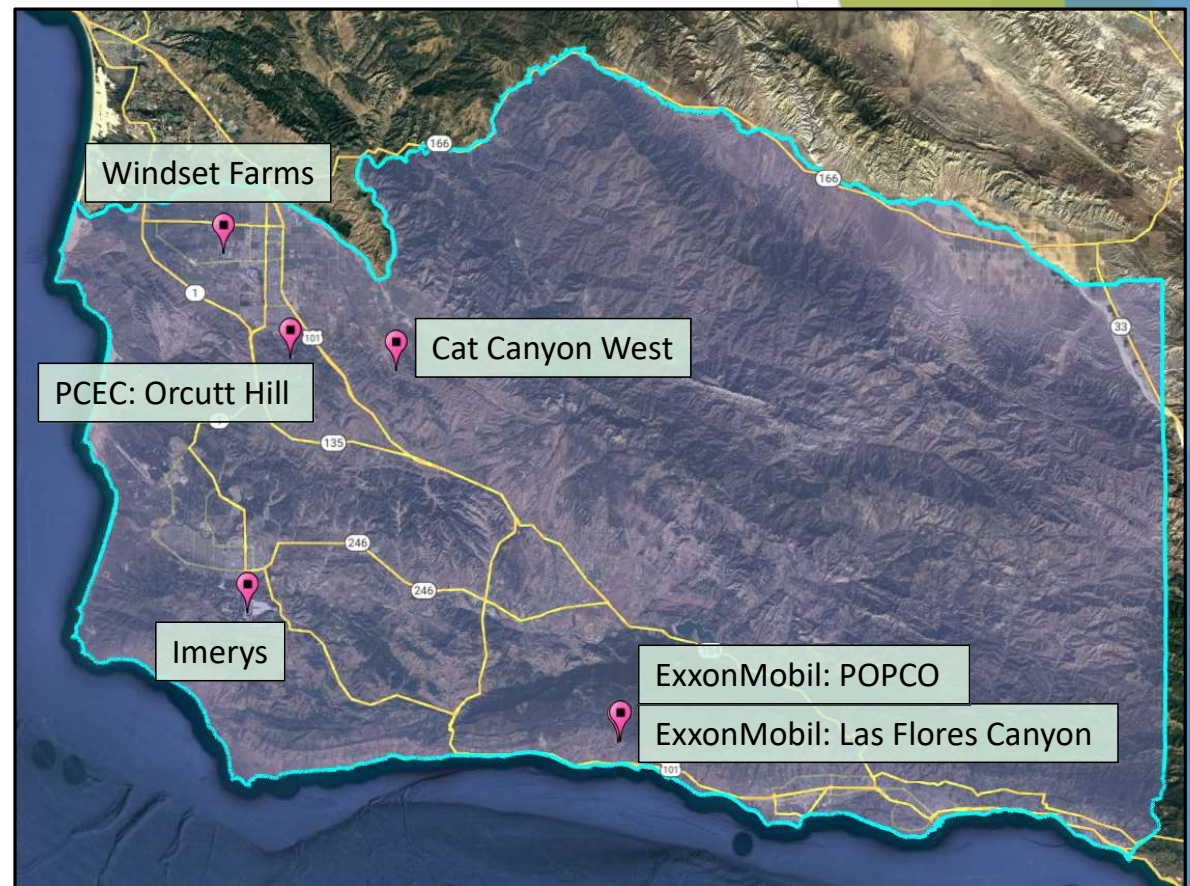
- Assembly Bill 617 – Best Available Retrofit Control Technology (BARCT)
- Misc. Combustion Equipment Units & Control Technologies

2) BARCT Analysis for Miscellaneous Combustion Units

- Emission Standards
- Cost-Effectiveness
- Implementation of BARCT

Background: Assembly Bill (AB) 617

- ▶ Enacted in 2017 for Community Air Protection.
- ▶ BARCT applies to large industrial facilities subject to Cap-and-Trade.
 - ▶ >25,000 metric tons/yr of GHGs as of 1/1/2017.
 - ▶ Requires maximum emission reduction achievable, taking into account environmental and economic impacts.
- ▶ BARCT Rule Development Schedule adopted by Board in 2018.



Miscellaneous Combustion Units

► Applicability

- **Includes:** Dryers, dehydrators, ovens, kilns, calciners, furnaces, roasters, crematories, and incinerators.
- **Excludes:** Boilers, water heaters, steam generators, and process heaters. (subject to District prohibitory Rules 342, 361, 360)



Example: Kiln



Example: Fabric Dryer

Control Technologies

Technology	Description	NOx Control
Low NOx Burners	Pre-mix the fuel and air, resulting in a more uniform and lower flame temperature.	30 - 75%
Flue Gas Recirculation (FGR)	Recycles a portion of the exhaust stream into the burner, reducing the flame temperature.	10 - 15%
Selective Catalytic Reduction (SCR):	Ammonia injection to reduce NOx in the exhaust.	80 - 95+%

Example:
Low NOx Burner



BARCT Emission Standard

► **Based on rules from:**

- South Coast AQMD (2008)
- San Joaquin Valley APCD (2005)
- Ventura County APCD (2016)
- Sac-Metro AQMD (2018)

► BARCT assessment focused on units rated at 5 MMBtu/hr and greater.

Table 4.1 – SB County BARCT for Miscellaneous Combustion Units

Equipment Category	Process Temperature	NOx Limit (ppmv)
Dryer, Furnace, Kiln, or Heater	< 1,200°F	30
	≥ 1,200°F	60

Industry Impacts

Table 5.1 – Miscellaneous Combustion Units at Imerys

#	Device Name	Rated Heat Input (MMBtu/hr)	Most Recent Modification	Permitted Emission Rate	BARCT Assessment
1	System 7 Kiln	50	1994	5.5 lbs/hr (≈ 48 ppmv NO _x)	Exempt*
2	System 7 Furnace	45	2007		
3	Silicates Conveyor Dryer	45 total [3 burners]	Pre-1990	Uncontrolled (≈ 82 ppmv NO _x)	30 ppmv NO _x
4	Silicates Flash Dryer	17.5	Pre-1990	Uncontrolled (≈ 82 ppmv NO _x)	30 ppmv NO _x

* System 7 Kiln and Furnace evaluated for BACT in 2007.

Units that recently achieved BACT are exempt from AB 617 - BARCT.

Cost-Effectiveness

	Conveyor Dryer (3 burners)	Flash Dryer (1 burner)
Capital and Installation Costs:	\$480,000	\$160,000
Representative Operating Capacity: <i>(3 years of data)</i>	170,000 therms (4% capacity)	13,000 therms (1% capacity)
Emission Reductions:	0.53 tpy NOx	0.04 tpy NOx
Cost-Effectiveness: <i>(25 year project life, 6% interest)</i>	\$71,000 per ton of NOx	\$303,000 per ton of NOx

- ▶ Cost-Effectiveness is higher than the normally accepted values.

Cost-Effectiveness (Low-use)

	Conveyor Dryer (3 burners)	Flash Dryer (1 burner)
Capital and Installation Costs:	\$480,000	\$160,000
Low-use Threshold:	270,000 therms (7% capacity)	90,000 therms (6% capacity)
Emission Reductions @ Threshold:	0.84 tpy NOx	0.28 tpy NOx
Cost-Effectiveness @ Threshold: <i>(25 year project life, 6% interest)</i>	\$45,000 per ton of NOx	\$45,000 per ton of NOx

- ▶ Project is more Cost-Effective at the Low-use Threshold.

BARCT Implementation

- ▶ Imerys submitted a permit application to incorporate the Low-Use Thresholds directly into their permit.
 - ▶ Results in enforceable permit conditions no later than 12/31/2023.
- ▶ If the Low-use Threshold is exceeded:
 - ▶ A new application will be required within 30 days.
 - ▶ Demonstrate compliance with the BARCT NO_x standard within 18 months.

Staff Assessment

- ▶ Creating a new rule for Miscellaneous Combustion Units is no longer necessary.
- ▶ The BARCT Analysis will be presented to the District Board & forwarded to CARB.
- ▶ The BARCT Analysis will continue to apply to existing and new equipment units at the AB 617 Industrial Facilities.

BARCT Timeline for Misc. Units

- ▶ **December 2018:** BARCT Schedule adopted by District Board
- ▶ **January 2023:** Draft BARCT analysis sent to Imerys for review
- ▶ **August 2023:**
 - 1) “Low-use” Permit application submitted by Imerys
 - 2) CAC Meeting to receive update on BARCT Analysis
- ▶ **September 2023:** Permit Modification to be finalized
- ▶ **October 2023:**
 - 1) District Board Hearing to receive BARCT Analysis
 - 2) Forward Analysis to CARB
- ▶ **Dec. 31, 2023:** AB 617 Implementation Date

Contact Information

Tim Mitro

Air Quality Engineer

(805) 979-8329

MitroT@sbcapcd.org

@OurAirSBC  

