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**Comments of Calpine Corp. on the Joint Agency Symposium on the Governor’s Greenhouse Gas Reduction Goals**

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Calpine appreciates the opportunity to comment on the July 9th Symposium on the Governor’s Greenhouse Reduction Goals.

Founded in San Jose, California, Calpine has been committed to sustainability since the company’s inception over 30 years ago. Our fleet of clean, flexible natural gas and geothermal power plants has the lowest emissions of criteria pollutants of the 10 largest U.S. electricity generators. Calpine has distinguished itself as a progressive leader among its peers in industry and has a long record of taking an active role to support state and federal initiatives to reduce air pollution and carbon emissions from power plants. For example, Calpine was recently the lone energy producer to file an amicus curiae brief in support of the U.S. EPA’s authority to regulate GHG emissions from power plants in the case Murray Energy, et al. v. EPA, et al. Additionally, Calpine’s Russell City Energy Center, located in Hayward, California, was the nation’s first power plant to receive a federal air permit that included a limit on GHG emissions.

Calpine fully endorses the GHG reduction goals articulated by the Governor and reflected in SB 32.

Calpine’s comments on the symposium focus on the important role of existing natural gas-fired generation in meeting the State’s environmental goals. As Nancy Ryan articulated in her remarks at the symposium, existing natural gas-fired generation will continue to serve a critical role in maintaining the reliability of the grid even as it operates less and produces less energy (and associated emissions). In fact, in the Pathways analysis that Nancy Ryan summarized, the capacity of gas-fired generation continues to expand over the next decade even as the State achieves deep reductions in GHG emissions.

In addition, as multiple speakers at the symposium noted, California’s fleet of existing gas-fired generation can be made significantly more operationally flexible. This operational flexibility would facilitate the integration of higher volumes of intermittent renewable energy such as wind and solar. For example, as Phil Pettingill of the CAISO noted, “It is certainly cost effective to take the facilities that we have and be able to invest in them so that they can either ramp faster or ramp off or cycle on and off.”

With respect to the use of gas-fired generation for renewable integration, Calpine also would like to comment on the analysis presented by UCS at the symposium. The study makes one fundamental point, i.e., there are limits to how much renewable energy can be integrated by turning gas plants down. At some point, additional loads, associated with load per se, storage charging, or exports from California may be necessary to absorb additional renewable energy. Nevertheless, the study finds significant benefits associated with increasing the ability of gas-fired generation to reduce its output to accommodate renewables. In addition, Calpine points out that the study does not address the important role of gas-fired generation in maintaining reliability under peak load conditions and providing upward operational flexibility as opposed to the downward flexibility that is the focus of the study. Calpine is not opposed to storage or other non-fossil renewable integration solutions, but observes that meeting the State’s environmental goals is a multi-faceted challenge that will require many different resources and strategies.

In light of the critical role of gas-fired generation in both maintaining reliability and integrating renewables, Calpine urges greater policy attention to the continued economic viability of existing gas-fired generation as well as incentives to encourage upgrades to existing gas-fired generation to make it more flexible. As indicated by Nancy Ryan at the symposium, gas-fired generation may run less prospectively. Hence, opportunities for it to recover its costs from energy markets will decline and capacity compensation will become more important. While the CPUC and CAISO have considered a series of reforms to the Resource Adequacy (RA) market, the primary market through which existing gas-fired generation is compensated for capacity, including the consideration but not the implementation of multi-year forward capacity procurement requirements and the introduction of new “flexible” RA requirements, these efforts have yet to increase the level or stability of capacity compensation for existing gas-fired generation. Prospectively, Calpine supports the CPUC’s continued consideration of multi-year forward capacity procurement requirements as well as the CAISO’s efforts to refine flexible RA requirements in a manner that clearly addresses the CAISO’s reliability requirements and provides meaningful additional compensation to the resources needed for reliability. In addition, Calpine notes that while significant enhancements in the ability of the existing fleet of gas-fired generation to integrate renewables could be achieved, to the extent that such enhancements require additional investment, they are unlikely to be undertaken without the support of multi-year contracts. Consequently, Calpine supports procurement mechanisms that would facilitate multi-year contracting for upgrades to existing gas-fired generation.

In addition to our fleet of gas-fired generation, Calpine also owns and operates the Geysers geothermal plant. Calpine agrees with the numerous speakers at the symposium who referenced the potential benefits of diverse portfolios of renewables in meeting future GHG goals. Calpine commends the recent efforts of the CPUC to ensure that all of the costs and benefits of different renewable technologies are considered in renewable procurement, including integration costs and the potential costs of renewable curtailment. We are optimistic that through reforms that are already in process that the State’s renewable procurement will yield a more diverse mix of renewable resources than recent historical procurement.