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To: Harland_Eli@Energy
Subject: Question to the Workshop 12/1/2014 in progress now
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My name is Klaus Schiess from KSEngineers in La Jolla. As some of you may know I am very involved with Thermal Energy Storage (TES). So I am familiar with the PLS program that appears to be a failure due to the stringent requirements of the program to show that permanent load shift is achieved.

Recently I have been asked to evaluate proposals for 40 KW to 100 KW battery projects for a school district. When I asked for the cost of energy that a battery storage system has to come up with due to the round trip efficiency ranging from 85% to 90% I was told that it is not being calculated as it is a wash for cost savings as we discharge during expensive on-peak time and charge the battery during lower off-peak costs.

Then when I was shown how this magic black control box keeps the chosen demand limit level, I was surprised to see that the battery was immediately recharged the moment the load dropped below that limit. I was told that this is done to have a fully charged battery ready for the next spike in demand that needs to be limited.

Now this is in direct contradiction with permanent load shift I was earlier told about the cost for the increased energy usage by the battery system. Furthermore, and this is my question:

If the grid has a hundred or a thousand of those battery projects that limit the demand for a certain site and achieves demand savings at that site, does the grid however benefit as a whole and see a reduced demand? Each site peaks at different times to satisfy its own limit, but then immediately after that load drops to below that level the battery is charged again which is a detrimental draw on the grid load. I can see perhaps an overall permanent reduction of about 10% on the grid load but definitely not 100% of all the demands claimed to be shifted and for which the State subsidizes 60% of the project costs. Therefore, if the grid sees only a much reduced actual permanent shift in load, take 10% as an example, then the battery projects should only be subsidized by 6% .

In my view the battery projects appear to be given a vastly preferential treatment in subsidies that the Thermal Energy Storage gets under the PLS program.

Thank you.

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