

**RESOLUTION NO. 2017 - 65**

**RESOLUTION TO NOT ADOPT ENERGY STORAGE PROCUREMENT  
TARGETS AT THIS TIME**

WHEREAS, existing law requires the governing board of a publicly owned electric utility to determine appropriate targets for the utility to procure viable and cost effective energy storage systems by December 31, 2016, and December 31, 2020; and

WHEREAS, pursuant to existing law the Board of Directors issued Resolution 2014-87 to not adopt energy storage procurement targets at that time; and

WHEREAS, existing law the requires the governing board of a publicly owned electric utility to reevaluate its energy storage procurement targets at least once every three years; and

WHEREAS, staff has recently completed a study of commercially available energy storage systems; and

WHEREAS, certain factors that are expected in the near term could affect the cost or the benefits of energy storage systems; and

WHEREAS, based on such study and factors staff recommends that no energy storage procurement targets be adopted at this time.

NOW, THEREFORE BE IT HEREBY RESOLVED by the Board of Directors of the Turlock Irrigation District that no energy storage procurement targets will be adopted at this time.

Moved by Director Macedo, seconded by Director Fernandes, that the foregoing resolution be adopted.

Upon roll call the following vote was had:

Ayes: Directors Fernandes, Santos, Frantz, Macedo, Alamo

Noes: Directors None

Absent: Directors None

The President declared the resolution adopted.

I, Tami Wallenburg, Executive Secretary to the Board of Directors of the TURLOCK IRRIGATION DISTRICT, do hereby CERTIFY that the foregoing is a full, true and correct copy of a resolution duly adopted at a regular meeting of said Board of Directors held the 26<sup>th</sup> day of September, 2017.



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Executive Secretary to the Board of  
Directors of the Turlock Irrigation District



## POWER SUPPLY ADMINISTRATION

### MEMORANDUM

**TO:** Board of Directors                      **DATE:** September 20, 2017  
**PREPARED BY:** Willie Manuel                      **RE:** Energy Storage Procurement Targets

#### Action Requested

Consider adopting a resolution not to adopt energy storage procurement targets at this time.

#### Discussion

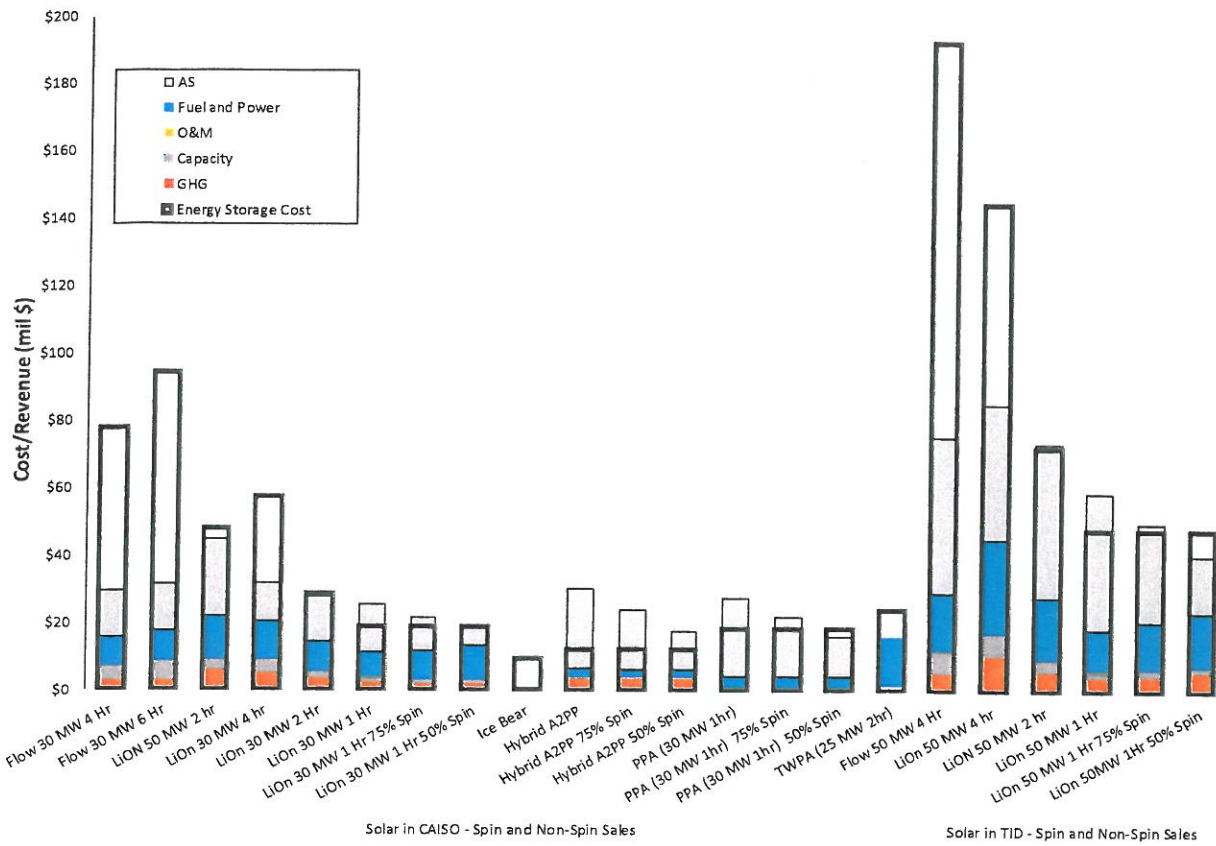
Chapter 7.7 of the CA Public Utilities Code (“PU Code”) requires that the governing board of POU’s adopt targets to procure viable and cost-effective energy storage systems (“Targets”) if determined to be appropriate. The PU Code defines energy storage as commercially available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy.

In compliance with California (“CA”) law, the TID Board of Directors (“Board”) did the following:

1. Issued Resolution 2012-10 that directed staff to review available energy storage systems and recommend to the Board, if appropriate, energy storage procurement targets to be achieved by December 31, 2016, and December 31, 2021.
2. Issued Resolution 2014-87 not to adopt energy storage procurement targets at that time.

CA law also requires that publicly owned utilities (“POU”) such as TID evaluate its energy storage procurement targets (“Targets”) at least every three years.

Since the issuance of Resolution 2014-87 to not adopt energy storage procurement targets, staff has continued to review information related to energy storage technologies, applications, and projects. To support staff’s recommendation herein, staff recently completed an updated evaluation of commercially available energy storage technologies. The study was based on publicly available information, information from TID service providers, and information provided by energy storage vendors/developers. In total, staff evaluated 22 technology/configuration/application combinations. The results of the study are summarized in the chart below. Each bar represents 1 of the 22 energy storage technology/configuration/application combinations. The cost of the energy storage resource is represented by the black outline of each bar. The color shading of each bar represents the benefits/cost savings realized by adding the energy storage resource to TID’s electric resource portfolio.



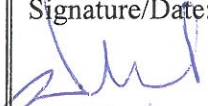
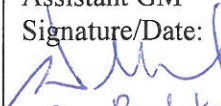

The chart above shows that a few applications under certain assumptions, such as a 30 MW 1 hour duration Lithium Ion battery or the Hybrid A2PP case, result in benefits greater than the cost of the energy storage resource. However, in determining whether to adopt Targets the following factors have to be considered:

1. Energy storage prices are expected to decline ~40% over the next several years. Hence procuring at a later date could save TID millions. For example, on a 30 MW 4 hr Li-Ion battery the cost savings would be about \$23 million.
2. The Western Electricity Coordinating Council recently began a field test waiving the requirement to have 50% of the Contingency Reserves be Spinning Reserve. This could reduce the Ancillary Service (“AS”) benefits of an energy storage resource. Note that as shown in the chart above a significant portion of the benefits come from AS.
3. Over the next few years, several large utilities are expected to join the Energy Imbalance Market which could result in lower volatility and negative pricing in the power markets that could reduce the energy price arbitrage benefits (reflected as blue shading in the chart above) of an energy storage resource.
4. Changes to CA environmental regulations are expected in the near term which could affect the optimal energy storage resource location/size/configuration.
5. Although one of the uses of energy storage resources is to resolve system reliability/stability issues and transmission/distribution upgrade deferrals, TID’s system currently has no system reliability/stability issues.

Given the study results and the other factors described above, staff recommends that the Board make a determination that it is not appropriate to adopt energy storage procurement targets at this time. Even though staff is recommending no targets be set at this time, staff plans to continually evaluate energy storage systems periodically since staff believes that energy storage systems will be an integral part of a utility's portfolio in the future. In the near term, staff plans to refine its analysis on a few of the cases studied. Furthermore, adopting staff's recommendation does not prevent TID from procuring energy storage any time in the future.

**Recommendation**

It is recommended that the Board determine that it is not appropriate to adopt energy storage procurement targets at this time.

Presenter Signature/Date:  9/15/17	Dept. Manager Signature/Date:	Assistant GM Signature/Date:  for Brad Koehn 9/15/17	General Manager Signature/Date:  9-21-17
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