

Kaye Lucas  
32 Trout Farm Road  
Lake Hume Village NSW 3691

9 September 2020

The Manager  
Planning and Assessment  
Department of Planning, Industry and Environment  
Locked Bag 5022  
PARRAMATTA NSW 2124

Dear Sir or Madam

**Lake Hume Battery Energy Storage System**  
**Application No: SSD-10460**

I am writing to your office in relation to the application for the installation of a Battery Energy Storage System at Lake Hume.

Whilst I am supportive of renewal energy I have concerns with the design and location of the proposed development and I make this submission in objection to the application.

**1. My executive summary**

I am in my 60's and I am retired. I live at 32 Trout Farm Rd, Lake Hume Village with my husband Stuart who is also retired. We moved here in 2003 and have since raised our two boys here.

We purchased the property for a country lifestyle and enjoy the scenery, flora, fauna and general ambience of our rural lifestyle block. Our life on this block involves a deep understanding of the environment, we plant a lot of trees, both here and in the community. We leave some fallen trees on the ground for insect habitat. We monitor gliders, keep records of birds, and are Woolshed Thurgoona Landcare members. We have a strong attachment to this area.

We are the **closest neighbours** to the Northern site proposed for the development.

Our home is referenced numerous times in the EIS as we are 200m North of the proposed Northern site across Trout Farm Rd. We are also referred to as RR01. Our mailbox is very close, about 50m.

If the proposed battery goes ahead at the Northern site, it will have significant impacts on our well-being and enjoyment of our property known as "Lanark" which is situated at 32 Trout Farm Rd, Lake Hume Village.

Perusal of Meridian website, states “The proposed battery will **co-locate alongside** the existing Hume hydro power station (HPS), at the Hume Dam .....”. Both sites being considered in the scoping report are within the parcel of land owned by NSW Water, but neither are alongside the power station. They are approximately 400m from the power station. The battery site should be **alongside** the power station.

## 2. **Safety, Noise, Visual, Property Value**

According to the information available for me to review I note that two sites were considered in the scoping report. I confirm that the Northern site is immediately adjacent to Trout Farm Rd and is in close proximity to our farm.

As indicated above, my husband and I are supportive of renewable energy and apart from the proposed location for the development we otherwise have no objection to the proposal.

If the battery is moved closer to the power station (as in the Southern site) there is a natural earth embankment that will provide us with much greater safety and peace of mind. The battery will be less visible and will have less impact on our property value. Noise will still be an issue during construction, but the existing earth embankment and the extra distance will reduce the noise impact to our property.

## 3. **EIS and accompanying Scoping report, Appendices and SEAR.**

I have read the information set out in the EIS and accompanying scoping report, appendices and SEAR and have a number of concerns regarding the information set out therein. I will detail these concerns below.

### New technology

There have been problems overseas with gas leaks, fires and explosions with large banks of Lithium ion batteries. Meridian have told me that the manufacturers of the batteries have fixed all the problems and that they are now safe. Despite these assurances I still have concerns with the location of the batteries at the Northern site as it is in close proximity to my property. My preference would be that the batteries be located in a position that is as far away from houses as possible.

### Unmanned

The battery will run without human input once operational. I have been told that there will be yearly services done to the batteries. I am also told that there are internal mechanisms to detect heat, gas and fire. For these mechanisms to function the battery needs an internet connection and phone. Most of these grid scale batteries are in remote locations away from homes.

When I expressed concern about proximity to homes Meridian told me about the Ballarat BESS. It is located immediately adjacent to the terminal power station. Given the location

of this system staff of the power station would notice if anything unusual was happening at the battery. The Northern site of Lake Hume BESS is out of sight from the Hume Hydro Power Station and likely to be forgotten by power workers. Moving the battery to the Southern site would make the battery more visible to power workers, therefore any change in the BESS will be noticed and so less likely to be catastrophic.

Why are these batteries unmanned? Reading Tesla report on SA's big battery indicated they are unmanned because they are dangerous to power workers.

### Lithium ion characteristics

Lithium is a highly reactive metal. Smaller batteries are used in many portable consumer electronic devices, cordless tools, electric cars, home batteries for solar power and lots more. Even smaller batteries can heat up. Lithium ion batteries sometimes cause a phenomenon called Thermal Runaway. The greater the number of smaller batteries the higher the likelihood of Thermal Runaway. See below for full description of thermal runaway

There will be 16 pods of Lithium Ion batteries in the Lake Hume BESS. Each pod is in a container, like a shipping container, and contains many smaller batteries. I found an estimate of 12,000 smaller batteries in grid scale battery connected to a wind farm (10MW). Each of these 24,000 batteries (at Lake Hume BESS) is capable of a Thermal Runaway event. The greater the number of batteries, the greater the risk of an adverse event.

I have requested further information from Meridian regarding the number of batteries that will be installed and their size and the cells that make up each battery. Despite making this request of Meridian I have not been provided with further details regarding my questions.

### Thermal Runaway

Thermal runaway occurs in situations where an increase in temperature changes the conditions in a way that causes a further increase in temperature, often leading to a destructive result. It is a kind of uncontrolled positive feedback. Heat in one cell of the battery causes heat in the adjacent cells. Once began Thermal Runaway is difficult to contain, the initial faulty cell and surrounding cells must be cooled.

### Fires from BESS

The issue of fires and Li-ion batteries was part of the ABC documentary "The great acceleration Series 1 Ep 3 Energy Revolutions" broadcast Tues 1<sup>st</sup> Sept 2020.

If the batteries in the proposed Lake Hume BESS get hot and begin thermal runaway, the batteries will be shut down immediately. Shutting down the battery will not necessarily stop accumulation of heat, and possible fire. The only way to stop Thermal Runaway is to cool adjacent batteries. This would be difficult to achieve by using sensors and software.

Then there is the issue of specialised training needed for a fire in a Lithium ion battery.

### BESS in fires

One night several years ago there was a bushfire near to the proposed Northern site. The fire had been started by two people who had been camping nearby and had been drinking. A lit match caught alight dry grass and large flames quickly spread. The fire brigade were called to bring things under control. Approximately 15 fire trucks attended. We were grateful for the fire truck that stayed at our front gate all night watching for spot fires from embers.

There is a camping reserve below the BESS, bringing increased potential for another fire from a careless camper. Fire brigade staff tell me there have been many incidences of hot coals being left at campsites on total fire ban days. Some of these campsites are close to the location proposed for the BESS.

### Gas Leaks

Gas leaks are not emitted from normal operations of BESS. My concern is not normal operations, the type of gas depends on the liquid component of the battery. This information was not included EIS. Described as being like plastics fire [see page 72 EIS]

### Protocols

The neighbours need to be included in any safety protocols or planning. The battery is all run automatically, fire detectors, monitoring and safety mechanisms will be in place. The battery is located within close proximity to houses and businesses. All the persons who reside or visit must be notified in the event of an incident involving the battery.

## **4. Impact on my enjoyment and wellbeing**

The proposed development will have a number of impacts on my enjoyment and wellbeing of my home and surrounding property. I will detail these impacts in further detail below.

### Noises

My husband and I love the sounds of the country; we spend a lot of time outdoors. Our favourite sounds are birds, cows, sheep, frogs, insects, squirrel gliders. We also hear sounds of the water coming out of the dam at certain times. This appeals to the greener side of our nature.

Meridien admit that during construction we are going to be significantly impacted by noise and have offered to mitigate this noise with earthworks and trees. If the design of the battery changes to that which is proposed there may even be noise once the battery is operational.

We spend a lot of time out of doors. We anticipate we will be able to hear the noise from our house. Additionally, the noise will be greater when we are outside and particular at our front gate and letter box and stock yards as they are situated closer to the proposed battery site.

### Visual

If any part of the battery is visible from our front entrance or “snow view paddock”, our property value will decrease significantly. It is difficult to quantify the impact on the value of our property if the proposed proceeds in the current location.

Our home is unique in that it is a large house, 15km from Albury, 18 kms from Wodonga and on town water. We are within walking distance to Lake Hume Village and have a rural setting on 10 acres of land. There are no similar properties to our property that we are aware of.

The unique aspect of our landscape means we have wonderful views over the Murray River and riparian zone, and mountains. We are concerned that the installation of the battery will detract from our wonderful views.

#### Second dwelling or Proposed future adjacent land use

We are at an interesting place in our lives, the next couple of years will see some changes. Our children are growing up and it is possible that one or both of them will return to living here at our property when they settle down and have children.

Given the size of our property we have enough land for the whole family and have always planned to erect a second dwelling at our property.

The second dwelling is proposed to be erected about halfway between our existing house and Trout Farm Rd. We have already made preliminary approaches to Albury City Council in this regard. This proposed future house will be more impacted than our existing house if the battery was to be installed where proposed. There is mention of proposed future use in EIS. We confirm that our second house is part of our proposed future use.

#### **5. Northern vs Southern, locations for BESS**

My husband and I had a telephone conference with Meridian and questioned them regarding a number of items. One of the main questions we asked Meridian was why the Northern site was selected over the Southern site. The response we were provided state that it was generally a more suitable site however no further details were provided.

Set out below is a table I have prepared which addresses a number of matters I consider relevant factors to be considered when determining whether the Northern or Southern site is most appropriate for the development. In the last column I have made a comment as to whether one site would be more preferable over the other side based on the information I have been provided and have available to me.

<b>Criteria</b>	<b>Southern Site (our preference)</b>	<b>Northern site (Meridian preference)</b>	<b>Comments</b>	<b>Northern or Southern</b>
<b>Subterranean infrastructure</b>	Underground infrastructure mentioned but no information on presence or	Drilling would be required to install the battery as there is granite rock between 0.7m to	Would the drilling of rock at the Northern site be more onerous then relocating	TBC

	constraint. No evidence in EIS/Scoping Report	1.7m in depth.	infrastructure?	
<b>Transmission easements</b>	The maps attached at figure 3 on page 3 of the scoping report shows the batteries would avoid the transmission easement.	The maps attached at figure 3 on page 3 of the scoping report shows the batteries would avoid the transmission easement.	Neither site is below transmission easements.	Either
<b>Ground disturbance, evidence of human activity</b>	Extensive ground disturbance	Less ground disturbance	Cited as difference in EIS, no bearing on decision	Either
<b>Archaeology</b>	No archaeology found	Low/moderate archaeology	The EIS details the archaeology impacts	Southern
<b>Aboriginal Heritage</b>	No aboriginal heritage objects found.	Potential Archaeology deposit identified. See PAD 001.	Any archaeology item found would mean immediate stop work	Southern
<b>Distance from power station, water NSW building &amp; gate</b>	Better proximity to power station and closer to main gate	Further from power station and further from main gate	Safety implications with being further from power station	Southern
<b>Visibility</b>	Less visible from public spaces and for residents	More visible from public spaces and for residents	Southern site is in a natural valley. Northern site is on top of a ridgeline.	Southern
<b>Noise</b>	Noise to freehold landowners reduced by natural landscape (valley)	Noisier to freehold landowners	Whilst there may be some noise to those residents in the Village at the Southern site this is likely to be minimal compared to the neighbours of the Northern site	Southern
<b>Safety</b>	Better safety profile in event of “not normal” operation. Closer and more obvious to workers	Unmanned battery, out of sight, probably out of mind, for power workers	Historic fire at power station circa 2012, village and resort were evacuated, residence at 32 Trout Farm Rd, were not	Southern
<b>Adjacent land</b>	Power station &	Rural lifestyle	Not considered in	Southern

usage	Water NSW	block	EIS	
<b>Land value issues</b>	Smaller impact	Major impact	Any hint of a battery from our front gate, or second dwelling site will decrease the value of our asset.	Southern

The first 5 rows in the above table are items mentioned in the EIS as reasons for choosing the Northern site. The following rows (following the line break) are things I considered but the EIS did not. Having reviewed the material supplied in support of the development I am unsure how Meridian came to the decision to select the Northern site over the Southern site.

#### **6. Teleconference with Meridian – 27 August 2020**

In an email sent from Justine of Jacobs (on behalf of Meridian) on the afternoon of the teleconference, it was stated Meridian would consider any alternate site we would be happier with. Enclosed is a copy of the email from Justine.

My husband has studied the NSW land area and found 2 other sites that would make a better site for the BESS. An email was sent to Justine on 2 September 2020 setting out the alternate sites. A response was received from Justine on 4 September 2020 advising that no other sites would be considered. Enclosed are copies of this email correspondence.

The details of the alternate sites are set out in my husband's submission.

#### **7. State Significant Development**

The state needs grid scale batteries, no doubt. We need to reduce reliance on coal, and power is essential.

What of the rights of the adjacent landholders? Consultation with Meridian has included several phone calls and emails to Justine, at Jacobs Engineering. Additionally my husband and I have had a teleconference with two gentlemen by the names of Angus and Alex of Meridian to discuss the proposed development.

There was supposed to be in information evening before the EIS was released, there was not.

Following the teleconference with Meridian I had the following major concerns:-

- We did not get a satisfactory explanation as to why the Northern site was chosen over the Southern site.
- Meridian indicated there would be construction changes at the Northern site that were not specified in the EIS. The EIS indicated there would be deep excavation and levelling of the Northern site. The teleconference indicated that poles would be drilled into the granite rock and pods sat on top of the poles. This means the containers would sit much higher in the landscape and be more visible and noisier.
- Safety concerns were discussed, more exact details were sought.

- BESS batteries are multiples of smaller batteries. The higher the number of smaller batteries the higher the chance of failure in one of the smaller batteries. And the potential for Thermal Runaway.
- Scalable. One of the advantages of Lithium ion batteries is they are easily scalable, as needs for power storage increase, it is simple to add more pods. Meridian say there are no plans to expand beyond the 20MW/40MWh at present. Mostly because there is no more carrying capacity in the grid. None the less it needs to be considered a possibility. Will there be more community consultation and another EIS? Is this battery just the thin end of the wedge?

## 8. Conclusion

In conclusion I have 3 main issues with the proposed development:-

- Safety if Northern site is chosen. The Southern site or my husband's alternate sites gives us protection in case of mishap because of the topography of the land
- Change in enjoyment at our home. Noises, changed visual outlook, reduced property value
- Glider population needs to be protected. Squirrel gliders are a magical part of living here, the community has put in a lot of effort to house, feed and spread out the remnant population. And had great success.

If your department elects to approve the development where proposed then we would request that Meridian level the ground as per the plans in the EIS so that the battery is 50 cm below the level of the existing road.

I would also request that if the development is to proceed in the Northern site that we be protected from potential accidents by having earth bank walls installed and trees suitable to blend in with the natural landscape. Even if these measures are undertaken I am still concerned that the value of our property will be effected by the development.

If the Southern site is selected then our property value will only be affected during construction.

My husband and I live a decidedly "green" lifestyle. As indicated above we would like to see a battery to be installed at Lake Hume however for the reasons set out above request that consideration be given to the Southern site or the alternative sites proposed by my husband in his submission.



## 9. Political Donations

As required by your guidelines I confirm that I have not made any political donations in the last two years.

Please note this submission is made on behalf of myself and my sons John William Lucas and Andrew Lance Lucas.

If you have any questions or require any further information please do not hesitate to contact me on 0407 430 126 or via email on [kayeland@hotmail.com](mailto:kayeland@hotmail.com)

Yours faithfully,

Kaye Lucas

## Addenda.

Justines email sent post teleconference sent 27/8/2020

Hi Kaye, Stuart and Travis

Thank you for your time today on the phone to discuss the Hume Hydro and Battery project. We appreciate all your questions and feedback.

The actions from the meeting are as follows:

- Meridian to provide more information on the foundation design of the battery site, including excavating, piling, type of drilling rig and depth of drilling.
- Meridian to provide more information on the battery cells including how many cells are in a pod, the size of the cells and height of the battery.

Screening of the site was discussed and as mentioned Meridian are open to ideas to ensure impacts of the site are reduced for the local community. Meridian will look into possible options. We ask that you also provide to Meridian any options and locations you would like Meridian to consider.

If anything has been missed please let me know so we can get the information you are after.

Thanking you again for your time.

Kind regards

Justine

**Justine McLaren**  
**Community Relations**  
Hume Hydro and Battery Power Project

Free call: 1800 718 459

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Visit: [www.meridianenergy.com.au](http://www.meridianenergy.com.au)

Justines email answering questions raised in teleconference. Sent 4/9/2020,

Hi Travis

Thanks for your email.

I can provide the following additional information as we discussed at our meeting last Thursday 27 August.

In regards to the foundation design of the battery site, I can confirm that drilling will not be required. Unfortunately the information we discussed at our meeting was incorrect and we apologise for any confusion. We can confirm that excavation and removal of rock will be required. We expect these activities to take approximately three weeks to complete. Noise mitigation measures will be put in place to ensure the impacts of noise during this work is minimised.

As described in the EIS, the current design states there are 80 battery blocks which are 2.5 metres high and a footprint of 2.6 by 2.2 metres each arranged in rows.

We thank you for the feedback on the site location. As described in the EIS, the proposed location is the preferred option for a range of reasons. As discussed at our meeting and in our follow up email, Meridian are open to options and ideas to ensure impacts of the site are reduced for the local community, including screening. We ask that you provide options to Meridian for consideration by return email or as part of your submission.

If we can assist further please let me know.

Kind regards

Justine

**Justine McLaren**

**Community Relations**

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