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**DRAFT: Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter**

**U.S. Environmental Protection Agency  
Office of Air Quality Planning and Standards  
Air Quality Policy Division**

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## 1. Introduction

The purpose of this guidance document<sup>1</sup> is to assist air agencies<sup>2</sup> that are required to prepare nonattainment plan submissions under Part D of Title I of the Clean Air Act (CAA). Specifically, in this document the Environmental Protection Agency (EPA or Agency) provides guidance to air agencies for the preparation of ozone and particulate matter (PM) plans,<sup>3</sup> and focuses on the requirement for those plans to include contingency measures (CMs). CMs are control requirements that would take effect if an area fails to attain a National Ambient Air Quality Standard (NAAQS) by an applicable attainment date, or fails to make reasonable further progress (RFP) toward attainment. These CM requirements are specified in CAA section 172(c)(9) for nonattainment areas generally, and in section 182(c)(9) for Serious or higher ozone nonattainment areas. This document addresses application of the CM requirements for the ozone and PM NAAQS. It does not address contingency provisions required for maintenance plans in section 175A(d), nor does it address specific contingency provisions for anticipated control measures in Extreme ozone nonattainment areas under section 182(e). It also does not address CM requirements for pollutants other than PM and ozone, where existing CM guidance remains in effect.

EPA is issuing this guidance document because recent court decisions – discussed later in this document – have invalidated key aspects of EPA’s historical approach to implementing the CM requirement. These court decisions had the effect of prohibiting an approach that many air agencies have historically used to meet the CM requirement, i.e., the reliance on implemented control measures as CMs (particularly the commonly used approach of relying on surplus reductions from mobile source fleet turnover from already-implemented federal or state control measures). EPA has received feedback from some air agencies that this constraint, together with the evolution toward more stringent control programs in the 30 years since EPA first articulated its CM guidance (explained in Section 2 of this guidance), has increased the difficulty that they face in identifying measures sufficient to meet the CM requirement. Some air agencies, particularly those with longstanding nonattainment problems that have implemented progressively more stringent control measures over time to meet more stringent NAAQS, have stated that the scarcity of remaining unimplemented control measures poses a significant

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<sup>1</sup> This document is intended only to provide clarity to the public regarding existing requirements under the CAA or EPA regulations. This document is not a rule or regulation, and the guidance it contains may not apply to a particular situation based upon the individual facts and circumstances. This guidance does not change or substitute for any law, regulation, or other legally binding requirement and is not legally enforceable. The use of non-mandatory language such as “guidance,” “recommend,” “may,” “should,” and “can” is intended to describe EPA’s policies and recommendations. The use of mandatory terminology such as “must” and “required” is intended to describe controlling legal requirements under the terms of the CAA and of EPA regulations. Such language and anything else in this document is not intended to and does not establish legally binding requirements in and of itself. None of the recommendations in this guidance are binding or enforceable against any person, and neither any part of the guidance nor the guidance as a whole constitutes final agency action that affects the rights and obligations of any person or represents the consummation of agency decision making. Only final EPA actions taken to approve or disapprove state implementation plan (SIP) submissions that implement any of the recommendations in this guidance would be final actions for purposes of CAA section 307(b).

<sup>2</sup> References to air agencies include state, local, and tribal air agencies.

<sup>3</sup> As used in this document, PM refers to both PM<sub>10</sub> and PM<sub>2.5</sub>. The guidance is intended to address planning requirements for NAAQS for both pollutants.

challenge to meeting CM requirements. EPA intends this guidance to address that increased challenge by clarifying and explaining approaches available to air agencies to meet the CM requirement, while still meeting the CAA as interpreted by the courts.

This guidance focuses on three key aspects of EPA’s CM guidance. First, the guidance addresses the method that air agencies should use to calculate EPA-recommended amount of emissions reductions that CMs should provide. Longstanding EPA guidance, discussed in Section 2 of this document guidance, has recommended that CMs provide reductions approximately equal to or greater than the amount needed to meet the requirement for RFP in the relevant area for 1 year. In this guidance EPA continues to recommend an annual progress-based approach for calculating the recommended amount of reductions for CMs but changes the metric to be more closely tied to the air quality improvement needs of the area when the CMs are triggered. (The term “triggered” for CMs refers to the effective date of EPA’s final determination that a nonattainment area has failed to attain a NAAQS by the applicable attainment date or has failed to meet RFP.<sup>4</sup> The CAA establishes time frames for EPA to make such determinations.)

Second, the guidance addresses the situation where an air agency cannot identify feasible CMs in sufficient quantity to produce the recommended amount of reductions using the updated metric. Previous EPA policy has indicated that states could provide a “reasoned justification” to have CMs that result in less than the recommended one year’s worth (OYW) of RFP. This guidance provides air agencies with specific recommendations about how to develop such reasoned justifications to support state implementation plan (SIP) submissions for which the submitting agency is asserting that it cannot provide for the recommended amount of CM reductions due to a lack of feasible measures.

Finally, this guidance addresses the time period within which reductions from CMs should occur. EPA previously recommended that CMs take effect within 60 days of being triggered, and that the resulting reductions generally occur within 1 year of the CMs being triggered. In instances where there are insufficient CMs available to achieve the recommended amount of emissions reductions within 1 year, EPA provides recommendations for how air agencies could include CMs that provide reductions within up to 2 years of being triggered. This guidance does not alter the 60-day recommendation for the measures to take effect.

While this guidance document focuses on these three aspects of CM guidance that EPA is updating, it also provides additional information to summarize EPA’s existing guidance for CMs more broadly, including aspects that EPA is not updating, to ensure clarity and national consistency.

## **2. Background**

This section provides background and context on the relevant statutory provisions, previous EPA guidance, and court decisions involving the CM requirement.

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<sup>4</sup> For ozone nonattainment areas classified Serious or above, CAA section 182(c)(9) further specifies that CMs are triggered by an area’s failure to meet the applicable RFP milestone. For PM<sub>2.5</sub>, the triggers for CM are further specified by regulation at 40 CFR 1014(a)(1)-(4). The term “triggered” as used here would also include any final EPA determination regarding these requirements.

## 2.1. Nonattainment Area CM Provisions in the CAA

The CAA’s nonattainment area CM requirements appear in two specific provisions: sections 172(c)(9) and 182(c)(9). Congress added these CM requirements to the CAA as part of the Amendments of 1990. Any evaluation of these provisions must rely on the statutory language as well as the larger statutory context and structure of the Act with respect to nonattainment plan requirements.

Section 172(c)(9) is included in the Part D Subpart 1 general nonattainment plan SIP requirements applicable to all NAAQS. It provides that states must include specific measures as CMs as a required element of their nonattainment plan SIP submissions. It applies to nonattainment plans regardless of the classification of the nonattainment area, with one notable exception, i.e., states are not required to meet certain nonattainment plan requirements, including the CM requirement, for ozone nonattainment areas classified as “Marginal.”<sup>5</sup> Section 172(c)(9) provides as follows:

### (9) Contingency measures

Such plan shall provide for the implementation of specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national ambient air quality standard by the attainment date applicable under this part [D]. Such measures shall be included in the plan revision as contingency measures to take effect in any such case without further action by the State or the Administrator.

Section 182(c)(9) is included in the Part D Subpart 2 ozone NAAQS nonattainment plan SIP requirements and applies specifically to states with ozone nonattainment areas classified as “Serious” or above. It provides that states must include specific measures as CMs as a required element of their nonattainment plan SIP submissions. In particular, section 182(c)(9) adds the requirement that the CMs must be in place to be triggered in the event that the state fails to meet a reasonable further progress “milestone” related to sections 182(c)(2)(B) and 182(g).<sup>6</sup> Section 182(c)(9) provides as follows:

### (9) Contingency measures

In addition to the contingency provisions required under [section 172(c)(9)] of this title, the plan revision shall provide for the implementation of specific measures to be undertaken if the area fails to meet any applicable milestone. Such measures shall be included in the plan revision as contingency measures to take effect without further action by the State or the Administrator upon a failure by the State to meet the applicable milestone.

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<sup>5</sup> See text at the end of CAA Section 182(a)(4), which states “[s]ection 7502(c)(9) [172(c)(9)] of this title (relating to contingency measures) shall not apply to Marginal Areas.”

<sup>6</sup> EPA has explained that “[s]ection 182(c)(9) requires that certain state submissions must provide for the implementation of contingency measures in the event of a failure to meet a milestone; it does not require the state to submit separate and distinct contingency measures allocated exclusively for a failure to meet a milestone.” 86 FR 27524 at 27527 (May 21, 2021).

The CAA includes no specific definition of the term “contingency measures” in section 302 or elsewhere, and thus section 172(c)(9) and section 182(c)(9) provide the statutory parameters that both states and EPA must meet with respect to these requirements.

## 2.2. Existing EPA Guidance and Regulations Interpreting the CM Provisions

The statutory requirements of sections 172(c)(9) and 182(c)(9) may appear straightforward, but ambiguities and gaps in the statutory language leave some important questions unanswered. Thus, EPA has previously addressed the CM requirements in a series of guidance documents and implementation rules. To understand EPA’s interpretation of these statutory requirements, and the evolution of EPA guidance for CMs, it is helpful to review key aspects of these documents.

### 2.2.1. 1992 General Preamble

In 1992, EPA published the “General Preamble for Implementation of Title I of the Clean Air Act Amendments of 1990” (General Preamble), which served as a preliminary roadmap outlining how the Agency intended to interpret various provisions of the CAA, as amended in 1990.<sup>7</sup> In the General Preamble, EPA provided its first guidance concerning key aspects of the new statutory CM requirements, including: (i) the recommendation that CMs should provide OYW of RFP; (ii) the conditions under which less or more than OYW of RFP may be appropriate; (iii) the timing of emissions reductions from CMs; (iv) how early implementation of an otherwise required measure could be a valid CM; and (v) what constitutes taking effect “without any further action” in the CM context. EPA provided somewhat different guidance for CMs for each of the criteria pollutants, based on differences in other relevant statutory provisions and the nature of the pollutants, but the portions of the General Preamble most relevant in this guidance document are those for ozone and PM<sub>10</sub>.<sup>8</sup>

#### Ozone

EPA previously provided guidance to address the CM requirements for the ozone NAAQS, taking into consideration other related provisions of Part D, Subpart 2 (of CAA Title I) that gave context for interpreting these requirements. We highlight some key aspects of the historical guidance that are relevant for this new guidance document.

#### *Amount of Emissions Reductions*

From the outset, EPA recognized that neither section 172(c)(9), nor section 182(c)(9) “specify how many measures are needed or the magnitude of emissions reductions that must be provided by these measures.”<sup>9</sup> Knowing the amount of emissions reductions that CMs should provide is a

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<sup>7</sup> 57 FR 13498 at 13511/Column 1 (April 16, 1992). The General Preamble served as an advance notice of how EPA generally intended, in subsequent rulemakings, to take action on SIP submissions and to interpret various title I provisions. EPA has subsequently applied this guidance in the context of many individual EPA SIP actions.

<sup>8</sup> EPA notes that guidance in the General Preamble and subsequent Addendum (59 FR 41998 (August 16, 1994)) remained applicable for the PM<sub>10</sub> NAAQS, whereas EPA provided additional guidance and regulatory requirements for purposes of the PM<sub>2.5</sub> NAAQS in the PM<sub>2.5</sub> Implementation Rule (81 FR 58010 (August 24, 2016)) discussed below. States must meet the statutory CM requirements in nonattainment area plans for any of the NAAQS for which they have a designated nonattainment area.

<sup>9</sup> 57 FR 13498 at 13511/1.

crucial issue for implementing the CM requirements. Because the express statutory language of these provisions does not provide an answer to this important question, EPA sought to resolve this statutory ambiguity. To do so, EPA considered the purpose of CMs in the context of ozone nonattainment plan requirements.

First, EPA noted that both statutory provisions require that CMs go into effect in the event that the state fails to meet RFP or fails to attain the NAAQS in the area.<sup>10</sup> Second, EPA noted that under section 182(b)(1)(A), states were separately required to make a SIP submission to meet RFP. For Moderate area RFP, the statute requires a 15 percent reduction from the base year emissions inventory (EI) over 6 years. For Serious and above area RFP, the statute requires a 3 percent per year reduction averaged over 3-year periods. The RFP calculation is for VOC, but in states that meet the equivalence provisions in CAA section 182(c)(2)(C), air agencies may substitute nitrogen oxides (NO<sub>x</sub>) reductions for a shortfall in VOC reductions for the period after the initial 6-year period. With respect to CMs, EPA stated: “If the strategy for an area relies on NO<sub>x</sub> substitution in lieu of or in addition to VOC reductions, the State should also submit NO<sub>x</sub> contingency measures as necessary to meet the 3 percent requirement.”<sup>11</sup>

Third, EPA considered whether it would be appropriate to require that CMs triggered by a failure to meet RFP should result in emissions reductions that could make up for an “entire shortfall” of the full 15 percent (thereby requiring a state to “adopt double the measures” to meet RFP), or some lesser amount. Fourth, EPA observed that in the event of a failure to meet RFP or a failure to attain, the state would need to develop and submit a new SIP submission to address the deficiency as necessary within 1 year.

Even in 1992, states were having difficulty identifying and adopting measures to meet RFP. Therefore, EPA reasoned that it would be more appropriate to interpret the statute to require that upon triggering, the CMs (whether one or more than one cumulatively) should provide emissions reductions equivalent to OYW of RFP, rather than some larger amount. EPA reasoned that this RFP-based approach would assure that the CMs would provide additional emissions reductions while the state took action to address the deficiency that triggered the CMs. The Agency concluded:

Therefore, EPA will interpret the Act to require States with moderate and above ozone nonattainment areas to include sufficient contingency measures . . . so that, upon implementation of such measures, additional emissions reductions of up to 3 percent of the emissions in the adjusted base year inventory (or such lesser percentage that will cure the identified failure) would be achieved in the year following the year in which the failure has been identified.<sup>12</sup>

This was the genesis of EPA’s guidance that CMs should achieve emissions reductions equivalent to “one year’s worth” of RFP in the area in question, and the assumption that states and EPA should calculate this amount of emissions reductions based on the initial base year EI

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<sup>10</sup> Id. at 13511/1

<sup>11</sup> Id. at 13520/3.

<sup>12</sup> Id. at 13511/2.

for the nonattainment area, rather than some other form of calculation. At the time, EPA logically thought it appropriate to recommend that CMs achieve a specific amount of emissions reductions related to the then current expectations for RFP.

EPA’s guidance in the General Preamble concerning the amount of emissions reductions that CMs should achieve was not compelled by specific statutory language. Instead, it reflected the Agency’s judgment at the time concerning an appropriate approach. EPA formulated this guidance 30 years ago, at a time before promulgation of multiple iterations of increasingly protective ozone NAAQS, and before development of multiple rounds of nonattainment plans to meet those NAAQS, have made it increasingly more difficult for states to identify and adopt additional control measures that are valid CMs. This guidance document revises the General Preamble’s OYW of RFP approach to calculating emissions reductions needed for CMs. The new approach is described in Section 3.

*Conditions Under Which Less or More Reductions are Appropriate*

In the General Preamble, EPA considered the possibility that its recommendation that CMs should achieve OYW of RFP based on the initial base year EI might result in CMs that provided too much or too little emissions reductions, compared to the actual shortfall that might trigger the CMs in the future. Thus, when recommending that the CMs provide emissions reductions equivalent to OYW of RFP, EPA stated that the CMs should result in “additional emissions reductions of up to 3 percent of the emissions in the adjusted base year inventory (*or such lesser percentage that will cure the identified failure*).”<sup>13</sup> By this, EPA was suggesting that if the future RFP or attainment shortfall that triggers the CMs could be cured by less than the full amount of reductions that would result from implementing all the CMs that add up to OYW of RFP, then it may not be necessary to trigger all of the CMs. EPA also acknowledged that “there is the possibility that in some cases 3 percent may not be adequate.” For those situations, EPA recommended two alternative approaches, one being a combination of the CMs and an enforceable commitment from the state to create a tracking program, and another being for the state to submit additional CMs to be held “as a reserve” in the event of a larger shortfall.

These complexities that EPA identified serve to illustrate that the OYW of RFP approach was understood by the Agency to be merely a rough estimate of the appropriate amount of emissions reductions, based on certain assumptions at that point in time. It illustrates that EPA was aware that its approach might turn out to be incorrect in either direction, and that CMs based on this approach would not necessarily reflect the amount of emissions reductions needed at the time of an actual triggering event to make up a shortfall.

EPA notes that its guidance in the General Preamble concerning the conditions under which less or more emissions reductions from CMs might be appropriate, and how to address that possibility, was premised upon the theory that the amount of reductions should be based on the separate RFP requirement in the first instance. As explained above, this recommendation resulted from EPA’s then expectations concerning the amount of emissions reductions that would be appropriate. EPA had these expectations before the Agency promulgated several more stringent

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<sup>13</sup> Id. at 13511/2 (emphasis added).



iterations of the ozone NAAQS and air agencies developed new nonattainment plans to address those NAAQS, which have reduced the pool of available control measures that could be valid CMs.

In this guidance document, EPA is revising its approach to estimating the amount of emissions reductions that CMs should achieve (from OYW of RFP to OYW of progress), and thus EPA’s revised guidance does not follow the approach described above related to the conditions under which less or more reductions are appropriate. EPA’s new approach is intended to more closely relate the amount of emissions reductions provided by CMs to the potential need for additional emissions reductions in the event CMs are triggered.

#### *Timing of Emissions Reductions*

Another important point that EPA addressed in the General Preamble was the timing of emissions reductions from CMs. As with the amount of emissions reductions that CMs should achieve, neither CAA section 172(c)(9) nor section 182(c)(9) expressly provide the time frame within which the CM emissions reductions should occur. In light of this statutory ambiguity, EPA considered the context and purpose of CMs to interpret the provisions and provide guidance to states on this important question of timing.

EPA directly addressed the question of how soon after a triggering event CMs should “take effect.” To evaluate this question, EPA considered the fact that the statutory provisions imply the need for prompt emissions reductions in the event CMs are triggered and considered the intended purpose for CMs. Thus, in discussing the express statutory requirement that CMs “take effect” with no further action by the state or EPA, the Agency stated its view that: “EPA will expect all actions needed to effect full implementation of the measures to occur within 60 days after EPA notifies the State of its failure.”<sup>14</sup> This reflects EPA’s view that CMs should generally begin to achieve emissions reductions soon after the triggering event to be consistent with the purpose of CMs. The intended purpose of CMs is to provide emissions reductions and to continue to make progress towards RFP and/or attainment and to bridge the gap after a triggering event, while the state is “conducting additional control measure development and implementation as necessary to correct the shortfall in emissions reductions or to adopt newly required measures resulting from bump-up to a higher classification.”<sup>15</sup> Accordingly, EPA recommended that CMs should be measures that will begin to result in additional emissions reductions quickly. EPA is not altering its guidance with respect to this 60-day expectation.

On the equally important question of what the outer date for CMs to achieve the intended emissions reductions should be, EPA guidance did not definitively state when the emissions reductions should occur. By implication, however, EPA was recommending that CMs achieve the necessary emissions reductions during the year following a triggering event, because EPA assumed that would be the period of time during which the state would be developing the subsequent SIP submission to cure the deficiency. This is illustrated by the General Preamble statement that a submission should include sufficient contingency measures so that, “upon

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<sup>14</sup> Id. at 13512/1.

<sup>15</sup> Id. at 13511/2.

implementation of such measures, additional emissions reductions...*would be achieved in the year following the year in which the failure has been identified.*”<sup>16</sup>

This was the origin of EPA’s guidance to states that CMs should, among other requirements, be measures that will begin to achieve emissions reductions soon after the triggering event, and that the reductions from the CM (the full OYW of RFP) should occur within 1 year following the triggering event.<sup>17</sup> As with other aspects of EPA’s guidance, however, these recommendations concerning the timing of emissions reductions from CMs were colored by the Agency’s then current understanding. In retrospect, interpreting the CAA to restrict CMs to measures that can achieve needed emissions reductions only in this 1-year time frame may serve to disqualify control measures that could otherwise be valid CMs that would serve the intended purpose of providing emissions reductions and bridging the gap after a state’s failure to meet RFP or to attain. As explained below in Section 5, EPA is revising this aspect of its prior guidance and now interpreting the CAA to allow for CMs that result in emissions reductions that occur up to 2 years from the triggering event under appropriate circumstances.

### *Early Implementation*

In the General Preamble, EPA recognized that one form of valid CM could be the accelerated implementation of a control measure that the state must include in its SIP to meet another requirement, such as reasonably available control measures or reasonably available control technology (RACM/RACT), or RFP in the nonattainment plan. As an example, EPA suggested that “a State could include as a contingency measure the requirements that measures which would take place in later years if the area met its RFP target or attainment deadline, would take effect earlier if the area did not meet its RFP or attainment deadline.”<sup>18</sup>

It is important to note that, for this example, EPA clearly contemplated that although the control measure at issue might be in the SIP to meet another requirement, the triggering of the CM would result in the air agency *accelerating the actual implementation* of such measure so that the emissions reductions would happen *earlier* than otherwise required (i.e., the acceleration is a direct result of the triggering of the CM). Such a CM would meet the statutory language of CAA sections 172(c)(9) and 182(c)(9), which requires CMs to be both conditional and prospective. To clarify, this initial concept in the General Preamble is distinct and separate from EPA’s later interpretation of CAA sections 172(c)(9) and 182(c)(9), discussed in Section 2.2.2, to allow states to use the reductions from measures designated as CMs but implemented early (i.e., before triggering), or the surplus emissions reductions from already implemented measures required for other nonattainment plan purposes, to meet the CM requirements. EPA no longer interprets the CAA to allow approval of this latter form of CM, as courts have held this to be an incorrect

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<sup>16</sup> Id. at 13511/2 (emphasis added).

<sup>17</sup> EPA notes that, where air quality is influenced by seasonal variability, this 1-year period should be sufficient to encompass at least one relevant season (e.g., at least one summer). However, EPA acknowledges that it is possible a triggering event could occur at a less convenient time of year. For example, a triggering event could occur in the middle of the relevant season, which could make it difficult for certain CMs to achieve their anticipated reductions within the timeframe needed. Air agencies should take this possibility into account when developing CMs, but EPA recognizes it is impractical to assess all possible timing scenarios.

<sup>18</sup> 57 FR 13498 at 13511/2-3.

reading of the plain language of the statute. However, EPA notes that a CM that requires accelerated implementation of an otherwise already required control measure as a result of a triggering event could still be a valid CM, if appropriately structured. This form of CM may be of limited utility in a situation in which a state has few or no available control measures, and the existing measures in the SIP to meet other requirements are incapable of more accelerated implementation, but EPA generally considers it a potentially available approach.

*Without Further State or EPA Action*

In the General Preamble, EPA acknowledged that although the statutory language of section 172(c)(9) and section 182(c)(9) provides that CMs must take effect “without further action by the State or the Administrator,” the Agency interprets this language to allow certain “minimal” actions by the state to implement the measures. For example, EPA noted that actions such as notification of affected sources subject to the triggered CM might be appropriate, whereas additional rulemaking or legislative action by the state to implement the CM would not be. This remains an element of EPA’s guidance for CMs and is not affected by this guidance document.

Particulate Matter

EPA also provided guidance to address the CM requirements for the PM<sub>10</sub> NAAQS in the General Preamble that was very similar to that for the ozone NAAQS. Core tenets of the guidance pertained to: (i) the amount of emissions reductions CMs should achieve; (ii) the fact that CMs are in addition to and beyond what is required for other nonattainment plan purposes; (iii) when states should begin to implement CMs; (iv) the timing of when CMs should be “implemented;” and (iv) when CMs should be “fully adopted and take effect.”<sup>19</sup>

*Amount of Emissions Reductions*

As with ozone, EPA recommended that states should have CMs that would achieve OYW of RFP for the area. Unlike ozone, however, Part D, Subpart 4 (of CAA Title I) does not include a statutory requirement for a particular percentage of emissions reductions for purposes of RFP. Instead, EPA guidance recommended that RFP for PM<sub>10</sub> nonattainment areas should represent generally linear progress toward attainment (i.e., the difference between the attainment projected inventory and the base year EI, divided by the number of years between the base year and the attainment year).<sup>20</sup> Following this approach to RFP, EPA recommended that the CMs should achieve a proportional amount of emissions reductions based on the number of years from the base year to the applicable attainment date:

the contingency emissions reductions should be approximately equal to the emissions reductions necessary to demonstrate RFP for one year. For instance, reductions equal to 25 percent of the total strategy would be appropriate for a moderate nonattainment area since the control strategy must generally be implemented in a 3- to 4- year period

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<sup>19</sup> Id. at 13543-13544.

<sup>20</sup> 59 FR 41998, 42015 (August 16, 1994).

between SIP development and the attainment date, and since RFP generally requires annual incremental reductions to attain the standards.<sup>21</sup>

Thus, at the time of the General Preamble, EPA was likewise interpreting section 172(c)(9) for purposes of the PM<sub>10</sub> NAAQS based on its then understanding of the facts and the most appropriate way to address this requirement. Now, as explained in more detail in Section 3, after the addition of PM<sub>2.5</sub> as a different indicator and NAAQS criteria pollutant, several increasingly more stringent iterations of the PM<sub>2.5</sub> NAAQS, and in some cases multiple rounds of state development of nonattainment plans for the PM<sub>10</sub> and PM<sub>2.5</sub> NAAQS, this OYW of RFP approach to the CM requirement is no longer as appropriate. This guidance document revises the General Preamble’s OYW of RFP approach to calculating emissions reductions for CMs for both ozone and PM.

#### *Timing of CMs*

As noted above, neither section 172(c)(9) nor 182(c)(9) expressly provide when the resulting emissions reductions from CMs should occur. In light of this statutory ambiguity, EPA considered the context and purpose of CMs to interpret the provisions and provide guidance to states on this important question of timing.

In the case of PM, as with ozone, EPA guidance was unclear. In one place, EPA stated that “[c]ontingency measures must be implemented immediately after EPA determines the area has failed to make RFP or to attain the standards.”<sup>22</sup> At the end of the very same paragraph, EPA stated that “[c]ontingency measures must be fully adopted and take effect within 1 year without further legislative action once EPA makes such determinations.” There is no explanation to elaborate on EPA’s use of these different terms (i.e., implemented, fully adopted, and take effect). EPA is now concerned that there has been confusion about the meaning of the term “take effect” and whether that pertains only to the effective date of a state’s CMs, or to the date when the state is beginning to “implement” the CMs, and about the related questions related to the timing of partial implementation or full implementation of the CMs. In reviewing its existing CM guidance, EPA has concluded that it is important to revisit the question of when emissions reductions from CMs should occur in light of the purpose of these provisions. Section 5 discusses EPA’s revised approach.

#### 2.2.2. 1993 Guidance Memoranda

In August 1993, EPA issued two guidance memoranda that further addressed the CM requirements. On August 13, 1993, EPA issued a guidance memorandum regarding the early implementation of CMs for ozone and carbon monoxide nonattainment areas.<sup>23</sup> In this initial 1993 guidance, EPA first explicitly addressed the issue of states electing to implement CMs earlier than otherwise required (i.e., before a triggering event). Specifically, EPA stated: “[i]t

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<sup>21</sup> 57 FR 13498 at 13543-44.

<sup>22</sup> Id. at 13544/1

<sup>23</sup> EPA, Memorandum from G.T. Helms, Chief, Ozone/Carbon Monoxide Programs Branch, Office of Air Quality Planning and Standards, to Air Branch Chief[s], Regions I-X, “Early Implementation of Contingency Measures for Ozone and Carbon Monoxide (CO) Nonattainment Areas,” August 13, 1993.

seems illogical to penalize nonattainment areas that are taking extra steps to ensure attainment of the NAAQS by having them adopt additional contingency measures now. Therefore, in cases of early implementation of State contingency measures, we do not feel that it is necessary now to adopt additional contingency measures to backfill for the early activation of contingency measures.”<sup>24</sup> In subsequent rulemakings on individual SIP submissions, EPA expanded upon this concept of early implementation of CMs to allow states to have CMs that are control measures that are already implemented and that provide ongoing reductions each year that are in excess of RFP or attainment needs.<sup>25</sup> As noted below, EPA carried forward its then current interpretation of the CM requirement that allowed approval of already implemented measures as CMs in the ozone and PM<sub>2.5</sub> NAAQS implementation rules, but courts have rejected this interpretation and it no longer informs EPA’s interpretation of the CM requirements.

On August 23, 1993, EPA issued another guidance memorandum concerning, among other issues, the CM requirement.<sup>26</sup> In this second 1993 guidance, EPA addressed the content of the CMs and indicated that for states with ozone nonattainment areas classified Moderate and higher that had completed the initial 15 percent VOC reductions for RFP, CMs could be a mixture of VOC and NO<sub>x</sub> reductions on a percentage basis.<sup>27</sup> EPA indicated that of the OYW of RFP reductions required, at least 10 percent should be VOC emissions reductions, allowing up to 90 percent of the CM emissions reductions to be NO<sub>x</sub> emissions reductions. While EPA’s guidance from August 23, 1993, explicitly allowed for NO<sub>x</sub> reductions in the context of CMs, it did not alter EPA’s approach to the overall amount of reductions required. As explained in Section 3, EPA is now recommending a different approach to calculating the amount of VOC and/or NO<sub>x</sub> reductions recommended for purposes of CMs.

### 2.2.3. 1994 Addendum to the General Preamble

In 1994, EPA published the “Addendum to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990” (Addendum).<sup>28</sup> The Addendum provided additional guidance to states with PM<sub>10</sub> nonattainment areas designated Serious under the Part D Subpart 4 requirements. EPA reiterated its guidance for section 172(c)(9), emphasizing key points including: (i) states must meet the CM requirement with measures that are not required to meet other attainment plan obligations; (ii) the CMs should be already adopted measures that would

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<sup>24</sup> *Id.*, at 2.

<sup>25</sup> For example, see 61 FR 36004, at 36009-36010 (July 9, 1996) and 62 FR 10690, at 10695 (March 10, 1997). Also see 62 FR 15844 (April 3, 1997); 62 FR 66279 (December 18, 1997); 66 FR 30811 (June 8, 2001); 66 FR 586 and 66 FR 634 (January 3, 2001); and 70 FR 71612, at 71651 (November 29, 2005).

<sup>26</sup> EPA, Memorandum from Michael H. Shapiro, Acting Assistant Administrator for Air and Radiation, to Regional Air Directors, “Guidance on Issues Related to 15 Percent Rate-of-Progress Plans,” August 23, 1993.

<sup>27</sup> In this context, “on a percentage basis” refers to substitution on the basis of the percentage of NO<sub>x</sub> emissions reductions relative to the NO<sub>x</sub> RFP baseline inventory. For example, in an area where the RFP baseline is 200 tons per day of VOC and 100 tons per day of NO<sub>x</sub>, an RFP shortfall of 1 percent in VOC emissions reductions (i.e., 2 tpd) can be remedied by NO<sub>x</sub> emissions reductions of 1 percent of the NO<sub>x</sub> inventory (i.e., 1 tpd).

<sup>28</sup> 59 FR 41998.

go into effect with minimal further action upon a triggering event; and (iii) the CMs should result in emissions reductions that are equivalent to OYW of RFP in the area.<sup>29</sup>

In the Addendum, the most notable clarification to prior EPA guidance for PM<sub>10</sub> was with respect to what additional state or EPA action is permissible after a triggering event, and within what time frame. Comparable to its prior guidance for ozone, EPA stated that it “generally expects” that any such actions to implement CMs should occur within 60 days of the triggering event, and further recommended that the state “should ensure that the measures are fully implemented as expeditiously as practicable after they take effect.”<sup>30</sup> Again, this statement indicated a distinction between the “effective date” and the “implementation” of the CMs, without fully evaluating or explaining what that might mean in terms of when the emissions reductions from CMs should occur.

#### 2.2.4. Implementation Rule for 2008 Ozone NAAQS

For implementation of the 2008 Ozone NAAQS, EPA issued a rule in 2015 that included additional regulatory requirements and additional guidance for ozone nonattainment plan requirements.<sup>31</sup> With respect to the CM requirement, EPA relied on its prior guidance in the General Preamble and provided additional guidance on several points.

In accordance with longstanding guidance, EPA reiterated that to meet statutory requirements CMs must: (i) provide for the implementation of specific measures if the area at issue fails to attain or to meet any milestone; (ii) must take effect without further action by the state or EPA upon a triggering event; and (iii) should represent OYW of RFP “amounting to reductions of 3 percent of the baseline emissions inventory for the nonattainment area.”<sup>32</sup> EPA also repeated its guidance that states could rely on emissions reductions from already implemented measures to be CMs, and in particular its “policy that allows promulgated federal measures to be used as contingency measures as long as they provide emissions reductions in the relevant years in excess of those needed for attainment or RFP.”<sup>33</sup>

The one significant modification to EPA’s prior CM guidance concerned whether the CMs must result in some VOC emissions reductions or may instead result only in NO<sub>x</sub> emissions reductions. As noted above, EPA’s prior 1993 guidance had been that some portion of the emissions reductions from the CMs must consist of VOC emissions reductions. However, in 2015 EPA stated that:

As explained in the proposal, this previous limitation is no longer necessary in all cases. In particular, Moderate and above areas that have completed the initial 15 percent VOC reduction required by CAA section 182(b)(1)(A)(i) can meet the contingency measures requirement based entirely on NO<sub>x</sub> controls if that is what the state’s analyses have

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<sup>29</sup> Id. at 42014-15.

<sup>30</sup> Id. at 42015/1.

<sup>31</sup> “Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements,” 80 FR 12264 (March 6, 2015).

<sup>32</sup> Id. at 12285.

<sup>33</sup> Id.; citing *LEAN v. EPA*, 382 F.3d 575 (5<sup>th</sup> Cir. 2004).

demonstrated would be more effective in bringing the area into attainment. There would be no minimum VOC requirement.<sup>34</sup>

As explained in Section 3, EPA now recommends a different approach to calculating the amount of VOC and/or NO<sub>x</sub> reductions recommended for purposes of CMs.

Petitioners challenged EPA’s implementation rule for the 2008 Ozone NAAQS on other issues, but no party challenged EPA’s interpretation of section 172(c)(9) and section 182(c)(9).<sup>35</sup> Accordingly, EPA guidance has remained the same with respect to other aspects of its interpretation of the CM requirements.

#### 2.2.5. Implementation Rule for PM<sub>2.5</sub> NAAQS

In 2016, EPA promulgated an implementation rule intended to address nonattainment plan SIP requirements for the 1997 PM<sub>2.5</sub> NAAQS and all other iterations of the PM<sub>2.5</sub> NAAQS going forward.<sup>36</sup> With respect to CM requirements, EPA provided both regulatory requirements in 40 CFR 51.1014 and guidance recommendations in the final rule preamble. This rulemaking highlighted several important distinctions to make with respect to CM for PM<sub>2.5</sub>.

First, states with PM<sub>2.5</sub> nonattainment areas must have CMs that can be triggered by four different events: (i) a failure to meet an RFP requirement; (ii) a failure to meet any quantitative milestone requirement; (iii) a failure to submit a quantitative milestone report; or (iv) a failure to attain by the applicable attainment date.<sup>37</sup>

Second, EPA codified certain CM requirements in regulatory text. For example, EPA has long interpreted section 172(c)(9) to require that CMs be measures that the state is not otherwise required to adopt and implement to meet other nonattainment plan requirements such as RACM/RACT, and that the state does not otherwise rely upon to meet RFP or attainment requirements. This and other core CM requirements are set forth by regulation for the PM<sub>2.5</sub> NAAQS.<sup>38</sup> EPA provided additional guidance on these requirements in the preamble to the final rule.<sup>39</sup>

Third, unlike Subpart 2 for ozone, Subpart 4 applicable to the PM<sub>2.5</sub> NAAQS does not include a statutory provision that defines what amount of emissions reductions constitute RFP, comparable to sections 182(b)(1)(A) and (c)(2)(B). Instead, the RFP requirement for PM<sub>2.5</sub> is governed by section 172(c)(2), as defined in section 171(1). The latter section provides that RFP means annual incremental reductions in emissions as required or may reasonably be required by EPA

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<sup>34</sup> Id. at 12285/2.

<sup>35</sup> See *South Coast Air Quality Management District v. EPA, et al.*, 882 F.3d 1138 (D.C. Cir. 2018). Although the court rejected EPA’s approach to implementation of the 2008 Ozone NAAQS with respect to other issues, no petitioners challenged EPA’s guidance with respect to CM requirements.

<sup>36</sup> See “Fine Particulate Matter National Ambient Air Quality Standards: Nonattainment Area State Implementation Plan Requirements,” 81 FR 58010 (August 24, 2016).

<sup>37</sup> 40 CFR 51.1014(a).

<sup>38</sup> 40 CFR 51.1014(b).

<sup>39</sup> 81 FR 58010 at 58066-068 (Moderate area plans); at 58092-93 (Serious area plans); and at 58105-106 (CAA section 189(d) plans).

for purposes of reaching attainment by the attainment date. Thus, rather than a set percentage reduction of emissions measured from the initial EI for the area (base year), EPA has interpreted RFP for PM<sub>2.5</sub> to mean annual generally linear reductions in emissions from the base year to the attainment year. Air agencies must perform this calculation for both the NAAQS pollutant and for each relevant plan precursor. Rates of reduction may differ for each pollutant or relevant plan precursor, and a state can use the relative air quality impacts of different precursors identified in the attainment modeling to demonstrate that the emissions reductions provide adequate progress toward attainment to meet the RFP requirement.<sup>40</sup>

Finally, EPA explained in the PM<sub>2.5</sub> Implementation Rule the amount of emissions reductions that CMs should achieve. EPA repeated its longstanding guidance that PM CMs should provide OYW of RFP, calculated as the annual average reductions from the base year EI to the attainment year EI for the area. However, EPA also acknowledged that there could be situations in which states would be unable to develop CMs that would achieve this amount of emissions reductions. In such cases, EPA stated that:

States should explain the amount of anticipated emissions reductions to be accomplished by the contingency measures outlined in the plan. In the rare event that an area is unable to identify contingency measures to account for approximately 1 year’s worth of emissions reductions, the state should provide a reasoned justification why the smaller amount of emissions reductions is appropriate.<sup>41</sup>

EPA did not provide any specific guidance to states concerning how to construct such a reasoned justification, but the Agency anticipated that there could be a factual and analytical basis to support approval of CMs that achieve less than the amount of reductions that EPA has historically recommended. EPA is providing additional guidance on this approach in this document in Section 4.

#### 2.2.6. Implementation Rule for 2015 Ozone NAAQS

For implementation of the 2015 Ozone NAAQS, EPA issued a new implementation rule in 2018 that was primarily an update to the implementation rule for the 2008 Ozone NAAQS.<sup>42</sup> With respect to the CM requirement, EPA relied on its prior guidance in the General Preamble and the prior ozone implementation rule.

In the preamble to the final rule EPA reiterated guidance on a number of key points, including: (i) that CMs must be fully adopted rules or measures that will take effect without further action upon a triggering event; (ii) that CMs should achieve OYW of RFP or approximately 3 percent of the baseline EI; (iii) that states may rely on NO<sub>x</sub> emissions rather than VOC emissions, if they have already fulfilled the 15 percent VOC reduction requirement for RFP in section

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<sup>40</sup>81 FR 58010, 58055–58063, 58090–58091, 58103–58104. The PM<sub>2.5</sub> implementation rule also lays out a stepwise option for RFP, but this approach is generally not relevant to the use of RFP in the calculation of the recommend amount of CM reductions based on the average annual rate.

<sup>41</sup> Id. at 58067/3.

<sup>42</sup> See “Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements,” 83 FR 62998 (December 6, 2018).



182(b)(1)(A)(i) and provide a demonstration that NO<sub>x</sub> substitution would be effective to bringing the area to attainment; and (iv) that CMs may consist of already implemented measures, so long as they meet other CM requirements and the state had not relied upon them for RFP or for attainment in the nonattainment plan.<sup>43</sup>

As discussed in Section 2.3.3 below, petitioners challenged EPA’s interpretation of CAA sections 172(c)(9) and 182(c)(9) to allow approval of already implemented measures as CMs and the D.C. Circuit agreed.<sup>44</sup> Although the court rejected EPA’s statutory interpretation and thus vacated the implementation rule with respect to EPA’s position on this specific issue, there were no challenges to any other aspect of EPA’s approach to CMs in the Implementation Rule for the 2015 Ozone NAAQS. Accordingly, EPA guidance has remained the same with respect to all other aspects of its interpretation of the CM requirements.

### 2.3. Relevant Court Decisions Addressing the CM Requirement

In addition to the statutory provisions, prior guidance, and existing implementation rules for purposes of the ozone and PM<sub>2.5</sub> NAAQS, EPA must take into account a number of significant court decisions that interpret the nonattainment plan CM requirements. These decisions focused on specific aspects of EPA’s interpretations of the statutory CM requirements, and thus inform EPA’s current guidance.

#### 2.3.1. *Louisiana Environmental Action Network (LEAN) v EPA*

*LEAN v. EPA* was a challenge to EPA’s approval of a portion of a nonattainment plan for the 1979 Ozone NAAQS for the Baton Rouge area of Louisiana.<sup>45</sup> EPA approved a new substitute CM that consisted of a control measure on a stationary source to reduce VOC emissions. The source had already installed and begun operating a flare to reduce VOC to meet this requirement in 1998; EPA’s approval of the CM was in 2002 and thus after the control measure was already implemented and achieving emissions reductions. In addition, the source at issue was located outside the boundaries of the designated nonattainment area.

Petitioners challenged EPA’s approval on several grounds, including: (i) that because the measure was already implemented, it could not be a CM consistent with the express language in section 172(c)(9) and section 182(c)(9) indicating that they are supposed to occur in the future after a triggering event; and (ii) that because the control measure applied to a source outside the nonattainment area, it could not be a CM.

With respect to the first issue, the court accepted EPA’s arguments that the statutory language was ambiguous, thereby allowing EPA to interpret the language to allow continuing emissions reductions from already implemented measures to be CMs.<sup>46</sup> As explained below, subsequent courts have disagreed that the statutory provisions are ambiguous and have ruled that CMs must be conditional and prospective based on the plain language of the provisions. Thus, EPA no

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<sup>43</sup> Id. at 63026.

<sup>44</sup> *Sierra Club v. EPA*, 21 F.4th 815, at 827-828 (D.C. Cir. 2021).

<sup>45</sup> 382 F.3d 575 (5th Cir. 2004).

<sup>46</sup> 382 F.3d at 582-585.

longer interprets the CAA to allow approval of already implemented measures, or surplus emissions reductions from such measures, to be CMs.

With respect to the second issue, the court found that the state and EPA had failed to provide adequate technical support to demonstrate that the emissions reductions from a source outside the designated nonattainment area would in fact result in the necessary air quality improvements inside the nonattainment area.<sup>47</sup> However, the court’s opinion leaves open the possibility that states could rely on control measures on sources outside the designated nonattainment area as CMs, so long as there is an adequate technical showing that the resulting emissions reductions from the CMs have the required impact within the nonattainment area.<sup>48</sup> Unlike other nonattainment plan requirements, section 172(c)(9) and section 182(c)(9) do not explicitly require that the control measures apply to sources inside the designated nonattainment area. The *LEAN* decision highlights that the technical support for such an approach to CMs must be adequate.

### 2.3.2. *Bahr v. EPA*

*Bahr v. EPA* was a challenge to EPA’s approval of a nonattainment plan for the PM<sub>10</sub> NAAQS for the Phoenix Planning Area of Arizona.<sup>49</sup> EPA approved the state’s SIP submission as meeting all applicable nonattainment plan requirements pursuant to section 189(d), including the CM requirements of section 172(c)(9).

The CMs at issue consisted of measures designed to reduce windblown dust, such as paving and stabilizing roads, lowering speed limits, and purchasing and using street sweepers to help reduce ambient PM<sub>10</sub>. There was no dispute that the state had already implemented these measures prior to EPA’s approval of the measures as CMs, and that the measures were then in place and thus continuing to reduce windblown dust. The court rejected EPA’s approval of the CMs, reasoning that the statutory language of section 172(c)(9) clearly indicates that they must be measures that are to take effect in the future, only after being triggered by a finding of failure to meet RFP or failure to attain.

The 9<sup>th</sup> Circuit found that the CAA language overrides EPA’s argument that allowing approval of already implemented measures as CMs would encourage states to implement control measures sooner, consistent with the overall policy objectives of the CAA to reduce pollution and protect public health. The court stated: “Even if we agreed that the EPA’s policy considerations are compelling, such considerations cannot override the plain language of the statute.” Although there was a dissenting opinion in this case, agreeing with the decision in the 2004 *LEAN* case, the majority expressly disagreed with that prior 5<sup>th</sup> Circuit decision. After the court decisions in *Bahr* and *LEAN*, EPA was left with seemingly contradictory opinions in the 9<sup>th</sup> and 5<sup>th</sup> Circuits.

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<sup>47</sup> 382 F.3d at 584-587.

<sup>48</sup> EPA has provided guidance with respect to CM on sources outside the nonattainment area in the PM<sub>2.5</sub> Implementation Rule. 81 FR 58067 (CM for Moderate nonattainment areas); 81 FR 58105 (CM for Serious nonattainment areas).

<sup>49</sup> 836 F.3d 1218 (9th Cir. 2016).

EPA now draws from this case that the statute prohibits approval as CMs any measures that the state has already implemented, and that will already be in place and achieving emissions reductions, regardless of whether there is ever a future triggering event for CMs such as a finding of failure to meet RFP or finding of failure to attain. States must have CMs that are structured and worded so that they are both conditional and prospective, to take effect only in the event of a future triggering event.

### 2.3.3. *Sierra Club v. EPA*

*Sierra Club v. EPA* was a challenge to EPA’s final implementation rule for the 2015 Ozone NAAQS.<sup>50</sup> EPA issued the rule to provide additional regulatory requirements and guidance to all states concerning nonattainment plan SIP requirements for the 2015 ozone NAAQS, including CMs. Among other aspects of the final rule challenged in this case, EPA interpreted section 172(c)(9) and section 182(c)(9) to allow approval of emissions reductions from already implemented measures as CMs. In the challenged rule, EPA also reiterated its interpretation of the CM requirements expressed in the implementation rule for the 2008 Ozone NAAQS, in which EPA explicitly identified surplus emissions reductions that would occur in the future as a result of mobile source fleet turnover as one acceptable form of already implemented CM.<sup>51</sup>

The D.C. Circuit rejected this interpretation. The court held that the specific statutory wording of sections 172(c)(9) and 182(c)(9) are unambiguously “conditional and prospective.” The court evaluated the express statutory language in light of dictionary definitions and reasoned that “contingent” means “dependent on or conditioned by something else.” Similarly, the court reasoned that already implemented measures are not measures “to take effect” only if and when the contingency occurs.

Significantly, the *Sierra Club* decision explicitly rejected EPA’s argument that these statutory provisions are ambiguous because the 5th Circuit found them to be so in the *LEAN* decision, as did the dissent in *Bahr*. Although the court acknowledged the different outcome in the *LEAN* decision, it rejected the conclusion that the statutory language is ambiguous with respect to the conditional and prospective requirements for CMs.

EPA draws from this decision, which the court rendered on a rule of nationwide applicability, that it cannot approve as CMs any measures that are already implemented, and that will already be in place and achieving emissions reductions, regardless of whether there is ever a triggering event in the future such as a finding of failure to meet RFP or finding of failure to attain. Again, states must have CMs that are structured and worded so that they are both conditional and prospective, to take effect only in the event of a future triggering event.

### 2.3.4. *Association of Irrigated Residents (AIR) v. EPA*

*AIR v. EPA* was a challenge to EPA’s approval of a nonattainment plan SIP submission for the 2008 Ozone NAAQS for the San Joaquin Valley area of California.<sup>52</sup> EPA approved the SIP

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<sup>50</sup> 21.F.4th 815 (D.C. Cir. 2021).

<sup>51</sup> 80 FR 12264 at 12285.

<sup>52</sup> 10 F.4th 937 (9th Cir. 2021).

submission as meeting the CM requirement with a single measure projected to achieve a relatively small amount of emissions reductions, well below the amount that would constitute OYW of RFP in the area. EPA’s approval action very explicitly acknowledged this fact. EPA explained its view that other surplus emissions reductions in the area, including those that would result from mobile source fleet turnover, that were not relied upon in the nonattainment plan for any purpose, would provide substantial additional emissions reductions following a failure to meet a milestone or attain the standard by the applicable attainment date, thereby justifying the small amount from the CM.

The 9<sup>th</sup> Circuit rejected this interpretation. Although the court noted that the CAA does not specify the amount of emissions reductions that CMs must achieve, and that EPA’s prior statements concerning this point are nonbinding guidance, the court evaluated EPA’s action under an arbitrary and capricious standard of review and concluded that EPA had not provided a sufficiently reasoned explanation for departure from its guidance that CMs should achieve emissions reductions equivalent to OYW of RFP in the area. Notwithstanding EPA’s acknowledgement of the issue, and EPA’s explanation for its application of its guidance to the facts at issue, the court reasoned that the Agency was allowing surplus emissions from other already implemented measures to make up for a lack of CMs that would achieve the recommended OYW of RFP. In particular, the court stated that EPA “has severed the relationship between the requirement of contingency measures and the benchmark of reasonable further progress, without an adequate explanation of why the new – and far more modest – contingency measure is reasonable.”<sup>53</sup>

EPA draws from the *AIR* decision that it cannot approve as meeting the CM requirement proposed CMs with reductions that comprise substantially less than OYW of RFP if our approval is dependent upon surplus emissions reductions from other already implemented measures to justify the smaller amount. States cannot rely on surplus emissions from other already implemented measures even indirectly as a means to reduce the amount of emissions reductions otherwise recommended for CMs. However, the court acknowledged that EPA’s prior statements concerning the amount of emissions reductions that CM should achieve to meet the statutory requirements are guidance, and that EPA can revise its guidance if it provides a sufficient reasoned justification for a change. EPA is heeding the court’s decision and in this guidance is reconsidering this key aspect of its prior guidance.

#### 2.4. Summary of EPA’s Existing Approach to CMs

In light of the statute, rules, guidance, and court decisions just described, the following summary distills key aspects of existing CM policy, prior to the issuance of this guidance. As noted throughout this guidance document, EPA is now changing and/or clarifying some of the aspects summarized here, while leaving others unchanged. Specifically, changes described in the remainder of this document relate to items 3 and 5 of the summary:

1. CMs must be conditional and prospective, not already implemented, per the statute and relevant court decisions. For this same reason, EPA cannot approve “excess” or “surplus”

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<sup>53</sup> *AIR*, 10 F.4th at 946.

emissions reductions from already required and implemented control measures as meeting the CM requirement. Thus, for example, additional emissions reductions that will occur each year as a result of mobile source fleet turnover, whether from federal or state requirements, cannot constitute CMs, because they are the result of regulatory requirements that are already implemented and the emissions reductions will occur regardless of whether there is, or is not, any future CM triggering event.

2. CMs cannot be control measures that states are required to adopt and implement to meet other legal requirements. They cannot be control measures that the state is required to impose to meet other CAA requirements including, but not limited to, nonattainment plan requirements, such as RACM/RACT, or best available control measures or best available control technology (BACM/BACT), or most stringent measures (MSM), and cannot be measures the state otherwise relies upon to meet RFP or for attainment in the modeled attainment demonstration. States are separately required to meet those other requirements and, by definition, CMs are required to be measures that will provide emissions reductions over and above what the state is required to impose to meet all other separate obligations under the CAA.
3. CMs should achieve emissions reductions equal to or greater than OYW of RFP for the nonattainment area and the NAAQS at issue, as projected in the nonattainment plan. States may meet this OYW requirement to satisfy the CM requirement through one or more control measures; individual measures do not need to provide this amount of reductions in isolation but can be combined with other measures in order to achieve OYW of RFP and thus be deemed a valid CM. CMs (one or more measures) that achieve less than OYW may be sufficient, with a reasoned justification for the lower amount.
4. CMs should take effect within 60 days, and with no further significant action by the state or EPA, following an EPA notification to the state of a failure to meet RFP or a failure to attain.
5. The emissions reductions from the CMs should generally occur in the year following the determination of failure to meet RFP or failure to attain, i.e., during the period that the state and EPA should be addressing the deficiency that triggered the CMs through a new SIP submission, as appropriate.
6. CMs may be measures that apply to sources outside the designated NAA (unlike other nonattainment plan requirements such as RACM/RACT), so long as there is an adequate technical demonstration showing that the emissions reductions from the CMs would provide the necessary air quality benefit within the NAA.
7. It is permissible, but not necessary, for a state to specify that certain CMs are for RFP failure only or for failure to attain only. If specified in this way, however, the state must ensure that adequate CMs are in place for each triggering event; this could result in the need for additional measures if a state elects to differentiate between CMs in this way.

EPA intends the remainder of this document to revise and supplement its existing CM guidance reflected in this summary. In particular, EPA is revising its prior guidance with respect to how to calculate the amount of emissions reductions that CMs should achieve (Section 3), and its guidance concerning the period of time during which emissions reductions from CMs should occur (Section 5). In addition, EPA is expanding its prior guidance concerning what would constitute a reasoned justification for air agencies to provide to establish that they cannot identify and adopt sufficient CMs to achieve the recommended amount of reductions (Section 4).

### **3. Showing that the CMs Achieve Sufficient Reductions**

As explained in Section 2, EPA previously recommended that CMs provide reductions that provide for OYW of RFP. Under the historical OYW of RFP approach, air agencies documented the amount of reductions expected from the identified CMs and compared them to the amount of emissions that would constitute RFP in 1 year. EPA now believes that it is appropriate to update its prior guidance in light of changed factual circumstances and a current understanding of what remaining controls may be available for states to adopt as CMs. EPA now considers it more appropriate for CMs to achieve approximately “OYW of progress,” which is a different metric than OYW of RFP.

Section 2 briefly describes how OYW of RFP is calculated (i.e., by summarizing how underlying RFP, which is a separate requirement, is calculated), noting differences between the CAA’s ozone and PM provisions. To summarize, for ozone, annual RFP is essentially defined as 3 percent of the base year EI anthropogenic emissions. For PM, annual RFP is the average annual reductions between the anthropogenic emissions from the base year EI and the projected attainment year EI (i.e., the projected attainment inventory for the nonattainment area, referred to in this document as the attainment projected inventory).<sup>54</sup> In contrast, OYW of progress is calculated the same way for ozone and PM: by determining the average annual reductions between the base year EI and the projected attainment year EI, determining what percentage of the base year EI this amount represents, then applying that percentage to the projected attainment year EI to determine the amount of reductions needed to ensure ongoing progress if CMs are triggered.<sup>55</sup> This CM guidance should not be read as defining or changing existing underlying RFP interpretations or regulatory requirements for RFP in any way.

In reviewing its guidance regarding the recommended amount of emissions reductions that CMs should achieve, EPA observed that basing the amount of emissions reductions on the annual amount of reductions needed to meet the separate RFP requirement – OYW of RFP – may in some cases lead to an amount that is greater than what would be typically needed to make up for a shortfall in RFP or for attainment purposes. The situation arises because the separate RFP requirement is tied in part to the base year inventory, despite the fact that the actual emissions inventory in nonattainment areas typically declines over time as a result of the implementation of

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<sup>54</sup> The term “attainment projected inventory” is described further in Section 3.8.1 (for ozone) and Section 3.8.2 (for particulate matter) of EPA’s “Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter NAAQS and Regional Haze Regulations”. See <https://www.epa.gov/air-emissions-inventories/air-emissions-inventory-guidance-implementation-ozone-and-particulate>.

<sup>55</sup> For the purposes of calculating OYW of progress, references to emissions, including “base year EI” and “projected attainment EI,” refer to the anthropogenic portion of the total emissions inventory.

control measures. Because the base year inventory for a given attainment plan is fixed until the attainment date,<sup>56</sup> an amount calculated based on a percentage of that inventory would also be fixed, despite the fact that as the emissions inventory declines in subsequent years, that amount actually represents an ever-growing percentage of any future year inventory. For example, the amount of VOC that represents 3 percent of the base year EI could represent 10 percent or more of the attainment projected inventory in some cases. Meanwhile, the timing of the implementation of CMs (i.e., the future year in which CMs will be triggered, if at all), is uncertain. CMs would be triggered no earlier than the first RFP milestone (and then only if a milestone failure occurred) and might not be triggered until the attainment date.<sup>57</sup> In either case, the emissions inventory will have declined from the baseline.

This declining inventory/increasing percentage effect associated with OYW of RFP is more pronounced in nonattainment areas with higher classifications, particularly for ozone areas, where the base year inventory can be 10 years or more removed from the attainment date. Over long time periods, the attainment projected inventory will likely be significantly smaller than the base year inventory. Consequently, 3 percent of the original base year EI at that time could represent a much larger percentage of the attainment projected inventory. After decades of implementing the CAA, EPA now believes that its OYW of RFP approach to calculating the amount of reductions for CMs was unnecessarily conservative for estimating the amount of emissions reductions needed for CM purposes because a given percentage of the base year inventory tends to represent a much more significant portion of the attainment projected inventory. Further, areas with higher classifications also generally have historically had more significant air quality problems that have required implementing a more comprehensive and stringent set of control measures; therefore, they tend to be the areas where the scarcity of measures presents the greatest challenge to developing CMs that provide sufficient reductions.

For these reasons, EPA believes it is reasonable to revise its guidance concerning the minimum amount of emissions reductions that CMs should achieve. It is more appropriate for CMs to achieve emissions reductions reflecting an amount equal to or greater than the annual emissions reductions between the base year and the attainment year, as applied to the attainment projected inventory, rather than to a set percentage of the base year EI (for ozone) or to the annual average reductions between the base year EI and the attainment projected EI (for PM). In making this change, EPA recognizes attainment of the NAAQS as the primary objective of the nonattainment plan requirements, and thus the appropriate metric should be attainment-focused. In the absence of a CAA-specified amount of emissions reductions required for CMs, EPA's new approach is reasonable given our understanding of the statutory purpose of CMs following a failure to attain or to meet an RFP milestone, which is to ensure uninterrupted progress toward attainment while the next steps unfold in response to the failure. Applying the percentage reduction equivalent to or greater than OYW of progress for CM purposes (rather than OYW of RFP) in the plan

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<sup>56</sup> In the event of reclassification of a nonattainment area for PM<sub>10</sub> or PM<sub>2.5</sub>, the state is required to update the base year EI as part of the new attainment plan SIP submission; for an ozone nonattainment area, the base year EI remains the same following reclassification.

<sup>57</sup> Note that for Moderate ozone nonattainment areas, the end of the RFP interval occurs at the 6-year mark and thus coincides with the attainment date. For areas classified Serious or above, there are separate RFP milestone-related triggers for CMs that could occur in advance of the attainment date.

submission to determine the recommended amount of CM reductions is a reasonable approach to ensuring such progress. EPA also recognizes an air agency may elect to adopt CMs that achieve more emission reductions than EPA’s recommendation. More details about performing this calculation and some examples are provided later.

In addition to focusing on the attainment projected inventory, there is, for ozone, an additional way in which the OYW of progress metric will differ from OYW of RFP: the recommended percentage of reductions represents appropriate progress toward attainment as opposed to a fixed amount. Under the CAA, the rate of emissions reductions to meet OYW of RFP for ozone is essentially specified to be a fixed amount of VOC (3 percent of the base inventory per year).<sup>58</sup> This fixed amount is not necessarily equivalent to the amount of emissions reductions of VOC and/or NO<sub>x</sub> that the area will need (as reflected in the attainment projected inventory) to attain the ozone NAAQS by the applicable attainment date. To calculate EPA’s recommended amount of CM reductions using the OYW of progress approach, which does relate to the amount of reductions that the area will need (again, as reflected in the attainment projected inventory), air agencies would determine the percentage of the base year EI the annual rate of reductions (i.e., the reductions in anthropogenic emissions between the base year and the attainment year, divided by the number of years between the base year and the attainment year) represents, then apply *that* percentage to the attainment projected EI, rather than calculating the amount based on a fixed 3 percent of the base year EI. The annual rate of reductions (i.e., the percentage) could be more or less than 3 percent. (This is similar to how the percentage is already determined for PM<sub>2.5</sub> precursors, because RFP for PM is not a fixed percentage). States should perform this calculation separately for both ozone precursors, VOC and NO<sub>x</sub>.<sup>59</sup> This would ensure that the state develops CMs to achieve reductions related to the reductions of the precursors that are needed for the area to attain, regardless of whether the approach is being applied for PM or for ozone.<sup>60</sup>

### 3.1. OYW of Progress Calculation Described

EPA recommends that air agencies use the following equation to calculate OYW of progress for the purpose of assessing the adequacy of the reductions provided by the submitted CMs:

$$\frac{(base\ year\ EI - attainment\ year\ EI)}{(attainment\ year - base\ year)} \div base\ year\ EI \times attainment\ year\ EI = OYW\ of\ Progress$$

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<sup>58</sup> The CAA expresses RFP for ozone in terms of averages over certain time periods. For example, RFP for Serious ozone areas is expressed in CAA section 182(c)(2)(B) as an average of 3% per year over 3 consecutive years.

<sup>59</sup> Under our previous guidance the calculation is done for VOC, with the possibility of NO<sub>x</sub> substitution. This is discussed in Section 2.2.1 of this document.

<sup>60</sup> For ozone, EPA notes that the new recommendation for separate NO<sub>x</sub> and VOC amounts has the potential to result in more CM reductions being needed for one of the precursors than would have been needed under the prior OYW of RFP approach, which allowed NO<sub>x</sub> substitution. EPA estimates this will be an uncommon occurrence, and it does not alter our conclusion that the new recommendation results in an amount of reductions that better aligns with the area’s air quality needs for reductions of that precursor, accounting for declining emissions. Air agencies that cannot adopt CMs sufficient to provide the recommended amount of reductions for a given precursor may wish to consider an infeasibility justification for that precursor.



The OYW of progress calculation is based on anthropogenic emissions. All uses of the term “emissions,” including “base year EI” and “projected attainment EI,” refer to anthropogenic emissions.

States should use this approach for ozone and PM nonattainment plans and should perform the calculation separately for each relevant pollutant and precursor. This calculation can be broken down into three steps.

**Step 1:** Calculate the average annual emissions reductions needed to attain. For each relevant precursor, determine the amount of emissions reductions between the base year and the projected attainment year and divide by the number of years between the base year and the attainment year. Note: for PM, this typically represents the RFP annual average reduction, but for ozone, this will likely be different from the 3 percent annual requirement for RFP.

**Step 2:** Calculate the annual percentage reduction needed to attain. Determine what percentage of the *base year inventory* is represented by the annual average emissions reduction needed to attain by dividing the annual average reductions by the base year inventory for the NAA.

**Step 3:** Calculate the amount of emissions reductions needed for OYW of progress. Multiply the total emissions from the *attainment projected inventory for the NAA* by the annual percentage reduction needed to attain. This represents the amount of emissions reductions CMs should provide to meet OYW of progress.

EPA notes that this calculation depends on an approvable attainment demonstration, which could either be a modeled attainment demonstration or, where the model does not show attainment, one that relies on weight of evidence to demonstrate attainment. For reasons explained in Section 2, EPA believes it is appropriate to base the OYW of progress amount on the attainment projected inventory for the NAA. However, if EPA is unable to approve the attainment demonstration for reasons related to the adequacy of the modeling or weight of evidence demonstration, then EPA would not be able to approve as adequate the amount of CMs the air agency provided.

To affirm that the CMs achieve OYW of progress, the SIP submission should provide documentation of the expected reductions from the CMs contained within the plan and should compare the expected emissions reductions to the OYW of progress amount calculated above. Air agencies should include all steps of these calculations in their SIP submissions. EPA expects that the CM requirement would be met if the expected reductions meet or exceed the OYW of progress amount for the relevant precursor(s) / pollutant(s), and the CMs meet all other applicable requirements and guidance. If submitted CMs fall short of this amount, Section 4 of this guidance addresses the potential for an infeasibility justification for a lesser amount. Air agencies should ensure that other CM requirements and guidance unrelated to the amount of reductions are met (e.g., the measures are prospective and conditional and will take effect without further actions by the state or EPA as §172(c)(9) requires). Finally, we note that this OYW of progress approach is only for the purpose of calculating the amount for CM purposes and does not relieve an area from meeting other applicable CAA requirements (e.g., RFP, the

milestone compliance demonstration requirements in CAA §182(g), or the quantitative milestone requirements of §189(c), which are separate and distinct from §172(c)(9) and §182(c)(9)).

OYW of progress is calculated for all relevant precursors to determine the amount of emissions reductions that CMs would need to provide to continue the annual percentage reduction, as applied to the attainment projected inventory. However, attainment demonstration modeling may provide a reasonable basis to identify ratios of the effectiveness of reductions of one precursor to reduce ambient concentrations relative to other precursors. If that is the case, then a state may use the ratio to substitute CM reductions of one precursor for a shortfall in CM reductions of another precursor. This applies to VOC and NO<sub>x</sub> for ozone and to the PM<sub>2.5</sub> plan precursors for PM<sub>2.5</sub>. EPA recommends that an air agency intending to use such a substitution approach consult with its Regional Office concerning selection of a methodology for developing appropriate ratios.

### 3.2. Examples OYW of Progress Calculations

This section provides examples of the OYW of progress calculation. The first example is for a Severe ozone nonattainment area and the second is for a Serious PM<sub>2.5</sub> nonattainment area. EPA is providing these examples for the purpose of illustrating the concepts only and they are not based on any particular nonattainment area.

#### 3.2.1. Example for Severe Ozone Nonattainment Area

Consider the example of a state with a Severe ozone nonattainment area that has a 2017 base year EI of 200 tons per day (tpd) of VOC and 150 tpd of NO<sub>x</sub>. The attainment demonstration shows that the area will attain the ozone NAAQS in 2032. The 2032 attainment projected inventory for the NAA (that are reflected in the modeled attainment demonstration) is 140 tpd of VOC and 50 tpd of NO<sub>x</sub>. The annual average reduction in emissions during the 15-year plan period is 4.0 tpd for VOC and 6.7 tpd for NO<sub>x</sub>, which represents 2.0 percent and 4.5 percent of the base year EI of VOC and NO<sub>x</sub>, respectively, i.e., the annual percent reductions needed to attain.

Under the OYW of progress approach, the CMs should provide emissions reductions sufficient to maintain the annual percentage reductions needed to attain. This amount (OYW of progress) is calculated by applying the annual percent reductions needed to attain to the emissions totals from the projected attainment inventory for the NAA. That is, upon triggering, the CMs should provide emissions reductions sufficient to provide an annual emissions reduction rate of 2.0 percent for VOC and 4.5 percent for NO<sub>x</sub>, based on the attainment projected inventory. In this example, the CMs should provide emissions reductions equivalent to 2.8 tpd of VOC and 2.2 tpd of NO<sub>x</sub>. This amount represents OYW of progress for CM purposes (but is not equivalent to the amount of emissions reductions the state would need to achieve for RFP purposes).

$$\text{OYW of Progress for VOC: } \frac{(200 \text{ tpd} - 140 \text{ tpd})}{(2032 - 2017)} \div 200 \text{ tpd} \times 140 \text{ tpd} = 2.8 \text{ tpd}$$

$$\text{OYW of Progress for NO}_x: \frac{(150 \text{ tpd} - 50 \text{ tpd})}{(2032 - 2017)} \div 150 \text{ tpd} \times 50 \text{ tpd} = 2.3 \text{ tpd}$$

This example can be broken down into three steps as described in Section 3.1.

**Step 1:** Calculate the annual average reductions needed to attain for each relevant precursor.

VOC Step 1a	$200 \text{ tpd} - 140 \text{ tpd} = 60 \text{ tpd}$
VOC Step 1b	$60 \text{ tpd} \div 15 \text{ years} = 4 \text{ tpd}$
NO <sub>x</sub> Step 1a	$150 \text{ tpd} - 50 \text{ tpd} = 100 \text{ tpd}$
NO <sub>x</sub> Step 1b	$100 \text{ tpd} \div 15 \text{ years} = 6.7 \text{ tpd}$

**Step 2:** Calculate the annual percentage reduction needed to attain.

VOC	$4.0 \text{ tpd} \div 200 \text{ tpd} = 0.02 \text{ (or 2\%)}$
NO <sub>x</sub>	$6.7 \text{ tpd} \div 150 \text{ tpd} = 0.045 \text{ (or 4.5\%)}$

**Step 3:** Calculate the amount of reductions needed for OYW of progress.

VOC	$140 \text{ tpd} \times 0.02 \text{ (or 2\%)} = 2.8 \text{ tpd}$
NO <sub>x</sub>	$50 \text{ tpd} \times 0.045 \text{ (or 4.5\%)} = 2.3 \text{ tpd}$

*Comparison of Historical and Revised Guidance:*

Under EPA’s prior guidance for CMs, the Agency recommended that CMs should achieve emissions reductions equivalent to OYW of RFP, which is essentially defined for ozone as 3 percent of the VOC emissions from the anthropogenic portion of the base year inventory for the NAA.<sup>61</sup>

VOC	$200 \text{ tpd} \times 0.03 \text{ (or 3\%)} = 6.0 \text{ tpd}$
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In this example, under EPA’s prior guidance, CMs should provide for emissions reductions equivalent to **6.0 tpd of VOC** (or, under the NO<sub>x</sub> substitution guidance, 4.5 tpd of NO<sub>x</sub> or a

<sup>61</sup> NO<sub>x</sub> reductions could generally be credited to make up for a shortfall in VOC reductions on a percentage-of-inventory basis. In other words, if VOC CMs only achieve reductions equivalent to 2 percent of the VOC base year inventory, the addition of NO<sub>x</sub> CMs that achieve 1 percent of the NO<sub>x</sub> base year EI could be used to meet a OYW of RFP requirement of 3 percent.

combination of VOC and NO<sub>x</sub> on a percentage basis). Under the revised guidance, CMs should provide for emissions reductions equivalent to **2.8 tpd of VOC** and **2.3 tpd of NO<sub>x</sub>** (although, as noted earlier in this section, a shortfall of reductions from CMs for one of the precursors may be remedied by additional reductions from CMs for other precursors if the attainment demonstration provides the basis to develop a ratio of relative effectiveness).

### 3.2.2. Example for Moderate PM<sub>2.5</sub> Nonattainment Area

Consider the example of a Moderate PM<sub>2.5</sub> nonattainment area that has 2011 base year emissions of 100 tpd of direct PM<sub>2.5</sub> and 200 tpd of NO<sub>x</sub> and the air agency has adequately demonstrated the insignificance of precursor emissions of VOC, sulfur dioxide (SO<sub>2</sub>), and ammonia. The modeled attainment demonstration shows that the area will attain the NAAQS by the end of 2021. The attainment projected inventory in the nonattainment plan is 75 tpd of direct PM<sub>2.5</sub> emissions and 150 tpd of NO<sub>x</sub>. The annual average reduction in emissions during the 10 years between the base year and the attainment year is 2.5 tpd of direct PM<sub>2.5</sub> and 5.0 tpd for NO<sub>x</sub>, which represents 2.5 percent of the base year emissions for both direct PM<sub>2.5</sub> and NO<sub>x</sub>. This represents OYW of RFP, which for purposes of the PM<sub>2.5</sub> NAAQS is defined as generally linear annual emissions reductions, rather than a set percentage as for ozone. Under EPA’s prior guidance for CMs, this OYW of RFP is the amount of emissions reductions that the CMs should achieve.

Under the revised OYW of progress approach, the CMs should provide emissions reductions sufficient to maintain the annual percentage reductions needed to attain. This amount (OYW of progress) is calculated by applying the annual percent reductions needed to attain to the attainment year inventory. That is, upon triggering, the CMs should provide emissions reductions sufficient to provide an annual emissions reduction rate of 2.5 percent for both direct PM<sub>2.5</sub> and NO<sub>x</sub> calculated as a percentage of the attainment projected inventory rather than the base year EI. In this example, the CMs should provide emissions reductions equivalent to 1.9 tpd of direct PM<sub>2.5</sub> and 3.8 tpd of NO<sub>x</sub>. This amount represents OYW of progress for CM purposes (but is not the RFP amount).

$$\text{OYW of Progress for Direct PM}_{2.5}: \frac{(100 \text{ tpd} - 75 \text{ tpd})}{(2021 - 2011)} \div 100 \text{ tpd} \times 75 \text{ tpd} = 1.9 \text{ tpd}$$

$$\text{OYW of Progress for NO}_x: \frac{(200 \text{ tpd} - 150 \text{ tpd})}{(2021 - 2012)} \div 200 \text{ tpd} \times 150 \text{ tpd} = 3.8 \text{ tpd}$$

Like the example above for a Severe ozone nonattainment area, this example can be broken down into three steps as described in Section 3.1.

**Step 1:** Calculate the annual average reductions needed to attain for each relevant precursor. (In this example, we assume the state has adequately demonstrated that it does not need to regulate the PM<sub>2.5</sub> precursors VOC, SO<sub>2</sub> and ammonia.)

Direct PM <sub>2.5</sub> Step 1a	$100 \text{ tpd} - 75 \text{ tpd} = 25 \text{ tpd}$
Direct PM <sub>2.5</sub> Step 1b	$25 \text{ tpd} \div 10 = 2.5 \text{ tpd}$
NO <sub>x</sub> Step 1a	$200 \text{ tpd} - 150 \text{ tpd} = 50 \text{ tpd}$
NO <sub>x</sub> Step 1b	$50 \text{ tpd} \div 10 = 5.0 \text{ tpd}$

**Step 2:** Calculate the annual percentage reduction needed to attain.

Direct PM <sub>2.5</sub>	$2.5 \text{ tpd} \div 100 \text{ tpd} = 0.025$ (or 2.5%)
NO <sub>x</sub>	$5.0 \text{ tpd} \div 200 \text{ tpd} = 0.025$ (or 2.5%)

**Step 3:** Calculate the amount of reductions needed for OYW of progress.

Direct PM <sub>2.5</sub>	$75 \text{ tpd} \times 0.025$ (or 2.5%) = 1.9 tpd
NO <sub>x</sub>	$150 \text{ tpd} \times 0.025$ (or 2.5%) = 3.8 tpd

*Comparison of Historical and Revised Guidance:*

Under EPA’s prior guidance, EPA recommended that CMs should provide for emissions reductions equivalent to OYW of RFP for direct PM<sub>2.5</sub> and each PM<sub>2.5</sub> plan precursor. The amount of OYW of RFP is determined by the same method as described above for step 1. That is, calculate the annual average reductions needed to attain for each relevant precursor by subtracting the attainment projected inventory from the base year EI and dividing that value by the number of years between the base year and the attainment year.

Direct PM <sub>2.5</sub> Step 1a	$100 \text{ tpd} - 75 \text{ tpd} = 25 \text{ tpd}$
Direct PM <sub>2.5</sub> Step 1b	$25 \text{ tpd} \div 10 = 2.5 \text{ tpd}$
NO <sub>x</sub> Step 1a	$200 \text{ tpd} - 150 \text{ tpd} = 50 \text{ tpd}$
NO <sub>x</sub> Step 1b	$50 \text{ tpd} \div 10 = 5.0 \text{ tpd}$

In this example, under EPA’s prior guidance, CMs should provide for emissions reductions equivalent to **2.5 tpd of direct PM<sub>2.5</sub>** and **5.0 tpd of NO<sub>x</sub>**. Under the revised guidance, CMs should provide for emissions reductions equivalent to **1.9 tpd of direct PM<sub>2.5</sub>** and **3.8 tpd of NO<sub>x</sub>**.

#### 4. Reasoned Justification for Less Than OYW of Progress

Notwithstanding the updated OYW of progress calculation in Section 3, EPA recognizes that some air agencies may still be concerned that they cannot meet the recommended amount of reductions from CMs. As noted in Section 2, EPA guidance currently interprets the CAA to allow an air agency that is unable to provide sufficient emissions reductions from CMs to provide a reasoned justification for a lesser amount. EPA has not to date provided further guidance on how to develop such a justification, but some air agencies have requested clarification, claiming that they are unable to provide sufficient reductions because there are not remaining sufficient feasible measures to meet the requirements for CMs. This guidance is intended to provide such additional clarification in response to these requests.

If, after adequately evaluating additional control measures, the air agency is unable to identify and adopt feasible CMs that would reduce emissions by an amount sufficient to meet the OYW of progress recommendation, then it may be appropriate for the air agency to submit CMs that result in less than that amount, using the reasoned justification approach described in this section. While EPA notes that CAA section 172(c)(9) and section 182(c)(9) do not explicitly provide for consideration of whether specific measures are feasible, the Agency believes that it is reasonable to infer that the statute does not require control measures regardless of any technological or cost constraints whatsoever. It is more reasonable to interpret the CM requirement not to require air agencies to adopt and impose infeasible measures. The statutory provisions applicable to other nonattainment area plan control measure requirements, including RACM/RACT (for ozone and PM), BACM/BACT (for PM), and most stringent measures (for PM) allow air agencies to exclude certain measures that are deemed unreasonable or infeasible (depending on the requirement). For example, the most stringent measures provision in CAA section 188(e) requires plans to include “the most stringent measures that are included in the implementation plan of any state or are achieved in practice in any state, *and can feasibly be implemented in the area* [emphasis added].” EPA considers it reasonable to conclude that Congress similarly did not expect air agencies to satisfy the CM requirement with infeasible measures. Thus, EPA anticipates that a demonstrated lack of feasible measures would be a reasoned justification for adopting CMs that only achieve a lesser amount of emission reductions. To justify a lesser amount of emissions reductions based on infeasibility, an air agency would need to provide EPA with an adequate explanation and documentation that there are not additional feasible CMs that could achieve the recommended full OYW of progress amount.

EPA notes that a key factor affecting the availability of feasible measures to be CMs in a given nonattainment area is the degree to which the air agency has (1) already implemented all feasible measures, or (2) already included all feasible measures in the state’s SIP to meet other control strategy requirements for implementation no later than the attainment date. In some areas, particularly those with longstanding nonattainment problems where the air agencies have already adopted increasingly stringent measures in attainment plans over the years since EPA issued the General Preamble, the available supply of feasible measures to hold in reserve as CMs may be greatly diminished. These air agencies may be justified in adopting and submitting CMs that would result in less than OYW of progress, if they have identified and evaluated all potentially applicable measures, have adopted the feasible measures necessary to expeditiously attain the

relevant NAAQS, have determined that the remaining feasible measures are insufficient to achieve OYW of progress, and have adequately demonstrated these points in their submission to EPA.

EPA recommends that if an air agency is seeking to satisfy the statutory CM requirement with less than OYW of progress based on lack of feasible measures, then that air agency should demonstrate that they have in fact considered all existing and potential control measures relevant to the appropriate source categories and pollutants in the nonattainment area, and have reached reasonable conclusions regarding whether a measure is infeasible.<sup>62</sup> In this guidance, we use the term “infeasibility justification” to refer to this kind of demonstration. The demonstration will entail air agencies documenting their efforts to identify existing and potential measures and explaining their reasoning for concluding that identified measures are infeasible. Where the nonattainment plan associated with the CM submission contains a robust control strategy analysis, that analysis can serve as a foundation for much of this effort. However, EPA recommends additional documentation specific to the infeasibility justification for CMs as described in this section to ensure that the justification is adequate.

This section provides a suggested step-by-step methodology for air agencies to use to develop an infeasibility justification for CMs based on the following general principles:

- It should be based on a case-specific factual analysis that begins with a thorough examination, as described in this section, of relevant emissions sources in the area and the range of existing and potential control measures for such sources. If existing or potential control measures are excluded from this analysis, the resulting infeasibility claim would likely be deficient with respect to the excluded measures.
- The evaluation of existing and potential control measures should encompass a broad range of sources and measures that could reduce relevant emissions. If the control strategy analysis was previously limited in scope (for example, a RACT analysis that only evaluated major sources and CTG-covered sources within an ozone nonattainment area), the air agency should evaluate additional sources because the CM requirement is not limited in this way.
- Once measures are identified, the case-specific factual analysis should explain and document the reasoning behind each claim that an identified measure is infeasible in the area. As explained later in this section, “infeasible” means either technologically or economically infeasible.
- The focus of the infeasibility justification should be on existing and potential control measures that the air agency intends to reject as infeasible as CM; for this type of justification, it may be useful to refer to measures that have already been adopted and described in the air agency’s current or previous control strategy submissions, but the

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<sup>62</sup> In this document, “existing control measures” refers to controls that are not yet on-the-books or on-the-way, but which could prospectively be applied to sources in the nonattainment area because they are presently being implemented for sources outside the relevant nonattainment area or are presently being implemented for different sources in the nonattainment area. “Potential control measures” refers to identifiable measures that may be feasible for sources in the nonattainment area but have not been previously implemented elsewhere.

information needed to support the infeasibility justification relates primarily to identifying the rejected measures and the reasons why they are infeasible.

We note that, where appropriate, air agencies evaluate control measures for reasons other than the CM requirement and may separately establish that specific control measures are not technologically or economically feasible in their non-CM control strategy analyses (e.g., that a measure is not RACM/RACT, BACM/BACT, or MSM, and is not feasible for meeting RFP or for attaining by the applicable attainment date) under existing guidance.<sup>63</sup> EPA expects that justifications to establish that control measures evaluated as CMs are infeasible could be similar to these analyses but should not simply repeat the control strategy’s infeasibility showing. By statute, CMs are a separate nonattainment plan requirement that is in addition to other control measure requirements, so disqualification of a specific control measure for purposes of other requirements does not per se disqualify the measure as a CM. As described in more detail below, a claim that a measure is infeasible for control strategy purposes does not necessarily mean that it is also infeasible as a CM, and in some cases additional explanation should be provided as to why an available measure will not be feasible as a CM at a given source.

It is important to note the possibility, that there may be *feasible* controls that the air agency previously considered in the control strategy analysis, but determined to be unnecessary for attainment, insufficient to advance attainment, or otherwise not required by the CAA. Where these measures are otherwise suitable for adoption as CMs (i.e., they can be implemented within 60 days of triggering, reductions can occur within 2 years of triggering, etc.) EPA recommends that, before undertaking an infeasibility justification as explained in Section 4.1, the air agency first ensures that such measures are already included as CMs in the nonattainment plan submission. If such measures are sufficient to reach OYW of progress, then the infeasibility justification is not necessary. If such measures and all other feasible measures still do not reach OYW of progress, then the shortfall may be addressed by an infeasibility justification.

Even where an air agency submits an infeasibility justification, it should also adopt and submit all feasible CMs (possibly including, pursuant to the previous paragraph, measures it previously excluded from the control strategy), documenting the reductions that would be achieved from the implementation of these CMs, if triggered. A plan that incorporates all feasible reductions but falls short of providing the recommended amount of CM reductions may still satisfy the CM requirement. EPA anticipates that, except in extremely rare instances, a state will be able to identify at least some feasible measures to serve as CMs, even if they achieve substantially less than OYW of progress. In light of the expected variation in the availability of feasible measures and resulting emissions reductions across different nonattainment areas, we are not recommending a minimum amount of CM emissions reductions that would be approvable as part of an infeasibility justification. With sufficient justification, CMs representing a small amount of reductions may be reasonable. However, EPA emphasizes that lower amounts of CM emissions reductions will warrant more robust infeasibility showings. In light of the very strong likelihood

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<sup>63</sup> See, e.g., 1992 General Preamble at 57 FR 13540-41, which states in reference to RACM/RACT that a submission should contain “a reasoned justification for partial or full rejection of any available control measures, including those considered or presented during the State’s public hearing process, that explains, with appropriate documentation, why each rejected control measure is infeasible or otherwise unreasonable.”



of any area having at least some available reductions, however small the amount, we do not recommend submission of a plan that provides no CMs (i.e., zero reductions) for a given precursor.<sup>64</sup>

4.1. Recommended procedure for developing a demonstration that the area lacks sufficient feasible measures to achieve 1-years' worth of reductions (“infeasibility justification”).

EPA recommends the following four-step approach for air agencies to identify CMs and to develop an infeasibility justification where warranted:

**Step 1:** Identify existing and potential control measures, i.e., measures not already included in the plan, that could be applied to sources in the nonattainment area.

**Step 2:** Review each of the measures identified in Step 1 to determine whether it is feasible as CM. If feasible, include the measure in the CM submission. (Check to see if OYW of progress is met, and if so, the infeasibility justification is no longer needed).

**Step 3:** For the remaining measures (i.e., the infeasible measures from Step 2), document the reason why the air agency reached the conclusion that each measure is infeasible, including whether the conclusion is based on technological or economic infeasibility.

**Step 4:** Prepare the infeasibility justification to include with the SIP submission by identifying each measure determined to be infeasible in Step 3, explaining the reason for each such determination, and providing supporting information and analysis that supports each conclusion.

Each of these steps is explained in more detail below.

**Step 1:** Identify existing and potential control measures not already included in the plan that could be applied to sources in the nonattainment area.

In this step, the air agency should conduct a careful analysis to identify the sources present in the nonattainment area, the “on-the-books” control measures (i.e., the control measures that already apply to those sources) and the “on-the-way” control measures (i.e., the control measures in the nonattainment plan that will be implemented during the upcoming planning period), and any remaining unregulated source categories. In addition, it should identify existing measures (including strengthening and expanding on-the-books and on-the-way measures) and potential measures that could serve as CMs. This analysis should include the following elements:

- An emissions inventory that provides a comprehensive, detailed list of source categories emitting relevant pollutants, including identification of subcategories based on different fuels or materials (e.g., feedstock or production materials) as applicable. For ozone areas that are newly designated for a NAAQS and for PM areas, the base year inventory for the nonattainment area can be used for this purpose. Ozone areas that have been reclassified

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<sup>64</sup> EPA notes that in the *AIR* decision, the court rejected a measure that would have achieved 10 percent of the recommended amount. However, EPA’s action there was not based on an infeasibility justification as described in this guidance. EPA believes that with the appropriate infeasibility justification, a lesser amount could be supported.

to a higher classification should use the most recent periodic inventory for the nonattainment area.

- The emissions inventory should separate broader source categories into more specific categories that correspond with different control measures that apply and should separately list subcategories that are currently unregulated. For example, reciprocating engines can be categorized according to size or the type of fuel used to allow contingency measures to be specified for certain subcategories. Farming operations can be broken down into tilling dust, harvesting dust, and animal husbandry. Animal husbandry can be categorized by the type of livestock, for example, dairy cattle, range cattle, feedlot cattle, poultry, etc. This level of detail is necessary for the next step of the analysis.
- Identification of the on-the-books and on-the-way controls that apply to the source categories or subcategories present in the nonattainment area.
  - In order to facilitate a comparison of the on-the books and on-the-way control measures with other existing and potential control measures and the identification of unregulated sources and subcategories in the nonattainment area, air agencies should list each source category included in the inventory as described above, the amount of relevant emissions generated by that source category, and the corresponding rules that apply (or are scheduled to apply) to the individual source categories and subcategories, and note any exemptions that apply.
- Identification of existing and potential control measures, including opportunities to strengthen on-the-books and on-the-way rules.<sup>65</sup> A robust attainment plan control strategy analysis<sup>66</sup> can serve as a good starting point for conducting this analysis.<sup>67</sup>
  - The CM analysis should include the full range of sources appropriate for emissions controls in a nonattainment plan, i.e., stationary point sources, anthropogenic area sources (also referred to as nonpoint sources), and mobile sources.
    - For stationary source measures, air agencies can use resources such as EPA’s Menu of Control Measures,<sup>68</sup> recent control strategy analyses (e.g., RACM/BACM and RACT/BACT analyses), and control measures in other nonattainment areas (particularly those with higher classifications or more mature programs), the RACT/BACT/LAER Clearinghouse

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<sup>65</sup> Changes to on-the-books and on-the-way control measures could include strengthening emissions limits, lowering applicability thresholds, and removing exemptions.

<sup>66</sup> The PM<sub>2.5</sub> Implementation Rule provides a detailed description of the elements of a control strategy analysis, including guidance regarding the determination of technological and economic feasibility. 81 FR 58010, 58033-58043 (August 24, 2016).

<sup>67</sup> Serious PM areas are required to adopt BACM/BACT, and under some circumstances, MSM. Such measures may also be useful models for contingency measures in other areas.

<sup>68</sup> <https://www.epa.gov/air-quality-implementation-plans/menu-control-measures-naaqs-implementation>.

(RBLC)<sup>69</sup>, and other resources available to the air agency to identify potential new stationary source control measures.

- For mobile source measures, there are currently two EPA webpages that provide information on mobile source program design and implementation as well as guidance on the crediting of such programs in a state implementation plan: (1) the Guidance on Control Strategies for State and Local Agencies webpage<sup>70</sup> and (2) the Policy and Technical Guidance webpage.<sup>71</sup>
- Some air agencies or multi-jurisdictional air organizations provide additional sources of information that can also assist in identifying additional control measures.<sup>72</sup> EPA recommends consulting with the appropriate Regional office regarding sources of measures beyond those EPA has identified above.
- A control measure that the state does not have the legal authority to impose because of federal preemption would not need to be evaluated in detail as part of the infeasibility justification, but the infeasibility justification should include a description of any such measures the air agency considered and excluded due to preemption, specifically identifying the preemption.<sup>73</sup>

In developing the Step 1 list of measures, air agencies may determine that some identified measures may have only a trivial impact on emissions. It would be appropriate for states to exclude trivial measures from the Step 1 list under such circumstances. In keeping with the recommendation earlier in this section regarding the preference for states to adopt at least one CM or a combination of CMs even if they only achieve a relatively small amount of emission reductions, along with an infeasibility justification, EPA recommends that if a state seeks to exclude measures in this way, the emission reductions from such measures should be unquestionably negligible, even when considered alongside other similarly trivial measures (e.g., no more than 1 percent of OYW in total).

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<sup>69</sup> <https://cfpub.epa.gov/rbhc/>.

<sup>70</sup> <https://www.epa.gov/state-and-local-transportation/guidance-control-strategies-state-and-local-agencies>. This webpage contains EPA guidance to help state and local air quality agencies quantify and implement state implementation plan control strategies that reduce mobile source emissions. Examples include commuter programs, diesel retrofit and replacement, land use, locomotive idle reduction, transportation control measures (TCMs), and transportation pricing programs.

<sup>71</sup> <https://www.epa.gov/state-and-local-transportation/policy-and-technical-guidance>. This webpage provides links to general information on mobile source Clean Air Act requirements and guidance on control strategies.

<sup>72</sup> Two examples are (1) the Ozone Transport Commissions (OTC) 2017 “White Paper on Control Technologies and OTC State Regulations for NO<sub>x</sub> Emissions from Eight Source Categories” and (2) the CARB Technology Clearinghouse <https://ww2.arb.ca.gov/our-work/programs/technology-clearinghouse/technology-clearinghouse-tools>.

<sup>73</sup> EPA notes that a state is obligated to meet the CM requirement of the CAA and thus division of authority between the state and local air districts, or between different state agencies within a given state, does not provide a basis to claim lack of authority.

The result of Step 1 would be a detailed list of source categories and subcategories, the associated relevant emissions for each category/subcategory, the “on-the-books” and on-the-way” that apply, and all existing or potential control measures that, prior to any feasibility screen, are applicable to sources in the nonattainment area, that could achieve additional emissions reductions, and that are not already adopted or implemented. The list should be accompanied by a description of how the air agency conducted the search for contingency measures. The list of measures identified in Step 1 will identify the scope of potential CMs and will later be used to define the remaining measures for which the air agency intends to make a technological/economic infeasibility justification in Step 3. It will also allow EPA and the public to comment on the full list of existing or potential measures that the air agency considered, in order to provide an opportunity to identify any potential measures that the air agency did not include in the analysis.

**Step 2:** Review each of the measures identified in Step 1 to determine whether it is feasible as CM. If feasible, include the measure in the CM submission.

In this step, the air agency will apply a feasibility screen to determine whether any of the identified measures are feasible as CMs. The measures not found to be feasible in this step will comprise the list of infeasible measures for which the air agency needs to provide infeasibility justification in Step 3. But first, EPA anticipates that the Step 1 search for existing and potential measures could identify measures that are feasible as CMs. Any measures identified during the Step 1 analysis that are feasible should be adopted as CMs, and an updated comparison with the OYW of progress metric should be conducted. If they are sufficient to reach OYW of progress, then the infeasibility demonstration is no longer needed.

A particular set of measures that an air agency could determine to be feasible in Step 2 and that would not already be included in the control strategy would be the measures that an air agency determined that it is not required to impose to meet RACM requirements because they would not advance the attainment date by 1 year. Assuming these measures meet the other conditions for being a valid CM, they should be adopted as CM in Step 2 unless they are infeasible, or until the OYW of progress recommendation is met. If rejecting those same measures as infeasible as CMs, the air agency should specifically address the feasibility of those measures because the fact that the control measures would not advance the attainment date by 1 year is not a sufficient reason for rejecting those control measures as CMs.

EPA has previously issued guidance addressing feasibility for various control measure requirements in nonattainment plans (e.g., RACM/RACT, BACM/BACT, or MSM).<sup>74</sup> This guidance has described the analytical factors that states should use to evaluate feasibility of CMs, identifying two kinds of feasibility: technological and economic. Each of these is briefly reviewed in this section. The discussion focuses on the considerations for evaluating feasibility of measures for CM purposes, which build upon these previously discussed feasibility

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<sup>74</sup> See, e.g., the Appendices to the 1992 General Preamble, 57 FR 18070 at 18073-4 (April 28, 1992), the 1992 NO<sub>x</sub> Supplement to the General Preamble, 57 FR 55620 at 55624-5 (November 25, 1992), the 1994 PM<sub>10</sub> General Preamble Addendum, 59 FR 41988 at 42013, and the 2016 PM<sub>2.5</sub> NAAQS SIP Requirements Rule at 81 FR 58010 at 58084-85.

considerations for other control measure requirements (and therefore this discussion should not be read as addressing feasibility analysis for requirements other than CMs).

*Step 2a. Technological Feasibility*

EPA has identified several factors that affect technological feasibility of a measure, including the source's process and operating procedures, raw materials, physical plant layout, and other environmental impacts such as water pollution, waste disposal, and energy requirements that would negate the environmental benefit of the control. If, upon consideration of these and other relevant factors, the air agency determines that a measure would render the source completely inoperable, make the source clearly unsafe to operate, or create significant negative non-air quality related environmental impacts, such a showing could support a justification that the measure is technologically infeasible.

An additional consideration in technological feasibility is the time frame for achieving reductions. For CMs, as explained in section 5 of this guidance, reductions should be achieved in no more than 2 years from the triggering event. Where an otherwise feasible measure requires longer than 2 years to achieve reductions, this could be a justification for technological infeasibility with appropriate documentation of the time frames involved.

EPA acknowledges that if an air agency determines that a control measure is not technologically feasible in the nonattainment plan control strategy analysis it may also not be technologically feasible as a CM. However, in light of the separate CAA requirement for CM, EPA recommends that any control measures a state rejected because of technological infeasibility in a control strategy analysis should still be evaluated to determine whether they may be feasible as CM. For example, there may be timing considerations (e.g., the need to implement RACT by a specified date) that could render an identified measure infeasible in a RACT analysis, but when considering the time that the CM would likely be implemented, up to and including the 2 years following the CM trigger date (i.e., the maximum date based on failure to attain), the measure may become feasible. Moreover, if a measure was included in the plan's control strategy but its scope/coverage was limited due to technological feasibility considerations, the state should consider it in Step 2 of the CM analysis by evaluating whether additional time would improve the feasibility of expanding its scope/coverage as a potential CM.

Where a measure involves significant planning, such as an extensive stakeholder, planning and/or budgeting process, that measure could still be feasible as a CM. Air agencies would need to complete these planning processes prior to adopting and submitting such a measure in order to assure its timely approval in a SIP, and ensure that it can otherwise meet CM requirements and guidance for timing and implementation without further action. At the same time, EPA believes that it is reasonable for states to account for factors that might prevent a particular measure from taking effect within 60 days of triggering when determining its feasibility as a CM. For example, a measure may be infeasible if it requires a plan for program implementation with details (e.g., project plan, detailed budget, schedule, etc. to assure the timely and successful implementation of the measure) that cannot be specified to take effect within 60 days of triggering. Similarly, a potential measure may be infeasible if it requires program funding to be available upon triggering the CM, but the funding or irrevocable funding commitment cannot be secured prior to

the time the state submits, and EPA approves the CM. Securing program funding or irrevocable funding commitments in advance for a CM program which may never be triggered may be a challenge for states. Where a state claims that a measure is infeasible for these reasons, it should clearly identify the specific factors that prevent it from taking effect within 60 days.

*Step 2b. Economic Feasibility*

EPA often uses cost per ton reduced as an indicator of economic feasibility, but there is not a single one-size-fits-all cost per ton (cost/ton) amount that would provide a bright line that renders a control measure economically feasible (or infeasible) for CM purposes for all areas, industry sectors, pollutant/precursors, etc.<sup>75</sup> Instead, evaluating whether a given measure is economically feasible as a CM will include a robust evaluation of the cost of the control measure to be implemented within a given timeframe. Therefore, EPA recommends that air agencies provide cost/ton estimates for each of the measures the air agency is rejecting as a CM on this basis. EPA’s Control Cost Manual provides guidance for developing accurate and consistent costs for air pollution control devices.<sup>76</sup> Providing cost/ton estimates for CMs that the air agency is adopting provides a useful basis for illustrating the relatively higher cost/ton of any measures rejected on this basis. Importantly, economic feasibility considerations include the control cost for a source relative to other similar sources that have implemented a specific control measure. EPA presumes that it is reasonable for similar sources to bear similar costs of achieving emissions reductions. Economic feasibility rests very little on the ability of a particular source to “afford” to reduce emissions to the level of similar sources.<sup>77</sup> Air agencies should also ensure that control measures are not rejected categorically as economically infeasible if they may otherwise be economically feasible for some individual sources with that category.

In determining what is economically feasible for CM purposes, the fact that a potential CM is more costly than those in the plan’s control strategy is not automatically a basis for concluding it is economically infeasible. EPA expects air agencies may need to consider more costly measures than those in the control strategy because, by definition, triggering CMs means the area has failed to attain or meet RFP through implementing the set of measures within the plan. Consistent with the statutory purpose of CMs to provide additional emissions reductions in the event that the measures in the control strategy fail to meet RFP or to result in attainment, EPA believes that CMs are logically measures that may have greater economic consequence than what was provided in the control strategy. Accordingly, measures that the air agency rejected in the control strategy analysis due to economic considerations should still be evaluated by the air agency in Step 2 as potential CMs. If the air agency still rejects the measures as CM due to economic infeasibility, Step 3 will need to document the agency’s reasoning.

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<sup>75</sup> The cost per ton amount referred to here is for an annual or annualized cost; that is, the typical yearly cost associated with a control measure under consideration for CM purposes.

<sup>76</sup> <https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution>. Section 1, Chapter 2 of the Control Cost Manual provides guidance on the cost estimation methodology that is appropriate for use with air pollution control devices such as those under consideration as CMs.

<sup>77</sup> See, e.g., 57 FR 18070 at 18074, and 81 FR 58010 at 58085.

The CAA does not indicate whether the cost of controls is a factor to consider when identifying CMs. On one hand, this suggests that air agencies ought to be considering all possible CMs regardless of how much those controls cost to implement. However, as explained above, EPA considers it reasonable to interpret the CM requirements not to require air agencies to adopt and impose economically infeasible measures. As such, EPA believes it is reasonable to expect that there be some upper limit relevant to costs in the context of CM; that at some point costs could become so exorbitant that it would render the otherwise possible CM infeasible. However, this point is difficult to define because it depends on many fact-specific elements that can change over time. EPA believes a reasonable approach is to recommend that the economic feasibility of potential CMs be evaluated based on a cost/ton threshold that is higher than what was considered in a similar economic analysis for control strategies in the nonattainment area, including any thresholds associated with RACT determinations. A measure that was determined economically “unreasonable” for RACT purposes because of cost is not automatically economically infeasible for use as a CM.

As with technological feasibility, the economic feasibility analysis for potential CMs should consider the timeframe by which the measures will need to achieve reductions. As explained in Section 5, EPA recommends that for CMs, this should be no later than 2 years following the trigger for the CM. To the degree that a measure, once triggered, would cost more to implement within 2 years of triggering than it would to implement it over a longer time, this could be a relevant consideration to the measure’s economic feasibility as a CM, provided the costs of the “faster” implementation are appropriately documented. At the same time, the economic feasibility analysis should reasonably consider the potential that the trigger for CMs might not occur until the attainment date, and for all creditable emissions reductions to not be realized until 2 years later. Additional time to prepare for implementation of a measure might reasonably lower its cost compared to the cost of implementing it now. Accounting for these timing considerations need not be based on detailed economic forecasts, but should provide a sufficiently robust basis for an air agency’s conclusions regarding economic infeasibility of the measure specifically as a CM.

**Step 3:** For the remaining measures (i.e., the infeasible ones from Step 2), describe the reason why the air agency reached the conclusion that they were infeasible (including whether the conclusion is based on technological or economic infeasibility).

Following the generation of the list of measures potentially applicable as CMs (Step 1) and the identification and adoption of the subset of those that are feasible (Step 2), air agencies begin Step 3 with the list of remaining measures for which they intend to provide an infeasibility justification. In Step 3, for each remaining measure, the air agency should develop an explanation of why it rejected the existing or potential control measures during Step 2 review. In keeping with the discussion in Step 2, EPA recommends that the air agency first identify whether the justification for excluding a measure as a CM is based on a determination that the measure is technologically infeasible and/or that it is economically infeasible. The air agency should then provide the basis for each such determination, consistent with the feasibility considerations that it evaluated in Step 2.

For a technological infeasibility determination, the explanation should identify on a measure-by-measure basis, the specific factors that the air agency used in determining that the measure cannot be implemented for the relevant sources (or, as applicable, that its implementation cannot be broadened). If the technological infeasibility determination is tied to the timeframe for achieving reductions (for example, if the measure cannot possibly achieve any reductions within 2 years) the air agency should describe the implementation time frames that it considered. As noted in Step 2, in light of the separate CM requirement, the justification should address why the new or expanded measure is technologically infeasible for CM purposes.

For an economic infeasibility determination, the explanation should identify on a measure-by-measure basis, the cost factors and other related factors that the air agency used in determining that the measure is economically infeasible. EPA recommends that air agencies provide cost/ton estimates for each of the measures being rejected as CMs on this basis. The air agency should also provide an explanation of why this cost/ton is infeasible for the specific CM under consideration. For example, it could compare the cost/ton of the infeasible measure to the estimates for CMs that the state is adopting to illustrate the relatively higher cost/ton of the rejected measures. The explanation of the air agency's judgments regarding infeasibility of measures as CMs should address the CM-specific factors noted in discussion of economic feasibility in Step 2, i.e., the expectation that CMs may be judged on a higher cost threshold than for other control strategy analysis in the SIP, and the costs to implement CMs should consider the later trigger date and potential for additional time beyond the attainment date that may be available to implement CMs.

**Step 4.** Prepare the infeasibility justification to include with the SIP submission by identifying each measure determined to be infeasible in Step 3, explaining the reason for each such determination, and providing supporting information and analysis to support each conclusion.

A state's nonattainment plan SIP submission should provide documentation of Steps 1 through 3 to ensure an adequate record to support the reasoned justification for having CMs that provide emissions reductions that result in less than OYW of progress. Specifically, EPA recommends that the submission should provide thorough description of:

- (1) *the approach used by the air agency in Steps 1 and 2 to identify existing and potential control measures, which will provide EPA an ability to assess whether existing and potential control measures have been identified, including any beyond the control strategy analysis, and, where feasible, have been included in the submission as CMs; and*
- (2) *the analysis in Step 3 of feasibility for each of these measures and justification for the conclusion that certain measures are technologically and/or economically infeasible, which will provide EPA with an ability to assess the basis for any infeasibility justification that the air agency makes for the measures identified in Step 1.*

EPA recognizes that in cases where the air agency is asserting that numerous measures are infeasible, this documentation effort will require an investment of effort beyond that already invested to document the control strategy analysis. At the same time, we recognize that without adequate record support, EPA would lack a basis for its approval of a reasoned justification for



approval of CMs that result in emissions reductions less than OYW of progress, particularly if the amount is significantly less than OYW. To balance these factors, EPA recommends that for Step 1, the air agency should prioritize more robust documentation of its approach for identifying existing and potential measures for the sources and categories that comprise larger portions of the inventory. Similarly, for Steps 2 and 3, EPA recommends that the air agency should provide more robust documentation for the infeasibility analysis for the measures that, if feasible, would have provided a greater amount of reductions. While focusing effort in this way is reasonable, the air agency, in order to provide the strongest justification, should at least describe the basis for infeasibility for any category and measure identified in Step 1. To further affirm that it has addressed all non-trivial measures, an air agency could list the source categories for which it determined in Step 1 that the aggregate reductions from available CM would result in unquestionably negligible emissions reductions. As noted previously, the further a CM plan is from achieving OYW of progress, the more robust the record support for its infeasibility showing should be.

## **5. Guidance on Timing of Reductions from CMs**

EPA is also updating its guidance on the recommended timing of emissions reductions that CMs should achieve. Section 172(c)(9) and 182(c)(9) both provide that CMs must “take effect” without further action by EPA or the state, but do not define the term “take effect” or specify timelines for implementing the measures or achieving reductions. As discussed in Section 2, in the 1992 General Preamble, EPA did address the question of how soon the CMs for ozone should take effect, and acknowledged that certain actions, such as notification of sources, modification of permits, etc., would probably be needed before a measure could be implemented effectively. There, EPA concluded that in general, actions needed to affect full implementation of the measures should occur within 60 days after EPA notifies the State of its failure. For purposes of PM, EPA stated in the General Preamble that states should implement CMs “immediately” after a triggering event, but subsequently in the PM<sub>2.5</sub> Implementation Rule, EPA has indicated that states should implement the CMs “quickly” in recognition of the potential need for minimal administrative actions to begin implementation, and by regulation EPA has required that the CMs expressly specify the time frame during which the CMs will become effective after a triggering event.<sup>78</sup> We continue to believe that 60 days is a reasonable period for such administrative actions to occur before the CMs begin to provide emissions reductions. EPA is not altering its previous guidance with respect to this 60-day period.

Turning to the question of when the emissions reductions from the CMs should occur, as discussed in Section 2, EPA did not make explicit recommendations in the General Preamble. However, EPA implicitly was assuming that the emissions reductions should occur within the year following a triggering event. This was a function of EPA’s approach to guidance on the amount of emissions reductions that CMs should achieve, premised on OYW of RFP, and the purpose of CMs as providing emissions reductions that would bridge the gap during the period – which prior guidance generally assumed to be 1 year – that a state would be developing a new SIP submission to address the underlying deficiencies that resulted in the failure to meet RFP or

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<sup>78</sup> 57 FR 13498 at 13544/1 (“immediately”); 81 FR 58.066 (“quickly”); 40 CFR 51.1014.

the failure to attain. Following this logic, it was reasonable to conclude that emissions reductions from CMs should generally occur within a year of the triggering event. EPA continues to believe that 1 year is generally the appropriate timeframe for CMs to achieve reductions because of the intended purpose of CMs to provide emissions reductions to bridge the gap between the failure and the subsequent corrective action.

Section 4 of this guidance discusses infeasibility justifications that could be used where an air agency is unable to identify and adopt sufficient CMs to provide OYW of progress due to a lack of feasible measures. However, it is also possible that an air agency lacking sufficient feasible CMs that it could implement to provide emissions reductions within 1 year could, upon accounting for reductions in the second year, come closer to reaching – or potentially fully reach – OYW of progress. EPA believes in this case that, rather than exclude measures that are feasible as CMs because they would not result in sufficient emissions reductions in the first year after triggering, it is preferable for air agencies to consider and include these as CMs in their SIP submissions. We think that CMs that result in new emissions reductions during the second year following triggering will still serve the important purpose of CMs to continue progress towards attainment, as the state develops and submits, and EPA acts on, a SIP submission to address the underlying deficiency.

EPA acknowledges that this approach would result in the OYW of progress reductions being spread out over the (up to) 2-year period following the triggering event. In light of the fact that the statute specifies neither the amount of emissions reductions that CMs should achieve, nor the timing for achieving the CM emissions reductions, EPA considers it is reasonable to provide for this option, especially where there are insufficient measures available to achieve sufficient emissions reductions over a 1-year period. If an air agency elects to adopt as CMs measures that will require more than one year from the triggering event to provide the full amount of necessary reductions, then it should provide an adequate explanation of why the reductions could not be achieved within the first year and how much additional time is needed (up to one additional year). Reductions should be achieved as soon as possible. This new approach remains consistent with EPA's original approach because the benefits of reductions in the second year would result in improvements to air quality during the time that the state and EPA are taking the next steps in response to the failure that triggered the CM, such as the state developing and EPA acting on a new SIP submission (e.g., the SIP submission that would be required upon reclassification, or in response to a PM milestone failure under 189(c)(3)). With the benefit of up to an additional year to achieve reductions, air agencies may also be able to avoid the need for an infeasibility justification by instead developing and adopting CMs that will provide the OYW of progress recommended amount of emissions reductions.

Where partial implementation of a measure is feasible in year 1 following triggering of a CM, but further implementation is feasible in year 2 (e.g., a phased-in control measure), the same reasoning applies. EPA believes that it could be appropriate for the reductions in both years to count toward the OYW of progress showing, but the state should adequately explain and document the basis for the inability to fully realize the reductions of the measure in year 1. On the other hand, where the phased measure extends to periods beyond year 2, EPA does not believe it would be appropriate to continue to credit new reductions beyond year 2 to the initial

OYW of progress showing, because by that time, the next steps should be well underway. For example, within 2 years of a CM triggering event, the state generally would have been required to develop and submit a SIP submission containing new control measures necessary to achieve attainment or address RFP. Where an air agency wishes to adopt into a SIP the phased implementation of a CM that continues to achieve additional reductions beyond the second year following triggering, EPA would likely be able to approve that portion of the measure as a SIP strengthening measure, but we would not consider new reductions beyond 2 years to count toward OYW of progress for the CM requirement.