

## DOCKETED

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**Comments of Eagle Crest Energy Company submitted in response to Notice of Request for Public Comments on the Scoping Order for the Draft 2016 Integrated Energy Policy Report Update**

*Additional submitted attachment is included below.*

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Notice of Request for Public Comments on the Scoping Order for the Draft 2016 Integrated  
Energy Policy Report Update**

Eagle Crest Energy Company (“ECE”) hereby submits its Comments on the Scoping Order for the Draft 2016 Integrated Energy Policy Report (“IEPR”) Update prepared by the California Energy Commission (“CEC”).<sup>1</sup> ECE, the developer of the FERC-licensed 1300 MW Eagle Mountain Pumped Storage Project located in Eastern Riverside County, appreciates the leadership demonstrated by the CEC in advancing the State’s ambitious energy and climate policy objectives. While ECE also appreciates that the CEC’s IEPR analysis will “*possibly* includ[e] ... large scale storage technology,” ECE’s comments underscore the *necessity* of including such technology in the IEPR analysis.<sup>2</sup> As detailed below, expanding the State’s bulk storage resources – particularly its pumped storage resources – will play an essential role in allowing the State to meet its ambitious renewable energy and GHG reduction goals.

**Bulk Energy Storage in California**

California law and numerous state executive orders have established the necessity of decarbonizing the State’s electric grid. SB 350 establishes a 50% renewables portfolio standard throughout California by 2030.<sup>3</sup> Coupled with the Governor’s 2030 and 2050 GHG reduction targets (40% and 80% below 1990 levels, respectively),<sup>4</sup> these initiatives tee up a number of energy policy decisions for California decision makers in the near term. Recent studies continue to make one point virtually incontrovertible: the decarbonization of California’s grid will almost

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<sup>1</sup> Notice of Request for Public Comments on the Scoping Order for the Draft 2016 Integrated Energy Policy Report Update (“Draft Scoping Order”), February 19, 2016, *available at* [http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-01/TN210475\\_20160219T150508\\_Notice\\_of\\_Request\\_for\\_Public\\_Comments\\_on\\_the\\_Scoping\\_Order\\_for.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-01/TN210475_20160219T150508_Notice_of_Request_for_Public_Comments_on_the_Scoping_Order_for.pdf).

<sup>2</sup> Draft Scoping Order, p. 4 (emphasis added).

<sup>3</sup> Cal. Pub. Util. Code § 359 et seq.

<sup>4</sup> California Executive Orders S-3-05 (June 1, 2005) & B-30-15 (April 29, 2015).

inexorably require the development of storage on a massive scale, particularly long duration bulk storage projects.<sup>5</sup>

For decades, all around the world, pumped hydro storage projects have played a major role in supplementing and supporting both conventional and intermittent renewable energy resources. Indeed, large pumped hydro storage technology accounts for 99% of global electric storage capacity.<sup>6</sup> Energy experts have repeatedly recognized that it remains the best form of storage to integrate renewable energy at a massive scale.<sup>7</sup>

California's need for this type of technology has never been greater. A 2010 KEMA report developed on behalf of the CEC concluded that the State's utilities would need to add at least 3,000 MW of energy storage to the grid by 2020 to accommodate the increasing amounts of renewable energy in California.<sup>8</sup> California's need for energy storage has only grown since the 2010 KEMA report, as SB 350 increased the State's renewable portfolio standard to 50%.<sup>9</sup> In

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<sup>5</sup> See James H. Nelson, Laura M. Wisland. 2015. Achieving 50 Percent Renewable Electricity in California: The Role of Non-Fossil Flexibility in a Cleaner Electricity Grid ("UCS Study"), Union of Concerned Scientists, pp. 26-27; KEMA, Inc., 2010, Research Evaluation of Wind and Solar Generation, Storage Impact, and Demand Response on the California Grid. Prepared for the California Energy Commission, CEC-500-2010-010, p. 65 ("KEMA Report"); Andris Abele, Ethan Elkind, Jessica Intrator, Byron Washom, et al. (University of California, Berkeley School of Law; University of California, Los Angeles; and University of California, San Diego) 2011, 2020 Strategic Analysis of Energy Storage in California, California Energy Commission, Publication Number: CEC-500-2011-047, p. 6; Energy and Environmental Economics, January 2014, Investigating a Higher Renewables Portfolio Standard in California, p. 123.

<sup>6</sup> Electric Power Research Institute, "Bulk Energy Storage Impact and Value Analysis" at 1 (December 31, 2012). Abstract available at: <http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=00000000001024288>.

<sup>7</sup> As the Under Secretary for Science at the U. S. Department of Energy testified before the U. S. Senate, "Currently the best form of energy storage to handle really large quantities of energy is pumped hydro." Statement of Dr. Steven E. Koonin, Under Secretary for Science, U. S. Department of Energy, Before the Committee on Energy and Natural Resources, United States Senate (Dec. 10, 2009), at p. 5. Available at:

[http://energy.gov/sites/prod/files/ciprod/documents/12-10-09\\_Final\\_Testimony\\_\(Koonin\)\\_\(S4\).pdf](http://energy.gov/sites/prod/files/ciprod/documents/12-10-09_Final_Testimony_(Koonin)_(S4).pdf). See also Testimony of Jon Wellinghoff, Chairman, Federal Energy Regulatory Commission, Before the Committee on Energy and Natural Resources, United States Senate (Dec. 10, 2009) ), at 4 ("To date, the most used bulk electricity storage technology has been pumped storage hydroelectric technology"). Available at:

<http://www.ferc.gov/EventCalendar/Files/20091210101921-12-10-09-wellinghoff-testimony.pdf>; Statement by Shin-Ichi Inage, Energy Analyst, International Energy Agency, "Prospects for Large-Scale Energy Storage in Decarbonised Power Grids" (2009), at p. 47 ("More than 200 pumped hydro plants are operating worldwide. There are few technical bottlenecks and it is the most mature and reliable technology among large-scale energy storage systems.") Available at: [https://www.iea.org/publications/freepublications/publication/energy\\_storage.pdf](https://www.iea.org/publications/freepublications/publication/energy_storage.pdf).

<sup>8</sup> KEMA Report at p. 65.

<sup>9</sup> Cal. Pub. Util. Code § 359 et seq.

short, an increase in renewable energy production, particularly California's photovoltaic weighted renewable portfolio, means increasing periods of overgeneration and curtailment. One recent study by the Union of Concerned Scientists found that an *additional* 3 GW of energy storage (4325 MW total, counting the 1,325 MW of storage to be procured per the California Public Utility Commission's current mandate) would be necessary to avoid renewable curtailment.<sup>10</sup>

### **The Necessity of IEPR Leadership on Energy Storage**

Against this backdrop, the CAISO has repeatedly noted the value that new pumped storage capacity can bring to the California grid. In recent comments filed with the California Public Utilities Commission ("CPUC"), the CAISO noted that its studies "demonstrate that additional bulk energy storage with fast-ramping capabilities is essential to balance California's rapid rise toward a 50% renewable grid."<sup>11</sup> It went on to note that pumped energy storage will play a particularly critical role because pump storage "can be constructed at large scale, with characteristics that are necessary to meet the grid's over-generation and ramping needs."<sup>12</sup>

The CPUC is closely examining these issues now. In the current Storage Proceeding, it has specifically asked the question of whether it should increase the Energy Storage Procurement ("ESP") targets beyond the 1,325 MW of storage already mandated in its groundbreaking decision.<sup>13</sup> In that same proceeding, it is also calling the question of whether pumped storage,

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<sup>10</sup> UCS Study at p. 27. Note that additional preferred resources (e.g., advanced demand response, net electricity exports) will also be required to avoid curtailment according to the study.

<sup>11</sup> Comments of the California Independent System Operator Corporation on Track 2 Issues ("CAISO Track 2 Comments"), CPUC R15-03-011, February 5, 2016, p. 4, *available at* <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M158/K180/158180563.PDF>.

<sup>12</sup> CAISO Track 2 Comments at p. 4.

<sup>13</sup> CPUC Proceeding R15-03-011, Order Instituting Rulemaking to consider policy and implementation refinements to the Energy Storage Procurement Framework and Design Program (D.13-10-040, D.14-10-045) and related Action Plan of the California Energy Storage Roadmap ("Storage Proceeding"), *available at* [http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:33159546966280::NO:RP,57,RIR:P5\\_PROCEEDING\\_SELECT:R1503011](http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:33159546966280::NO:RP,57,RIR:P5_PROCEEDING_SELECT:R1503011).

which was excluded from the Commission's original decision, should now be considered an eligible resource under an increased ESP target.<sup>14</sup> These are all promising developments.

The CEC can and should play a role here, including through the IEPR process, given the critical role it plays in developing statewide energy policy recommendations. To that end, ECE urges that the CEC include in the IEPR a robust assessment of bulk energy storage – particularly bulk pumped hydro storage – with an eye on not only the near-to-mid-term renewable integration needs of the system but also the long-term need to make full use of these renewables to achieve the State's aggressive GHG reduction targets.

ECE appreciates the opportunity to comment on this Scoping Order and looks forward to further participation in the 2016 IEPR Update.

Respectfully submitted,

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<sup>14</sup> *Id.*