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Comments on the April 20, 2018 IEPR Workshop on North Coast Regional Energy Perspective

Additional submitted attachment is included below.

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May 4, 2018

Commissioner Karen Douglass
California Energy Commission
1516 Ninth Street
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Via email

Comments on the April 20, 2018 IEPR Workshop on North Coast Regional Energy Perspective

Honorable Commissioner Douglas:

My name is Mohamed M. El-Gasseir. I am the founder and principal of Rumla, Inc., a California corporation providing consulting services to the energy industry since 1991. I am also a co-founder of Atlantic Grid Development LLC, a Maryland based company focused on developing undersea transmission for offshore wind farms to serve loads NJ and elsewhere. My professional background includes integrated system planning, risk assessment and renewable generation development. My brief comments on the April 20 Workshop represent only my views and I am not delivering them on behalf of any client of Rumla.

The posted Workshop presentations portrayed two major tracks: Offshore wind (OSW) development and smart grid applications. Several other topics and issues came up, one of which is a call for enabling expansion of small hydroelectric power generation in California northwestern counties. My focus is on OSW RD&D needs, investment planning and integration with critical state policy issues. The electricity generation potential of California's OSW resources is sufficient to meet the state's future electricity needs and much more. The technical, environmental and economic challenges in developing these resources are unprecedented. The following comments broadly outline the scope of work facing the California Energy Commission as the lead agency for identifying balanced and effective short and long-term strategies and action plans for developing and nurturing a healthy OSW industry.

1. OSW RD&D Needs:

Research, development and demonstration efforts specific to the very challenging and most unique maritime environment off the California coast are a top priority. The North Sea experience is informative but California's waters are much deeper, the wave dynamics pose far greater risks and the seismic risks are serious. Experience elsewhere will be even less useful. The scope of this area of work includes among other things technical designs, dynamic stability research, prototypes testing, developing design and operation standards, pilot and scale-up projects, insurability, institutional issues, evaluation of alternative regulatory and business models, and technology transfer. This tall order requires considerable funding that has to be planned and executed in novel ways.

2. Investment Planning:

Wind generation is a capital intensive industry that heavily favors capturing of economies of scale. OSW is even more so. Wind turbine generators (WTGs) design is trending toward 12 and 20 MWs machines. R&D work is now targeting 50-MW WTGs. This means the farms have to be larger and further out in the ocean, which leads to investments into deeper waters; 1,500 feet and more. The largest farms recently approved in the relatively benign North Sea environment (compared to California's coastal waters) with merchant contract-prices as low as 5.6 cents/kWh. This background suggests the road to developing

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merchant OSW generation in California is likely to be long and arduous. The P3 business model might provide an intermediate or a long-term solution but it will have to be reevaluated and perhaps altered in some fundamental ways. This suggests an area of work that should combine the formation and evaluation of alternative investment strategies in regulatory and public arenas with informative inputs from the RD&D track.

3. Integration with Critical State Policy Issues:

Integrating critical state policies in several important areas is an essential step that needs to be undertaken if OSW generation is to be optimally developed to benefit California. If there is a current plan or program to integrate OSW efforts with the management of other issues facing the State, then the Energy Commission should seriously look into evaluating the situation in view of the acceleration of the onset of major climate change impacts. This recommendation is based on the current multiplicity of state agencies handling OSW issues, and more so on the novelty of the new and major driver of California's potentially existential problems; principally growing water shortages, severe drought episodes, and chronic endemic poverty that is very evident in the three counties of concern.

Respectfully,



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