

APPENDIX E:

**SUMMARY OF INDUSTRY REPRESENTATIVE COMMENTS ON
MECHANISMS TO INCREASE RMC SUBSTITUTION**

Table E-1 below summarizes suggestions from six key industry stakeholders on potential mechanisms to address barriers and increase use of coal fly ash, foundry sand, and other RMCs.

Table E-1: Summary of Suggestions from Industry on Potential Mechanisms

Industry Member	Suggestions
National Ready Mixed Concrete Association (NRMCA)	<ul style="list-style-type: none"> • Mandates for use of RMCs, including requiring specific minimum quantities, should be avoided. All mechanisms for increased use should ensure that the resulting concrete meets quality standards that will not compromise its service life. • Government should implement education efforts aimed at harmonizing policy by ensuring that state transportation agencies (on Federally supported projects) do not restrict the beneficial use unless there are technically valid reasons locally. • Government should provide financial (economic) and other incentives to the industry to increase the beneficial use of RMCs.
Headwaters, Inc.	<p>The U.S. government should:</p> <ul style="list-style-type: none"> • Continue on-going activities aimed at removing informational barriers including, but not be limited to: <ul style="list-style-type: none"> ○ Education through various media regarding the safety and performance- enhancing capabilities of RMCs. ○ Elimination of use restrictions not supported by technical considerations. ○ Support for performance-based specifications for concrete and RMCs used in concrete. • Substantially increase efforts to overcome logistical barriers. This may include creation of infrastructure incentives. Financial (economic) incentives, such as tax credits or accelerated depreciation of capital expenditures could assist companies that invest in the construction of infrastructure to store, process, transport or improve the quality of RMCs.
American Coal Ash Association (ACAA)	<p>In Federal projects, current requirements that contractors use recovered mineral resources do not have adequate "teeth." A number of caveats make it easy for a contractor to opt-out of beneficial use material options. If the procurement process directed contractors to use RMC materials whenever the design specification allows it, RMCs would be more likely be used. Furthermore, other CCPs including FGD gypsum, boiler slag, bottom ash, and cenospheres could also be included.</p>

Industry Member	Suggestions
Holcim, Ltd.	<p><i>General Comments:</i></p> <ul style="list-style-type: none"> • Create greater transparency about the use of RMCs • Create a centralized reporting system that tallies the amount and type of recycled cement/concrete products used in Federally funded projects. <p><i>State Agencies:</i></p> <ul style="list-style-type: none"> • Where Federal funds are involved, include requirements in state and local contracts requiring contractors to use cement/concrete containing RMCs (unless cost, availability or technical specifications prohibit such use). <p><i>Federal Agencies:</i></p> <ul style="list-style-type: none"> • Review and update Federal procurement rules to require that contractors bidding on Federal construction projects use cement/concrete containing RMCs (unless cost, availability or technical specifications prohibit such use). • On an annual basis, each Federal agency should provide EPA with copies of their procurement plans and rules, grant regulations, and information submitted to them by Federal contractors and state and local governments as to the amount and type of recycled cement/concrete being used, or reasons it is not being used, in Federally funded projects. • Require states to adopt specifications including RMCs in order to in order to receive Federal funds.
Silica Fume Association (SFA)	<ul style="list-style-type: none"> • Since cement production is a pound for pound contributor of CO₂ emissions, SFA suggests a strong program that requires elimination of cement-only concretes or requiring the use of SCMs in Federal projects using concrete. Give weighted financial credit (economic incentive) for using CPG materials to produce concrete on Federal projects. • Any program of this sort must include a technology transfer element, as most concrete producers in the US are not well versed in cement and cement replacement technology. To help provide this education or technology transfer, we recommend the Federal agencies using concrete join with the concrete industry organizations, and together provide this education to the industry.

Industry Member	Suggestions
Slag Cement Association (SCA)	<ul style="list-style-type: none"> • The CPGs can be much more effective if they had more explicit requirements regarding replacement rates, use of ternary mixtures, and had actual “teeth” so that non-compliance would have negative project impacts. Create minimum upper limits on slag cement (and fly ash) percentages in concrete based on application. • Require that specifications allow the use of ternary mixtures. • Establish a review protocol to allow a technical evaluation by an outside party if a project stakeholder challenges compliance of a specification to the CPGs. This “outside party” could be an appropriate functional agency for the project (e.g. FHWA for transportation, DOD for military, GSA for general facilities), or the EPA or a combination thereof. • Add “teeth” to the CPGs so that if the review protocol recommends specification changes, 1) reissue specifications if there is a reasonable amount of time prior to the project bid date (if time frame is too short before the bid date, then the bid date would need to be delayed); 2) if the project has already been bid, then re-bidding would be required; 3) if the project specifications are not changed then Federal funding should be withheld. • Provide incentives that encourage more domestic granulation capacity, such as tax incentives for new granulator installation (such as accelerated depreciation or tax credits), and provide funding for training programs on the proper use of GGBF slag (and other RMCs). • Provide funding for the nascent Green Highways Partnership, which is attempting to incorporate sustainable design concepts into highway design.