

Docket Optical System - Comments on Energy topics for Workshop

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Subject: Comments on Energy topics for Workshop

California Energy Commission
Docket Office, MS-4
Re: Docket No 08-IEP-1B
1516 Ninth Street
Sacramento, CA 95814-5512

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Workshop Comments on Docket for 2008 IEP Report Workshop on Renewables

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I have been reviewing the workshop reports and comments and find that the greatest problem in the use of a significant amount of energy from solar and wind which is energy storage has not had very much attention. The average capacity factor for solar and wind in California is 20%. This means they are peaking power sources that require other throttleable sources to provide energy when they are not working every day. Those throttleable sources must be fossil fueled. To get 20 percent of our energy from wind and solar we have to install enough to get 100 percent of our energy from them. When they are all working we have to turn off all other sources. The only solution to using more than about 5 percent wind and solar is to store the excess energy when they are operating and use it when they are not. This then allows us to get 20% from wind and solar and 80% from the other sources. If we want 33 percent from renewables we must get 13% from geothermal and hydro which must have over 90% capacity factors.

By 2050 when a large percent of our transportation is by electrical energy, if we have 20% of our energy from wind and solar and we must rely on pumped storage we will need 12 pumped storage facilities the size of Hoover Dam. Where will we put them in California? This means the California energy Commission should be pushing development of economical, safe and reliable energy storage systems. If we do not have enough storage it will be physically impossible to come anywhere near our goal for wind and solar energy

Edwin D. Sayre
Engineer with over 60 years experience in energy systems