Capstone

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October 16, 2006

Clerk of the Board,
Air Resources Board
1001 I Street, Sacramento, California 95814

Reference: October 19, 2006 Board Meeting
Amendments to the Distributed Generation Certification Regulation

Dear Board Members,

Capstone Turbine Corporation respectfully submits these comments in accordance with the "Notice of Public Hearing To Consider Amendments To The Distributed Generation Certification Regulation" of August 22, 2006. It is Capstone's position that implementing the proposed requirements effective January 1, 2007 is not practicable, and may actually result in increased net NOx, CO and VOC emissions as well as an increase in greenhouse gas emissions in the State.

Capstone recommends that the Board change the proposed implementation date for the Distributed Generation Certification Regulation to November 1, 2007.

Capstone recognizes that CARB is mandated by AB 1298 to implement a distributed generation certification regulation that would reduce emissions to those of the best available control technology for permitted central station power plants in California by the earliest practicable date. Capstone has participated in technical discussions with CARB to review field data and evaluate the state of microturbine combustion technologies. We are appreciative of the open discussions with CARB, and the opportunity to share our views on test methods and the technical challenges facing a microturbine manufacturer. We support the inclusion of a CARB distributed generation certification regulation for waste gas, as well as the proposed revisions to make the regulation clearer and more effective. However, we are compelled to state our objections to the proposed implementation date for emissions requirements for DG operating on natural gas or LPG, and offer the following arguments in support of our request.

1. Feasibility of 2007 Standards – The September 1, 2006 Staff Report "Initial Statement of Reasons for Proposed Amendments to the Distributed Generation Certification Regulation" states that the ARB has certified one microturbine to the 2007 standard, and therefore "believes these limits are feasible" and is "not proposing any changes to the January 1, 2007 compliance date." Capstone manufactures 30, 60, and 65kW microturbines, and has certified its 60kW microturbine to the CARB 2003 emissions standard. While exhibiting low NOx and other emissions, it does not yet achieve the CARB 2007 specified CO and VOC emission levels. The only microturbine supplier which has certified to the 2007 levels did so with a 250kW machine, and did not certify its own 70kW microturbine product. The actual test results for the 250kW microturbine certification are not public, and neither Capstone nor the Board have the benefit of field experience to

confirm reliable operation nor the demonstrated ability to maintain the laboratory tested levels over time. Therefore, Capstone does not believe that feasibility to meet the 2007 levels has been demonstrated at this time.

2. Impact on California Business Competitiveness – The Staff Report states that "the proposed amendments are not expected to adversely impact California business competitiveness," because all manufacturers will be required to meet the same emissions standards. This implies that Capstone's microturbine products are comparable to other technologies. This not the case, since Capstone currently only offers a 60kW microturbine to the CARB 2003 emissions standard and no other microturbine supplier has certified equipment below 250kW to the proposed CARB 2007 levels. As far as we are aware, no District has yet adopted the CARB 2007 standards as part of the permitting requirements for reciprocating engines that are typically subject to their permit. While Capstone has been exploring options to achieve the CARB 2007 emissions levels on its 65kW microturbine, the required redesign of our microturbine is not expected to be complete until early next year, and may include cost increases which will make our lower electrical output rated product less competitive. Furthermore, the additional cost required to comply with the CARB 2007 standard is not incurred by competing reciprocating engines, which are required to be permitted by districts and do not need to meet the CARB 2007 emissions standards. Implementing this new standard before microturbine technology generally has had the chance to consistently demonstrate it is capable of meeting such emissions levels could dramatically change the competitive nature of the market.

3. Change in California Employment or Business Status – As noted above, Capstone has not yet demonstrated performance to the proposed emissions levels, and does not have a production product ready to initiate testing. Even if we did, the CARB 2007 DG certification standard is not yet finalized. This means that it is unlikely that Capstone would have a 65kW microturbine for sale by January 1, 2007, and would not be able to participate in portions of the California market where air permits are not required. The resulting loss of potential market will have a negative impact on sales of Capstone microturbines and could result in lost employment in California if we are not able to offset this lost business with growth in other states or other countries.

4. Cost Impacts to Businesses – The items listed in the September 1, 2006 Staff Report include "Application Fees," "Application Preparation Costs," and "Source Testing Costs." However, as noted above, there are significant non-recurring design and production readiness costs, as well as increased unit costs in order for Capstone to offer a commercial 65kW microturbine able to meet the proposed emissions. These additional costs will most impact Capstone – the only California company offering a DG product subject to the proposed standards. If the implementation date is extended, it provides Capstone the opportunity to incorporate the required design changes in a more cost effective way.

5. Alignment with California Self-Gen Incentive Program – While not specifically stated in the Staff Report, discussions with CARB have indicated that one argument for maintaining the effective date of January 1, 2007 is to align with the California Public Utilities Commission self-generation incentive program requirements. Capstone has also kept this perspective in mind, and agrees with the desire to align the emissions regulations and the incentive program requirements. However, the self-gen incentive requirements are only based on

NOx in 2007, and any project for which a reserve is filed in 2006 does not even need to meet these lower NOx requirements - even if it is installed in 2007. Further, Capstone's current C65 microturbine is able to meet the 2007 NOx requirements of the self-gen incentive program. Therefore, there is no need to accelerate adoption of CARB 2007 emissions requirements for CO and VOC's to be in concert with the self-gen incentive program.

6. Premature Adoption may Actually Increase NOx, CO, VOC, and Greenhouse Gas Emissions – Capstone has been fortunate to be a significant participant in the adoption of small-scale clean and efficient distributed generation in California. If the proposed amendment retains a January 1, 2007 effective date, Capstone will not be able to participate in California to the extent it has previously. The result will be that projects which could have benefited from our 65kW rated microturbines will now continue to rely on traditional electric power from the utility grid and heat from boilers or hot water heaters. The result will be lost opportunity to displace these traditional less clean and less efficient forms of energy conversion – and that means an increase in undesirable emissions including greenhouse gases.

Capstone is pleased to be able to provide our input to the CARB Board, and trust that the comments above will be seriously considered in the Board's decisions. We view California as a world leader in promoting distributed generation through its self-generation incentive program focused on energy efficiency, Rule 21 to simplify utility interconnection, CARB emissions regulations to be sure we deploy clean technologies, and now AB 32 that sets ambitious targets to reduce greenhouse gas emissions. Our only concern is taking too narrow a focus on one performance aspect of distributed generation, with the impact of not achieving a balanced result with maximum benefits for all Californians.

Sincerely,

Mark Gilbreth
President and CEO