From: Jonathan Kuperberg < jonathan.kuperberg@gmail.com>

Sent: Friday, December 3, 2021 5:28 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

It is important to me, as a member of the community, that SCAQMD represent its constituency's quality of life, safety, and health. To that end, I'm supportive of the District's intentions to implement a more regulation-focused (rather than incentive-centric) approach to transitioning to zero-emission technologies.

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Zero-emission technology is readily available, and it is past time to push our worst polluters to start making the transition. I thank you for your work to move us forward on a path to making our communities healthier and more livable.

Sincerely, Jonathan Kuperberg 6210 Bee. Ave. Agoura Hills, CA 91301

From: Sam Butler <samjbutler@sbcglobal.net> Sent: Monday, December 6, 2021 1:49 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Sam Butler 8134 Westlawn Ave Los Angeles, CA 90045

From: Diana Shepherd <tech@jlshepherd.com> Sent: Monday, December 6, 2021 1:49 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Diana Shepherd 1010 Arroyo St. San Fernando, CA 91340

From: Steve Graff <stevegraff12@hotmail.com> Sent: Monday, December 6, 2021 1:52 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Steve Graff 1948 Malcolm Ave Los Angeles, CA 90025

From: Rob West <robwest@sbcglobal.net>
Sent: Monday, December 6, 2021 1:53 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Rob West 5551 W 63rd St Los Angeles, CA 90056

From: Karie Prescott <karikat@earthlink.net>
Sent: Monday, December 6, 2021 1:54 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Karie Prescott 1271 Upton Pl. Los Angeles, CA 90041

From: Mark Reback < mark@consumerwatchdog.org >

Sent: Monday, December 6, 2021 1:54 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Mark Reback 2324 Lake Shore Ave Los Angeles, CA 90039

From: D. Fachko <DFachko@yahoo.com> Sent: Monday, December 6, 2021 1:55 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely,
D. Fachko
7142 Orangethorpe
Buena Park, CA 90621

From: Tony Poland <TonysBodywork@yahoo.com>

Sent: Monday, December 6, 2021 1:55 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Tony Poland 1632 Ellsmere Ave Los Angeles, CA 90019

From: Jessica Krick < jkrick@caltech.edu>
Sent: Monday, December 6, 2021 1:55 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Jessica Krick 1 Cricklewood path Pasadena, CA 91107

From: Dudley and Candace Campbell <cdcampbl@roadrunner.com>

Sent: Monday, December 6, 2021 1:58 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Dudley and Candace Campbell 13167 Ortley Pl Van Nuys, CA 91401

From: Janet Heinle < janetheinle@yahoo.com> Sent: Monday, December 6, 2021 2:00 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Janet Heinle 1047 Lincoln blvd Santa Monica, CA 90403

From: William Schlesinger <teamlajolla@sbcglobal.net>

Sent: Monday, December 6, 2021 2:00 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, William Schlesinger 854 N La Jolla Ave Los Angeles, CA 92270

From: Anne Dugaw <adugaw@pacbell.net> Sent: Monday, December 6, 2021 2:01 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Anne Dugaw 385 Ogle St Apt C Costa Mesa, CA 92627

From: casee maxfield <storyspice@yahoo.com> Sent: Monday, December 6, 2021 2:04 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, casee maxfield 1737 N Sycamore Ave Los Angeles, CA 90028

From: Julia Vetrie < jvetrie@att.net>

Sent: Monday, December 6, 2021 2:04 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely,
Julia Vetrie
26513 Cardinal Dr.
Canyon Country, CA 91387

From: Hank Schlinger < hschling@hankschlinger.com >

Sent: Monday, December 6, 2021 2:05 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Hank Schlinger 1755 W Mountain St Glendale, CA 91201

From: Jodi Bell <jodibell@kennebell.net>
Sent: Monday, December 6, 2021 2:13 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Jodi Bell 6148 River Birch Place Rancho Cucamonga, CA 91739

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Ruby Brown 4023 W 64th St Los Angeles, CA 90043

From: Stacy Cornelius <stacycornelius@yahoo.com>

Sent: Monday, December 6, 2021 2:15 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Stacy Cornelius 530 Mountain Rd Apt A Laguna Beach, CA 92651

From: Martin Tripp <recn@sbcglobal.net>
Sent: Monday, December 6, 2021 2:18 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Martin Tripp 28720 Woodside Dr Santa Clarita, CA 91390

From: Neal Steiner <nrspacific@yahoo.com> Sent: Monday, December 6, 2021 2:21 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Neal Steiner 2706 Castle Heights Pl Los Angeles, CA 90034

From: Pati Tomsits <patito12@att.net>
Sent: Monday, December 6, 2021 2:25 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Pati Tomsits 42 Lakepines Irvine, CA 92620

From: Jessica Likens <leobufyfan@aol.com> Sent: Monday, December 6, 2021 2:45 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Jessica Likens 8137 Santa Inez Way Buena Park, CA 90620

From: Craig Golden <gzen@sbcglobal.net>
Sent: Monday, December 6, 2021 2:49 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Craig Golden 6935 Encino Avenue Lake Balboa, CA 91406

From: David Garfinkle <drgarfinkle@sbcglobal.net>

Sent: Monday, December 6, 2021 2:53 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, David Garfinkle 6073 Calvin Ave Tarzana, CA 91356

From: Diana Kliche <klichediana@gmail.com> Sent: Monday, December 6, 2021 2:53 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Diana Kliche 3351 Ridge Pk Ct Long Beach, CA 90804

From: Bonnie Karrin
 sbcglobal.net>
 Sent: Monday, December 6, 2021 2:54 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Bonnie Karrin 1119 Greenacre Ave West Hollywood, CA 90046

From: Michael Dow <sugar_mountain@mac.com>

Sent: Monday, December 6, 2021 2:54 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Michael Dow 1207 1/2 South Ogden Drive Los Angeles, CA 90019

From: Tom Hazelleaf <cheapcruiser2003@yahoo.com>

Sent: Monday, December 6, 2021 2:55 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Tom Hazelleaf 4656 Fir Avenue Seal Beach, CA 90740

From: Lynne Weiske <movieblonde@hotmail.com>

Sent: Monday, December 6, 2021 2:59 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Lynne Weiske 6128 Wilshire Los Angeles, CA 90048

From: Mark Bartleman < mbartleman@cox.net> Sent: Monday, December 6, 2021 3:03 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Thank you.

Sincerely, Mark Bartleman 1984 Del Mar Ave Laguna Beach, CA 92651

From: Matt Abularach <matt@envirovoters.org> Sent: Monday, December 6, 2021 3:10 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Zero-emission technology is readily available, and it is past time to push our worst polluters to start making the transition. I thank you for your work to move us forward on a path to making our communities healthier and more livable.

Sincerely, Matt Abularach 7030 Marino Pl Rancho Cucamonga, CA 91701

From: Richard Dawson < rcdawson@att.net> Sent: Monday, December 6, 2021 3:10 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

I support the South Coast Air Quality Management District (SCAQMD) implementing a more regulation-focused (rather than incentive-centric) approach to transitioning to zero-emission technologies in the Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

Regulations have proven effective in protecting the quality of life, safety, and health residents. Incentives and other other inducements to achieve voluntary compliance have not. We don't have time to indulge in what will almost certainly be a ineffective efforts to achieve the clean air and greenhouse gas emision reductions we need now.

It is also essential to prioritize adopting zero-emission technologies – this includes eliminating gas-fueled water heaters and furnaces in new construction and incentivizing transitioning for existing buildings. Maintaining reliance on fossil fuel infrastructure will not get us to our clear air goals nor help us reach emissions targets set by the State.

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Sincerely, Richard Dawson 1974 Avon St Los Angeles, CA 90026

From: Sherie Stark <starkbiz@sbcglobal.net> Sent: Monday, December 6, 2021 3:13 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

It is important to me, as a member of the community, that SCAQMD represent its constituency's quality of life, safety, and health. To that end, I'm supportive of the District's intentions to implement a more regulation-focused (rather than incentive-centric) approach to transitioning to zero-emission technologies.

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Sincerely, Sherie Stark 8755 Bonner Dr. West hollywood, CA 90048

From: Ryan Davis <ryansdavis@yahoo.com> Sent: Monday, December 6, 2021 3:15 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Ryan Davis 250 N. 1st St. Burbank, CA 91502

From: Laurel Tucker <tsva1@earthlink.net> Sent: Monday, December 6, 2021 3:48 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Laurel Tucker 676 W 9th St Claremont, CA 91711

From: Pamela La Rue <pkayelarue@aol.com> Sent: Monday, December 6, 2021 3:55 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Pamela La Rue 3703 Hackett Ave Long Beach, CA 90808

From: Noah Mercer < Noah.mercer@gmail.com> Sent: Monday, December 6, 2021 4:00 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Noah Mercer 2232 Talmadge St Los Angeles, CA 90027

From: Mara Richards < tiramara@gmail.com > Sent: Monday, December 6, 2021 4:09 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Mara Richards 4110 Michael Avenue los angeles, CA 90066

From: Desi Larkin <desi.larkin@sbcglobal.net>
Sent: Monday, December 6, 2021 4:39 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely,
Desi Larkin
42 E Manor St
Altadena, CA 91001

From: kare m <kmussette@me.com>

Sent: Monday, December 6, 2021 4:50 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, kare m po box 437 BH, CA 90211

From: Beth Stein <lasirena@mardeashe.com> Sent: Monday, December 6, 2021 5:18 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Beth Stein 3787 3/4 S Centinela Ave Los Angeles, CA 90066

From: Carroll Abshier <cla6@outlook.com> Sent: Monday, December 6, 2021 5:24 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Carroll Abshier 5842 Cardale St Lakewood, CA 90713

From: forrest hopping <guajolotl@aol.com> Sent: Monday, December 6, 2021 6:11 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, forrest hopping 4534 e madison av fresno, CA 93702

From: Lois Arkin <crsp@igc.org>

Sent: Monday, December 6, 2021 6:23 PM

To: AQMPTeam

Subject: re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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I further advise that legislation be passed reducing the number of gas fueled vehicles that can be registered in the SCAQMD by 20% per year for the next five years.

Further that SCAQMD use its influence to streamline local permit processes for older buildings going all electric, especially LA City which can take up to 6 months.

Sincerely,

Lois Arkin

This event is exclusive for a small group of the Los Angeles Eco-Village members. We are still on lockdown. Los Angeles, CA 90004

From: Julie Klabin < jklabin@aol.com>

Sent: Monday, December 6, 2021 6:40 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Julie Klabin 3127 Ettrick St. Los Angeles, CA 90027

From: lynn hoang <spacecadetnova_2000@yahoo.com>

Sent: Monday, December 6, 2021 6:50 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, lynn hoang 2307 Leggett Ln Fullerton, CA 92833

From: diana koeck <dianakoeck@gmail.com> Sent: Monday, December 6, 2021 6:50 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, diana koeck 1000 S Coast Dr Apt K107 Costa Mesa, CA 92626

From: Kelly Sutton <kellyam@csu.fullerton.edu> Sent: Monday, December 6, 2021 7:59 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Kelly Sutton 1443 Prospect Ave #D Placentia, CA 92870

From: Christine B. Hayes <hayescb@hotmail.com>

Sent: Monday, December 6, 2021 8:00 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Christine B. Hayes 1534 Fairwood Way Upland, CA 91786

From: Mark Giordani < magiordani@aol.com> Sent: Monday, December 6, 2021 8:01 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Mark Giordani 21200 Kittridge Street Apt 3200 Woodland Hills, CA 91303

From: Ann Dorsey <aedorsey@hotmail.com> Sent: Monday, December 6, 2021 8:04 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

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Sincerely, Ann Dorsey 18042 Schoenborn St Apt 5 Northridge, CA 91325

From: Therese Ryan <mandm2872@earthlink.net>

Sent: Monday, December 6, 2021 8:09 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Therese Ryan 37310 36th St E Palmdale, CA 93550

From: Erica Silverman <ericas521@yahoo.com> Sent: Monday, December 6, 2021 8:36 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Erica Silverman 4001 Evadale Dr Los Angeles, CA 90031

From: Wendy Rosenfeld <houseofhats@sbcglobal.net>

Sent: Monday, December 6, 2021 8:45 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Wendy Rosenfeld 4924 Tujunga Ave Apt 7 North Hollywood, CA 91601

From: Susanne Berntsson <susanneberntsson@sbcglobal.net>

Sent: Monday, December 6, 2021 9:03 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Susanne Berntsson 13577 Nectarine Avenue Eastvale, CA 92880

From: Lawrence Lujan <lawrenluj@aol.com> Sent: Monday, December 6, 2021 9:48 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Lawrence Lujan 7327 Loch Alene Avenue Pico Rivera, CA 90660

From: Stephen Hutchinson <shutchin@sbcglobal.net>

Sent: Monday, December 6, 2021 9:53 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Stephen Hutchinson 849 Omar St Glendale, CA 91202

From: Victoria Miller <vemiller0426@gmail.com> Sent: Monday, December 6, 2021 10:44 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Victoria Miller 15857 Moorpark St Encino, CA 91436

From: Deborah Savage <deborahsavage@sbcglobal.net>

Sent: Tuesday, December 7, 2021 2:48 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Deborah Savage 19071 Holly Lane, Apt 14 Huntington Beach, CA 92648

From: Kimberly Calvin <calvin_ki@sbcity.org>
Sent: Tuesday, December 7, 2021 3:15 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Kimberly Calvin 290 n E st San Bernardino, CA 92401

From: jess zelniker <suirpfael@gmail.com> Sent: Tuesday, December 7, 2021 5:55 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, jess zelniker 4938 Placidia Ave North Hollywood, CA 91601

From: Soraya Dosaj <soraya_d@sbcglobal.net> Sent: Tuesday, December 7, 2021 6:11 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Soraya Dosaj 6220 Allott Ave. Van Nuys, CA 91401

From: Vic Bostock <care4animals@hotmail.co.uk>

Sent: Tuesday, December 7, 2021 9:06 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Vic Bostock 1612 Woodglen Ln Altadena, CA 91001

From: David Camp <campd@mindspring.com> Sent: Tuesday, December 7, 2021 10:11 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Zero-emission technology is readily available, and it is past time to push our worst polluters to start making the transition. I thank you for your work to move us forward on a path to making our communities healthier and more livable.

Sincerely, David Camp 436 E Magnolia Blvd. Apt. 209 Burbank, AP 91501

From: Tia Triplett <tia@anlf.com>

Sent: Tuesday, December 7, 2021 10:46 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Tia Triplett 3959 Berryman Ave Los Angeles, CA 90066

From: TAYFUR INGALLS <tayfur@prodigy.net> Sent: Tuesday, December 7, 2021 11:55 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, TAYFUR INGALLS 3334 Dorchester Ave Los Angeles, CA 90032

From: Teri Lockton < teri@lockton-magill.com > Sent: Tuesday, December 7, 2021 12:01 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Teri Lockton 3760 Tracy St Los Angeles, CA 90027

From: Benjamin Barajas, Jr. <bbarajasjr@yahoo.com>

Sent: Tuesday, December 7, 2021 12:12 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Benjamin Barajas, Jr. 12367 4th St Spc 17 Yucaipa, CA 92399

From: Susan Steube-nordine <suesnordine@dslextreme.com>

Sent: Tuesday, December 7, 2021 12:13 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Susan Steube-nordine 2543 Mono Circle La Verne, CA 91750

From: Amira Mansour <amiramansour@earthlink.net>

Sent: Tuesday, December 7, 2021 12:38 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Amira Mansour 4615 Green Tree Lane Irvine, CA 92612

From: Jane Whitcomb < jane.whitcomb@sbcglobal.net>

Sent: Tuesday, December 7, 2021 12:48 AM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Jane Whitcomb 1121 Bell St Pasadena, CA 91104

From: Anise Aschenbach <asoligo12@juno.com> Sent: Tuesday, December 7, 2021 1:07 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Anise Aschenbach 14118 Fairford Ave Norwalk, CA 90650

From: jess zelniker <suirpfael@gmail.com> Sent: Tuesday, December 7, 2021 1:53 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, jess zelniker 4938 Placidia Ave North Hollywood, CA 91601

From: Robert Kurz <rkurz@hotmail.com>
Sent: Tuesday, December 7, 2021 3:32 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Robert Kurz 23256 Arelo Ct Laguna Niguel, CA 92677

From: Merrill Matchett <sierra_jay@juno.com> Sent: Tuesday, December 7, 2021 4:02 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Merrill Matchett 14801 Newport Ave Apt E Tustin, CA 92780

From: Laurel Tucker <tsva1@earthlink.net> Sent: Tuesday, December 7, 2021 4:49 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Laurel Tucker 676 W 9th St Claremont, CA 91711

From: Phyllis Chavez < Phyllis@phyllischavez.com>

Sent: Tuesday, December 7, 2021 5:07 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

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Sincerely, Phyllis Chavez 2112 Ocean Park Blvd., #5 Santa Monica, CA 90405

From: diana horowitz <tupug@aol.com>
Sent: Tuesday, December 7, 2021 6:14 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, diana horowitz 23634 aetna st Woodland Hills, CA 91367

From: Alberto Acosta <aacosta756@att.net> Sent: Tuesday, December 7, 2021 6:58 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

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Sincerely, Alberto Acosta 235 N Valley St Burbank, CA 91505



N. Jonathan Peress Senior Director Business Strategy & Policy 555 West 5th Street Los Angeles, CA 90013 Tel: (213) 335-1081 NPeress@socalgas.com

December 7, 2021

Wayne Nastri South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

Subject: Comments on the Draft Control Measures for the 2022 Air Quality Management Plan (AQMP)

Dear Mr. Nastri:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide public comments on the South Coast Air Quality Management District (South Coast AQMD) Draft 2022 AQMP Stationary Source Control Measure workshop held on November 10, 2021. Since the AQMP development process began in 2020, SoCalGas has been an active participant by serving on the AQMP Advisory Committee, participating in workshops, meeting with South Coast AQMD staff to share data, advancing clean fuel technologies and programs, releasing our detailed study of economy-wide decarbonization, and presenting at the Residential and Commercial Buildings Working Group Meeting held on May 6, 2021.

The draft stationary source control measures presented at the November 10th workshop constitute a major shift from the longstanding policy of fuel-neutrality for new space and water heaters (both in new construction and existing buildings). Putting aside the abruptness of this change, it is far from clear whether any meaningful emission reductions, from an ozone attainment planning standpoint are likely to result. Yet, as discussed below, measures that would apply to residential combustion equipment, as proposed, are certain to be costly and have particularly regressive adverse effects imposed on those least able to bear the costs. This is contrary to what has been developed over the last two years as part of the 2022 AQMP process and conflicts with what was presented at the Residential and Commercial Building Working Group Meeting held on September

¹ See SoCalGas, "Decarbonizing the gas grid and reducing building emissions" presented at the South Coast AQMD 2022 AQMP Residential and Commercial Buildings Working Group Meeting on May 6, 2021 available at http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/2022-aqmp-residential-and-commercial-buildings-working-group/socalgas-presentation-aqmp-building-emissions-5-6-21.pdf?sfvrsn=6

9, 2021, which mandated electric-drive technologies for space and water heating in new construction but provided a fuel-neutral approach for existing buildings.

As shared with you and staff in subsequent meetings after the November 10th workshop², increasing load on the electric grid at the scale being proposed to reach attainment in 2037 will have significant impacts on energy system reliability, resiliency, and affordability. In addition, adverse public health effects from the use of diesel backup generators will be exacerbated by this policy approach, notably in disadvantaged communities. It is imperative that ozone attainment and air quality policies, especially those adopted for widespread implementation and with equally widespread effects, are also developed with a thorough and fact-based understanding of prospective consequences and results. As such, we submit the following comments:

(1) Prolific deployment of renewables on the electric grid is dramatically changing how the gas system is used and may hinder attainment through increasing or sustained air pollutant emissions from dispatchable generation.

The reliability services and capabilities provided by the gas grid are increasingly being called upon to complement renewable resource deployment. In 2020, in significant measure most peak hour gas deliveries from SoCalGas' system were to serve dispatchable electric generators (DEGs) and electric system ramping needs more so than to serve peak hour core customer thermal load.³ For example, of the 77 hours in 2020 when deliveries to either core customers or DEGs exceeded 100,000 Dekatherms/hour (Dths/hr) (equivalent to ~ 2.4 billion cubic feet/day (bcf/d) of capacity), 62 hours were to serve DEGs while 15 hours served core customers.⁴ In 2021, the peak hour gas deliveries to DEGs exceeds the peak hour for 2020. Our modeling projects this trend to continue and is likewise consistent with projections by the California Public Utilities Commission (CPUC).

The CPUC is evaluating current electric resource portfolios via a series of reliability decisions, recognizing that California is facing more extreme weather events and corresponding operational challenges due to an increasingly higher renewable resource mix. The CPUC's mid-term reliability draft decisions make clear the operational need and characteristics required to meet the reliability void filled by the loss of Diablo and once-through cooling power plants. The need for firm dispatchable generation to support greater penetrations of renewable resources is unequivocal both in the near and mid-term, as identified by recent CPUC action, and beyond. This becomes particularly acute as questions remain around the ability to procure the amount of long lead time resources with a zero-emission profile given the constraints around online dates (by 2026) and the prescribed operational characteristics identified by the Proposed Decision and Alternate Proposed

² SoCalGas met with South Coast AQMD to discuss concerns on draft stationary source measures on December 3, 2021 and December 7, 2021.

³ SoCalGas' internal modeling analysis.

⁴ Id.

⁵ See CPUC "Alternate Proposed Decision and Proposed Decision Requiring Procurement to Address Mid-term Reliability 2023-2026"; R20-05-003; May 21, 2021 available at https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M385/K026/385026495.PDF
⁶ Id.

Decision.⁷ Greater renewable electric capacity deployment, coupled with electrification of buildings and transport, corresponds to a need for more sustained peaking capacity, so more thermal generation capacity is needed in higher electrification cases. Thermal gas-fueled electric power plant fuel demand decreases on an annual basis, while concurrently peak daily and hourly fuel demand from power plants increases, has likewise been observed in modeling conducted by the CPUC Energy Division.⁸

In fact, this trendline is and will be amplified as more renewables are added and core customer load and transportation are increasingly electrified. In the California Energy Commission's recent report assessing electricity needs to meet the State's zero-emission vehicle mandates, researchers observed a new trend on the electric grid called the "dragon curve". As seen in Figure 1, there are two notable increases in load during the day as vehicles charge—once in the morning when commuters arrive to work and once in the evening when they return home. Spikes from fast chargers which use powerful, short bursts of energy can be seen as people plug in throughout the day and "could bring some strain to the grid" when millions come home at the end of the day to charge. Overall, as seen in Figure 2, building electrification and electric vehicle charging will likely add incremental load to the electric grid during early morning and afternoon ramp periods.

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⁷ To Deliver at least 8 hours duration, 85% capacity factor and/or dispatchable between hours 17-22 daily. *See* Alternate Proposed Decision and Proposed Decision Requiring Procurement to Address Mid-term Reliability 2023-2026; R20-05-003; May 21, 2021 available at

https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M385/K026/385026495.PDF

⁸ See SoCalGas, "The Role of Clean Fuels in Achieving California's Net Zero Climate Goal", available at Roles_Clean_Fuels_Full_Report.pdf (socalgas.com)

⁹ While beyond the scope of this proceeding, it should be noted that much of the valuable complementary reliability (decarbonization-enabling) service provided by the gas grid to the electric grid is unpriced and largely uncompensated. An effect that must change for a reliable and resilient decarbonizing integrated energy system.

¹⁰ See Governor's Wind and Solar Energy Coalition, "Electric vehicles should fear the 'dragon curve,' 26 April 2018. Available at https://governorswindenergycoalition.org/electric-vehicles-should-fear-the-dragon-curve-researchers-say/.

¹¹ See CEC's Staff Report "California Plug-In Electric Vehicle Infrastructure Projections: 2017-2025," March 2018, pg. 4. Available a at

https://efiling.energy.ca.gov/URLRedirectPage.aspx?TN=TN222986_20180316T143039_Staff_Report__California _PlugIn_Electric_Vehicle_Infrastructure.pdf

¹² See Governor's Wind and Solar Energy Coalition, "Electric vehicles should fear the 'dragon curve,' 26 April 2018. Available at https://governorswindenergycoalition.org/electric-vehicles-should-fear-the-dragon-curve-researchers-say/.

Figure 1: The "Dragon Curve": Electricity Use from EVs in 2025

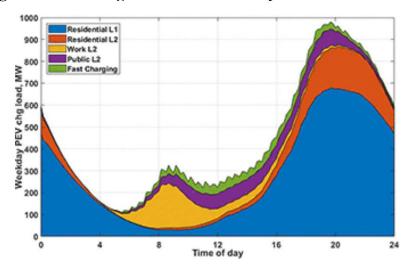
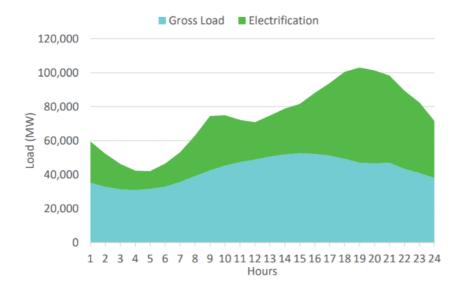


Figure 2: Potential Electric Load, Winter Day in 2045



A 2019 article by the Union of Concerned Scientists states that "because no one has ever decarbonized their electric sector to the extent that California plans, we need to keep watch for a wide range of unanticipated impacts to ensure the transition to clean energy goes as smoothly as possible". The authors note that "California's gas plants, particularly gas turbines, have been starting much more frequently over the past decade, with a very steady increase in the number of starts over time. While the massive increase in gas turbine starts has not dramatically increased the gas turbine [nitrogen oxides] NOx emissions rate, all these starts are undoubtedly keeping the

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¹³ See Union of Concerned Scientists, "Do Renewables Lead to Increased Air Pollution from California Power Plants", available at https://blog.ucsusa.org/mark-specht/do-renewables-lead-to-increased-air-pollution-from-california-power-plants/

overall NOx emissions rate higher than it otherwise would be."¹⁴ More research is needed to evaluate whether the increased load on the electric grid due to electrification measures, and the subsequent increase cycling of DEGs, will undermine South Coast AQMD's efforts to reach attainment in 2037.

(2) Effective building decarbonization solutions that serve and advance the public interest must be carefully designed to avoid the imposition of asymmetrical and inequitable affordability effects.

According to Dennis Allen, Chair of Dean's Council at the Bren School of Environmental Science & Management at the University of California, Santa Barbara (UCSB), replacing fuel-burning appliances (i.e., water heaters, stove tops, clothes dryers, furnaces, etc.) can cost between \$3,000 and \$20,000 or more, per household. The costs depend on whether building upgrades are included, such as adding insulation or new high-performance windows. 16 This cost estimate does not include costs for the required service panel upgrades (further discussed below). This cost projection differs from the estimates of the City and County of San Francisco Board of Supervisors Budget and Legislative Analyst, who conducted a policy analysis to inform the Board of Supervisors of potential policies to reduce or eliminate the use of natural gas appliances. ¹⁷ The Budget and Legislative Analyst found that estimates range from \$19,034 to \$34,790 for a singlefamily home and \$18,762 to \$19,574 for a multi-family unit to replace fuel-burning appliances (see Table 1 below). These substantial cost estimates include disposal of old appliances, purchase of new appliances, labor, and electrical panel upgrades. ¹⁸ As most existing homes have a 100-amp service panel (and some older homes have a 60-amp panel), an electrical panel upgrade to a 240volt circuit would be needed in all cases to allow for sufficient electricity to support all appliances in a household.¹⁹ Physical barriers in older housing stocks can also increase the cost and complexity of changing an appliance's fuel source and modifying buildings to increase efficiency. For instance, the presence of asbestos is a barrier to energy efficiency building upgrades because of the cost of removal and/or abatement. Insulation can also be needed to improve energy efficiency for heat pump HVAC systems.²⁰ Although the currently proposed South Coast AQMD control measures would require the replacement of space and water heaters at the end of their useful life, rather than all at one time, this information is helpful in demonstrating how costly the transition can be.

https://sfbos.org/sites/default/files/BLA. Residential Decarbonization. 042221.pdf.

¹⁴ Id.

¹⁵See Dennis Allen, "Retrofitting Homes to Become All-Electric: Two Approaches and the Costs – Incrementally or All at Once," Santa Barbara Independent, March 25, 2021. Available at

https://www.independent.com/2021/03/25/retrofitting-homes-to-become-all-electric/.

¹⁷ See City and County of San Francisco Board of Supervisors Budget and Legislative Analyst "Policy Analysis Report,", April 22, 2021. Available at

¹⁹ See Dennis Allen, "Retrofitting Homes to Become All-Electric: Two Approaches and the Costs – Incrementally or All at Once," Santa Barbara Independent, March 25, 2021.

²⁰ See City and County of San Francisco Board of Supervisors Budget and Legislative Analyst "Policy Analysis Report,", April 22, 2021. Available at

https://sfbos.org/sites/default/files/BLA.ResidentialDecarbonization.042221.pdf

Besides the one-time costs for converting gas to electric appliances, new ongoing costs would be incurred by residents. Researchers found that aggressive electrification of residential end-use appliances has the potential to exacerbate daily peak electricity demand and increase total household expenditures on energy. Currently, the average California household uses 532 kWh per month, or 6,384 kWh per year, to electrically power some appliances, electronics, and lighting. The San Francisco Budget and Legislative Analyst estimated the annual electricity use of an average household replacing all gas appliances with electric would consume an additional 443 kWh per month, or more than 5,300 kWh per year, when replacing all gas appliances with electric, whereas multi-family units would consume an additional 292 kWh per month, or 3,500 kWh per year, for all electric appliances. Table 1 (below) shows the conversions.

Table 1: Estimated Annual Electricity Use²³

	Single-Family House		Multi-Family Unit	
Usage Type	Natural Gas	Electricity	Natural Gas	Electricity
	(Therms/Year)	(kWh/Year)	(Therms/Year)	(kWh/Year)
Space Heating	260.0	2,069	170.8	1,359
Water Heating	207.6	1,795	140.9	1,218
Clothes Dryer	25.3	658	12.7	329
Cooking	50.0	792	37.5	594
Total	542.9	5,314	361.9	3,500

When considering the CPUC's 10-year baseline forecast in customer rates between 2020 and 2030 for the three electric Investor-Owned Utilities (IOUs), a single-family residential customer's electric bill would increase \$147 to \$202 monthly by 2030. This means that a single-family household would incur a total electric bill of \$288 to \$445 per month depending on the electric service provider. A multi-family household's electric bill would increase \$97 to \$133 monthly by 2030 or would incur a total monthly electric bill of \$243 to \$376 by 2030, depending on the electric service provider. While some households may be able to absorb the additional costs of all-electric appliances, many households cannot.

Today, low- to middle-income households tend to pay a higher percentage of their discretionary income for energy bills than wealthier households.²⁴ Higher energy burdens are not solely owed to lower incomes, but also because of energy inefficiencies in the home and the time-of-use of

²¹See Eric Daniel Fournier, et al. "Implications of the timing of residential natural gas use for appliance electrification efforts," *Environmental Research Letters* 15, no. 12 (2020): 124008. Available at https://iopscience.iop.org/article/10.1088/1748-9326/aba1c0/pdf.

²²See "How Much Electricity on Average Do Homes in Your State Use," *Electric Choice*, 2017. Available at https://www.electricchoice.com/blog/electricity-on-average-do-homes/#:~:text=According%20to%20the%20U.S.%20Energy%20Information%20Administration%2C%20the,Kent ucky%2C%20Mississippi%20and%20Tennessee%2C%20use%20the%20most%20electricity.

²³ See City and County of San Francisco Board of Supervisors Budget and Legislative Analyst, "Policy Analysis Report,", April 22, 2021, at 8.

²⁴ See American Council for an Energy-Efficient Economy "How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burdens across the U.S.,", September 10, 2020. Available at https://www.aceee.org/research-report/u2006.

energy. Under the existing electricity and gas rate structures, replacing a gas-based technology with an electric-based technology will increase a household's expenditure on energy. This is because a household appliance like a stove or water heater's use pattern typically coincides with periods of peak-electricity demand when "the price premium for electrical energy can grow to a factor of 12 times during peak hours (4PM-9PM)."²⁵ In contrast, gas prices fluctuate more on a season-by-season basis rather than a minute-to-minute basis. For energy price sensitive households, bills are expected to outpace inflation over the coming decade, according to CPUC electric rates projections.²⁶ The implication is that, if household incomes are expected to generally increase at the rate of inflation, bills will become less affordable and more burdensome over time.

Additionally, in April 2020, the CEC released a report on retail natural gas sales in the state that evaluates different scenarios that aim to slash California's GHG emissions by 80 percent by 2050.²⁷ The report states that the possibility of large reductions in natural gas use "creates a new planning imperative for the state."²⁸ It further notes that without a gas transition strategy, "unsustainable increases in gas rates and customer energy bills could be seen after 2030, negatively affecting customers who are least able to switch away from gas, including renters and low-income residents."²⁹ If the State's gas consumption declines but the cost of operating and maintaining the gas grid does not decline proportionately, "then large financial obligations will be left to be paid by a smaller number of customers."³⁰ Particularly concerning is the prospect that low- and moderate-income Californians or renters, who may be unable to electrify due to upfront costs or lack of home ownership, could bear the impact of these cost increases.

(3) The costs and benefits should be thoroughly analyzed for stationary source control measures that result in a proliferation of backup generation to ensure reliable electricity

According to an analysis conducted by Bloom Energy and PowerOutage.us, from 2017 to 2019, there were 50,000 significant blackout events in California that affected 51 million customers.³¹ Utility initiated "de-energization" events (i.e. Public Safety Power Shutoffs), while on the rise, were only a small fraction of outages recorded during this time period.³² The study also notes that:

²⁵ Eric Daniel Fournier, et al., Implications of the timing of residential natural gas use for appliance electrification efforts, *Environmental Research Letters* 15, no. 12 (2020): 124008, at 6.

²⁶ "Utility Costs and Affordability of the Grid of the Future: An Evaluation of Electric Costs, Rates, and Equity Issues Pursuant to P.U. Code Section 913.1," California Public Utilities Commission, February 2021, at 8. Available at https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/office-of-governmental-affairs-division/reports/2021/senate-bill-695-report-2021-and-en-banc-whitepaper_final_04302021.pdf.

²⁷ See CEC's Final Project Report, The Challenge of Retail Gas in California's Low-Carbon Future: Technology Options, Customer Costs, and Public Health Benefits of Reducing Natural Gas Use, April 2020. Available at https://www.energy.ca.gov/sites/default/files/2021-06/CEC-500-2019-055-F.pdf.

²⁸ Id., at iii.

²⁹ Id., at iii.

³⁰ Id., at 69

³¹ See Bloom Energy, "California Power Outage Map", available at https://www.bloomenergy.com/bloom-energy-outage-map/

"Among California's 25 largest cities, San Bernardino—which had 1,208 blackout events affecting the equivalent of 1.4 million utility customers—experienced the most blackouts on a per capita basis. Using customers impacted divided by population as a rough approximation of how many times a typical resident experienced a blackout, the average person in San Bernardino experienced more than 6 outages ... Los Angeles alone accounted for 5,787 blackout events affecting the equivalent of 6.4 million utility customers." Aging electric grid infrastructure is cited as a main cause of these blackouts and it has been estimated that a single blackout event in October 2019 incurred over \$2 billion in costs to small commercial and industrial businesses 34

In response to the need for reliable power, diesel-fired generation is growing at a rapid pace in California with enough capacity to power 15 percent of the electric grid. 35 Per the California Air Resources Board (CARB), "[the] demand for reliable back-up power has health impacts of its own. Of particular concern are health effects related to emissions from diesel back-up engines. Diesel particulate matter (DPM) has been identified as a toxic air contaminant, composed of carbon particles and numerous organic compounds, including over forty known cancer-causing organic substances. The majority of DPM is small enough to be inhaled deep into the lungs and make them more susceptible to injury."36 According to the Mount Sinai Selikoff Center for Occupational Health, long-term exposure to diesel exhaust can cause the worsening of existing lung conditions, such as asthma.³⁷ The increase in diesel generation statewide is troublesome, as the generators tend to be located near public spaces, such as schools and workplaces. ³⁸ Even more concerning is that many of the diesel generators are located within disadvantaged communities and can potentially burden these residents with high levels of carcinogenic pollutants.³⁹ For example, nearly one million people were affected by a Public Safety Power Shutoff (PSPS) event in October 2019 and utilized 125,000 diesel backup generators (BUGs) for electrical power.⁴⁰ CARB estimated that diesel BUGs used during this time emitted 9 tons of diesel soot, which is the equivalent of about 29,000 heavy-duty diesel trucks driving on California's roadways for one month.

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³³ Id.

³⁴ Id.

³⁵ "The Diesel-Fired California Dream," California Energy Markets, October 8, 2021, No. 1662. Available at https://www.newsdata.com/california_energy_markets/bottom_lines/the-diesel-fired-california-dream/article_f65b1070-2876-11ec-b3f1-f3ef2c8a4076.html.

³⁶ See Use of Back-up Engines for Electricity Generation During Public Safety Power Shutoff Events, California Air Resources Board

³⁷ See Mount Sinai Selikoff Centers for Occupational Health, Diesel Exhaust Exposure, Available at https://www.mountsinai.org/files/MSHealth/Assets/HS/Patient%20Care/Service-Areas/Occupational%20Medicine/Diesel%20Exhaust%20Exposure.pdf

³⁸ See M. Cubed, "Diesel Back-Up Generator Population Grows Rapidly in the Bay Area and Southern California," Available at https://www.bloomenergy.com/wp-content/uploads/diesel-back-up-generator-population-grows-rapidly.pdf.

³⁹ Id.

⁴⁰ See California Air Resources Board, "Emission Impact: Additional Generator Usage Associated with Power Outage," January 30, 2020. Available at https://ww2.arb.ca.gov/sites/default/files/2020-01/Emissions_Inventory_Generator_Demand%20Usage_During_Power_Outage_01_30_20.pdf.

According to a recent analysis, there are 14,800 BUGs capable of generating 7.3 GW of power in the South Coast Air Basin. ⁴¹Since April 1, 2020, SCAQMD has seen a 22 percent increase (3,331 units) in permitted BUGs, with diesel-fired units representing over 85 percent of newly permitted units. ⁴²As seen in Figure 3, an overwhelming majority of BUGs are in environmentally and economic burdened communities highlighted in red and orange, especially in Los Angeles, San Bernardino, and Riverside.

The proliferation of fossil fuel-fired BUGs is likely to offset the benefits of the proposed strategy for residential combustion appliances on an episodic basis due to the increasing episodic emissions that result. The trendline indicates that more electrification results in more diesel and fossil-fired South Coast AQMD estimates that in 2019, diesel BUGs emitted back up generation. approximately 6 tons of NOx during a PSPS event⁴³, meaning that such emissions should be expected to increase in the future. On an episodic basis, similarly to the episodic measurements required for assessing ozone NAAQS attainment status and planning, the net effect of BUG emissions will tend to offset the projected and expected emissions reductions from the appliance measures. Considering the inordinate and regressive cost burden such measure will impose, it is critical for South Coast AQMD to carefully and empirically assess basin-wide emissions impacts prior to formally proposing any such measure. When developing stationary source control measures in the 2022 AOMP, it is in the public interest to weigh costs and benefits of policies that result in a proliferation of backup generation to assure reliable electricity. The growing reliance on these higher-emitting generators undermines efforts made by the State regarding climate change mitigation, energy affordability, equity, air quality attainment requirements, and reliability on clean energy resources.

⁴¹ See M. Cubed, "Diesel Back-Up Generator Population Grows Rapidly in the Bay Area and Southern California," Available at https://www.bloomenergy.com/wp-content/uploads/diesel-back-up-generator-population-grows-rapidly.pdf.

⁴² Id.

⁴³ See South Coast AQMD, "Legislative Update Presentation by Philip Crabbe to the Environmental Justice Community Partnership Advisory Council", September 2, 2020. Available at http://www.aqmd.gov/home/news-events/webcast?ms=0U9KfvvcV3w

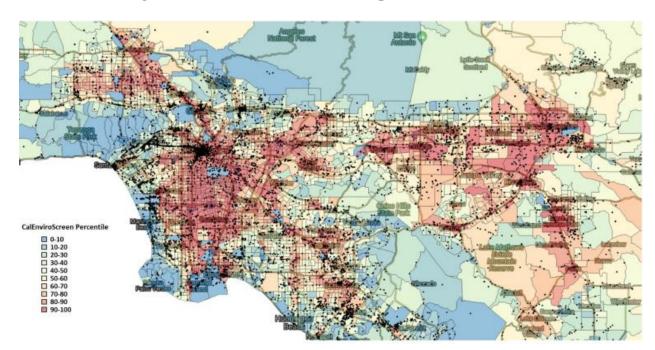


Figure 3: South Coast AQMD Backup Generators (BUGs)⁴⁴

Conclusion

SoCalGas appreciates the opportunity to comment on the Draft AQMP Stationary Control Measures. A focus on control measures that lead to a reliable and robust electricity system will have the greatest GHG and other air pollutant emission reductions. Consideration of a more diversified energy supply will assure sustained emission reductions and will help avoid more diesel back up procurement. SoCalGas looks forward to collaboratively pursuing our common interest of achieving both climate and air quality goals in California.

Respectfully,

/s/ N. Jonathan Peress

N. Jonathan Peress Senior Director Energy and Environmental Policy

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⁴⁴ Id.

Cc: Chairman Ben Benoit

Senator Vanessa Delgado

Supervisor Lisa Bartlett

Councilman Joe Buscaino

Council Member Cacciotti

Gideon Kracov

Supervisor Sheila Kuehl

Mayor Pro Tem Larry McCallon

Veronica Padilla-Campos

Supervisor V. Manual Perez

Vice Mayor Rex Richardson

Council Member Carlos Rodriguez

Supervisor Janice Rutherford



December 8, 2021

Air Quality Management Team (AQMPTeam@aqmd.gov) South Coast Air Quality Management District (SCAQMD) 21865 Copley Drive Diamond Bar, CA 91765-4178

RE: CTS-01 Further Emission Reductions from Coatings, Adhesives and Sealants; ACA Comments

Dear Air Quality Management Team:

The American Coatings Association (ACA)¹ provides the following comments on CTS-01 Further Emission Reductions from Coatings, Adhesives and Sealants. ACA is concerned with the SCAQMD CTS-01 approach of incentivizing "zero and non-zero VOC materials" and "UV light, electron beam, and light emitting diode cured materials," since these have generally not been proven technically sound nor cost effective for most applications. In addition, ACA is very concerned that SCAQMD is planning to remove the exemption status of PCBTF and tBAC, since removal of these exempts will be devastating to the coatings industry. Finally, ACA believes that it is important that SCAQMD memoralize in the AQMP key considerations to serve as reference and help guide any future rulemaking process.

ACA concerns with incentivizing Zero and Near-zero VOC Materials

In the past the District incentivized and regulatorily compelled the coatings industry to use PCBTF and tBAC. Now SCAQMD is planning on removing the PCBTF and tBAC exemptions, which will be devastating to the coatings industry since we do not have alternatives to these exempts compounds.

Consequently, the District should understand that the coatings industry is concerned that the District is again regulatorily incentivizing zero and near-zero VOC materials. ACA understands zero and near-zero VOC materials to include waterborne technology and exempt compounds without toxicity concerns. Waterborne technology has advanced over the last few decades, however, ACA suggests that waterborne technology may not be as durable and more weather dependent as PCBTF/tBAC formulations. Furthermore, if waterborne technology was a viable realistic alternative, it would have already been widely utized and implemented. As described in the following comments, the remaining exempt compounds (including acetone) are not a replacement for PCBTF and tBAC.

¹ The American Coatings Association (ACA) is a voluntary, nonprofit trade association working to advance the needs of the paint and coatings industry and the professionals who work in it. The organization represents paint and coatings manufacturers, raw materials

suppliers, distributors, and technical professionals. ACA serves as an advocate and ally for members on legislative, regulatory, and judicial issues, and provides forums for the advancement and promotion of the industry through educational and professional development services.

ACA concerns with incentivizing UV light, electron beam, and light emitting diode cured materials

ACA generally opposes the incentivization of technologies including UV light, electron beam and light emitting diode cured materials. Here is a partial list of our concerns:

- In general, these technologies have either not been developed, have been found to not be feasible on a wide scale, have too many limitations or have technical issues (substrate pentration, coating large subtrate areas, curved surfaces, line of sight issues and issues with field application). If companies found these "energy coatings" to be worthwhile they would have already been implemented. ACA understands that there may be some sectors and applications that this technology may be feasible, assuming the issues above have been addressed.
- These technologies may be cost prohibitive and may force applicators to invest in expensive curing equiopment, thereby drastically increasing the cost of coating substrates and products. SCAQMD must investigate increased costs versus possible quicker drying times.
- As compared to air dried coatings, these technologies require energy to cure the coating thereby resulting in increased energy demand. These technologies transfer the source of air contaminants to a different source – energy production with increased greenhouse gases and NOx emissions.
- These technologies may include worker safety issues including exposure to UV/EB light (from non shielded lamps), hazard initiation compounds, cure volatiles and clean-up solvents. In addition, UV/EB resin technologies pose worker inhalation and skin sensitization exposure concerns.
- With regard to autorefinish coatings, like waterborne coatings, the concern is that OEM companies have not approved these technologies so OEM warranties may be voided if these technologies are used.

ACA PCBTF and tBAC Concerns

ACA has expressed many times the following PCBTF and tBAC concerns to SCAQMD staff:

- SCAQMD lowered the VOC limits of many coatings, justified in whole or in part, by manufacturers use of VOC exempt compounds (including PCBTF and TBAC). As a result, many companies rely on the use of PCBTF and tBAC to meet the District's VOC limits and cannot meet the VOC limits if the PCBTF and tBAC exemptions are removed.
- The industry is not aware of any readily available PCBTF and tBAC alternatives
- VOC limits *must* be increased in many cases to pre-PCBTF and tBAC exemption levels

- Regulatory Alternatives given the magnitube of the impact to the coatings industry, ACA suggests that any all regulatory alternatives be considered including reactivity; adoption of the European Autorefinish limits and VOC definitions; adopting other VOC exempt compounds (DMC and AMP for example); and the use of add-on controls to destroy PCBTF and tBAC emissions.
- Architectural coatings are highly regulated by Federal, State, and Local building code standards and require performance approvals administered by, but not limited to, Underwriters Laboratories, Factory Mutual, and other governing/approval bodies. Switching to new raw material technologies will void and nullify all current and exitsting approvals.
- Many coatings are certified and will need to be recertfied if PCBTF and tBAC are replaced this process is very expensive and could take years to complete.
- Compliance timeframe industry will need a minimum of 5 years to reformulate and another 3 years to test and recertify products.

Additional PCBTF and tBAC alternatives considerations:

- PCBTF was the primary alternative to tBAC so SCAQMD removing both exemptions is even more problematic
- PCBTF provides a slower evaporation profile than the remaining exempt compounds (acetone and methyl acetate), better solubility parameters than tBAC and DMC.
- Acetone and methyl acetate are not suitable as a substitute since they have lower flashpoint and high evaporation rate, as well as weak solvency for elastomers
- Acetone is highly flammable and making it a *significant* Health and Safety risk; evaporates too quickly, which can result in coating defects and serious safety issues
- In addition, SCAQMD has not adopted additional exempt compounds including Dimethyl Carbonate and AMP, as a result, manufacturers currently do not have a functional substitute to PCBTF nor will they in the near future.
- Switching to water-based products presents issues for many applications color matching, efficiency, dry-time, preservation challenges due to increased restrictions on preservatives, wasted product and increased energy usage.

Rule 1168 Adhesive and Sealant Considerations

SCAQMD must consider that adhesives and sealants may pose a very different exposure pathway than coatings (the pathway for adhesives and sealants is primarily be via skin versus inhalation for coatings). In addition, PCBTF likely evaporates from adhesives and sealants slower than coatings. Sealants tend to be used in well ventilated areas and at lower concentrations than other categories. Finally, PCBTF is the only exempt solvent

which can be used in sealants formulations requiring an aromatic solvent. PCBTF is unique in this regard and so dissimilar to tBAc, Acetone, AMP, etc. that none are a feasible option.

SCAQMD should memoralize in the AQMP key considerations to help guide any future rulemaking process

ACA is very concerned that the AQMP process in general and CTS-01 (specifically) is based on aspirational and lofty goals and relies on very little if any technically sound information. Further, the technical feasibility of the CTS-01 measures are discussed in the rulemaking stage after the CTS-01 measures and reduction commitments have already been made. By the time the rulemaking stage begins SCAQMD is already committed to reductions, that must be achieved, regardless of industry technology feasibility and cost concerns. Given the impact to the coatings industry we request an open dialogue process and additional meetings with SCAQMD as the 2022 AQMP is developed.

ACA also suggests that the District memoralize language in the 2022 AQMP to address key industry considerations/concerns to help guide and serve as a resource/reference for any future rulemaking activities.

ACA requests SCAQMD staff memoralize the following language in the 2022 AQMP:

- The district has not fully evaluated the technical feasibility, costs, or health/toxicity impacts of zero and near zero materials or UV, EB and light emitting diode cured materials. This evaluation will occur in the future as the rulemaking is developed. As such, if the technology is found not to be technically effective or cost effective, the AQMP VOC emission reduction commitments can be revised in the future.
- The District incentivized the coatings industry to utilize PCBTF and tBAC and understands that the industry has yet to find alternatives and the removal of the VOC exemption for these compounds will be very problematic for the coatings industry.
- The District will review each coating rule and coating rule category on a case by case basis (via a survey) to determine if PCBTF and tBAC alternatives exist and are technically feasible (via a technology assessment) and cost effective. If the district finds that adequate alternatives to PCBTF and tBAC do not exist, the VOC limits for these categories should be increased to accommodate the use of PCBTF/tBAC or other VOC compounds.
- The District also recognizes that it will take industry several years to reformulate, test and recertify their products if the VOC limits are increased.
- The District is receptive and open to considering reactivity; adoption of the European Autorefinish limits and VOC definitions; adopting other VOC exempt compounds (DMC and AMP for example); the use of add-on controls to destroy PCBTF and tBAC emissions; or other ideas given the devastating impact removing the VOC for PCBTF and tBAC will have on the coatings industry.

• To limit burden on the coatings industry, the District will open one coatings rule at a time to address PCBTF and tBAC and assess the feasibility of adopting zero and near-zero VOC materials including UV, EB and LED cure technologies.

BIO-01 Assessing Emissions from Urban Vegetation

Considering that biogenic VOC emissions account for nearly 250 tons per day, ACA supports the District further investigating biogenic VOCs and promoting the planting of low VOC emitting species.

Thank you for your consideration of our comments. Please do not hesitate to contact me if you have any questions.

Sincerely,

David Darling

David Darley

Vice President, Health, Safety and Environmental Affairs



December 8, 2021

Sarah Rees, Ph.D.
Deputy Executive Officer
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765

Re: Comments on 2022 AQMP Draft Control Measure Development

Dear Dr. Rees:

As Executive Director of the Southern California Air Quality Alliance and a member of the AQMP Advisory Group, I am providing the following comments regarding the information provided at the November 9, 2021 AQMP Advisory Group meeting and November 10, 2021 Workshop on Draft Stationary and Mobile Source Control Measures.

Overview

The information presented at the two meetings described above indicated that by 2037, if no further emission reduction measures are imposed, mobile sources would account for 82 percent of the NOx emissions in the SCAQMD, point sources would account for 8 percent, and area sources would account for 10 percent. The District's modeling analysis indicates that a 70 percent reduction in basinwide NOx emissions will be necessary to achieve the 70 ppb ozone standard by 2037.

To address this need, SCAQMD staff has identified a number of emission reduction measures that it will evaluate for inclusion in the 2022 Air Quality Management Plan and implementation thereafter. As emphasized during those meetings, massive conversion to zero emission technologies will be required. Zero emission technologies are generally regarded as some form of electrification (e.g, obtaining needed power from the grid, fuel cells, distributed solar, etc.). This would replace current equipment powered directly by fossil fuels (e.g., natural gas fired boilers, generators, heaters, ovens and domestic appliances).

Issues

Although this may be a necessary strategy, we have several major "high level" concerns that must be addressed in the 2022 AQMP before such control measures are finalized and (following EPA approval) implementation of them is required. These issues are:

6080 Center Drive, Flr 6 Los Angeles, CA 90045 Attn: Curtis L. Coleman (310) 242-5269 Ph (310) 861-1484 Fax (310 569-1922 Cell colemanlaw@earthlink.net • There must be assurances that the electrical grid in California will be able to supply the electrical power needed to meet the vastly increased demand that will result from the implementation of these measure (and similar measures that will undoubtedly be imposed by CARB in the transportation sector and other air districts that also are faced with meeting the NAAQS for ozone). California currently is not able to supply sufficient electrical power during certain times of the year and there is no clear indication that this will be

Sara Rees, Ph.D. December 8, 2021 Page 2

> getting better any time soon. If new power generating facilities are to be built to meet the anticipated demand, you should be aware that siting and construction of such facilities is extremely difficult, and siting and construction of new electric transmission lines is equally, if not more, challenging.

- There needs to be a careful analysis of how and when zero emission technologies are imposed. There must be assurances that the electrical power will be available by or before the date that any control measure requiring conversion to electricity is required. Additionally, the District should fairly tailor compliance schedules and electrical or other type of technology conversion in recognition of the fact that most of the larger NOx emitting facilities in the SCAQMD are in the process of upgrading their current combustion equipment to meet BARCT standards for NOx, in many cases at huge cost. To require facilities to install add on control equipment (e.g., SCR) and the related support equipment only to be required to "junk" that equipment in favor of zero emission technology soon after installation of the BARCT level emission controls could result in an immensely costly and unaffordable stranding of assets at best, and closure of businesses at worst.
- Finally, there needs to be a recognition that there will continue to be a need for reliable and instantaneously available emergency power if grid or other base load power fails or is not available. Fuel cells are a very promising technology to address distributed power generation for base load situations and some back up generation scenarios (when adequate notice of an outage is given). Battery storage technology is very immature, and it is not clear that it can be scaled to meet the demand for emergency power during long duration outages or outages at large facilities. This is especially critical for essential public services such as water treatment facilities, fire pumps, and other critical health and safety applications. Natural gas, propane or diesel emergency generators may still be required in some applications. Given the limited hours of operations and current emission control technologies, the resultant NOx emissions from these applications should be low. The District will need to carefully analyze what types of equipment will work in specific applications due to the critical need for emergency backup power.

We look forward to continuing to work with you and SCAQMD staff on these and other issues that we will confront as you move ahead with drafting the 2022 AQMP.

Very truly yours,

Curtis L. Coleman Executive Director

Southern California Air Quality Alliance

From: Shakayla Thomas <tshakayla88@yahoo.com> Sent: Wednesday, December 8, 2021 2:25 PM

To: AQMPTeam

Subject:re: Draft Control Measures for AQMP

Dear South Coast Air Quality Management District,

As a concerned constituent, I appreciate the opportunity to submit these comments to the South Coast Air Quality Management District (SCAQMD) regarding the Proposed Drafts of Stationary Source and Mobile Source Measures for the 2022 Air Quality Management Plan.

It is important to me, as a member of the community, that SCAQMD represent its constituency's quality of life, safety, and health. To that end, I'm supportive of the District's intentions to implement a more regulation-focused (rather than incentive-centric) approach to transitioning to zero-emission technologies.

It is also essential to prioritize adopting zero-emission technologies – this includes eliminating gas-fueled water heaters and furnaces in new construction and incentivizing transitioning for existing buildings. Maintaining reliance on fossil fuel infrastructure will not get us to our clear air goals nor help us reach emissions targets set by the State.

To achieve attainment, we cannot limit appliance transitions to new construction, and it is essential to assure that low-income households and environmental justice communities are not left behind in the process. In making this transition, SCAQMD must be intentional in developing equity measures for environmental justice communities, including reducing costs associated with transitioning to zero-emission technologies with targeted incentive programs and additional local investments.

It is essential to acknowledge and address the disproportionate health, quality of life, safety, and climate impacts of air pollution on historically disinvested and marginalized communities, and to address these impacts, equity must be a core goal of the AQMP. We support creating working groups specifically formed to engage the local community, developing strategies based on community needs, and providing plans to implement solutions sought by and centered on environmental justice communities.

Zero-emission technology is readily available, and it is past time to push our worst polluters to start making the transition. I thank you for your work to move us forward on a path to making our communities healthier and more livable.

Sincerely, Shakayla Thomas 407 S Taper Ave Compton, CA 90220

08 December 2021

Sarah Rees, Ph.D. (Deputy Executive Officer) & Governing Board Members c/o AQMPTeam@aqmd.gov
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

RE: Advisory Group Meeting (09 November 2021) and Control Measure Workshop (10 November 2021); RCMA Public Comment

Dr. Rees and Governing Board Members:

The Roof Coating Manufacturers Association (RCMA)^[1] and its member companies appreciate the opportunity to comment on the South Coast Air Quality Management District's (SCAQMD) on the proceedings of the Air Quality Management Plan (AQMP) Advisory Group Meeting held on 09 November 2021 and presented during the AQMP Control Measures Workshop held on 10 November 2021.

Specifically, RCMA has comments related to items presented in Item #2 during the Advisory Group Meeting and in item #7 during the AQMP Control Measures Workshop.

From the Advisory Group Meeting item #2:

- 1. Slide 5 presented baseline Volatile Organic Compound (VOC) emissions data for 2018 (417 tons per day [tpd]) and projected data for 2023 (390 tpd), 2031 (386 tpd), and 2037 (389 tpd) with the projections based on no additional control enacted beyond currently adopted regulations. The presenter explained that the increase between 2031 and 2037 is projected to be a result of population growth.
- 2. Slide 6 presented a pie graph of the Preliminary VOC emissions for 2037 with the largest section being the VOCs from Area contributors (57%).
- 3. These items were presented again for context during the Control Measures Workshop before individual proposed measures were presented.

From the Control Measure Workshop item #7 (morning session):

 Slides 6-7 presented a general overview of CTS-01 (Further Emission Reduction from Select Coatings, Adhesives, and Sealants). Specifically, staff presented that SCAQMD would be considering changes to Rule 1168 (Adhesive and Sealant Applications), highlighted specific

¹ RCMA has served as the national trade association representing a large majority of the manufacturers of asphaltic and solar reflective roof coatings and the suppliers to the roof coatings industry. Roof coatings protect commercial and residential roofs against water, chemicals, and physical damage. This can extend the life of the roof system, reducing building-owner costs and tear-off waste. Roof coatings have numerous benefits to energy use and the environment. Reflective roof coatings lead to lower roof temperatures, which in turn reduce the Urban Heat Island Effect, air conditioning costs, and peak energy use. The vast majority of RCMA member companies are family-or employee-owned, privately held small businesses.



technologies, and proposed approaches to strategic VOC control programs, incentivizing the use of zero and near-zero VOC materials and other technologies, and removing the exempt status of PCBTF and tBAc. The cost-effectiveness of these considerations has yet to be determined.

Regarding the above items 1-3 from the Advisory Group Meeting, RCMA staff in attendance (Chadwick Collins, Director of Technical Services) inquired if the SCAQMD would be providing the background data that generated the slides highlighted. SCAQMD staff acknowledged his inquiry and stated that SCAQMD intends to post that data on the website for review and would put forth an effort to publish that data as soon as possible. To date, RCMA staff has yet to receive communication from SCAQMD notifying that such data is posted, and a review of the website could not locate the data. RCMA believes that this data should be available to be viewed to provide the public with the same context to A) understand why certain proposed measures are being considered and B) to clearly understand the modeling projections. Further, we would expect the data to be presented in a similar fashion and level of detail as previous AQMPs to allow examination of the effectiveness of previous proposals as well as assessment of individual categories before creating draft proposal language.

The reason that RCMA is requesting this data to be presented is when a long term analysis is done using data from previous AQMPs (2003, 2007, 2012, 2016), each updated baseline data set shows that architectural coatings have exceeded projections both in terms of volume and as a percentage of overall stationary VOC totals. Further, architectural coatings VOC tpd has reduced by 78% in the baseline data values between 2003 AQMP and 2016 AQMP (60 tpd to 13.3 tpd). Over a longer period, 90% of VOC content has been eliminated from roof coatings. These achievements have come while our member companies have reformulated products repeatedly in response to changing regulations affecting base chemistries. While our members understand and support the need to consistently explore options to improve across the board, RCMA looks to the release of this supporting data to examine, evaluate, and, so far to date, celebrate the strides we have made to this point. RCMA believes that this achievement by our industries and its members too often is overlooked and undervalued by regulatory bodies when discussions begin on new proposed measures.

Regarding new proposed measures (above item #4), there are three items of concern RCMA will comment on: considerations of rule 1168, the cited alternative technologies, and the exemption status of PCBTF and tBAc. While rule 1168 does not directly impact roof coatings, several accessories related to roof coating systems are privy to rule 1168 and many of our members manufacture products that are under the jurisdiction of rule 1168. Further, given the liquid form adhesives, sealants, and coatings, it is the opinion of RCMA that any proposed changes to rule 1168 that are implemented would then be proposed for rule 1113 with the assumption being that rule 1168 implementation of these proposed changes would be used as justification for the same in rule 1113. Of primary concern, is the consideration of the removal of exemption status of PCBTF and tBAc.

While it was not clear during the presentation if these changes in exempt status would be a flat removal of the status for these solvents or if would be just for the rules identified, RCMA must voice opposition to such action at this time. Regardless of the approach by SCAQMD, RCMA has to reassert the fact that as little as 20 years ago, PCBTF and tBAc were the alternative exempt solvents that the roof coatings industry along with others redeveloped formulas around to move away from other solvents that were



no longer exempt. While this formulation change was done in response to environmental regulations, the cost and time to evaluate these solvents' capabilities in existing chemistries and then approve the reformulated products through the myriad of other regulatory or standardization requirements is an undertaking that should not be lightly overlooked. The built environment wants to utilize products with proven track records of not just initial compliance with regulatory standards, such as those managed by SCAQMD, but longer-term expectations of performance. This burden of balance between rapid response to changes in regulations in cycles shorter than the expected life cycle of roof coating products (and all roofing system products) and developing a product in a manner to provide the designers in the construction community the confidence when selecting products is a constant strain on manufacturers.

Further, this proposed removal of tBAc is especially perplexing given that in 2014, RCMA sent comments supporting proposed changes to rule 1168 of a then-proposed action to grant exemption status to tBAc for roofing regulated products, which was only 10 years after the EPA granted an exemption to tBAc nationally. A seven to eight-year window is not a sufficient market timeframe for any manufacturer to invest in product development in the roofing industry, especially regarding roof coatings as one of the key attributes (solar reflectivity and thermal emissivity) takes a full three years of testing to generate the evaluation data for acceptance into the California marketplace.

Concerning PCBTF, RCMA will first point that advocates that called to remove tBAc from the exempt list suggested PCBTF as an alternative solvent in its stead. Removal of both solvents would greatly impact roof coatings (and roofing industry liquid applied products like adhesives and sealants) as there are not currently any readily available alternatives. Both PCBTF and tBAc provide a slower evaporation profile than remaining exempt compounds acetone and methyl acetate. Further acetone and methyl acetate's weak solvency for elastomers, lower flashpoint, and higher evaporation rate would greatly impact the attributes, storage, and handling procedures for any chemistry that would be forced to switch to either for a solvent. Acetone's high flammability would have significant negative impacts to Health and Safety risks as well as cascading consequences to shipping procedures.

Secondly, RCMA reminds SCAQMD that PCBTF replaced 1,1,1-trichloroethane and xylene to address the concerns related it their use. It was these alternative solvents that were suggested to the industry as the pathway to maintain product attributes and support the desired initiative of regulatory entities. RCMA again highlights the contributions the roofing industry has made with its liquid applied products (roof coatings, adhesives, and sealants) to not only meet but many times exceed projections toward the goals of SCAQMD. Further, the reason PCBTF and tBAc were given their respective exempt status is they each were determined to not substantially contribute to air pollution.

With that RCMA will address the items around the discussed technologies. After speaking with its members, RCMA can report that none of our manufacturers are aware of any UV curing, electron beam, or LED cured technology that has been successfully assessed to provide on par or greater performance than current field applied roof coating technologies. The statement about zero and near-zero VOC materials would indicate a reference to water-based products in the roof coating marketplace. While RCMA advocates for all roof coating products, it is a disservice to the industry and the affected stakeholder to not be clear on the impacts and limits of relying heavily on water-based technology.



Roofing and waterproofing systems are designed to be impenetrable by moisture and to prevent the transport of moisture through to the substrate to which they are applied. Because of this design, significant moisture arising from water-based adhesives becoming trapped between the impermeable roofing components can result in blisters and premature roof system failures. These issues drive more frequent repairs, tear-offs and/or full roof system replacements, contributing to detrimental environmental effects.

While RCMA can empathize on re-visiting rules that have shown success in meeting or exceeding SCAQMD's goals with previous rule amendments, further restrictions to reduce VOCs in roofing industry liquid applied products could result in:

- Reduced adhesion of products to substrates
- Need for increased coverage rates (higher volume application) to equate expected attributes, resulting in overall increased VOC emittance
- Reduction in product lifespan resulting in more frequent applications which leads to increased overall VOC emittance
- Elimination of product lines due to inability to reformulate, which could impact the rate of retrofitting to cool roofs on existing buildings resulting in a slowing of the positive impacts seen with those retrofit installations

The association appreciates the positive relationship we have built with the South Coast Air Quality Management District and looks forward to continuing collaboration to work toward improved air quality through achievable regulatory activities.

Sincerely,

Dan Quinonez
Executive Director
Roof Coatings Manufacturers Association (RCMA)
1280 National Press Building
529 Fourteenth Street, NW
Washington, DC 20045













December 8, 2021

Kalam Cheung, Ph.D. Program Supervisor South Coast AQMD Michael Krause Planning and Rules Manager South Coast AQMD

Submitted via email to: kcheung@aqmd.gov & mkrause@aqmd.gov

RE: Comments on Proposed Draft NOx Stationary Source Measures for the 2022 Air Quality Management Plan (AQMP)

On behalf of the undersigned organizations, we appreciate the opportunity to provide initial comments on the South Coast Air Quality Management District's (District) efforts to reduce stationary source emissions, specifically Nitrogen Oxide (NOx) emissions in the buildings sector.

Residential and commercial buildings currently account for 23.8 tons of NOx emissions per day in the District and reducing emission in this sector will be critical to attaining the 70 ppb 8-hour ozone National Ambient Air Quality Standard (NAAQS). We agree with the District that the "only viable solution to achieving 70 ppb ozone standard requires significant push to zero emissions technology", and we support the District's intention to move forward with a regulatory approach to move toward zero-emission technology.

Additionally, as we make the transition to zero-emission technology, we must prioritize low-income and environmental justice communities through targeted incentive programs and

other investments for the adoption of zero-emission technologies to equitably provide for significant benefits in terms of affordability, quality of life, and public health to communities that need these benefits the most. Highly efficient heat pumps in particular can lower energy bills, improve indoor comfort and health to stay safe from extreme heat, and protect from hazardous air quality caused by wildfire smoke and pollution.

In response to the District's draft AQMP control measures, we propose the District adopt the following regulatory measures:

- **New Buildings:** Set a date of 2024 for a zero emission NOx standards for all electric appliances.
- Existing Buildings: Set a date of 2029 for a zero-emission NOx standard for space heating and water heating.
 - Equity Working Group: The long-term phase in date of zero-emission NOx standards for space and water heating in existing buildings should be paired with an equity working group process. This process should engage local community groups, affordable housing groups, and environmental justice stakeholders in the development and implementation of plans and policies to equitably advance zero-emission technologies across the District. Considerations should include, but not be limited to, assessing installation, affordability, and accessibility barriers, anti-displacement and affordability protections, and strategies and programs to ensure low-income communities are prioritized in the clean energy transition.
- **Financing and Accessibility:** Increase the incentive dollars for zero-emission technologies, with the majority of the total funding targeted toward low-income and environmental justice communities, covering necessary installation costs such as panel upgrades, wiring, and other structural upgrades.

We strongly urge the District to adopt regulatory measures coupled with increased incentives to reduce building emissions and deploy zero-emission technologies. Historically, incentives without strong regulations to set a clear pathway for the market have not been effective; however, robust incentives are critically important to ensure equity in the regulations' implementation. The District has the authority to regulate the buildings sector and has already attempted to reduce emissions without regulatory measures in its 2016 AQMP with no success. In fact, building emissions since 2016 have increased to become the largest stationary source of NOx emissions in the District. This incentive-only approach has left the District on the hook for a steep 70% reduction goal to meet its clean air mandates.

Moreover, as the Air Resources Board (ARB) and the Bay Area Air Quality Management District consider regulatory approaches for zero-emission technologies in buildings, the District's two-pronged approach of regulatory measures coupled with incentives will provide not only regional but statewide certainty and shift the market to grow market volume and contractor familiarity. On this front, we applaud the District's change in eligibility requirements for its CLEANair Furnace Rebate Program towards only funding heat pumps.

Zero-emission technologies are already viable and widely available on the market. The District cannot afford to do anything less than a zero-emission approach to achieve the NOx reductions necessary to be in compliance with clean air rules.

We look forward to continuing to collaborate with you on this and also helping the District succeed in achieving attainment.

Sincerely,

Resa Barillas Matt Gough California Environmental Voters Sierra Club

Leah Louis-Prescott Andrea Vidaurre

RMI Peoples Collective for Environmental Justice

Fernando Gaytan Faraz Rizvi

Earthjustice Center for Community Action and Environmental Justice

Christopher Chavez
Coalition for Clean Air



California Council for Environmental and Economic Balance

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December 8, 2021

Dr. Kalam Cheung
Program Supervisor
South Coast Air Quality Management District
Submitted Electronically to AQMPTeam@aqmd.gov

Re: South Coast AQMD Draft Stationary and Mobile Source Control Measures

Dear Dr. Cheung,

On behalf of the members of the California Council for Environmental and Economic Balance (CCEEB), we submit these comments on the draft South Coast Air Quality Management District (SCAQMD or "District") stationary and mobile source control measures for the 2022 Air Quality Management Plan (AQMP), as presented at the November 10, 2021 workshop. CCEEB has been a longstanding stakeholder engaged in District air quality planning efforts, as well as California Air Resource Board (CARB) State Implementation Plans (SIPs), on behalf of both stationary and mobile sources of emissions.

We are just beginning to evaluate the draft control measures and hope to provide detailed comments as more information becomes available from CARB and the District. For now, we share initial thoughts on three major and inter-related components of the 2022 AQMP and SIP strategies: (1) special considerations inherent to technology forcing and technology switching measures that transition combustion equipment to "zero emissions"; (2) the importance of infrastructure planning and technology assessments to support zero emission vehicles (ZEVs) and equipment; and (3) public safety and feasibility considerations related to emergency engines. These three issue areas are complex individually, and even more so in their interactions; CCEEB believes cross-sector dialogue would be beneficial, so that stakeholders may explore technical and other feasibility issues together, in the hope that some degree of shared understanding of the challenges and opportunities could be formed. CCEEB would be pleased to work with the District to facilitate such discussions, whether through the AQMP planning process or as stand-alone meetings.

Additionally, CCEEB continues to be concerned by the lack of progress being made towards the 2023 and 2031 attainment deadlines. While we understand the 2022 AQMP is solely focused on the 2037 deadline for the 2015 8-hour ozone standard, lessons from past AQMPs have meaning for the current planning cycle. SCAQMD partner agencies – CARB and the federal Environmental Protection Agency (EPA) – must be accountable for their "fair share" of emission reductions,

both past and present, including Clean Air Act (CAA) requirements that the State adopt all reasonably available control measures in order to meet federal standards "as expeditiously as possible." The State cannot defer action to later years, or pick and choose which attainment deadlines it will seek to meet, without risk of significant CAA penalties. Moreover, when looking at the gaps in implementation in the 2016 AQMP, we see that the missing emissions are from State and federal sources, particularly those meant to be reduced by "further deployment of clean technologies" as part of SIP measures for on-road and off-road mobile sources. If failure to attain is due to a lack of action on State and federal mobile sources, District-controlled stationary sources should not then be penalized. CCEEB appreciates the attention and careful consideration the District gives to this problem, and strongly supports its efforts to resolve CAA challenges with its State and federal partners.

Transition to "Zero"

Traditionally, air quality regulations have primarily focused on mandates to use or produce the cleanest engines and equipment within a category, including retrofitting of equipment and engines with emissions control devices. Strategies to transition equipment from one category to another – such as switching from internal combustion engines to batteries or fuel cells – instead relied on incentives, whether monetary or otherwise.

The draft 2022 AQMP-SIP marks an important shift in strategy; CARB now seeks to mandate a wholesale transition to ZEVs and zero-emission equipment (ZEE). Additionally, it proposes measures that retire equipment before the end of its useful life, where it has authority to do so (e.g., amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation), and the stacking of multiple regulations on the same engines and equipment for the purpose of forcing zero emissions wherever possible, while mandating increasingly tighter controls on remaining combustion categories that it cannot or may not electrify (e.g., development of a new Tier 5 standard and the recently adopted Low NOx Heavy-Duty Omnibus Regulation). While such aggressive strategies may indeed be needed to meet state air and climate goals, they also raise substantial risks of stranded assets, and lacking more details about timelines and actual requirements, create investment uncertainty.

Questions about the combined effect of overlapping regulations on the same sources is of particular interest to the many RECLAIM facilities, which even now are planning projects to implement the District's Best Available Retrofit Control Technology (BARCT) "landing" rules. For some businesses, these are literally billion-dollar investments in cleaner air. It is critical that these businesses and public agencies fully understand intended timelines and scale by which the District and CARB plan to then move these very same sources to zero emission. SCAQMD should allow these sources to recoup the capital costs spent on BARCT controls, and allow facilities to operate new equipment for its useful life.

Small and medium-sized businesses will need this certainty too – forcing retirement of older equipment to Tier 4 today, Tier 5 tomorrow, and "zero" after that, will be a major transition and costly mandate. The environmental and health benefits of these regulations should be

clear, as well as expected implementation timelines, for there will certainly be heavy economic impacts for most, and the business case for some may ultimately not pencil out.

At a minimum, the District and CARB must ensure that ZEV and ZEE technologies meet operational needs, are feasible for the given duty cycle and use case, have the requisite public fueling and charging infrastructure available at a comparable cost, and are cost effective, so that businesses have a realistic pathway to compliance and are not forced out of the basin because they cannot afford the transition at the pace and scale being required. For some sources, such as those with high thermal loads, there may not be ZEE options through 2037. For others, a holistic approach that looks at net zero strategies, rather than just tailpipe or stack emissions, may make more sense. CCEEB encourages the District to take a broad view of potential control options and emission reduction strategies that can achieve our air quality and climate goals while maintaining the economic viability of businesses operating in the South Coast.

For the 2016 AQMP, the District formed an ad hoc committee on Large Compliance Investments and Future Regulatory Certainty. CCEEB found that group useful, and suggests that staff consider reconvening the ad hoc as a means to discuss with stakeholders these and other issues related to the transition to ZEVs and ZEE. Regardless of what forum or format it uses, CCEEB believes that feasibility and cost effectiveness should be key elements of the proposed technology assessments.

SCAQMD, Infrastructure Planning and Determining Technology Readiness

Given the importance of these ZEV and ZEE strategies – both for achieving our shared environmental goals as well as for preserving our economic base – mindful planning of infrastructure and assessment of technology readiness for commercial applications is paramount. CCEEB appreciates the District's commitment to undertaking these assessments, along with its partner agencies. However, details on the criteria and process by which these assessments will be done are unknown at this early stage. CCEEB welcomes the opportunity to discuss these issues with staff as its concepts begin to develop. Many agencies and organizations already work in this space, although coordination among them has been less than clear, and policies at one agency do not always align with others. What additive role the District can play is also not quite clear. That said, CCEEB recognizes and supports the District's longstanding and world-class engineering and scientific expertise, as well as its innovative approaches to policy, and believes it can play a positive part.

As a starting point, CCEEB recommends the District work with partner agencies to fund technology demonstrations and testing at the specific sources and operations being targeting in the draft control measures. As much as possible, these pilots should reflect the different use and duty cycles at different industrial and commercial applications. Any replacement technology must be capable of supplying back-up power immediately and automatically upon loss of the primary power supply, which could last for the entire duration of the power outage or emergency situation. This is especially critical for essential public services, which we address

further in the next section. Many essential public services have a duty to serve, therefore the delivery system must be reliable and resilient to function even in a worst-case scenario situation.

Emergency Engines at Essential Public Services and Critical Infrastructure

Emergency engines at essential public services must be a special category. CCEEB believes this topic is ripe for cross-sector dialogue; we are listening to the call for aggressive transition of this equipment category, and acknowledge that permitting of emergency engines in general is increasing in basin and state. The need for backup power will likely increase as more businesses and households electrify and in response to the risk of Public Safety Power Shutoffs. CCEEB understands that batteries, fuel cells, and microturbines can and should play an ever-increasing role in both prime and emergency distributed generation, but asks that the following considerations be made for essential public services and critical infrastructure.

- Loss of power at essential public services poses an immediate public health danger.
 One has only to look at the District's defined list of essential public services (Rule 1302) and critical service facilities (Rule 118.1), to see why this is so; hospitals, water delivery, firefighting and police facilities, telecommunications and cell towers, sewage treatment and pumping plants, recycled water plants, natural gas distribution, and public transit are all part of the definitions.
- Unless there is an emergency, these engines run very low hours. Almost all carry strict operational limits based on the minimum hours needed for testing and maintenance. This means actual emissions are also very low, and already closely monitored and regulated by New Source Review permitting rules for new engines, BARCT rules for existing engines, and toxics rules for the cumulative emissions from a facility or bank of engines. Under CARB's new statewide criteria and toxics emission reporting regulation, emissions from all permitted emergency engines will be reported annually at the facility level, and open to audit by both the District and CARB.
- During an emergency, these engines must operate dependably for potentially long periods in uncertain conditions. Providers of essential public services and critical infrastructure have special parameters by which they plan for emergencies it may be useful for agency staffs and other stakeholders to hear discussion of what is involved, and why, to better understand the conditions under which emergency power must be available. Lessons learned from events like the Northridge and Loma Prieta earthquakes, and all too many wildfires, are important reminders. Factors to consider include supply lines and distribution (e.g., hydrogen for fuel cells), not just the durability of the equipment. Additionally, several other agencies regulate the functioning and provision of essential public services, such as the fire code (e.g., water pressure) and hazardous material handling regulations, which must be factored in.

- Emergency engines often power large loads for things like water and wastewater pumps, hospitals and building systems. Coupled with the potential for long event durations, the reliability of battery and other energy storage systems is uncertain. This technology, in particular, seems better suited for commercial and residential applications where power failures do not carry the same risk of immediate danger to public health, safety or disaster recovery.
- During low-load operation, such as testing and maintenance, add-on emission controls are not effective, meaning the supposed emission benefits from using higher tiered engines can go unrealized. For example, in the absence of an actual emergency, some engines only run 20 or 30 hours per year for testing and maintenance, despite permit conditions that allow as many as 200 hours per year. Cost-benefit analysis must take this into account; that is, basing emission reduction estimates only on District default one-size-fits-all emission factors or manufacturing nameplate ratings can be misleading as the engines primarily run during low-load applications.
- Replacing entire emergency power systems will take careful, site-specific planning.
 Even after reliability testing and demonstration prove that a near-zero or zero emission technology can meet emergency power duty cycles and operational safeguards, many additional factors must be taken into account. Capital costs, the physical footprint of the site, fuel supply and infrastructure, interim backup power, and worker training, for example, will take time and coordination for each facility.
- SCAQMD must ensure that viable alternatives are commercially available before requiring replacement of older, higher-emitting emergency standby engines with near-zero/zero-emission technology. In addition, potential safety concerns (such as explosion and/or fire) associated with on-site storage of alternative fuels (such as compressed natural gas or hydrogen) must be carefully evaluated. Permitting associated with the installation and use of the replacement technology must also be considered.
- Further evaluation is needed to determine if renewable diesel fuel is feasible for emergency engines and can be stored for a long period of time without breaking down. Additional considerations include adequate supply/availability of renewable diesel fuel.

Comments and Questions on Specific Measures and Other Issues

Inventory and Background Levels – CCEEB asks that staff provide inventory estimate for 2023 and 2031, not just 2037. CCEEB would also like to better understand estimates of background levels of ozone and how this could impact attainment strategies over time.

CTS-01: Further Emission Reduction from Select Coatings, Adhesives, and Sealants – any proposal to remove the exemption status for PCBTF and tBAc should be evaluated with a full understanding of what control are already in place to prevent exposures to workers and nearby

receptors. If no or de minimis exposures would be expected in certain use cases, and if alternatives would *increase* VOC emissions, then CCEEB believes the exemption should be refined, not removed.

L-CMB-03: NOx Reductions from Permitted Non-Emergency Internal Combustion Engines — CCEEB would like to better understand potential timeframes for implementing this measure, and how the how the assessment of zero-emission technologies will be conducted. As we noted previously, many of these engines will be implementing BARCT as part of the transition out of RECLAIM, including installation of selective catalytic reduction (SCR) controls. Sources should be allowed to recoup the significant capital investment involved in these projects, including preserving the useful life of new equipment.

L-CMB-05: NOx Reductions from Large Turbines – same comment as for L-CMB-03. Additionally, CCEEB asks staff to clarify what would be considered a "higher emitting turbine."

CCEEB appreciate this opportunity to provide initial comments on the draft SCAQMD 2022 AQMP control measures. We hope these comments can provide a useful starting point for CCEEB discussions with staff, CARB, and other stakeholders. To that end, we appreciate the work of you and your staff in developing the plan, including the convening of work groups and the advisory group as a means to encourage and facilitate stakeholder input. Should you or your staff have questions or wish to discuss our comments in more detail, please contact me at janetw@cceeb.org or (415) 512-7890 ext. 111.

Sincerely,

Janet Whittick

CCEEB Vice President and South Coast Air Project Manager

cc: Dr. Michael Benjamin, California Air Resources Board Mr. Bill Quinn, CCEEB President and CEO

The Members of the CCEEB South Coast Air Project

Comment Letter 89

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December 8, 2021

Kalam Cheung South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 92675

South Coast AQMD 2022 AQMP Draft Stationary

and Mobile Source Control Measures

Dear Dr. Cheung:

On behalf of the Regulatory Flexibility Group ("RFG") we submit these comments on the draft South Coast Air Quality Management District ("SCAQMD") stationary and mobile source control measures for the 2022 Air Quality Management Plan ("AQMP"), as presented at the November 10, 2021 workshop. The RFG is an industry coalition comprised of companies operating in the aerospace, automotive, refining and utility sectors with facilities located within the SCAQMD. The RFG has been a leading business advocacy organization on SCAQMD matters for over 30 years.

The RFG will provide additional comments as more detailed information on the AQMP control measures is made available. We focus these comments on the need to recognize the investment that has been made in the region's existing oil and gas infrastructure and to plan in a manner that protects that investment. The existing infrastructure is not only critical to meeting the needs of the region over what will inevitably be a lengthy energy transition period; it will also play an important role in making the transition possible.

The AQMP represents a sea change from traditional air quality regulation and planning relying on additional exhaust stack controls, new engine technology, and fuel improvements to an across the board push to zero emissions technology and an economy-wide transition to different fuels. As the SCAQMD acknowledged in the November 10, 2021 workshop, existing infrastructure is currently not sufficient for widespread adoption of zero emission technologies, and new and enhanced infrastructure will be needed for mobile and stationary sources. The backbone of that new and enhanced infrastructure is the existing oil and gas infrastructure, and planning should ensure that new investments in the existing infrastructure are encouraged and protected.

Contrary to the wishful thinking of some, the transition from a fossil-fuel based economy will continue to be gradual. Studies consistently show continued use of natural gas for at least

the next 30 years, even in scenarios where the country achieves net-zero targets by midcentury. There simply is no quick replacement for gas in the U.S. energy mix. The degree to which the world depends on oil and gas is often not understood. It is not just a matter of shifting from gasoline-powered vehicles and equipment to electric alternatives. It is about shifting away from all the other ways we use plastics and other oil and gas derivatives. Plastics are used in wind towers and solar panels, and oil is necessary to lubricate wind turbines. The number of passenger planes is expected to double in the next two decades and they are unlikely to fly on batteries. The existing oil and gas infrastructure will be required to meet critical needs for many decades to come even under the most ambitious transition scenarios.

Furthermore, substantial investments are already being made at facilities in the oil and gas sector throughout the SCAQMD to comply with existing requirements to reduce emissions, many of which were recently put in place as part of the SCAQMD's transition from the NOx RECLAIM program. This includes billions of dollars of investment in petroleum refineries and related facilities, and in the region's natural gas supply system. These investments should be protected for their useful life by recognizing that this enhanced infrastructure can play a critical role in the regions' energy transition.

Investments in oil and gas infrastructure are often criticized for locking fossil fuels into the energy mix for a longer period of time and working against an energy transition, but electric and fossil fuel systems are not competitors. Instead, they complement each other's strengths. Electrification combined with low- and zero-emissions fuels delivers the most affordable, resilient and technologically proven path to reducing emissions. By repurposing existing oil and natural gas infrastructure to deliver clean fuels, SCAQMD can reach its emission reduction goals more affordably, and with less risk of power disruptions, customer conversion barriers and technological limitations.

Thank you for your attention to these comments. We look forward to working with the staff on the development of the 2022 AQMP. Please feel free to call me at (714) 401-8105 if you have any questions.

Very truly yours,

Michael J. Carroll

Michael J. Carroll

of LATHAM & WATKINS LLP

cc: Wayne Nastri

CALIFORNIA COMMUNITIES AGAINST TOXICS CALIFORNIA KIDS IAQ CENTER FOR COMMUNITY ACTION & ENVIRONMENTAL JUSTICE COALITION FOR A SAFE ENVIRONMENT COMMUNITY DREAMS EAST YARD COMMUNITIES FOR ENVIRONMENTAL JUSTICE

EARTHJUSTICE EMeRGE

NAACP, SAN PEDRO-WILMINGTON BRANCH
PACIFIC ENVIRONMENT
PEOPLE'S COLLECTIVE FOR ENVIRONMENTAL JUSTICE
SAN PEDRO & PENINSULA HOMEOWNERS COALITION
USC PROFESSORS
WEST LONG BEACH ASSOCIATION

December 8, 2021

Wayne Nastri
Executive Officer
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Re: Comments on Control Measure Workshop for the 2022 Air Quality Management Plan ("AQMP").

Dear Mr. Nastri:

On behalf of the undersigned organizations, we submit this comment letter on the Control Measures Workshop for the 2022 Air Quality Management Plan ("AQMP" or "plan"). We look forward to working with the staff of both the South Coast Air Quality Management District ("South Coast AQMD" or "Air District") and the California Air Resources Board ("ARB") in developing an ozone plan that actually meets the standards by the relevant deadlines. The following sections provide our very initial and brief input on the proposals we have seen. We will likely have more specific comments once actual drafts of the plan are provided for review.

I. The Air Quality Public Health Crisis Demands Action.

Organizations have come together under a simple premise: South Coast air basin ("South Coast") residents should not get sick, have existing respiratory illnesses worsened, or die prematurely as a result of breathing. They have a fundamental human right to breathe clean air. We are failing in our mission to make it safe to breathe. Last year was the worst ozone season in decades – despite having myriad prior plans that claimed we would meet clean air standards on time. This year, we are careening towards one of the worst fine particulate seasons in years. We

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request what the Clean Air Act promised us, which is clean air for all in our region by a deadline. We need our air agencies to stop playing games with our attainment plans, and deliver what Congress promised us.

II. The Focus on Zero-Emissions Makes Sense.

We appreciate staff finally articulating that the only way to meet clean air standards is to push widely on zero-emissions. The following slide from the Control Measure Workshop clearly articulates the need of this air plan to pivot from an incrementally cleaner combustion approach to a zero-emissions approach.



We 100% agree with the assessment that we have to get to zero-emissions to meet the 2015 8-hour ozone standard. It is also our assessment that we need a major shift to zero-emissions to attain the 2008 and 1997 8-hour ozone standards, as well. We fear there is often a shortcut and unexplained argument – even from South Coast AQMD agency staff - for investments in combustion technologies now¹ based on generic arguments that we need these investments for attainment of the standards with earlier deadlines. It is important that we not confuse people with what is needed to attain clean air standards. We would like some analysis showing us if there is, in fact, a combustion pathway to attain either the 2008 ozone standard or the 1997 ozone standard. To the extent there is (which we are highly skeptical), we would like to understand how investments in combustion technologies in the next five years will inhibit or delay attainment of the later ozone standards when the staff is identifying that we must get to zero-emissions. We would prefer to have a hard pivot to zero-emissions now, and we think this analysis would get your agencies better aligned with us that even for the near-term standards, investments in combustion technologies will not actually help us attain any 8-hour ozone standard.

¹ We use the phrase "now" very loosely because in some instances combustion proponents claim their technology is available "now" when it is in fact months, if not years away.

III. We Remain Disappointed In the Continued Reliance on "Black Box" Measures.

As we have raised in prior comments, reliance on "black box" measures presents an unfavorable trade-off for those who live in the South Coast Air Basin. While it may provide additional time to attain an ozone standard, the track record of failing to actually identify these measures has resulted in decades of South Coast residents breathing ozone-polluted air. The proposal presented at the workshop while trying to scope out a "different" approach is nothing new.



The "new" approach provided on the right side of the slide is nothing but the old approach to the "black box" - out of sight, out of mind. The Air District and ARB have traditionally used the flexibility provided in section 182(e)(5) for all ozone plans, but the agencies never actually follow through in actually achieving the reductions needed to close the "black box." We also fear the existence of the "black box" could also be used to erode commitments to zero-emissions regulations and other strategies under the false pretense that there is some choice on how stringent the regulation or strategy can be.

We will vigorously oppose any use of the "black box" – especially at this stage in the process – because it will taint an actual assessment of what is possible from the source categories under the control of South Coast AQMD and the ARB.

IV. Incentive Programs Cannot Form the Primary Basis of the Entire Plan.

We warn the Air District and ARB not to overly rely on incentive strategies to attain the ozone standards. While our organizations are not opposed to incentive programs per se, the unprecedented level of voluntary incentive programs proposed in prior plans should create pause for everybody. The U.S. Environmental Protection Agency ("EPA") has made clear that voluntary incentive-based programs are only allowed to cover a relatively small subset of emissions reductions necessary to achieve the National Ambient Air Quality Standards ("NAAQS"). In elaborating on this position, EPA has stated:

The limit is set at three percent (3%) of the total projected future year emissions reductions required to attain the appropriate NAAQS. However, the total amount of emissions reductions from voluntary measures shall also not exceed 3% of the statutory requirements of the CAA with respect to any SIP submittal to demonstrate progress toward, attainment of, or, maintenance of the NAAQS.²

As we have identified in prior comments, securing sufficient funding to achieve attainment under an incentive laden approach would take a miracle. State and federal law do not allow the South Coast AQMD to rely upon miracles to demonstrate future compliance in its clean air plans. Attainment demonstrations must be based on legally enforceable, quantifiable, verifiable, and reasonably achievable emission reductions, not wishful thinking and unrealistically optimistic theoretical projections about securing funds from unwilling sources. Convincing taxpayers to pay for heavily polluting industries as the sole source of clean up is not fair, but also political fantasy. The AQMP must be based in reality.

V. The South Coast AQMD Should Shift Existing Incentive Programs to Zero-Emissions.

A lot of the current incentive programs use a large portion of funds on combustion technologies, and we need the South Coast AQMD to pivot. For example, at the December Governing Board meeting, a school bus program resulted in 50% electric investments and 50% combustion investments (Compressed Natural Gas and Propane). These buses will be operating for many years, and we should shift to solely funding zero-emissions in categories like trucks and buses, which are so clearly on line to move to zero-emissions.

VI. The AQMP Must Be Centered Around Commitments to Regulations.

We hope that the draft AQMP will lay out a robust set of commitments to pursue regulatory measures. Regulatory measures are certain and our best approach to attainment of ozone standards.

A. The Strategy Should Provide Additional Measures to Reign in Pollution from Transportation.

An important aspect of cleaning our air and reducing climate pollution is reigning in poor transportation decisions that will make the job harder. For decades, transportation investments and decisions have made it harder to achieve ambient air quality standards. Communities working to improve mobility in their neighborhoods have had to spend thousands of hours fighting poorly conceived highway and freight expansion projects that would add more pollution to their communities. A big part of the problem is transportation planning documents often dictate the terms of what transportation agencies were willing to do to advance clean air and

² Memorandum from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to EPA Regional Administrators, re "Guidance on Incorporating Voluntary Mobile Source Emission Reduction Programs in State Implementation Plans (SIPs)," October 24, 1997.

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climate goals rather than what they can and must do. We suggest approaching this in a different way.

i. Use Motor Vehicle Emissions Budgets As a Tool to Direct Coherent Investments.

We ask that ARB and the South Coast AQMD use the important powers they have over setting Motor Vehicle Emissions Budgets ("MVEB") to ratchet down the potential to invest in counterproductive expenditures that do not make air pollution better. Instead, the MVEBs should serve to push solutions to our transportation pollution crisis. ARB and South Coast AQMD should explore a 25% or more reduction in MVEBs to ensure our transportation system is actually helping to meet our air quality challenges. While it may take some time to see the benefits of this measures, the timeline horizons for the 2008 and 2015 8-hour ozone standards could provide a perfect amount of time to start seeing our transportation infrastructure investments do more to push us towards attainment.

ii. Include More Robust Transportation Control Measures

Another set of dramatically underutilized tools in our fight against air pollution has been transportation control measures. We recognize that some of these measures can involve difficult operational changes to our transportation system. But, it is an important tool in our arsenal. There are several transportation control strategies that we are not using that could be pursued.

To the extent there are questions of authority, ARB and South Coast AQMD should explore the guidance that the federal government is supposed to provide to states on transportation control measures. In particular, section 108 of the Clean Air Act provides the EPA Administrator and the Secretary of Transportation must provide guidance on these strategies "from time to time." 42 U.S.C. § 7408(f). That section of the Clean Air Act also provides that these agencies can provide more guidance on how to protect vulnerable and sensitive populations from pollution. *Id.* § 7408(f)(1)(C). There is no more important time than now as we are trying to solve intractable air pollution and climate pollution problems.

iii. Improve General Conformity Provisions

Similarly, the use of general conformity budgets – allowing certain federal projects to skip emissions reduction – will continue to undermine Clean Air Act objectives and local efforts to protect public health. Often the "federal projects" benefiting from this loophole are some of the wealthiest corporations in the world. These large corporations have the resources to achieve matching emissions reductions relative to the harms they create but are allowed not to. These loopholes for the well-resourced have no place in future air plans.

iv. Include More Robust Contingency Measures When We Fail to Meet an Air Standard.

Finally, California has extensive experience not meeting ambient air quality standards. It is important that California create some contingency measures that will ensure operational changes to curb pollution. Large transportation sources have had decades of notice that we need to do massive amounts of reductions to meet clean air standards. If we fail to meet these legal mandates, there should be measures that push harder on zero-emissions operations in nonattainment areas.

B. Emission Reductions at Commercial Marine Ports (NOx, SOx, CO).

We are outraged that the South Coast AQMD has not finalized any strategy to clean up port pollution. The San Pedro Bay Ports are busting at the seams with cargo. In fact, in recent months hundreds of ships can be seen at anchor or drifting and waiting for entry. The information on port operations and its impacts is sobering, and agencies have been slow to respond. New data shows the impacts are even worse than we thought.

Researchers at Nanyang Technological University in Singapore, for example, released a study which found that **port emissions increased by 100% in Los Angeles and 65% in Long Beach** when comparing data from 2019 and the COVID shipping surge between July 2020-July 2021. To make matters worse, the researchers in running future scenarios do not project relief in emissions in the near term.¹²

Perhaps more disturbing, the California Air Resources Board recently reported that congestion at the Ports has led to "overall containership emissions increases of **20 tons per day** (**tpd**) **of oxides of nitrogen** (**NOx**) **and 0.5 tpd of particulate matter** (**PM**) in the South Coast Basin relative to average pre-pandemic baseline levels." It is worth noting that the 20 tdp of NOx that CARB highlights is just one piece of shipping emissions and does not include emissions from at berth, transit and maneuvering of freight before it leaves the Ports. Yet these NOx emissions from containerships at anchor alone are roughly the equivalent of 20 percent of the additional 108 tpd NOx reductions the South Coast Air Basin needs to attain the 80 ppb ozone standard by 2023. 14

These increased NOx emissions from at-anchor ships add the equivalent of roughly 5.8 million passenger cars, and the increased diesel PM emissions is comparable to those of approximately 100,000 Class 8 diesel trucks on the road. The current efforts to ramp up to 24/7 operations to move containers off ships are unlikely to ease the region's spike in pollution levels. On the contrary—moving containers from ships to trucks will shift emissions from the port to inland areas and the increased activity will only add to the region's pollution woes.

These alarming trends underscore the urgent need to curb port pollution by electrifying ships, trucks and equipment at the Ports. While some of the harms have been tied to larger ships, the Ports' own recent data confirm the importance of addressing multiple emissions sources tied to port operations such as commercial harbor craft and cargo handling equipment.¹⁶ We recommend the following as a minimum for the 2022 AQMP as it relates to Ports:

- Prioritize adoption of an ISR that will aim to cap emissions from Port facilities with actions aimed at companies with control over those facilities and an aggressive push to transition to zero-emissions across emissions source categories.
- Set a clear timetable for completing the rulemaking process within the first year of the 2022 AQMP.
- Adopt metrics and clear timetables for meeting the attainment goals tied to these measures.

C. Additional Indirect Source Rules

The draft air plan should also include more robust commitments on indirect source rules for railyards, new development, and other sources. The progress in deploying these types of strategies has been slow, and we need a swift commitment to adopt these regulations quickly.

D. Fleet Rules

Ample legal authority exists to push forward clean vehicles ranging from light duty equipment to heavy duty equipment. Even though local jurisdictions like the South Coast AQMD are preempted by federal law from adopting emissions standards and limitations, they have authority to adopt fleet rules and indirect source regulations.

The District may "direct[] state and local governmental entities to purchase, procure, lease, or contract for use of vehicles meeting specified air pollution criteria." *See Engine Mfrs. Ass'n v. South Coast Air Qual. Mgmt. Dist.*, 498 F.3d 1031, 1045-46 (9th Cir. 2007). However, this authority is not boundless because rules governing purchases of new vehicles by private actors (at least, beyond those under contract with a government entity) are likely pre-empted by the Clean Air Act. *See Engine Mfrs. Ass'n v. South Coast Air Qual. Mgmt. Dist.*, 541 U.S. 246, 258-9 (2004) (citation omitted)). But the authority exists, and the District should use it.

The District has, in the past, applied its fleet rules to state and local public entities, including the State of California, counties, cities, public districts, and private entities under contract to such entities (Advisory Notice to Fleets Subject to SCAQMD Fleet Vehicle Rules 1186.1, 1191, 1192, 1193, 1194, 1195 and 1196 (July 20, 2005- noting that rules will not be applied to private entities, or the federal government).

The government fleets in question are substantial; in 2000, the District estimated that fleets governed by the light- and medium-duty rule (Rule 1191) had a population of roughly 44,000 vehicles (Staff Report, Proposed Rule 1191, Att. 2). The Heavy Duty rule covers fleets that comprised nearly 7,000 vehicles in 2000 (Staff Report, Proposed Rule 1196, App. B).

³ Note, however, that EPA could authorize the District to regulate private fleets, by waiving the Act's pre-emption provisions pursuant to 42 U.S.C. 7543(b). We recommend that the District petition EPA to do so.

One study found that government automobiles tend to travel an average of 12,000 miles per year, with heavier-duty trucks travelling only slightly less (11,000 miles per year). These are smaller figures than within the private sector. The same study found the replacement cycle for government automobiles to range from 5 to 7 years. One would expect, therefore, the fleet rule to have relatively rapid effects.

These effects would also include support for the creation of a viable clean vehicle market and economic incentives for vehicle manufacturers to develop and sell more clean vehicles to a wider range of customers. The impact of a regional commitment to clean government fleets should not be underestimated. If the South Coast AQMD is to achieve clean air, it will have to have clean vehicles. The momentum to get the prerequisite clean vehicle development commitment from manufacturers could start with the adoption of aggressive fleet rules.

The plan should commit to adopt new and update the existing fleet rules. These changes should be done to require zero emissions vehicles in fleets throughout the basin, particularly those well suited for zero emission technologies.

VII. Stationary and Area Source Strategies Must Be Improved.

A. The Residential Commitments Must Be Strengthened.

The Air District's emission reduction strategy for residential appliances should include an aggressive regulatory approach coupled with incentives targeted towards equitable transition. The 2022 AQMP should set a framework for future rulemaking that not only aligns with state goals, but more aggressively curbs emissions from residential buildings. We agree that by prioritizing zero-emissions appliance standards for buildings, especially in new construction, the Air District can chart a more ambitious path towards meeting its goal for stationary sources.

CARB has already set a zero GHG emissions standard to go into effect in 2030 for all space and water heaters in both residential and commercial buildings. Under the state rules, beginning in 2030, 100 percent of sales of new space and water heaters will have to comply with this new standard. According to CARB, "even with low NOx emissions limits in place, NOx emissions from space heating and water heating in residential and commercial buildings are projected to total 33 tpd in the year 2030". By contrast, a zero GHG emission standard has the potential of reducing 8.08 tpd of NOx in 2031 and 11.74 tpd of NOx in 2037. While CARB's SIP strategy is focused on GHGs, the Air District should, at a minimum, develop control measures for space and water heaters that mirror the aggressive path CARB has set by assigning a greater role for available zero-emissions technology.

⁴ P.S. Hu and M.Q. Wang, State Vehicle Fleets and Their Potential Acquisition of Alternative Fueled Vehicles under EPACT 507 (1996). http://ntl.bts.gov/lib/000/700/722/507.pdf. ⁵ *Ibid*.

Moreover, the 2022 AQMP should set clear timelines for requiring zero-emissions appliances, much like the approach being considered by the Bay Area Air Quality Management District.⁴ Setting a clear timeline sends a strong market signal and allows developers, installers, and consumers to better prepare to transition away from older combustion technologies. We caution, however, that with any new rule staff must conduct the necessary outreach to communities that will face the greatest challenges, such as low-income households and affordable housing providers, to design targeted investment programs and other strategies to address the economic and technical barriers to electrification.⁵

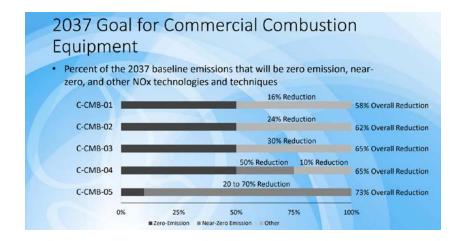
Targeted Incentives

The Air District has correctly recognized that incentivizing gas and other combustion technology is no longer a suitable strategy—especially when the South Coast must reach a 70% reduction goal to reach attainment. Earmarking all incentive dollars for zero emissions is the best use of these funds given the key role that technology will play in reaching attainment. Moreover, ending gas appliance subsidies aligns the Air District's strategy with the actions several state agencies are taking to advance building decarbonization statewide.⁶

For any incentive strategy to work, the Air District should work to engage impacted communities and those that house the District's most vulnerable early on and center their interests and priorities in the program's design. To do so, programs should incorporate an evaluative process that engages with impacted communities to assess best practices and provide reporting on the accessibility and affordability of zero-emissions appliances in their communities. This will allow the Air District to adjust programs according to community needs. A model for this approach is currently being developed at the Bay Area Quality Management District where reporting will aim to ensure that incentive policies and rulemaking support housing affordability and "anti-displacement outcomes" while making healthier and safer technology more accessible. We encourage the Air District to explore a similar approach that will carefully evaluate best strategies to promote a zero-emissions transition without creating cost-shifting, increased energy burdens and potential for displacement and harassment of vulnerable tenants in the region.

B. We Need Greater Ambition in Advancing Zero-Emissions in the Commercial Combustion Sector.

We appreciate the recognition of the need to advance zero-emissions in the commercial combustion sector. While the penetration of zero-emissions is projected higher in these sectors than other sectors, we believe there is a greater potential, particularly in C-CMB-01, C-CMB-02, and C-CMB-03. These are places where fuel switching makes imminent sense, and there are great climate reductions.

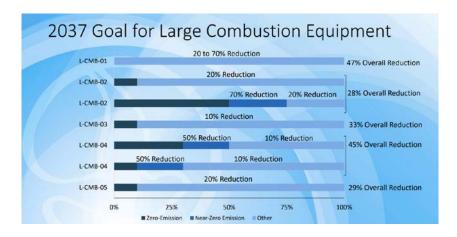


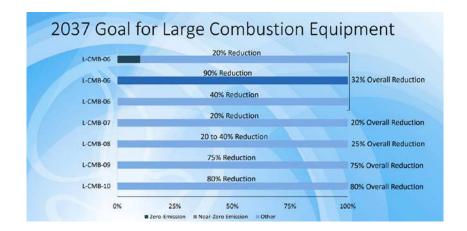
Given the large portion of emissions associated with C-CMB-04 and C-CMB-05, we would also appreciate a deeper dive into the equipment in this universe to understand if there is greater potential for zero-emissions. We remind the District that its ability to set Best Available Retrofit Technology ("BARCT") standards that are technology forcing. These source categories could be prime for some technology forcing approaches – to the extent the technology has not already been developed yet.

We recognize that there may be some small businesses in these sectors, so we suggest this as a place where incentive dollars would be appropriate to help truly small business shift to the zero-emissions future. But, these investments must be coupled with a robust and strong set of regulatory requirements.

C. We Need Greater Ambition from the Large Combustion Equipment Sector.

We appreciate staff recognizing the need to get to zero-emissions in the large combustion sector. But, we fear the initial modeling for the proposed AQMP represents too paltry a commitment for what will be a large source of NOx in 2037 (e.g. 15.3 tpd).





Arguably, these are the sources where the Air District has greatest control. And, as such, the agency should have more ambition.

	mary of 2037 NOx Emissi Combustion Equipment			
Control Measure	Control Measure Name	2037 Baseline (tpd)	2037 Remaining (tpd)	Percent Reduction
L-CMB-01	NOx RECLAIM	0.60	0.32	47%
L-CMB-02	Large Boilers and Process Heaters	2.47	1.78	28%
L-CMB-03	Large Internal Combustion Prime Engines	0.97	0.65	33%
L-CMB-04	Large Internal Combustion Emergency Standby Engines	1.74	0.96	45%
L-CMB-05	Large Turbines	0.21	0.15	29%
L-CMB-06	Electric Generating Facilities	1.93	1.31	32%
L-CMB-07	Petroleum Refining	3.82	3.05	20%
L-CMB-08	Landfills and POTWs	1.32	0.99	25%
L-CMB-09	Incineration	1.19	0.30	75%
L-CMB-10	Miscellaneous Combustion	1.45	0.29	80%
Total		15.69	9.79	38%

Overall, we do not understand the lack of ambition for categories like petroleum refining and electric generating facilities. These are facilities operated by immensely profitable entities, and the plan should commit to more reductions. We also are deeply disappointed in the initial numbers for large boilers and process heaters in L-CMB-02. We believe there are great opportunities in this sector to advance zero-emissions.

D. We Need More Workshops on Volatile Organic Compound ("VOC") Emissions from Large Stationary Sources.

More discussion is needed to understand what additional measures should be taken to achieve additional VOC emission reductions – particularly in the petroleum refining sectors. There are immense health benefits that could be achieved, and we think this issue should have more discussion before the plan is developed.

VIII. The Plan Must Include Greater Commitment to Solar Technologies.

The California Health and Safety Code contains a clear mandate that air quality plans "incorporate solar energy technology into its air quality management plan in applications where it can be shown to be cost-effective." It is not enough to passively take credit for other programs that the State administers. The South Coast AQMD must do more. We request the South Coast AQMD lay out plans to require solar energy technology in new construction and major remodels, and to see these incorporated into the forthcoming revised AQMP draft.

IX. Compliance with state level CAAQS Requirements.

We write to remind the Air District of its obligations to develop a strategy to achieve CAAQS. We remind the South Coast AQMD that the current CAAQS for the 8-hour ozone standard is set at 70 ppb. The Lewis Presley Air Quality Management Act is abundantly clear that "a comprehensive basinwide air quality management plan must be developed and implemented to provide for the rapid abatement of existing emission levels to levels which will result in achievement and maintenance of **state** and federal ambient air quality standards and to ensure that new sources of emissions are planned and operated so as to be consistent with the basin's air quality goals." We remind the Air District and ARB that attaining the state standard – even though set at 70 ppb – requires additional reductions given differences in attainment under state and federal law. There is no basis for the conclusion that this plan can ignore the current state ambient air quality standard for the 8-hour ozone standard, which was established in 2008.

X. Conclusion

We appreciate your consideration of these comments.

Sincerely,

Adriano Martinez Fernando Gaytan Earthjustice

Jane Williams California Communities Against Toxics

rian 2. Martines

Drew Wood California Kids IAQ

⁶ Cal. Health & Safety Code, § 40404.5.

⁷ Cal. Health & Safety Code, § 40402(e).

South Coast Control Measure Workshop Comments 12/8/2021

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Faraz Rizvi

Center for Community Action & Environmental Justice

Jesse Marquez

Coalition for a Safe Environment

Ricardo Pulido

Community Dreams

Taylor Thomas

East Yard Communities for Environmental Justice

Magali Sanchez-Hall

EMeRGE

Joe R. Gatlin

NAACP, San Pedro-Wilmington Branch

Madeline Rose

Pacific Environment

Andrea Vidaurre

People's Collective for Environmental Justice

Peter Warren

San Pedro & Peninsula Homeowner's Coalition

Ed Avol

Jill Johnston

USC Dept. of Population and Public Health Sciences

Theral Golden

West Long Beach Association



Patty Senecal

Senior Director, Southern California Region

December 8, 2021

Mr. Ian MacMillan Assistant Deputy Executive Officer South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765 Via e-mail at: imacmillan@aqmd.gov

Re: SCAQMD 2022 Air Quality Management Plan

WSPA Comments on Control Measures Workshop (November 10, 2021)

Dear Mr. MacMillan,

Western States Petroleum Association (WSPA) appreciates the opportunity to participate in the working group meetings and workshops for the South Coast Air Quality Management District's (SCAQMD or District) 2022 Air Quality Management Plan (AQMP or Plan). The AQMP is a regional blueprint for achieving the National Ambient Air Quality Standards (NAAQS). On October 1, 2015, the U.S. Environmental Protection Agency (EPA) strengthened the NAAQS for ground-level ozone, lowering the primary and secondary ozone standard levels to 70 parts per billion (ppb). The 2022 AQMP is being developed to address the requirements for meeting this standard through proposed control measures.

WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport, and market petroleum, petroleum products, natural gas, and other energy supplies in five western states including California. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA-member companies operate petroleum refineries and other facilities in the South Coast Air Basin that are regulated by the SCAQMD and will be impacted by the 2022 AQMP.

We understand the challenges that the District faces in attaining the NAAQS. The region's unique topography and meteorology combined with mobile source emissions continues to produce significant ozone pollution for which the District has limited control authority. As cost-effective controls have been implemented, it has become increasingly difficult to identify and implement additional control measures that are cost-effective.

On November 10, 2021, SCAQMD held a Control Measures Workshop to provide an overview of the control measures and strategies that are being considered for the 2022 AQMP. WSPA offers the following comments on the proposed measures.

¹ 2015 Revision to 2008 Ozone NAAQS. Available at: https://www.federalregister.gov/documents/2015/10/26/2015-26594/national-ambient-air-quality-standards-for-ozone.

1. The District has stated that the only viable path to achieving the NAAQS for ozone may be a significant push to zero emission technology and has suggested an approach that includes new zero emissions (ZE) and ultra-low NOx technologies that are still in the research and development phase and/or yet to be commercialized for many stationary and mobile use categories. The District suggests relying on flexibility provided under Clean Air Act (CAA) Section 182(e)(5) for potential emission reductions from future technologies. Given the long-term planning horizon of this AQMP (e.g., 2037), WSPA believes this approach will be necessary.

CAA Section 182(e)(5) allows the Administrator to "approve provisions of an implementation plan for an Extreme Area which anticipate development of new control techniques or improvement of existing control technologies...".² The District has outlined a potential approach for the 2022 AQMP which includes maximized implementation of existing ZE and low NOx technologies. The District acknowledges that new ZE and ultra-low NOx technologies will still need to be invented for many use cases, both stationary and mobile (see Figure 1). For this reason, the District has proposed using the flexibility provided by the CAA §182(e)(5).

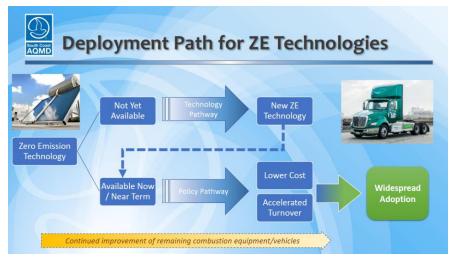


Figure 1: SCAQMD Proposed Deployment Path for ZE Technologies

Source: 2022 AQMP Control Measures Workshop, November 10, 2021, Agenda Item 3.

The District is in the process of developing new Best Available Retrofit Control Technology (BARCT) rules to transition facilities out of the REgional CLean Air Incentives Market (RECLAIM) program. For example, the District's Governing Board just adopted Rule 1109.1 (R1109.1), Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations, which introduces BARCT requirements for subject facilities. The majority of the control technologies specified in that rulemaking were developed and tested technologies. Just the same, the final compliance milestones for R1109.1 implementation is 2034. The District will need to consider whether other technologies can be developed and commercialized on the timeline necessary for achieving the NAAQS for ozone by 2037.

² Clean Air Act Title I Part D, Plan Requirements for Nonattainment Areas, §182, Plan Submissions and Requirements. Available at: https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapl-partD-subpart2-sec7511a.htm.

2. The District has suggested ZE and near zero emission (NZE) technologies, as well as other technologies as potential replacements for existing emergency standby engines. Technologies proposed must be fit for purpose to be successful.

Proposed Control Measure L-CMB-04 addresses NOx reductions from permitted emergency standby engines used to provide backup power during power outages.³ These engines are not subject to the requirements of R1109.1. SCAQMD has suggested ZE and NZE technologies, as well as other technologies, as potential replacement options for existing emergency standby engines. Technologies proposed must be fit for purpose in order to be successful. The battery power and electrification concepts cited may not be suitable for emergency applications.

Battery energy storage quickly becomes infeasible for emergency backup applications where potential duration of a backup requirement is unknowable. For example, when an emergency event lasts longer than the battery storage specifications, there could be dire consequences. There may be other dispatchable generation technologies which, while currently non-economical for emergency applications, could eventually become alternatives to diesel-fueled generators. Some of these technologies are not ZE technologies.

The District has suggested a transition of higher emitting turbines to ZE technologies.
 The technologies proposed for equipment replacement must be fit for the operational purpose and of the same scale as those they are replacing in order to be successfully implemented.

Proposed Control Measure L-CMB-05 addresses NOx emissions from large gas turbines ≥0.3 MW regulated by Rule 1134, Emissions of Oxides of Nitrogen from Stationary Gas Turbines.⁴ Similar turbines found at refineries are covered under R1109.1. The District is suggesting a transition of higher emitting turbines to ZE technologies, but the ZE technology cited (i.e., fuel cells) is a comparatively small-scale product. In addition to producing electricity, many turbines are configured to also provide process heat in combined heat and power designs. The District will need to consider these varied types of operational requirements.

³ 2022 AQMP Control Measures Workshop, Agenda Item 5, South Coast AQMDs Proposed Draft NOx Stationary Source Measures, Slides 27-28. Available at: <a href="http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plans/2022-air-quality-management-plans/air-plan/am-pres-agenda-item-5-nox-measures-110621.pdf?sfvrsn=6.

⁴ 2022 AQMP Control Measures Workshop, Agenda Item 5, South Coast AQMDs Proposed Draft NOx Stationary Source Measures, Slide 29. Available at: <a href="http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plans/2022-air-quality-management-plans/air-quality-management-plans

4. With the L-CMB-07 measure, the District suggests transition of refinery boilers and process heaters to ZE, NZE, and other technologies. With the adoption of R1109.1 in November 2021, the District expended significant resources arriving at the country's most stringent refinery BARCT rule. This rulemaking was extremely challenging and is likely the most expensive single rule adopted by the District's Governing Board. R1109.1 has final implementation deadlines stretching to the mid-2030's, and it is yet to be defined how to achieve the District's proposal for an additional 20% emission reduction goal by 2037.

Proposed Control Measure L-CMB-07 addresses NOx emissions at petroleum refineries and specifically calls out refinery boilers and process heaters.⁵ The District suggests a transition of such equipment to ZE, NZE, or "other technologies."

The California Health & Safety Code requires the District, in adopting any BARCT standard, to ensure the standard is technologically feasible, to take into account "environmental, energy, and economic impacts," and to assess the cost-effectiveness of the proposed control options.⁶

WSPA agrees that development of new technologies is crucial to the reduction of pollutants; however, the timeline for development of these emerging technologies is distant. R1109.1, which was just adopted in November 2021, already included implementation of emerging burner technologies to control NOx emissions from boilers and heaters <40 MMBtu/hr input. These emerging technologies are still under development and are not commercially available. For this reason, the District acknowledged the need to review and report on the status of the emerging technologies in 2029 and conduct a technology assessment if those technologies are not being commercialized quickly enough.⁷

As an example, the L-CMB-07 presentation suggested the potential use of "advanced selective catalytic reduction" such as multi-stage reactors for achieving emissions reductions. Such multi-stage reactors were exhaustively evaluated during R1109.1 development,⁸ and the District and its third-party engineering expert (i.e., Fossil Energy Research Corporation) was unable to show them to be technologically feasible or cost effective.

detreepath=31.

⁵ 2022 AQMP Control Measures Workshop, Agenda Item 5, South Coast AQMDs Proposed Draft NOx Stationary Source Measures, Slide 31. Available at: <a href="http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plans/2022-air-quality-management-plans/air-quality-management-plans

⁶ California Health & Safety Code §40406, 40440, 40920.6. Available at: https://leginfo.legislature.ca.gov/faces/codes displayexpandedbranch.xhtml?tocCode=HSC&division=26.&title=&part=&chapter=&article=&no

⁷ SCAQMD Draft Staff Report, Proposed Rule 1109.1, Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations, page 3-12, October 2021. Available at: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1109.1/dsr-pr-1109-130-day-package.pdf?sfvrsn=4.

⁸ PR1109.1 WGM #22 presentation, slide 27, June 30, 2021. Available at: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1109.1/pr1109-1 wgm22 presentation.pdf?sfvrsn=18.

5. The District needs to present a technical basis for the emission reduction goal presented for the FUG-01 control measure.

Proposed Control Measure FUG-01 discusses improved leak detection and repair on process and storage equipment at a variety of facilities. The District is also proposing enhanced leak detection under the Wilmington, Carson, West Long Beach (WCWLB) Community Emissions Reduction Plan (CERP) to achieve emission reductions. The WCWLB CERP states a potential 50% reduction of VOC emissions through amendments to the following rules:

- Rule 1178, Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities:
- Rule 1118, Control of Emissions from Refinery Flares; and/or
- Rule 1173, Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants.

The District has yet to provide the technical basis for the 50% VOC reduction goal. In the meantime, in accordance with Rule 1180, Refinery Community and Fenceline Air Monitoring, refineries have successfully implemented real-time observations of air quality at the fenceline of each facility. These systems include real-time measurement of VOC emissions. Through this continuous monitoring, in combination with ongoing Method 21 activities, refineries are already able to detect and address any significant changes in emissions from equipment leaks. Given the information from these monitoring programs, the District will need to explain how a FUG-01 control measure would yield significantly better emissions performance.

WSPA appreciates the opportunity to provide these comments related to the 2022 AQMP. We look forward to continued discussion of this important Plan development. If you have any questions, please contact me at (310) 808-2144 or via e-mail at psenecal@wspa.org.

Sincerely,

Cc: Wayne Nastri, SCAQMD

Catty Genecal

Cc: Cathy Reheis-Boyd, WSPA

⁹ 2022 AQMP Control Measures Workshop, Agenda Item 7, South Coast AQMDs Proposed Draft VOC Stationary Source and Other Measures, Slide 3. Available at: <a href="http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plans/2022-air-quality-management-plans/air-quality-managem



South Coast AQMD Stationary and Mobile Source Control Measures

1. What is the name of the control measure(s) or emission source(s) you would like to address? Please provide a control measure number, if applicable. (e.g., ECC-03, FLX-02, MOB-14, etc.) *

L-CMB-05 and L-CMB-06

2. Provide your comments and suggestions on the control measure(s) or emission source(s) you identified. (What is most helpful are suggestions that identify how emissions can feasibly be reduced to achieve the ozone standard.) *

The NFCRC supports the use of zero and near-zero emission fuel cell systems to replace large turbines as a control measure for L-CMB-05. • The high efficiency and extremely highcapacity factor of fuel cells displaces more GHG emissions than equivalent intermittent renewable resources. The most significant NOx, other criteria air pollutant and greenhouse gas (GHG) emissions reductions achieved in the California Self-Generation Incentive Program were made by fuel cells operating on natural gas. • Fuel cells create resilient, always-on energy systems and can island to serve critical loads in the event of a grid outage, eliminating the need for backup diesel generators. More than 5,000 telecommunication and cable facilities are using fuel cells for backup power and higher power fuel cell systems are replacing diesel generators at hospitals, data center, utilities and critical facilities. • Unlike combustion technologies that are only efficient at very large scale, stationary fuel cell systems are an efficient scalable resource with global project sizes ranging from under 1 kW to 78 MW . As a result, fuel cells improve overall system efficiency at any size, behind-themeter and in-front-of-the-meter. • Unlike combustion technologies, fuel cells electrochemically convert fuel with no opportunity to produce and emit criteria air pollutants. • Fuel cell systems are fuel flexible, operating today on biogas, hydrogen and natural gas, and do not represent a long-term commitment to fossil fuels. A 2018 UC Irvine Advanced Power and Energy Program assessment showed that stationary fuel cell systems can achieve air quality and GHG co-benefits, with the following conclusions: • By off-setting emissions from combustion technologies, fuel cell systems balance intermittent wind and solar power on the grid while maximizing the air quality and GHG co-benefits of renewable

energy. • Fuel cell systems yields improvements in both ozone and PM2.5 concentrations in key areas of California associated with high populations and unhealthy levels of pollution including the South Coast Air Basin, San Francisco Bay Area, and Central San Joaquin Valley. • Combined heat and power fuel cells can enhance provide an effective and efficient reduction of air pollutant and GHG emissions from traditional thermal generation methods (e.g., industrial boilers and process heat, commercial space and water heating). • Reductions in pollutant emissions, notably of NOx, achieves improvements in ground level ozone and PM2.5 in both summer and winter. The NFCRC supports the use of zero and near-zero emission fuel cell systems to supplement or offset electricity generating facilities as a control measure for L-CMB-06. Benefits of fuel cell systems include the provision of 24/7 firm, loadfollowing power at close to 100% capacity factors. The AQMP must include the use of noncombustion fuel cell systems for general grid support and to increase reliability and resiliency, in the era of increasing wildfires and public safety power shutoff (PSPS) events. Fuel cell systems are deployed today on the utility-side of the meter to create grid support solutions where transmission or distribution infrastructure or clean, 24/7, load-following power generation to complement the increasing deployment of intermittent solar and wind resources, and to support grid reliability in locations including disadvantaged communities. The size of these utility-side-of-the-meter fuel cell installations range from 3 MW to 78 MW. Typically, one acre is required for one MW of fuel cell generation, allowing for operation of clean power generation in high density areas. Fuel cell systems support the utility grid network and can also provide ancillary services such as 1. Peak demand reduction; 2. Power quality; 3. Grid frequency and voltage support; 4. Capacity and spinning reserve; 5. Avoidance of expensive transmission and distribution system upgrades; and 6. Fast ramping and load-following.

Open Ideas/Comments on South Coast AQMD Control Measure Strategy

3. Please provide any other ideas or comments on what South Coast AQMD should consider when developing the control measure strategy.

References 1.) SGIP 2016-2017 Self-Generation Incentive Program Impact Evaluation Report. Submitted by Itron to Pacific Gas & Electric Company and the SGIP Working Group, September 28, 2018. Available at: https://www.cpuc.ca.gov/General.aspx?id=7890 2.) H2 View, George Heynes, "New 78.96 MW hydrogen fuel cell power plant opens in South Korea," November 3, 2021. Available at: New 78.96MW hydrogen fuel cell power plant opens in South Korea (h2-view.com) 3.) Air Quality and GHG Emission Impacts of Stationary Fuel Cell Systems, An Assessment Produced by the Advanced Power and Energy Program at the University of California, Irvine, March 2018, available at:

http://www.apep.uci.edu/Research/whitePapers/PDF/AQ_Benefits_Of_Stationary_Fuel_Cells_BenMAP_Final_

Contact Information (not required)

ame		
Dr. Jack Brouwer		
5. Organization		
National Fuel Cell Research Center, University of California Irvine Irvine, CA 92697-3550		
6. E-mail Address (may be used for staff to follow up on your ideas/comments)		
jb@nfcrc.uci.edu		
7. Phone Number (may be used for staff to follow up on your ideas/comments)		
949-338-5953		
8. Would you like South Coast AQMD staff to contact you to schedule an individual meeting or call to discuss your ideas or comments provided above?		
Yes		
○ No		

Comment Letter 93



South Coast AQMD Stationary and Mobile Source Control Measures

1. What is the name of the control measure(s) or emission source(s) you would like to address? Please provide a control measure number, if applicable. (e.g., ECC-03, FLX-02, MOB-14, etc.) *

L-CMB-05 and L-CMB-06

2. Provide your comments and suggestions on the control measure(s) or emission source(s) you identified. (What is most helpful are suggestions that identify how emissions can feasibly be reduced to achieve the ozone standard.) *

FuelCell Energy Inc. supports the use of fuel cell systems to replace large turbines as a control measure for L-CMB-05. • The high efficiency and extremely high-capacity factor of fuel cells displaces more GHG emissions than equivalent intermittent renewable resources. The most significant NOx, other criteria air pollutant and greenhouse gas (GHG) emissions reductions achieved in the California Self-Generation Incentive Program were made by fuel cells operating on natural gas. • Fuel cells create resilient, always-on energy systems and can island to serve critical loads in the event of a grid outage, eliminating the need for backup diesel generators. More than 5,000 telecommunication and cable facilities are using fuel cells for backup power and higher power fuel cell systems are replacing diesel generators at hospitals, data center, utilities and critical facilities. • Unlike combustion technologies that are only efficient at very large scale, stationary fuel cell systems are an efficient scalable resource with global project sizes ranging from under 1 kW to 78 MW . As a result, fuel cells improve overall system efficiency at any size, behind-the-meter and in-front-of-the-meter. • Unlike combustion technologies, fuel cells electrochemically convert fuel with no opportunity to produce and emit criteria air pollutants. • Fuel cell systems are fuel flexible, operating today on biogas, hydrogen and natural gas, and do not represent a long-term commitment to fossil fuels. A 2018 UC Irvine Advanced Power and Energy Program assessment showed that stationary fuel cell systems can achieve air quality and GHG cobenefits, with the following conclusions: • By off-setting emissions from combustion technologies, fuel cell systems balance intermittent wind and solar power on the grid while maximizing the air quality and GHG co-benefits of renewable energy. • Fuel cell systems

yields improvements in both ozone and PM2.5 concentrations in key areas of California associated with high populations and unhealthy levels of pollution including the South Coast Air Basin, San Francisco Bay Area, and Central San Joaquin Valley. • Combined heat and power fuel cells can enhance provide an effective and efficient reduction of air pollutant and GHG emissions from traditional thermal generation methods (e.g., industrial boilers and process heat, commercial space and water heating). • Reductions in pollutant emissions, notably of NOx, achieves improvements in ground level ozone and PM2.5 in both summer and winter. FuelCell Energy Inc supports the use fuel cell systems to supplement or offset electricity generating facilities as a control measure for L-CMB-06. Benefits of fuel cell systems include the provision of 24/7 firm, load-following power at close to 100% capacity factors. The AQMP must include the use of non-combustion fuel cell systems for general grid support and to increase reliability and resiliency, in the era of increasing wildfires and public safety power shutoff (PSPS) events. Fuel cell systems are deployed today on the utility-side of the meter to create grid support solutions where transmission or distribution infrastructure or clean, 24/7, load-following power generation to complement the increasing deployment of intermittent solar and wind resources, and to support grid reliability in locations including disadvantaged communities. The size of these utility-side-of-the-meter fuel cell installations range from 1.4 MW to 78 MW. Typically, the footprint required for one MW of fuel cell generation is very small, allowing for operation of clean power generation in high density areas. Fuel cell systems support the utility grid network and can also provide ancillary services such as 1. Peak demand reduction; 2. Power quality; 3. Grid frequency and voltage support; 4. Capacity and spinning reserve; 5. Avoidance of expensive transmission and distribution system upgrades; and 6. Fast ramping and load-following.

Open Ideas/Comments on South Coast AQMD Control Measure Strategy

should consider when developing the control measure strategy.

Contact Information (not required)

4. Name

Brady Borcherding

5. Organization
FuelCell Energy Inc.
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7. Phone Number (may be used for staff to follow up on your ideas/comments)
(415) 710-7167
 8. Would you like South Coast AQMD staff to contact you to schedule an individual meeting or call to discuss your ideas or comments provided above? Yes No



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February 17, 2022

Ian MacMillan South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

Subject: Comments on the Draft Control Measures for the 2022 Air Quality Management Plan (AQMP)

Dear Mr. MacMillan:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide further information regarding public comments made on SoCalGas' behalf at the AQMP Advisory Group Meeting on January 28, 2022. We provide these in the hopes of informing the planning process, and to address certain longstanding foundation elements for advancing public welfare in undertaking ozone attainment planning. By way of background, these comments begin with SoCalGas' efforts and commitment to advancing California climate goals and the imperative to achieve them.

In March 2021, SoCalGas announced <u>ASPIRE 2045</u>, a goal to achieve net zero Greenhouse Gas (GHG) emissions by 2045, which matches the State's carbon neutrality goal. Our goal includes decarbonizing the energy SoCalGas consumes, as well as the energy SoCalGas delivers to our customers. Building on our Climate Commitment, SoCalGas released its <u>ASPIRE 2045</u> <u>Sustainability Strategy</u> in February 2022, which identifies five key areas we will focus on to advance our sustainability goals.

SoCalGas is continuing to work towards our goal to decarbonize our system. This morning we filed an application at the California Public Utilities Commission (CPUC) requesting approval to track costs related to development of the Angeles Link. SoCalGas is proposing to develop the United States' largest green hydrogen Energy Infrastructure System to help decarbonize the Los Angeles

basin and accelerate California's climate goals. The proposed Angeles Link green hydrogen system would drive deep decarbonization of dispatchable electric generation, hard-to-electrify industries, and heavy-duty transportation in the Los Angeles Basin.

Reducing emissions from buildings is critical to SoCalGas achieving its sustainability goals. SoCalGas is and has been a national leader in delivering programs that reduce emissions through reduced natural gas, electric, and water use in residential, commercial, and industrial buildings. SoCalGas currently administers a \$114M annual energy efficiency portfolio of 90 programs, constituting the largest natural gas energy efficiency portfolio in the country. Additionally, SoCalGas administers electric and water efficiency programs on behalf of three investor-owned electric utilities, five 5 municipal owned utilities, and 16 water agencies in Southern California. Collectively, these programs have eliminated 955K metric tons of GHGs over five years and avoided \$1 billion in energy costs.

Policymakers at the local, state, and federal level are increasingly looking to building electrification as a key strategy to reduce emissions in new building construction. SoCalGas recognizes that electrification is a key tool for reducing emissions where cost effective and practical, particularly as California integrates more renewables into the grid and electric appliances and heating equipment become more efficient.

SoCalGas' recently released Clean Fuels White Paper, <u>The Role of Clean Fuels and Gas</u> <u>Infrastructure in Achieving California's Net-Zero Climate Goal</u>, projects that at least 50% of all appliances and heating equipment sales in California will be electric by 2035. SoCalGas' White Paper also demonstrates that a capable gas grid is a key facilitator of decarbonization, and the extent to which use of clean fuels enables more widespread electrification, including in buildings.

For this reason, SoCalGas does not oppose policies that incentivize or require the use of zero emissions appliances and equipment in new residential and commercial buildings as a plan element for progress to achieve NOx reductions so long as those policies are cost-effective, commercially available, and do not have the unintended consequence of increasing regulated air pollutant emissions. For this reason, a cornerstone and mandated component of ozone attainment planning is preparation of a top-down analysis for prospective plan emissions control measures, at the heart of which is cost-effectiveness analysis.

We have learned through our lengthy experience administering building decarbonization programs that the existing building stock is non-homogenous, which complicates design and administration of energy efficiency and emissions reductions programs for widespread application. The lack of uniformity in building stock presents complex cost and practicality

¹ See SoCalGas, "SoCalGas Proposes to Develop United States' Largest Green Hydrogen Energy Infrastructure System to Help Decarbonize LA Basin and Accelerate California's Climate Goals, available at SoCalGas Proposes to Develop United States Largest Green Hydrogen Energy Infrastructure System to Help Decarbonize LA Basin and Accelerate California's Climate Goals | SoCalGas Newsroom

factors. These factors include but are not limited to: renter occupied buildings, buildings that cannot adequately handle additional load without infrastructure upgrades; and poorly insulated and weatherized buildings with hazardous materials. The resulting challenges are exacerbated for when there are limited funds to pay for upgrades. Over one-third of SoCalGas' customers are enrolled in customer assistance programs. For these and other reasons, the cost-effectiveness of converting existing buildings to zero emissions space and water heating equipment can vary greatly.

Since 2018, SoCalGas has been an active participant in South Coast's development of the Net Emissions Analysis Tool (NEAT), which can be used to "analyze the electrification of residential natural gas appliances, and its impact on [nitrogen oxide] NOx and [greenhouse gas] GHG emissions, and costs due to purchase and installation, and to shifting electricity and natural gas use." As noted in SoCalGas' Clean Fuels Strategy, renewable natural gas, clean hydrogen, synthetic natural gas, and biofuels can be utilized to both facilitate and supplement electrification efforts and meet California's carbon neutrality goals more quickly, reliably, and affordably than relying on electrification alone. At this time, the NEAT tool cannot model clean fuel decarbonization pathways, a point we made in 2018 comments suggesting that it is in the public interest to include more efficient gas technologies and residential fuel cells as options under the alternative technologies listed in the model. Notwithstanding the foregoing, the NEAT tool remains as a compulsory element of AQMD's top-down analysis necessary to support ozone attainment planning.

Accordingly, based on the prospective control measures South Coast AQMD presented for buildings, we asked Ramboll to apply the NEAT tool to evaluate the cost-effectiveness of the proposed zero emission standard for new space and water heaters with the only scenario option available (conversion from gas to electric appliances). The analysis⁵ shows that:

- Requiring the electrification of residential space heaters is **seven to nine times less cost- effective** than the 2016 AQMP cost-effectiveness threshold of \$50,000 dollars per ton of nitrogen oxides (NOx). The cost-effectiveness ranged from \$360,000-\$460,000 dollars on average per ton of NOx reduced.
- Requiring the electrification of residential water heating could approach <u>\$3.5 million dollars per ton of NOx reduced</u>, which is approximately <u>seventy times less cost-effective</u> than the 2016 AQMP threshold of \$50,000 dollars per ton of NOx reduced.

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² See SCAQMD "Net Emissions Analysis Tool" available at Net Emissions Analysis Tool (NEAT) (aqmd.gov)

³ See SoCalGas (2021). The Role of Clean Fuels and Gas Infrastructure in Achieving California's Net Zero Climate Goal. Available: https://www.socalgas.com/sites/default/files/2021-10/Roles_Clean_Fuels_Full_Report.pdf. Accessed: January 2022.

⁴ See SoCalGas, "Net Emissions Analysis (NEAT) Tool Working Group #3", comment letter submitted to South Coast AQMD on March 19, 2018, available at General Letterhead (aqmd.gov)

⁵ Please see Appendix A for methodology, assumptions, and results.

In sum, South Coast AQMD has adopted and implemented the NEAT tool for the required cost-effectiveness analysis for ozone attainment planning. Application of South Coast AQMD's NEAT tool is informative, if not dispositive, with respect to the measures presented by staff for reducing NOx emissions from buildings. More pointedly, effective building decarbonization solutions that serve and advance the public interest must be carefully designed to avoid the imposition of asymmetrical and inequitable affordability impacts. We are hopeful that this data contributes to South Coast AQMD's ozone attainment planning efforts and look forward to collaboratively pursuing our common interest of achieving both climate and air quality goals in California.

Respectfully,

Andy Carrasco

hospinne

Vice President

Communications, Local Government & Community Affairs

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Vice Mayor Rex Richardson

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APPENDIX A

METHODOLOGY

Ramboll evaluated the NO_x cost-effectiveness of replacing natural gas water heaters and space heaters with electric appliances using South Coast AQMD's NEAT tool. The South Coast AQMD released NEAT version 1.11 Beta to a select group of stakeholders in December 2019. NEAT calculates incremental changes in costs and emissions resulting from replacement of one or more natural gas residential appliances with electric appliances in the South Coast Air Basin. NEAT relies on data reported in the 2009 Residential Appliance Saturation Survey (RASS) and is intended to model California's South Coast Air Basin in particular.

Ramboll ran the NEAT model using South Coast AQMD default values where possible, including default unit energy consumptions, NO_x emission factors, unit and installation costs, utility rates, utility specific loss percentages, and equipment lifetimes. The assessment assumes appliances will be replaced at the end of their lifetimes.

The study parameters are described below.

- Appliances Assessed: The study focuses on water heaters and space heaters. Conventional
 natural gas water heaters are compared to electric water heaters and solar water heaters
 utilizing electricity as a back-up power source. Conventional natural gas space heaters are
 compared to electric space heaters.
- **Electricity Intensity Factors**: This study evaluates emissions from electric appliances using two intensity assumptions. The first uses basin-average grid electricity intensity factors representative of electricity generation between 2005-2017 in the South Coast Air Basin that are included within the NEAT model. The second assumes zero-emission electricity through centralized photovoltaics, wind, and battery storage.
- Home Types and Climate Zones: In addition to evaluating basin-wide cost-effectiveness of appliance electrification, Ramboll evaluated cost-effectiveness for several subsets of homes throughout the Basin. This was done to understand if cost-effectiveness varied by house type or location. The subsets Ramboll analyzed are single-family homes, multi-family homes, homes in the Inland Climate Zone (CZ 10) as well as homes in the Coastal Climate Zone (CZ 6).
- **Pollutants Assessed**: This study focuses on the cost-effectiveness of NO_x emission reductions within the basin.

NEAT reports cost-effectiveness in terms of incremental cost divided by the change in emissions from appliance electrification. This approach is different from the conventional way that cost-effectiveness results are presented, which is incremental costs divided by a reduction in emissions. Thus, within the NEAT tool, a more positive (less negative) value implies greater cost-effectiveness.

NEAT presents average cost-effectiveness for homes grouped into three regions according to the extent of cost-effectiveness: Green regions where appliance replacement is always cost-effective, yellow regions where replacement may be cost-effective, and red regions where appliance replacement is never cost-effective. For this analysis, Ramboll calculated the overall cost-

effectiveness for appliance replacement as the weighted average of the cost-effectiveness from each region based on the number of households within each region.

RESULTS AND DISCUSSION

Ramboll's NEAT model runs demonstrate that appliance electrification for space and water heaters in the South Coast Air Basin would be *significantly* less cost-effective than the 2016 AQMP cost-effectiveness threshold of \$50,000 per ton NO_x reduced,⁶ and the estimated \$15,000 - \$30,000 per ton NO_x reduced cost-effectiveness for the 2016 AQMP control strategy CMB-02 for Emission Reductions from Replacement with Zero or Near-Zero Appliances in Commercial and Residential Applications.

The cost-effectiveness for water heater electrification across all homes in the South Coast Air Basin (dark blue bars in **Figure 1**) ranged between \$1,200,000 and \$3,100,000 per ton of NO_x reduced.

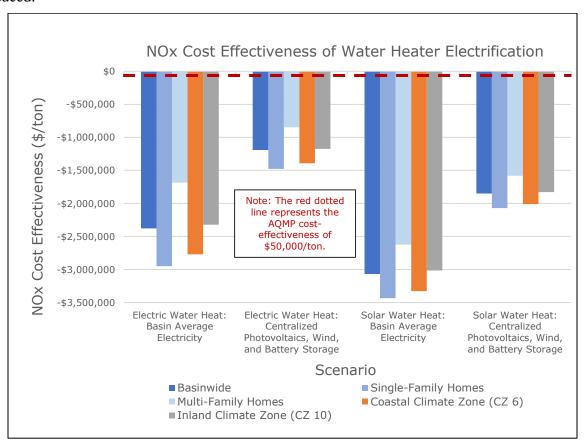


Figure 1: NO_x Cost Effectiveness of Water Heater Electrification

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SCAQMD. Draft Staff Report, Proposed Rule 1109.1, Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations. Available: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1109.1/dsr-pr-1109-1-30-day-package.pdf?sfvrsn=4. Accessed: January 2022.

Even in the most cost-effective case, where water heaters in multi-family homes (lightest blue bars in **Figure 1**) are electrified assuming a zero-carbon source of electricity, the cost-effectiveness value calculated by NEAT is approximately \$850,000 per ton of NO_x reduced. There is no significant difference in cost-effectiveness across the climate zones studied (compare orange and grey bars for each modeled scenario in **Figure 1**). Cost-effectiveness may approach \$3,500,000 per ton of NO_x reduced for some homes. These values are *twenty-four to sixty-two times less cost-effective* than the AQMP cost-effectiveness of \$50,000 per ton of NO_x.

Cost-effectiveness for space heater electrification calculated by the NEAT tool ranged from \$360,000-\$460,000 on average per ton of NO_x reduced, as shown in **Figure 2**, below. These values are *seven to nine times less cost-effective* than the AQMP cost-effectiveness of \$50,000 per ton of NO_x.

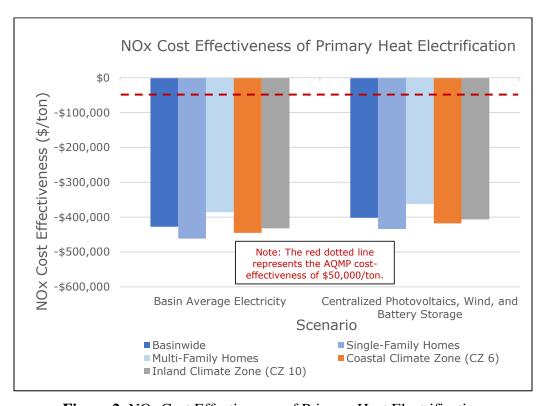


Figure 2: NO_x Cost Effectiveness of Primary Heat Electrification

Limitations and Uncertainties in NEAT Model

The cost-effectiveness results presented above may be optimistic, since the NEAT model does not include several key cost components and potential sources of emissions associated with a transition to mass electrification. These are discussed further below:

Panel Upgrades

NEAT does not account for upgrades to a home's electric panel which may be needed to support increased loads from electric appliances. For example, HomeAdvisor⁷ estimates the average cost

Available: https://www.homeadvisor.com/cost/electrical/upgrade-an-electrical-panel/. Accessed: December 2020.

to upgrade an electrical panel as \$1,133, with increased costs for higher amperages or rewiring. Further, research by the California Energy Commission (CEC) on Cost of Residential Electrification⁸ indicates that "many homes are not wired to handle the electric load from having all-electric stoves, space heaters, and water heaters in addition to their usual electric appliances" and that "homeowners would need to pay roughly \$4,600 to upgrade their wiring and electric panel" to support electrification of appliances.

Recent research by University of California Los Angeles (UCLA) Institute of the Environment and Sustainability⁹ indicates that diurnal patterns of hourly natural gas use largely coincide with the timing of existing daily peak residential electricity loads. This suggests that electrification of residential appliances has the potential to place additional electrical loads during peak residential electricity usage and that most homeowners who chose to switch natural gas appliances to their electric counterparts would require electrical panel upgrades.

Grid Infrastructure Upgrades:

The electric utility costs in the NEAT model do not reflect the additional dollars that have to be spent to upgrade the electric grid to support a transition to a high renewables grid that supports a high electrification future. For example, the California Energy Commission (CEC) funded 2018 E3 Study, Deep Decarbonization in a High Renewables Future, ¹⁰ estimates that cumulative costs for the grid infrastructure maintenance and upgrades for a High Electrification Scenario would be \$1.82 trillion between 2020 to 2050. ¹¹ The costs needed to support these changes to the grid would likely result in electricity rate increases, and consequently increased utility costs for the consumers. These costs would result in appliance electrification being even less cost-effective than currently estimated by the NEAT tool.

Public Safety Power Shutoffs:

Public safety power shutoff (PSPS) events are becoming increasingly frequent in California, owing to hotter and dryer climates coupled with aging transmission infrastructure. During PSPS events, residences with a high degree of appliance electrification may require power to be supplied using backup diesel generator sets. In areas that are prone to these PSPS events, operation of these generators could produce NO_x emissions that offset the benefits gained by switching to electric appliances.

Greenhouse Gas Considerations:

While this memo evaluates NO_x cost-effectiveness of appliance electrification, we note that the NEAT model does contain estimates of greenhouse gas (GHG) emission changes and GHG cost-effectiveness. However, it does not contain the functionality to evaluate lower-carbon fuel options that can help decarbonize California. For example, as SoCalGas noted in their Clean

⁸ California Energy Commission. "Cost of Residential Electrification" (Navigant Research on behalf of the California Building Industry Association). Available: https://efiling.energy.ca.gov/GetDocument.aspx?tn=224498&DocumentContentId=55045. Accessed: December 2020.

Fournier et al (2020). "Implications of the timing of residential natural gas use for appliance electrification efforts". Environ. Res. Lett. 15 124008.

¹⁰ Available at: https://www.ethree.com/wp-content/uploads/2018/06/Deep Decarbonization in a High Renewables Future CEC-500-2018-012.pdf. Accessed: December 2021.

¹¹ The study is available at: https://www.ethree.com/wp-content/uploads/2017/02/California PATHWAYS Technical Appendix 20150720.pdf. Accessed: December 2021.

Fuels Strategy, ¹² renewable natural gas, clean hydrogen, synthetic natural gas, and biofuels can be utilized to supplement electrification efforts and meet California's carbon neutrality goals more quickly, reliably, and affordably. Furthermore, Ramboll has noted concerns about how GHG cost-effectiveness is calculated within NEAT, as documented in our comment letter dated December 4, 2020. ¹³ Therefore, Ramboll recommends that GHG cost-effectiveness evaluations for residential appliances are performed outside of NEAT at this time.

SoCalGas (2021). The Role of Clean Fuels and Gas Infrastructure in Achieving California's Net Zero Climate Goal. Available: https://www.socalgas.com/sites/default/files/2021-10/Roles Clean Fuels Full Report.pdf. Accessed: January 2022.

Ramboll (2020). Model Issues in the South Coast AQMD's Neat Emissions Analysis Tool (NEAT). Available: http://www.aqmd.gov/docs/default-source/default-document-library/socalgas-neat-model-issues-memo-20201204.pdf?sfvrsn=6. Accessed: January 2022.

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March 31, 2022

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Milan

Re: Regulatory Flexibility Group ("RFG") General Comments in Advance of Release

of South Coast Air Quality Management District ("SCAQMD") 2022 Air Quality

Management Plan

Dear Dr. Rees:

In advance of the release of the upcoming draft of the SCAQMD 2022 Air Quality Management Plan (the "2022 AQMP"), thank you for the opportunity to submit these general comments on behalf of the RFG, a coalition of California entities whose operations are subject to regulation under the Clean Air Act and corresponding state and regional air quality programs. RFG members include manufacturers, natural gas utilities, oil and chemical companies and other regulated entities. RFG members have participated in the review of and comment on SCAQMD regulations and AQMPs since its formation in the fall of 1990. We look forward to continuing to work with SCAQMD staff during the development of the 2022 AQMP.

Implementation Timeline and RECLAIM Landing Rules Coordination

We appreciate the work done to date to identify and develop the proposed 2022 AQMP control measures. However, at this time, it is unclear over what period of time the SCAQMD anticipates implementing many of these control measures. It is also unclear how the SCAQMD intends to ensure that the adoption of any new control measures will take into account/appropriately consider the implementation of recently adopted/amended RECLAIM landing rules. We request that the 2022 AQMP include detailed implementation timelines and analysis of how the SCAQMD will coordinate the development of the proposed control measures with the RECLAIM landing rules to avoid inconsistent or duplicative regulation of stationary sources.

Permitting Feasibility and Incentives

As RFG members have previously shared with staff in the context of the various RECLAIM landing rules, the regulated community continues to face challenges in obtaining construction and operating permits for required control technology installations. The SCAQMD must resolve fundamental New Source Review (NSR) issues as stationary sources transition from RECLAIM Regulation XX NSR to Regulation XIII NSR, and the 2022 AQMP must protect against an implementation regime that forces companies to undertake projects that have an uncertain permitting regime. The 2022 AQMP should also explore and offer incentive concepts associated with permitting, include incentive funding, permitting and fee incentives and enhancements, NSR incentives and enhancements, branding incentives, and recordkeeping and reporting incentives.

Risk of Stranded Assets

RFG members have and continue to make significant investments to implement recently adopted/amended RECLAIM landing rules. The 2022 AQMP must protect these investments and their useful life, and any new control measures cannot render those investments moot. At a minimum, the 2022 AQMP must consider equipment life on a case-by-case basis, attempt to avoid stranded assets, and in cases of stranded assets, include equipment replacement costs and salvage values in applicable socioeconomic analyses. The 2022 AQMP should also analyze the potential environmental impacts and legal factors associated with the proposed control measures and the RECLAIM transition to ensure that both programs are effectively and efficiently implemented and do not results in unintended adverse environmental or economic impacts.

Technical Feasibility

The 2022 AQMP should clearly acknowledge that the SCAQMD will undertake a comprehensive technology assessment for each of the proposed control measures prior to implementation. These assessments must demonstrate that the proposed emission reduction can be achieved through technologically feasible means prior to adoption. Any new proposals must be evaluated in the context of controls installed or planned to implement recently adopted/amended RECLAIM landing rules, and take into practical considerations such as space constraints within facilities.

Establishment and Maintenance of a Cost-Effectiveness Threshold Cap and Provision of Alternative Compliance Measures

The 2022 AQMP should recognize and confirm that the SCAQMD will only proceed with future regulatory measures after very careful technical evaluation of the feasibility of achieving further emission reductions at a reasonable cost. RFG is concerned with the SCAQMD's increasing acceptance of higher values for cost effectiveness, particularly for those stationary sources that have already invested significantly in the control measures and from which there are limited further emission reduction opportunities available (particularly when compared to mobile sources).

We recognize the 2016 AQMP adopted a cost effectiveness threshold of \$30,000 per ton of VOC and \$50,000 per ton of NOx. This NOx threshold was more than twice the level the SCAQMD had historically applied for certain command-and-control rules. For example, the 2012 AQMP used a cost threshold for NOx control measures of \$22,500 per ton. Given the economic and employment risk of further burdening stationary sources, we strongly believe the 2022 AQMP should maintain the 2016 AQMP's cost effectiveness thresholds, and that the thresholds should function as a cap (as opposed to a trigger for tiered analysis) to ensure that future control measures, as implemented, remain within reasonable economic boundaries.

The 2022 AQMP should also ensure that any future stationary source control measures contain appropriate alternative compliance mechanisms (e.g., an alternative compliance fee set at the relevant threshold level and used to fund clean technologies or mass-based facility caps) to ensure that sources have a ready compliance alternative when costs near the threshold level. Alternative compliance approaches will also help address the technical feasibility concerns summarized above. The 2002 AQMP should further direct that control measure review processes specify incremental cost-effectiveness scenarios and methodology and identify industry-specific affordability issues.

Fuel Neutrality and Interim Control Technologies

RFG has consistently advocated that AQMPs should not pick winners and losers, but instead should force technologies to compete against one another to maximize air quality benefits and provide products that meet residential, commercial, and industrial needs at reasonable costs. Technology and fuel neutrality promotes competition, which forces technologies to become cleaner and drives down prices. Importantly, technology and fuel neutrality also protects against price spikes and shortages, which can have devastating impacts on the economy.

As recognized in the 2016 AQMP, "[a]ir quality regulatory agencies have traditionally set policies and requirements that are performance-based, and thus technology- and fuel-neutral. This is a policy that the SCAQMD intends to continue." We ask the SCAQMD to not only continue this policy in the 2022 AQMP, but to affirmatively identify and recognize those control technologies that support attainment and are implementable sooner and at less cost than zero emission technologies. RFG members have and will continue to work with the AQMD to educate the SCAQMD on the control technologies that they are using at their facilities that are cost effective and making meaningful emission reductions.

Infrastructure and Grid Reliability

At an even larger scale than contemplated in the 2016 AQMP, the 2022 AQMP control measures are almost exclusively reliant on electrification to meet attainment in 2037. Given this reliance, the 2022 AQMP must take into careful consideration the additional electrical generation and associated infrastructure that the proposed control measures will drive, and the potential effects

¹ SCAQMD, 2012 AQMP, December 2012, pp. 4-43.

² SCAQMD, 2016 AQMP, March 2017, pp. 4-9.

of the same. We are concerned that the increasing load on the grid at the scale proposed under the 2022 AQMP will adversely impact the affordability, availability, and reliability of the regional energy market. To protect against these potential consequences, the 2022 AQMP should include a detailed analysis of the generation and infrastructure needs of the anticipated control measures, and the potential consequences of the anticipated implementation approach on the environment, public health, and the regional economy. At a minimum, the document should include analysis of dispatchable generation, the need for increased or new backup generation and other grid reliability considerations, and the affordability effects of building decarbonization.

Conclusion

Thank you for the opportunity to submit these general comments. We look forward to further discussions with the SCAQMD staff and other stakeholders following release of the 2022 AQMP draft.

Sincerely,

Michael J. Carroll

of LATHAM & WATKINS LLP

Michael J. Carroll

cc: Wayne Nastri Ian MacMillan Barbara Baird