



Questions and Answers for the On-Road Advanced Technology Demonstration Projects Applicant Teleconference July 18, 2017

On June 19th the California Air Resources Board (CARB) held an Applicant Teleconference to answer questions regarding the Low Carbon Transportation and Fuels Investments and the Air Quality Improvement Programs On-Road Advanced Technology Demonstration Projects solicitation. The below questions and answers are a result of that applicant teleconference. Questions and answers are grouped by topic.

Grantee and Project Eligibility Questions:

1. Reference page 10 of the solicitation, regarding disadvantaged community benefit. Will equal weight be given to a project's potential for benefit due to mass adoption and expanded future commercialization after project completion?

Answer: While projects must benefit a disadvantaged community during the actual field demonstration of the technology. Scoring Criteria 9, Potential for Market Penetration and Commercialization of the Technology is where the benefits of mass adoption of the proposed technology will be scored.

2. Will CARB allow the grantee and project manager to also serve as the party responsible for evaluating vehicle performance and project success?

Answer: Yes, the grantee and/or the project manager can serve as the responsible party for evaluating vehicle performance and project success with CARB providing oversight of data collection and analysis. However, whomever the applicant decides to perform the data collection and analysis portion of the project must have prior experience in data collection and analysis from heavy duty vehicles.

3. Is there any requirement that vehicle development has to occur within the State?

Answer: There is not a requirement that development and building of the advanced technology vehicles take place in California. However, there is a minimum 3-month revenue service field demonstration and must satisfy the disadvantaged community requirement to be eligible for funding.

4. Will the grantee and project team be able to make changes to the projects scope of work or budget after the application is submitted?

Answer: No, the application is a commitment from the whole project team including the grantee, technology demonstrator and end user fleet as to the scope and cost of the project. If the application is chosen to be funded it will be incorporated into the grant agreement as a binding part of the grant agreement. Further, the application will be used to develop the grant agreement's budget, timeline and scope of work. Project team members should be aware of all the requirements of the solicitation including being held to the budget, deliverable dates and other commitments made in the application. Any expectation of cost of living increases or increases in cost for project administration for any reason needs to be included in the proposed budget along with the rationalization for any increases during the term of the agreement.

5. How does a private enterprise participate since they are not eligible to submit a grant application?

Answer: The interested enterprise needs to partner up with an eligible applicant, such as a public agency or non-profit organization.

Technology and Vehicle Eligibility Questions:

6. Trucks developed for Advanced Engine and Powertrain projects need to be focused on longer range trucking operations (solicitation page 11). What is CARB's definition of longer range trucking operation? Are there specific miles/day targets that CARB is expecting?

Answer: The longer range requirement in the Advanced Engine and Powertrain category are illustrated by truck ranges that are longer than

short and regional haul trucking service. The goal of this category is to demonstrate technologies that can be applied to long haul trucking.

7. Reference scope of work, solicitation page 11, regarding advanced powertrain focus on longer range truck operation. Would a shipment from San Diego to the San Joaquin Valley be an example of the desired range? Are Interstate operations preferred? Or is there a “minimum” distance that meets the longer range hurdle?

Answer: There is not a minimum distance that is required for trucks to be eligible in the Advanced Engine and Powertrain category. However, the intent of, “longer-range’ is that technologies in this category will be focused on trucks that have ranges beyond short and regional haul applications and be suitable for trucks that engage in long-haul service. Longer range for the purpose of this solicitation includes both interstate operations and routes that span the distances between San Diego and the San Joaquin Valley.

8. Is this grant solicitation only for fuel cell technology or a combination of fuel cell, electric and compressed natural gas technologies?

Answer: This grant solicitation has three eligible categories, Intelligent Transportation Systems and Connected Trucks, Advanced Engines and Powertrains and Zero-Emission Short and Regional Haul Trucks. Only the Zero-Emission Short and Regional Haul Trucks category is limited to fuel cell technologies. The other two eligible categories, Intelligent Transportation Systems and Connected Trucks, and Advanced Engines and Powertrains do not have a restriction on the type of eligible technologies.

9. Is electric technology included as an eligible technology under this solicitation?

Answer: Yes, electric technologies are an eligible technology under this solicitation.

10. Does the program require to demonstrate a proposed technology via a working prototype or just an engineering document?

Answer: A practical field demonstration of the proposed technology is required, therefore an actual vehicle utilizing the proposed eligible technology is required.

11. Would a downsized heavy-duty hybrid engine be eligible as an Advanced Engine and Powertrain project?

Answer: Yes.

12. Are Class 7 straight box trucks eligible for this solicitation or is it focused on tractor trailers only?

Answer: Yes, Class-7 box trucks are eligible vehicle types if they meet the other requirements stated in the solicitation.

13. Can an advanced hybrid powertrain technology that increases the engine fuel efficiency be eligible as an Advanced Engine and Powertrain project?

Answer: Yes, technologies that increase fuel efficiency are eligible under the Advanced Engine and Powertrain category.

14. Can CARB explain in more details why Advanced Engines and Powertrain technologies should describe the expected increase in engine fuel efficiency compared to the baseline model year 2017 Class 8 conventional diesel-fueled truck?

Answer: A model year 2017 Class-8 diesel fueled truck is the baseline truck and is the benchmark for determining a percent increase in fuel efficiency for any proposed technology under this solicitation. The reason for choosing the 2017 Class-8 diesel fueled truck is because this solicitation is limited to Class 7 and 8 truck weight categories and a standard benchmark is needed to compare different technologies against each other. Further, it is standard practice for CARB's advanced technology demonstration projects to utilize the currently available conventional technology as the baseline for determining efficiency improvement, emission reductions and cost effectiveness calculations.

15. Reference scope of work, solicitation page 13, regarding CARB experimental permit requirements. Is this required for the repower of an existing truck? If so, is it something that can be applied for post-award and pre-revenue service?

Answer: Yes, an experimental permit will be required for a conversion of an existing truck and the experimental permit can be applied for post-award and will be required before revenue service begins.

16. Can any funds be used for technology development purposes?

Answer: Yes, funds can be used to develop the proposed technology. However, a practical field demonstration, in revenue service, of the technology is required. Research projects without a field demonstration are not eligible.

17. Are research only projects allowed under this solicitation?

Answer: No, research only projects are not eligible for funding.

18. On page 11 of the solicitation, automation is included as an eligible technology under the Intelligent Transportation Systems and Connected Trucks category. How can one comply with it since rules regarding the use of automated trucks are not released?

Answer: Automated vehicles are included as eligible under the Intelligent Transportation Systems and Connected Trucks category. A lack of regulatory direction on commercialization and deployment of automated trucks will not limit CARBs ability to fund technologies in this category. However, if the proposed technology to be demonstrated is not yet legally able to be operated in the state the applicant should illustrate the plan for coordination with regulatory agencies, California Highway Patrol and any other organization that has purview over the legal operation of the proposed technology.

19. Are improvements to natural gas engines eligible?

Answer: Yes, natural gas engines are eligible under the Advanced Engine and Powertrain category, but need to provide greenhouse gas emission reduction based on the engine technology and not exclusively the fuel used in those engines.

20. Are fuels for advanced technology engine demonstrations eligible for funding?

Answer: Yes, fuels used in advanced technology demonstrations are an eligible expense. However, projects that only use fuels solely as the source of greenhouse gas emission reductions are not eligible.

21. Reference page 24 of the solicitation, regarding higher scoring for use of a high percentage of renewable energy. For pure combustion engines, can this project score more points if the engine is capable of running off renewable fuel as well as conventional fuel?

Answer: No, higher scoring will not be awarded for technologies that are simply capable of using renewable energy but do not use renewables during the demonstration period.

22. Is an electric traction motor included as a part of a conversion eligible for funding?

Answer: Conversions of conventional diesel fueled trucks to electric drive traction motors are eligible under this solicitation.

23. Can CARB please define what qualifies as a vehicle retrofit for purposes of this solicitation?

Answer: The term retrofit is used only once in the solicitation (page 13, Section X Scope of Work Subsection A Data Collection and Analysis and Emissions Testing) and is used in the context of vehicles used in the proposed project that still have a contractual obligation under an incentive funding program. Vehicle retrofits can include such technologies as diesel particulate filters, selective catalytic reduction technologies, or other pieces of equipment that are installed on a vehicle to reduce emissions of criteria or greenhouse gas emissions.

24. Are conversions of diesel fueled trucks that were initially converted to zero-emission as part of another project that is now complete be eligible to be converted again to participate in an eligible technology under this solicitation?

Answer: Yes, trucks that were initially manufactured as conventional diesel fueled are eligible for conversion.

25. Is a written proposal of the technology required or is just a demonstration okay?

Answer: A written proposal is part of the application process. In addition, a practical field demonstration while in revenue service is a required element of selected projects.

26. Is the daily goal specified for the Zero-Emission Short and Regional Haul category a 24-hour period?

Answer: Yes the daily mileage goal comprises a 24 hour period.

27. Is engine off technology considered advanced technology? For example ePTO use?

Answer: Engine off technologies are eligible for funding, if all the other requirements under this solicitation are met. Electric Power Take Off (ePTO) technology can be eligible for funding but cannot be the sole basis of eligibility. The Advanced Engine and Powertrain category requires that eligible technologies be focused on motive power technologies.

28. Are pure battery-electric vehicle excluded?

Answer: Battery-electric vehicle technologies are eligible for funding under the Advance Engine and Powertrain category and can be combined as part of a suite of technologies being demonstrated under the Intelligent Transportation Systems and Connected Trucks categories, but are not eligible under the Zero-Emission Short and Regional Haul truck category which is limited to fuel-cell technologies only.

29. Does CARB have a preference if the vehicles operate in State or out of State for example, interstate trucks?

Answer: CARB does not have a preference if the proposed vehicles operate in state or out of state. However, regardless of the route that is proposed to be used by the advanced technology vehicle the requirement to benefit a disadvantaged community must be satisfied for the project to be eligible for funding.

30. If a truck is domiciled outside of a disadvantaged community, what is the required time that a truck operate within a disadvantaged community?

Answer: Amount of time of operation within a disadvantaged community is not necessarily a metric that is used to determine eligibility for funding. Applicants should review Appendix A Attachment 5 of the solicitation package and review CARB's guidance on benefitting a disadvantaged community at https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/final_supplemental_ggrf_funding_guidelines_12_30.pdf to help determine the eligibility requirement for benefitting a disadvantaged community.

31. Is there a limit on the number of demonstration vehicles that should be part of proposal?

Answer: No, there is no limit to the number of vehicles that may be part of the demonstration project

32. Does the technology demonstrator have to have an assembled vehicle prototype before submitting an application for funding?

Answer: No, a prototype vehicle does not have to exist to be eligible for funding. However, a practical field demonstration of the technology, in revenue service is required as part of an eligible application. Furthermore, the application must clearly document that the proposed technology to be demonstrated is within 3 years of commercialization.

33. Reference solicitation page 9, regarding the demonstration of commercialization within 3 years. Does this mean within 3 years of the completion of the project?

Answer: The goal of the solicitation is to accelerate the deployment of technologies into the marketplace that are on the cusp of commercialization. Therefore, the 3 years from commercialization timeframe is from the submission of the application for funding.

34. What specific criteria need to be met to be considered “commercialized?”

Answer: For the purposes of this solicitation, commercialized means that the vehicle or technology meets all certification requirements and can be purchased in the marketplace.

35. Reference scope of work, page 14, regarding requirement for 10 year remaining life, how should this requirement be demonstrated?

Answer: The 10 year remaining life requirement is for conversions of existing vehicles and is intended to require that any vehicle that is converted is in good condition and the vehicle itself is capable of lasting an additional 10 years, applicants should detail in their application the reasons they believe the vehicle has at least a 10 year remaining useful life.

36. The term “baseline” is used several times in the solicitation. Is baseline defined as a similar model year and vehicle class as the new technology but with a conventional diesel fuel or something different?

Answer: The solicitation defines the baseline truck will be a 2017 model year Class-8 diesel fueled truck.

Funding Level Questions:

37. There is a good chance that there may be bids that, when totaled, exceed the \$17 million of available funds. CARB has signaled their intent to negotiate projects to within that total cap. What needs to be included in the solicitation response to ensure that projects are not thrown out because they exceed available funding levels? How does an applicant signal that they are willing to negotiate within the cap while still detailing the level of funding that is required, even if it exceeds the potential funding available?

Answer: With the technology or grantee caps in place the maximum award of funds for a project is \$12.75 million. If an application states in the project narrative that they are amenable to expanding the size of the project or reducing the size of the project with the costs identified for increasing or decreasing the size of the project, then any change in the size of the project's costs can be determined while maintaining the competitive nature of the solicitation process.

38. Reference page 20, regarding funded application expansion. Should the proposal be structured to allow for this expansion to be seen or scoped pre award, or can this be negotiated post-award when more money becomes available?

Answer: CARB does not anticipate that additional funding will become available. However, any negotiation for an expansion of a proposed project can occur at CARB's sole discretion pre-award if there are remaining funds that are not allocated to another project or post award if additional funds become available.

39. The solicitation states the following: "At CARB's sole discretion, a grantee cap and a technology cap may be applied to the funds available under this solicitation as follows: no single Grantee may be awarded more than 75% of the funding for projects under this solicitation and no single technology may be awarded more than 75% of the funding under this solicitation." What is meant by the term "single technology?"

Answer: Single technology is meant to be categories of technologies such as fuel cells, battery-electric vehicles, or specific engine technologies such as microturbine or opposed piston engines.

40. The solicitation states the following: “Funding targets for each of the three project categories provided below represent the goal for this solicitation and are not considered maximum or minimum funding levels for each category.” Do funding targets impact project scoring? For example, if an application is submitted that requests advanced engine and powertrain funding for \$12 million, is it on the surface rated less because it exceeds the \$5 million goal set forth in this solicitation for that category?

Answer: No, the solicitation’s stated funding targets are goals and will not impact scoring of projects that request more funding in a specific category than the stated funding goal.

Data Collection Questions:

41. There seems to be some latitude regarding the selection or method of data collection and an analysis provider. Is it safe to assume that any reasonable and industry validated method of collecting and analyzing emissions and efficiency data will be accepted and scored the same, or is there a preferred method, process, and provider for the collection and analysis of vehicle run data?

Answer: Data collection and analysis methodology should meet industry and academic standards and be suitable for peer review scientific publications. Emission testing will be required to meet Federal or CARB emission testing standards and follow established protocols. Any emission testing procedure will require CARB approval before testing begins.

42. To establish the performance of the demonstration vehicle(s), data will be taken on efficiency and emissions while it is in revenue service. Is it acceptable to compare that performance data to established industry benchmarks, or is an “A to B” run with a similar vehicle on a similar route needed to establish the potential performance improvement with said demo?

Answer: It is acceptable to compare performance data between two vehicles, one the conventional baseline truck and the second the advanced technology truck on a similar or the same route to establish potential performance improvements of the new technology. Industry benchmarks are not sufficient for determining efficiency and emission

reductions for advanced technology vehicles. CARB will have final determination of any route used to compare vehicles in a funded project.

43. Will CARB have the ability to negotiate and advise on technical details in the data collection and comparison plan after the project is selected for funding?

Answer: CARB retains sole approval authority for all aspects of data collection and comparison of the baseline truck and advanced technology truck.

44. What are the data elements and data collection points required under this solicitation?

Answer: All required data collection elements are included in Appendix F of the solicitation package. Additional data elements that are not included in Appendix F and are included in the application can be eligible for funding, but are subject to approval at CARB's sole discretion.

45. Is there a duration of data acquisition portion of the demonstration project?

Answer: Data acquisition portion of the project must be at least 3 months and should be long enough to get a robust data set that validates the technology and commercialization prospects. If a field demonstration is to last only 3 months, data should be collected for the entire 3 month field demonstration. Field demonstrations longer than 3 months are desirable and will be scored higher.

Community Groups as Part of the Project Team Questions:

46. Reference page 21 of the solicitation, regarding extra points for completed sub-agreements with partners. Can all 5 extra points be awarded for meeting one of the three sub-criteria?

Answer: It is possible for all 5 extra credit points to be awarded for meeting one of the three subcriteria in Scoring Criteria 12.

47. How many extra points are available for sub agreements?

Answer: Up to 5 extra points can be awarded for having the applicant and technology demonstrator subagreement in place before submission of the application.

48. What are examples of the types of community groups that are part of the project team and make the application eligible for extra points under Scoring Criteria 12?

Answer: The types of community groups that make the application eligible for extra points under Scoring Criteria 12 are those groups that have a presence in the community where the demonstration project is taking place or where the trucks are domiciled. Those community groups that are well established and have a track record in air pollution advocacy and environmental justice issues may score better than groups that are not as focused on air pollution and environmental justice issues.

49. How local must a community group be? Should it be statewide or more of a local group?

Answer: There is no requirement how local a community group needs to be, however, CARB would like to see projects that engage the community where the projects are being demonstrated or where the trucks are domiciled.

Infrastructure Questions:

50. The majority of existing hydrogen fueling stations are not accessible to heavy-duty fuel cell truck refueling, because stations have not been planned and designed for heavy-duty vehicles and located on heavy-duty vehicle routes. The requirement to “only process applications for infrastructure projects (including hydrogen refueling stations) where the project is proposed to be sited where similar infrastructure already exists (e.g., installing a hydrogen refueling station at an existing fueling station or industrial facility)” will greatly limit the number of quality applications and decrease the commercialization prospects of fuel cell technology for heavy-duty vehicles. Several large non-port drayage fleets have expressed interest in a long-range Class 8 fuel cell truck but will be limited by this strict definition for infrastructure projects.

Answer: The requirement to site infrastructure where similar infrastructure already exists is to ensure adequate time for California Environmental Quality Act (CEQA) compliance due to the short timeframes for program funds to be spent. Fueling infrastructure should be cited where similar infrastructure exists.

51. It states in the solicitation package that hydrogen generated from renewable electricity must be co-located where similar infrastructure already exists, therefore is it okay to truck hydrogen to the truck refueling site?

Answer: Yes, it is acceptable to truck hydrogen fuel to a truck refueling site.

52. Would a mobile hydrogen refueler, used to fill vehicles directly and located at a port or place of usual heavy-duty vehicle traffic, be eligible?

Answer: Yes, a mobile hydrogen refueler is an eligible technology to refuel technologies that utilize hydrogen as a fuel type.

Match Requirement Questions:

53. Would fuel cost incurred after the project demonstration be an eligible cost or match share? At costs up to \$14/kg of Hydrogen, fleets may choose to operate the trucks on shorter routes or stop operating the trucks altogether once the project is over, thus reducing the emission saving benefits to disadvantaged communities.

Answer: No, costs after the end date for the project are not eligible expenses.

54. If an applicant proposes to use as in-kind cost share an existing fueling/charging facility presently valued at \$2 million, and free and clear of any outstanding grant obligations, to refuel/recharge its proposed demonstration vehicle(s), what portion of that value can be counted as cost share and how is this documented?

Answer: The level of the in-kind cost share for an existing fueling station should be the fair market value for the use of the refueling station. Fair market value for the purposes of this solicitation can include refueling equipment and facility maintenance, depreciation of equipment used to fuel the demonstration vehicles, security for the station, labor for refueling, and other costs that are related to fueling the demonstration vehicle. The exact amount of the in-kind contribution for the existing refueling station will be up to the applicant to define and validate in the application.

55. Reference solicitation page 5, are there any restrictions on what constitutes a “capital outlay” as a part of the overall 10% cash contribution requirement?

Answer: Capital outlay to be considered as part of the cash match means funds spent after the grant agreement has been executed. Match funding spent prior to grant execution maybe included as in-kind match but not cash.

56. How early can match funds be expended? Can it be before the grant award?

Answer: In-kind match funds can be expended and count toward the match requirements before grant is executed but only after the issuance of a preliminary award letter and may be used for such activities as completing California Environmental Quality Act (CEQA) requirements, entering into sub-agreements with technology manufactures and end-users, and performing other administrative activities required by the prospective grantee to enter into the grant agreement.

57. Can the cost of required permits be considered as part of the match requirement?

Answer: Yes, the cost of required permits can be part of the match requirement.

58. The solicitation states the following: “All work shall be completed by March 30, 2020.” Are cost-share funds included in this timeline or is there a longer term that can be provided for expending cost share/matching/in-kind funding so long as the CARB funding is expended by March 30, 2020?

Answer: No, all funds that are committed as part of the proposed project must be expended by the March 30, 2020 deadline.

Project Timeline Questions:

59. The timeline to complete this project and include three months of data as part of the draft final report by February 14, 2020, may not be doable. Would CARB give any consideration to allowing the applicant to provide the data and analysis subsequent to the completion and final billing of this project in March 2020, if the vehicle(s) is/are operationally deployed by that date?

Answer: No, the field demonstration with data collection and analysis needs to be completed by end date stated in the solicitation.

60. Is there any flexibility in the project end date of March 30, 2020?

Answer: No.

61. How long from notice of award until the grant agreement is executed?

Answer: Preliminary award letters will be issued by September 29, 2017 and grant execution will be completed by November 30, 2017. This timeline is subject to change at CARB's sole discretion. Public agencies are encouraged to seek governing board approval to enter into a grant agreement prior to submitting an application.

Other Questions:

62. Can CARB give a targeted range of projects that you would like to see included in each application?

Answer: There is no preference for the number of technologies or categories that a single application can apply for.

63. Is there a targeted range of projects you would like to see in each funding target?

Answer: The expectation is that there will be at least two projects funded under this solicitation.

64. On page 20 of the application CARB indicates a total possible score of 100, but the scoring table on page 21 shows a total of 105 points. Please clarify?

Answer: The total possible score is 105 points and includes the extra credit points under Scoring Criteria 12.

65. Is the Work Plan described in Appendix A, Attachment 2 part of the Project Narrative and considered in the 15-page limit?

Answer: No, the Work Plan is not part of the 15 page limit for the Project Narrative.

66. Is the link for the Payee Data Record correct? In box 6 it references the Dept of Health Care Services.

Answer: The link provided in the solicitation for the Payee Data Record is correct.

67. What is the definition of zero-emission mode while in a disadvantaged community?

Answer: Zero-emission mode while in a disadvantaged community means that the demonstration vehicle will not have tailpipe emissions while operating in the disadvantaged community. The definition of a disadvantaged community is provided by CalEnviroScreen 2.0, a link is provided in the solicitation regarding guidance on determining a disadvantaged community and can be found here:
https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/final_supplemental_ggrf_funding_guidelines_12_30.pdf

68. How long does it take to get experimental permits granted?

Answer: The timeframe for applying and receiving experimental permits varies, applicant should have a plan in their application for obtaining all required permits.

69. Can CARB provide a list of partners?

Answer: CARB will not provide a list of interested project partners.

70. Can CARB publish a list of participants from today's applicant teleconference?

Answer: No, CARB will not publish a list of participants from the application teleconference since no list exists.

71. If an applicant is applying for funding under the Zero-Emission Short and Regional Haul Truck category and finds that the fuel cell cannot complete the minimal 3 month fled demonstration, can the project continue as a battery-electric technology demonstration?

Answer: No.

72. How is the emission reduction calculation performed for a project that only has a 3 month field demonstration?

Answer: To ensure the scoring of projects on a level playing field the solicitation requires the applicant calculate the emission reductions using a 2 year life during the demonstration and a 10 year life after the demonstration.

73. Who will pay for the demonstration vehicle?

Answer: The source of funds used to pay for the demonstration vehicle is determined by the applicant team. Demonstration vehicles are an eligible expense under this solicitation.

74. Will there be a charge and / or testing required by CARB for an experimental permit?

Answer: There may be a charge and testing required. For more information on experimental permits see:

<https://www.arb.ca.gov/permits/permits.htm>