

LG Energy Solution Michigan, Inc.
Partial Response to September 21, 2021 Information Request (PE 20-016)

This response to the Agency's September 21, 2021 Information Request regarding Preliminary Evaluation ("PE") 20-016 is submitted on behalf of LG Energy Solution Michigan, Inc. a U.S. subsidiary of LG Energy Solution, Ltd. (collectively referred to herein "LGES"). This response was prepared pursuant to a diligent search for the requested information. The scope of LGES's search for responsive information focused on the locations where responsive information is most likely to be maintained and on review of LGES files in which responsive information ordinarily would be expected to be found and to which LGES ordinarily would refer. LGES notes that although electronic information was included within the scope of its search, it has not attempted to retrieve from computer storage electronic files that were overwritten or deleted.

Based on the broad nature of the Agency's request, the Office of Defects Investigations (ODI) agreed in a November 16, 2021 email to limit the scope of its request as follows:

- The time period covered by the information request will be January 1, 2016 to the present. (This limitation is relevant to Request Nos. 1, 10 and 11.)
- With respect to Request No. 6 (related to transporting and storing components), LGES's response will relate to products intended for the U.S. market.
- With respect to Request Nos. 8, 9, and 12, LGES will provide, in a combined response, a narrative description that includes the following:
 - LGES's current process for assessing a potential thermal event;
 - How LGES applied this general process to assess vehicles covered by General Motor's Chevrolet Bolt EV recalls and Hyundai's Kona EV recalls related to thermal events in EV batteries (including with reference to the specific information categories in Request 8 a.-f., Request 9 a.-g. and Request 12 a.-f. as pertaining to these vehicles);¹ and
 - Any modification or changes made by, or on behalf of, LGES in the design, material composition, manufacture, quality control, supply, or installation that are relevant to the GM Bolt and Hyundai Kona recalls.
- With respect to Request Nos. 10 and 11, LGES will provide a consolidated response that identifies fire incidents of which LGES is aware, that involve pouch-cell and cylindrical batteries in EVs, including the information categories in Request 10 a.-e. and Request 11 a.-e. NHTSA has agreed to extend the due date for LGES's response to Request Nos. 10 and 11 (as so modified) to December 17, 2021.

With respect to Request No. 1, LGES provides the requested information for batteries supplied by LGES for the propulsion of Electric Vehicles ("EVs"), as well as for plug-in hybrid electric vehicles ("PHEVs") and hybrid electric vehicles ("HEVs"). With respect to Request Nos. 2 through 9 and 12, LGES provides information with respect to EVs, not PHEVs or HEVs.

¹ The relevant NHTSA recall numbers are 20V-701, 21V-560, 21V-650, 20V-630, and 21V-127.

Request Nos. 2 through 9 and 12 do not distinguish between batteries with different cell types and, therefore, LGES's responses to these requests address EV pouch-cell batteries. Information for cylindrical-cell batteries can be provided to NHTSA upon request.

LGES has directed inquiries reasonably calculated to assure that its responses are complete and correct, subject to anticipated supplement on December 17, 2021. Responses to the Agency's requests are set forth below. LGES is providing responsive information only insofar as such information is not subject to the attorney-client privilege or attorney work product.

As requested, after each numeric designation, we have set forth verbatim the Agency's request for information as originally stated (although these have been modified as described above), followed by LGES's response. Unless otherwise stated, LGES has undertaken to provide responsive information dated up to and including November 18, 2021.

Request No. 1.

Identify all automobile manufacturing companies (OEM) and battery suppliers to whom LGES provided the subject components. Separately, for each OEM (i.e. customer) and supplier, provide the following additional information in tabular form:

- a. Customer name (i.e. General Motors);*
- b. Customer contact information including the name(s) and title(s) of person(s) familiar with the subject components, address, phone number(s), email address(es) and other pertinent information;*
- c. Customer part number;*
- d. LGES part number;*
- e. LGES manufacturing location (including assembly line if pertinent);*
- f. Address the parts were shipped to;*
- g. Any information LGES possesses regarding the final stage user/OEM of the part number;*
- h. Any information LGES possesses regarding the market (US or foreign) the part was intended for; and*
- i. Total number of parts provided (for the manufacturing location in item e) by year of manufacture.*

Response to Request No. 1

In accordance with 49 CFR Part 512, information in response to Request No. 1 is contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. No. 1.xlsx."

LGES notes that the information provided in this response reflects its best estimates based on reasonable searches of production and shipping records. Where LGES could not locate the requested information (for example the part number used by its customer or the intended market for the product), LGES left the corresponding cell blank. With respect to the vehicle and market information, LGES's response reflects its current understanding. LGES did not confirm this information with its customers. For the production numbers, LGES used a dash to designate years

with no production parts. Additionally, for the customer name, LGES used the familiar name for the vehicle manufacturer (e.g., GM in place of General Motors).

Because Request No. 1 does not distinguish between batteries with different cell types, LGES notes that the response provides the requested information with respect to pouch-cell batteries. The Nov. 16th email from ODI indicates that this response should also include the requested information with respect to cylindrical-cell batteries; LGES will provide this information when available, no later than December 17, 2021.

Request No. 2.

Describe in detail all quality control or assurance policies, processes, procedures, and other governing provisions that are currently in use at LGES for components purchased from suppliers that are used to produce the subject components. The response should include, but not be limited to, any policies, processes, procedures that address the issue of manufacturing defect mitigation.

Response to Request No. 2.

In accordance with 49 CFR Part 512, information in response to Request No. 2 is contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. No. 2.pdf."

Request No. 3.

Describe in detail all quality control or assurance policies, processes, procedures, and other governing provisions that are currently in use at LGES for end product subject components. The response should include, but not be limited to, any policies, processes, procedures that address the issue of manufacturing defect mitigation.

Response to Request No. 3.

In accordance with 49 CFR Part 512, information in response to Request No. 3 is contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. No. 3 and 4.pdf."

Request No. 4.

Describe in detail the quality control (quality monitoring) processes LGES utilizes to ensure the subject components produced meet all internal (LGES imposed), external (customer or other imposed) and regulatory quality and safety requirements. The response should include, but not be limited to, any processes, that address the issue of manufacturing defect mitigation.

Response to Request No. 4.

In accordance with 49 CFR Part 512, information in response to Request No. 4 is contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. No. 3 and 4.pdf."

Request No. 5.

Describe in detail the manufacturing processes LGES utilizes to manufacture the subject components including a description of the operations performed at each manufacturing station. Provide an illustration of the overall layout of the assembly line depicting each station. Describe or otherwise provide detailed information for any processes or specialized equipment LGES utilizes to prevent the alleged defect from occurring in the subject components.

Response to Request No. 5.

In accordance with 49 CFR Part 512, information in response to Request No. 5 is contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. No. 5.pdf."

Request No. 6.

Describe in detail the storage and transport procedure for components used in the manufacture of the subject components and the vehicle the subject component(s) is used in. Include the following information in the description:

- a. Component;*
- b. Containers used for storage;*
- c. Storage environment (i.e. climate controlled)*
- d. Transport method and container used; and*
- e. Any other pertinent information.*

Provide this information in tabular form.

Response to Request No. 6.

In accordance with 49 CFR Part 512, information in response to Request No. 6 is contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. No. 6.pdf."

Request No. 7.

Describe in detail the testing process and tests used for Production Validation and Design Validation used by LGES for the subject components.

Response to Request No. 7.

In accordance with 49 CFR Part 512, information in response to Request No. 7 is contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. No. 7.pdf."

Request No. 8.

Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject components that have been conducted, are being conducted, are planned, or are being planned by, or for, LGES. For each such action, provide the following information:

- a. Action title or identifier;*
- b. The actual or planned start date;*
- c. The actual or expected end date;*
- d. Brief summary of the subject and objective of the action;*
- e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and*
- f. A brief summary of the findings and/or conclusions resulting from the action.*

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

Response to Request No. 8.

In accordance with 49 CFR Part 512, information in response to Request Nos. 8, 9, and 12, as modified by agreement with ODI, are combined and are contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. Nos. 8, 9, and 12.pdf."

Request No. 9.

Describe all modifications or changes made by, or on behalf of, LGES in the design, material composition, manufacture, quality control, supply, or installation of the subject components, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:

- a. The date or approximate date on which the modification or change was incorporated into vehicle production;*
- b. A detailed description of the modification or change;*
- c. The reason(s) for the modification or change;*
- d. The part number(s) (service and engineering) of the original component;*
- e. The part number(s) (service and engineering) of the modified component;*
- f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;*
- g. When the modified component was made available as a service component; and*
- h. Whether the modified component can be interchanged with earlier production components.*

Also, provide the above information for any modification or change that LGES is aware of which may be incorporated into battery production within the next 120 days.

Response to Request No. 9.

In accordance with 49 CFR Part 512, information in response to Request Nos. 8, 9, and 12, as modified by agreement with ODI, are combined and are contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. Nos. 8, 9, and 12.pdf."

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Request No. 12.

Furnish LGES's assessment of the alleged defect in the subject components, including:

- a. The causal or contributory factor(s);*
- b. The failure mechanism(s);*
- c. The failure mode(s);*
- d. The risk to motor vehicle safety that it poses; and*
- e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring, or subject component was malfunctioning; and*
- f. The reports included with this inquiry.*

Response to Request No. 12.

In accordance with 49 CFR Part 512, information in response to Request Nos. 8, 9, and 12, as modified by agreement with ODI, are combined and are contained in LGES's request for confidential treatment in the file named "Conf Bus Info – Response to PE20016 IR Req. Nos. 8, 9, and 12.pdf."

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Sincerely,

LG Energy Solution Michigan, Inc.