

From: [REDACTED]
To: [Cleve Hill Solar Park](#)
Subject: Cleve Hill Solar Park Development my ref 20018862 response to CHSP air quality Lithium-ion battery report
Date: 20 September 2019 23:09:39
Attachments: [REDACTED]

Dear Madam or Sir,

Please find attached my response to CHSP air quality Lithium-ion battery report.

With regards,

Bruno Erasin

Cleve Hill Case Team
1/18 Eagle Wing
The Planning Inspectorate
Temple Quay House
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Bristol
BS1 6PN

20th September 2019

Ref: 20018862

Cleve Hill Solar Park Development – Response to CHSP Air Quality Impact Assessment Lithium-ion battery fire – August 2019

Dear Madam or Sir,

I have now had the opportunity to review the report 'Air Quality Impact Assessment Li-ion Battery Fire' dated August 2019 prepared by CHSP.

I concur with the report, that some of my assumptions were based on limited information available at the time of writing/preparing. I used a 10,000kWh battery storage system as a starting point for the assessment. As we have now learned during the issue specific hearing on the environment, the battery storage manufacturer, Leclance SA, proposes to install 120 units with a 6,000kWh battery storage capacity each. I would like to point out that these two values are in the same order of magnitude. Information provided in the CHSP report on air quality also details that the total weight of the battery in each battery storage unit is about 24,750kg. Based on the proposed battery storage of 120 units to store 700kWh of energy, a total weight of about 2,970,000kg (2.9 million kg) of lithium battery may be installed at the CHSP development.

For modelling of the potential release of hydrogen fluoride I have previously referred to technical research presented by Larsson et al. 2018. Extrapolation of potential hydrogen fluoride release, based on the Larsson et al. 2018 study, of the battery storage unit proposed by Leclance for the CHSP development, with an energy storage capacity of 6,000kWh, it can be estimated that these units may release of 1,200kg of hydrogen fluoride during a catastrophic fire event.

I acknowledge comments made by CHSP, that extrapolation of potential release of hydrogen fluoride referring to the Larsson et al. 2018 study, has limitation and may lead to an overestimation.

I also acknowledge comments made by CHSP, that it is important to know the type of lithium chloride batteries to be used, as different types of lithium ion batteries may have different compositions/releases during fire events.

However, at the time of preparing my original objection report no information of the type, size and dimension of the proposed battery storage units was made available by CHSP.

CHSP has provided information in their report on the emissions from a lithium-ion battery which was supplied by Leclance SA. The release of hydrogen fluoride was detailed to be significantly lower compared with the data presented by Larsson et al. 2018.

In order to prepare a response to the CHSP report on air quality in relation to lithium-ion battery fire, I would require the technical report, experimental set up and instruments used for analysis of hydrogen fluoride.

At the same time I would like to receive additional information in relation to the release/emissions of lithium, nickel and cobalt from this type of batteries during an event of fire, as it appears that the lithium-nickel manganese cobalt oxide battery is now the preferred choice of battery storage units by CHSP.

Once I have the technical report, I will respond to the CHSP – air quality -Lithium-ion report in full.

This response was prepared by Bruno Erasin, BSc, PhD.

References

Fredrik Larsson, Petra Andersson, Per Blomqvist and Bengt-Erik Mellander, Toxic Fluoride Gas Emissions from Lithium-Ion Battery Fires, 2017, Scientific Reports, 7:10018, DOI:10.1038/s41598-017-0984-z