



Ref: 20191001MC:JC

1 October 2019

The Hon. Mark Buttigieg, MLC
Parliament House
Macquarie Street
Sydney NSW 2000

Email: Mark.Buttigieg@parliament.nsw.gov.au

Dear Mr Buttigieg

Thank you for providing further details in respect to the 'September 2017 report' referred to during the 2019-20 Budget Estimates Committee hearing held on Friday 13 September 2019.

In addition to the emailed request from your office of 23 September 2019, I note a question in respect to the September 2017 report was taken on notice during the Budget Estimates Committee. The below is an expanded version of the response Essential Energy provided to the Department of Planning, Industry and Environment in respect to the question taken on notice regarding this matter.

Early in 2017, Essential Energy was approached by the Managing Director of WaveCorp, Mr Frank Steele. WaveCorp's services incorporated the use of ultrasound technology along with thermal imagery, photographs and location coordinates to identify potential network issues. Following initial discussions between Essential Energy and Mr Steele, Essential Energy agreed to undertake a pilot study utilising the technology to assess the potential for application in our inspection programmes.

The trial results reported 116 indications of partial discharge. Partial discharge is a low intensity discharge of electrical energy, and at low levels are a normal part of the operation of an electricity network. They are not considered faults, but indicators for future maintenance work.

The readings provided in the pilot study report did not meet Essential Energy's inspection and maintenance thresholds for action, which have been derived from several sources, Australian and worldwide industry best practice, and the UK based EA Technologies (manufacturer of the majority of our partial discharge test equipment).

The trial highlighted that the instrument tested offered no additional benefits to our existing methods which range from site specific partial discharge inspections, dedicated pole site inspections through to aircraft LiDAR ("Light Detection and Ranging") and drone hi-resolution pole top photography. No outstanding actions relate to those 116 indications and none of the assets identified have failed. Essential Energy determined the costs to implement the WaveCorp technology with respect to the potential risk, did not warrant investment and would be prohibitive.

In 2018, Mr Steele shared the results of the pilot study with the then Minister for Energy and Utilities and expressed his safety concerns.

On 1 June 2018, Essential Energy was requested to investigate and respond to the Division of Energy, Water and Portfolio Strategy within the then Department of Planning & Environment. A response was provided on 5 July 2018.

In the response provided, Essential Energy advised following an assessment of the pilot study results, a determination was made that Essential Energy's in-house technology was more appropriate for use within zone substations. However, Essential Energy confirmed it would continue to assess and compare the benefits of WaveCorp's technology against existing methods used to detect faults on the broader distribution network.

Essential Energy also confirmed the development of local and international emerging partial discharge testing technologies would continue to be monitored, and if deemed mature and fit for purpose, Essential Energy would go to market via a formal tender process so all suppliers of that technology could participate.

In respect to the pilot study undertaken by WaveCorp, the following is noted:

- It is normal to test the claims of new technologies and something Essential Energy routinely does to ensure we are operating with the most appropriate practices; and
- WaveCorp were engaged to undertake the 10-day pilot study in accordance with Essential Energy's procurement processes at a cost in the vicinity of \$11,000.

Please do not hesitate to contact me should you require any further information in respect to this, or any other Essential Energy matter.

Yours sincerely

John Cleland
Chief Executive Officer