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August 28, 2015

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 15-HYD-01  
1516 Ninth Street  
Sacramento, CA 95814-5512

California Energy Commission

**DOCKETED**

**15-HYD-01**

**TN # 761Í F**

**AUG HF 2015**

Subject: Comment Submittal by Mercedes-Benz Research & Development North America, Inc. to Docket No. 15-HYD-01 — Draft Solicitation Concepts, For Hydrogen Refueling Infrastructure

To Whom It May Concern:

We at Mercedes-Benz Research & Development North America (MBRDNA) would like to commend the CEC on quality of the thoughts and concepts presented in the “Draft Solicitation Concepts, For Hydrogen Refueling Infrastructure” document (Concept Document). The level of effort that went into this document exemplifies the CEC’s commitment and dedication to making hydrogen and fuel cell vehicles a success in the market. In particular, the Concept Document shows a marked improvement in the incentive structure, technical requirements, and guidance on station locations in comparison to previous PONs.

MBRDNA has been involved with leasing fuel cell vehicles to customers in the State of California since 2005, and over that time, we have collected a substantial amount of knowledge pertaining to fuel cell customer behavior in terms of both vehicle operation and hydrogen refueling. Based on this experience, we would like to suggest a number of modifications to the language in the Concept Document which we feel are important to ensure the utmost success of this solicitation.

Here are our comments, organized by the actual headings used in the Concept Document:

### **Section 1: Available Funding**

Given the results of the most recent ARB survey, and the data depicted in Figure 16 of the June 2015 AB 8 Report, MBRDNA strongly recommends that the CEC consider pulling forward funding from later funding years to this funding year. In Figure 16, ARB draws a dotted line through the data points from Survey Year 2014 and Survey Year 2015. It is MBRDNA’s opinion that the data point for CY 2020 from Survey Year 2014 should be removed from consideration, as this data results from the Optional Reporting section of the survey, and it is unknown if those estimates are still valid, or if deployment plans from the OEMs have evolved over the last calendar year. With this data removed, the jump between the CY 2018 and CY 2021 data points for Survey Year 2015 is substantial, and it is unknown when the bulk of these vehicles will arrive to the market. The CEC needs to begin preparing the market for the arrival of these vehicles in advance of



them actually arriving. Executing a pull-forward, as was done with PON-13-607, would give the CEC the flexibility to fund additional stations as project proposals warrant.

### **Section 3: Station Priority and Funding Levels**

MBRDNA recommends the CEC merge the Establish Core Market Competition and Expand Core Market Competition into a single Core Market Competition. At this point in time, the needs for hydrogen infrastructure in California are transitioning from a coverage-only focus to a more balanced coverage and capacity focus, and MBRDNA suggests that the CEC merge these competitions into a single competition to reflect these changing needs in the market.

Also, MBRDNA strongly recommends that CEC allow the market to begin to work, and not predetermine the number of stations built in a particular area, as is done in Table 1 of the Concept Document. Instead, MBRDNA recommends that Table 1 be used as a guide for applicants, in addition to other market relevant data provided by other sources, such as OEMs and gasoline station owner/operators. The argument for individual station projects should be made in the Market Viability section of the project narrative. The CEC should reserve the right to fund more proposals for an area than what Table 1 indicates if the stations, working in concert, add value, robustness and redundancy to the network. Please see the comments for Section 24 for a more in-depth comment on this topic.

### **Section 6: Multiple Station Applications Allowed**

MBRDNA recommends that the CEC encourage applicants to submit proposals for a block of stations, ten or more, to allow applicants to take advantage of economies of scale. Such a block should include a combination of Core Market Stations, Future Market Stations and Connector Stations. CEC should continue to score the stations individually, and reserve the right to eject proposals from the block which do not pass a minimum threshold, but should also consider evaluating the stations as a group, and give the applicant/project team a 5% overall score boost for a block proposal of ten or more passing station proposals.

### **Section 7: Single Applicant Cap**

MBRDNA recommends that the CEC raise the Single Market Cap from 60% to 75% to encourage applicants to submit a block of stations for evaluation by the CEC.

### **Section 8: Operational Date and Cap-X Funding**

MBRDNA strongly recommends that the CAP-X funding be based on the Open Date, as opposed to the Operational date, where the Open date should be defined as the date when the station operator grants unrestricted access to the station to fuel cell vehicle drivers. As a matter of course, the CEC should withhold 25% of the State cost share until the station is fully Open.

MBRDNA also recommends that the State fund station projects up to 80% cost share for stations that are Opened within twelve months of the NOPA. Similarly, rather than using calendar dates of March 2018 and September 2018 for Table 2, MBRDNA recommends the CEC use twenty-four months from the NOPA in





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place of those two calendar dates, respectively. In our opinion, the incentive for early completion off-sets the need for pro-rated CAP-X awards, as was proposed in the original version of Table 2.

Modified Version of Table 2: CAP-X Funding and Station Opening Dates

Station Type	Max. Funding for Stations that Open within 12 Months of NOPA	Max. Funding for Stations Open that between 13 and 24 Months of NOPA	Max. Funding for stations that Open after 24 Months of NOPA
New Station	\$2,000,000 or 80% of total station costs, whichever is less.	\$1,875,000 or 75% of total station costs, whichever is less.	\$1,500,000 or 60% of total station costs, whichever is less.
Station Upgrade	\$1,500,000 or 75% of total station upgrade costs, whichever is less.	\$1,235,292 or 60% of total station upgrade costs, whichever is less.	

### Section 9: Operational Date and Operation and Maintenance Funding

MBRDNA recommends that the CEC use the Open Date for the O&M funding schedule, instead of the Operational Date, similar to what was suggested in Section 8 above. This way, the applicants are rewarded for bringing hydrogen to the market, rather than just building a station.

CEC should reserve the right to terminate O&M funding if station operator does not meet a certain level of up-time (e.g. 65%) for any one calendar year, unless for planned outages that were approved by CEC beforehand.

Modified Version of Table 3: O&M Funding

	Station Open Within 24 Months of the NOPA	Station Open between 24 and 36 Months of the NOPA	Station Open After 36 Months of the NOPA
Maximum Percentage of O&M Support	100% of eligible O&M costs	80% of eligible O&M costs	60% of eligible O&M costs
Maximum Term for O&M Funding	March 1, 2022	March 1, 2022	March 1, 2022
Maximum O&M Funding Award per Station	\$300,000	\$240,000	\$180,000





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## Section 10: Minimum Technical Requirements

**A. Hydrogen Quality Data:** test results for the station — in tabular form — should be a requirement for completing the station commissioning process and receiving the last Cap-X payment from the CEC.

For stations using a gaseous delivery method, stickers on the delivery vehicle/vessel indicating hydrogen quality would not be valuable, as these vessels are often behind a gate and not visible to the public. Also, in a number of cases, the station may use a permanently installed tube trailer, and simply bump up the pressure this trailer with a product transfer from a delivery trailer. As a result, MBRDNA would support the removal of this requirement.

As a point of clarification, stations that produce their fuel on-site should be allowed to use a continuous monitoring system that monitor the product stream for canary gas species that indicates off-specification operation, rather than require a continuous analysis of the product stream for individual contaminant gases. This would allow on-site generators to use the same industrial practices that are commonly used at central production facilities.

**B. Fueling Protocols:** MBRDNA supports this requirement as written in the Concept Document.

**C. Test Method and Equipment Specifications to Confirm Performance:** If the reference to CSA HGV 4.3 is made in the Grant Funding Opportunity document, care needs to be taken to ensure the revision of CSA HGV 4.3 referenced in the solicitation is compatible with the SAE J2601-2014.

**D. Minimum Station Daily Fueling Capacity Requirements:** The proposed station(s) should be right-sized for the location and expected demand through the O&M funding period. The argument for the proposed station size should be justified in the Market Viability section of the project narrative. MBRDNA recommends that Core Market stations have a minimum size of 200 kg/day.

**F. Dual Dispenser Pressure Requirements:** Mercedes-Benz F-Cell customers have shown an overwhelming preference for stations that offer dual H70 dispensers over those that do not. These same customers have shown a substantial dislike for fueling from a H35 dispenser/hose, even when H70 is not available at the station due to a component failure in the H70 system. If given a reasonable alternative, F-Cell customers have repeatedly demonstrated that they would rather drive slightly out of their way to get an H70 fill than use a station that is only able to offer an H35 fill. Therefore, we would recommend that the CEC not require H35 be implemented at stations funded under this solicitation. Instead, the CEC should award points under the Market Viability score for applicants who demonstrate a robust station design, perhaps with redundant components, which will ensure higher station reliability and up-time of the H70 system.

**H. Station Design Requirements:** Mercedes-Benz suggests that the CEC eliminate the design requirement that an awarded station to be able to accept a tube trailer or a mobile refueler as a form of back-up fuel supply. This is likely not feasible at most gasoline station based locations, and by the time that stations funded under this solicitation arrive, there should be adequate station redundancy in the network to mitigate the need for this capability.





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**J. Public Point of Sale (POS) Terminal:** Point of Sale equipment should be mandatory, and the card reader should be required to accept all forms of payment commonly accepted at gasoline stations today.

**K. Fueling Protocols:** MBRDNA supports this requirement as written in the Concept Document.

#### **Section 11: Plan to Connect with an Online Status System**

A data connection to the CaFCP S.O.S.S. system should be a mandatory requirement to establish eligibility for O&M funding, and the Station Operator should be required to report station status to the S.O.S.S. system for the duration of the O&M funding. The connection to other systems should be optional, but not scorable.

#### **Section 12: Renewable Hydrogen Requirement**

The CEC should allow Applicants the ability to count green electricity used to power the station equipment toward the Renewable Hydrogen Requirement.

#### **Section 15: Letter(s) of Support or Commitment**

**A. Site Owner/Operator:** The language in this section should be updated to reflect a requirement to receive Letters of Support from the property/land owner.

**D. Third-Party Letters of Support:** Letters of Support from OEMs, while optional, should be evaluated as a crucial input to the Market Viability score.

#### **Section 16: Operational Date**

MBRDNA recommends that the CEC use the Open Date in place of the Operational date when considering the final project milestone, and the eligibility for O&M Funding. This date should be defined as the date when the station operator grants unrestricted access to the station to fuel cell vehicle drivers

#### **Section 18: Enforcement of Proposed Locations**

The CEC should reserve the right to withhold 50% of Cap-X cost share from reimbursement until the station location has been secured via a land lease or some other binding agreement.

#### **Section 19: Enforcement of Critical Milestones**

The CEC should reserve the right to reduce the Cap-X cost share and O&M funding for station projects that miss milestones by an amount of time pre-determined by the CEC.

#### **Section 20: Station Competition and Station Priority Area Determination**

MBRDNA recommends that the CEC not use the CHIT tool to establish a Locations and Capacity Score. Instead, MBRDNA recommends that the CEC use the Market Viability scoring criteria to determine which stations provide the greatest benefit and utility to the existing hydrogen infrastructure network. Please see the comments for Section 24 for a more in-depth comment on this topic.





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### Section 21: Hydrogen Refueling Station Upgrades

Proposals for hydrogen station upgrades should only be considered when the Market Viability score exceeds 140 points (70% points of the proposed total 200 points possible for this section). As a part for the argument that a station should be upgraded using public funds, the station developer should provide data that demonstrates station has a high customer utilization rate, and that this data be a part of the narrative on Market Viability. Please see the comments for Section 24 for a more in-depth comment on this topic.

### Section 22: Match Share Funding Requirements

MBRDNA questions whether applicants should be allowed to use labor as a part of their cost share contribution to the Cap-X part project.

### Section 24: Evaluation Process, Scoring Criteria and Points

There seems to be four overarching scoring criteria: Qualifications of the Applicant/Project Team, Market Viability, Project Plan, and Social Benefits. The applicant should be required to receive a passing score in each of these four areas to be eligible for an award (70% of the total possible points for each section). Passing stations should then receive a total score that is the sum of the number of points awarded for the four sections, and the highest scoring projects should be funded.

Modified Version of Table 4: Summary of the Scoring and Points

Scoring Criteria	Points
<b>Qualifications of Applicant/Project Team</b> <ul style="list-style-type: none"><li>Qualifications of Applicant/Project Team</li><li>Past Performance in Delivering Hydrogen Stations to the Market</li></ul>	50
<b>Market Viability</b> <ul style="list-style-type: none"><li>Market Viability</li><li>Location and Capacity</li><li>Hydrogen Refueling Station Performance</li></ul>	200
<b>Project Plan</b> <ul style="list-style-type: none"><li>Project Readiness</li><li>Project Implementation</li><li>Project Budget</li></ul>	100
<b>Social Benefits</b> <ul style="list-style-type: none"><li>Economic and Social Benefits</li><li>Sustainability</li></ul>	50
<b>TOTAL POSSIBLE POINTS:</b>	<b>400</b>





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### **Qualifications of the Applicant/Project Team**

Qualifications of the Applicant/Project Team should include the topics of the former Qualifications of the Applicant/Project Team, and be expanded to include one new sub criterion: Past Performance in Delivering Hydrogen Stations to the Market. Past performance should consider activities in all markets around the globe, but the score for this subsection should heavily reflect an applicant's past performance in supplying hydrogen stations to the state of California, including timely achievement of milestones on past projects, up-time of their stations, and demonstrated capability in addressing station equipment failures in a timely manner.

MBRDNA supports the scoring criteria presented in the Qualifications of the Applicant/Project Team section of the Concept Document.

MBRDNA suggests the combined score be equal to 50 points.

### **Market Viability**

Market Viability should include the topics of the former Market Viability section, and be expanded to also include the topics of Station Location, Station Capacity, and Hydrogen Refueling Station Performance. All of these factors are a package that will help indicate the utility of the station to the network, and the station's long-term viability.

With respect to station location, MBRDNA prefers that the results from the CHIT model be only used to help applicants identify viable locations for their projects. In its present state, the model has not yet been publically validated, and it is not clear if it is sensitive and sophisticated enough to replace human analysis. If the CEC felt compelled to use the CHIT model to score locations, MBRDNA requests that the CEC allow other market relevant data in the Market Viability part of the project narrative to compensate for/off-set a low score from the CHIT model, as long as the applicant can demonstrate strong market viability for their station at the proposed location. With that allowed, the applicant would be free to propose stations in areas that make the most sense to them, based on the market data that they have collected. It would then become their responsibility to make the case for that station project at that particular location. This approach would allow the CEC to fund the best projects, regardless of where they are located, or how close they are to another station, as long as the business case supports it, and it would not be disruptive to other stations in the network. It would also allow any community within the state a fair chance at hosting a hydrogen station project.

In the determination of the Market Viability score, MBRDNA proposes that the CEC assess the market viability of the project as evidenced by actual market data, such as gasoline sales volumes at/near the station location, OEM letters of support, etc. In addition to this, MBRDNA supports the scoring criteria presented in the original Market Viability and Hydrogen Refueling Station Performance sections of the Concept Document.

MBRDNA suggests the combined score be equal to 200 points.







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### **Project Plan**

The Project Plan should include the topics of Project Readiness, Project Implementation, and Project Budget. MBRDNA supports the scoring criteria presented in the Market Viability and Hydrogen Refueling Station Performance sections of the Concept Document.

MBRDNA supports the scoring criteria presented in Project Readiness, Project Implementation and Project Budget sections of the Concept Document.

MBRDNA suggests the combined score be equal to 100 points.

### **Social Benefits**

The Social Benefits section should include the topics of Economic and Social Benefits, and Sustainability.

MBRDNA supports the scoring criteria presented in Economical & Social Benefits and Sustainability sections of the Concept Document.

MBRDNA suggests the combined score be equal to 50 points.

### **Safety Planning**

MBRDNA recommends that CEC not include scoring criteria for Safety Planning. Instead, Safety Planning should be a mandatory requirement – one that is a pass/fail applicant screening criterion.

### **Innovation**

MBRDNA recommends that the CEC forego the Innovation scoring criterion for this solicitation.

In regard to the solicitation development process, MBRDNA appreciates the workshop based process that the CEC has used to incorporate stakeholder comments into their thinking. We think this allows the stakeholders to get more into consensus at the workshops, and allows for clearer outcomes. We hope this approach continues as the CEC continues to evaluate the comments and feedback from the stakeholders.

Thank you for your consideration of our comments. Please feel free to contact us with any questions or requests for clarification.

Sincerely,

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