

## **Exhibit 9**

### **Andrew Larson Pre-Filed Direct Testimony**

**BEFORE THE STATE OF NORTH DAKOTA  
PUBLIC SERVICE COMMISSION**

**HARMONY STORAGE, LLC  
HARMONY STORAGE PROJECT – CASS COUNTY  
SITING APPLICATION**

**CASE NO. PU-26-284**

**PRE-FILED TESTIMONY OF ANDREW LARSON  
ON BEHALF OF HARMONY STORAGE, LLC**

**October 14, 2026**

**I. INTRODUCTION AND QUALIFICATIONS**

**Q. Please state your name, employer, and business address.**

A. My name is Andrew Larson. I am employed by Geronimo Power, LLC ("Geronimo Power"). My business address is 8400 Normandale Lake Boulevard, Suite 1200, Bloomington, Minnesota 55437.

**Q. What is your position with Geronimo Power?**

A. I am a Principal Energy Storage Engineer for Geronimo Power.

**Q. Briefly describe your work history and education.**

A. I have a Bachelor of Science degree in electrical engineering technology and a Master of Science degree in Technology from Purdue University. I have over ten years of experience as an engineer and extensive experience with energy storage. A copy of my curriculum vitae is attached as proposed Exhibit 9-A.

**Q. What is your role with respect to the Harmony Storage Project ("Project")?**

A. I am the lead designer for energy storage, meaning I oversee all technical aspects of all energy storage systems, such as the Project.

**Q. What proposed hearing exhibits are you sponsoring in your testimony?**

A. I am sponsoring the following proposed hearing exhibits:

- Exhibit 1: Certificate of Site Compatibility Application
- Exhibit 3: Project Receptor Chart
- Exhibit 9: Pre-filed Testimony of Andrew Larson
- Exhibit 9-A: Andrew Larson Curriculum Vitae

**Q. What is the purpose of your Direct Testimony?**

A. The purpose of my testimony is to provide an overview of the Project's components and design. I will also discuss the results of the sound modeling analysis conducted

for the Project. I will also provide an overview of Project construction, operation, and decommissioning.

## **II. OVERVIEW OF PROJECT DESIGN, ENGINEERING, AND COMPONENTS**

### **Q. Please provide a general description of the Project's storage capacity and facilities.**

A. The Project will be a 200 megawatt ("MW") battery energy storage system ("BESS") with a four-hour duration (800 MW-hours ("MWh")) to store excess energy. The Project's facilities would include:

- energy storage (battery) modules;
- inverters and transformers;
- electrical collection and communication lines;
- gravel access roads;
- stormwater management facilities;
- On-site Maintenance Infrastructure ("OMI") areas;
- laydown area;
- Supervisory Control and Data Acquisition ("SCADA") System;
- security fencing; and
- associated temporary facilities.

### **Q. Where and how will the Project interconnect to the electric grid?**

A. The Project will interconnect to the electric grid at Northern States Power's existing Bison Substation via Harmony Solar ND, LLC's Harmony Solar Project collection substation (Case No. PU-18-219) and transmission line. The Harmony Solar Project is currently under construction and the collection substation is anticipated to be operational by the end of October 2028.

59 **Q. Please explain how the Project will connect to the Harmony Solar Project's**  
60 **collection substation.**

61 A. The Project's 34.5-kilovolt ("kV") underground electrical collection system will extend  
62 from the Project's medium voltage transformers to the Harmony Solar Project's  
63 collection substation, which is connected to the Bison Substation by a short  
64 transmission line. This connection will allow the Project to receive and store electric  
65 energy from either the Harmony Solar Project or from the grid. Additionally, the  
66 connection allows the Project to transmit stored electric energy to the grid when it is  
67 needed.

68  
69 The Harmony Solar Project's collection substation will undergo minor modifications to  
70 accommodate the Project's connection that will enable the bidirectional flow of energy  
71 to and from the Project from both the electric grid and the Harmony Solar Project's  
72 substation. Utilizing the Harmony Solar Project's interconnection facilities with minor  
73 modifications minimizes the Project's overall footprint while providing additional grid  
74 value through energy storage from the solar facility and the electric grid.

75  
76 **Q. Please provide an overview of how the Project will store and dispatch energy.**

77 A. The Project will receive and store electrical power generated from two sources:

78 (1) Excess energy available on the existing electric grid. When the grid has  
79 excess energy (e.g., during periods of low demand), the Project batteries will be  
80 charged from the electric grid and stored by the Project for later dispatch onto the  
81 grid.

82 (2) Surplus generation from the Harmony Solar Project (PU-18-219).  
83 When the Harmony Solar Project has surplus generation (i.e., energy in excess of  
84 what the Harmony Solar Project can inject onto the grid per its Generation  
85 Interconnection Agreement), this surplus energy will be pulled from the Harmony  
86 Solar Project's collection substation and stored by the Project for later dispatch  
87 onto the grid.

When the grid requires additional energy, the Project will receive a “dispatch signal” prompting it to dispatch the stored energy back to the grid during periods of higher demand.

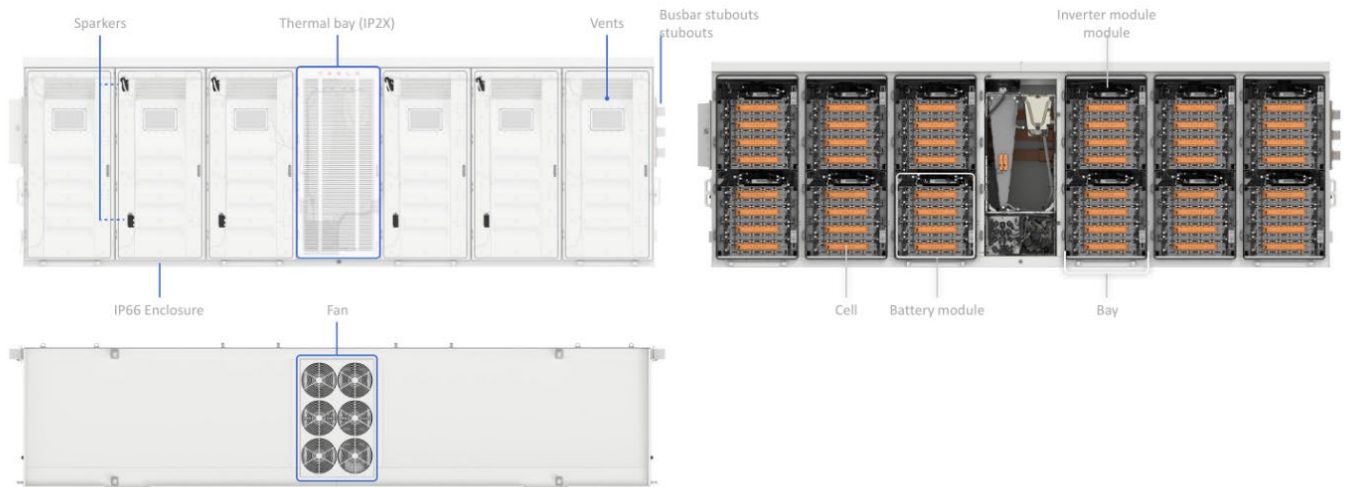
**Q. What are the primary components of a BESS?**

A. The primary components of a BESS include the battery modules, Battery Management System (“BMS”) that continuously monitors and regulates critical parameters, and Power Conversion System (“PCS”) (also referred to as the inverters) that converts the direct current (“DC”) stored within the BESS to alternating current (“AC”) suitable for grid integration. These components are housed in energy storage system cabinets. Each battery module has an associated BMS and PCS, and there are multiple battery modules within each cabinet. The battery modules are connected to a common busbar, which in turn connects to a medium voltage transformer located outside of and adjacent to the cabinet. These components are shown on Image 1 and Image 2 below.

103 *Image 1<sup>1</sup>*

## Megapack 3 Components

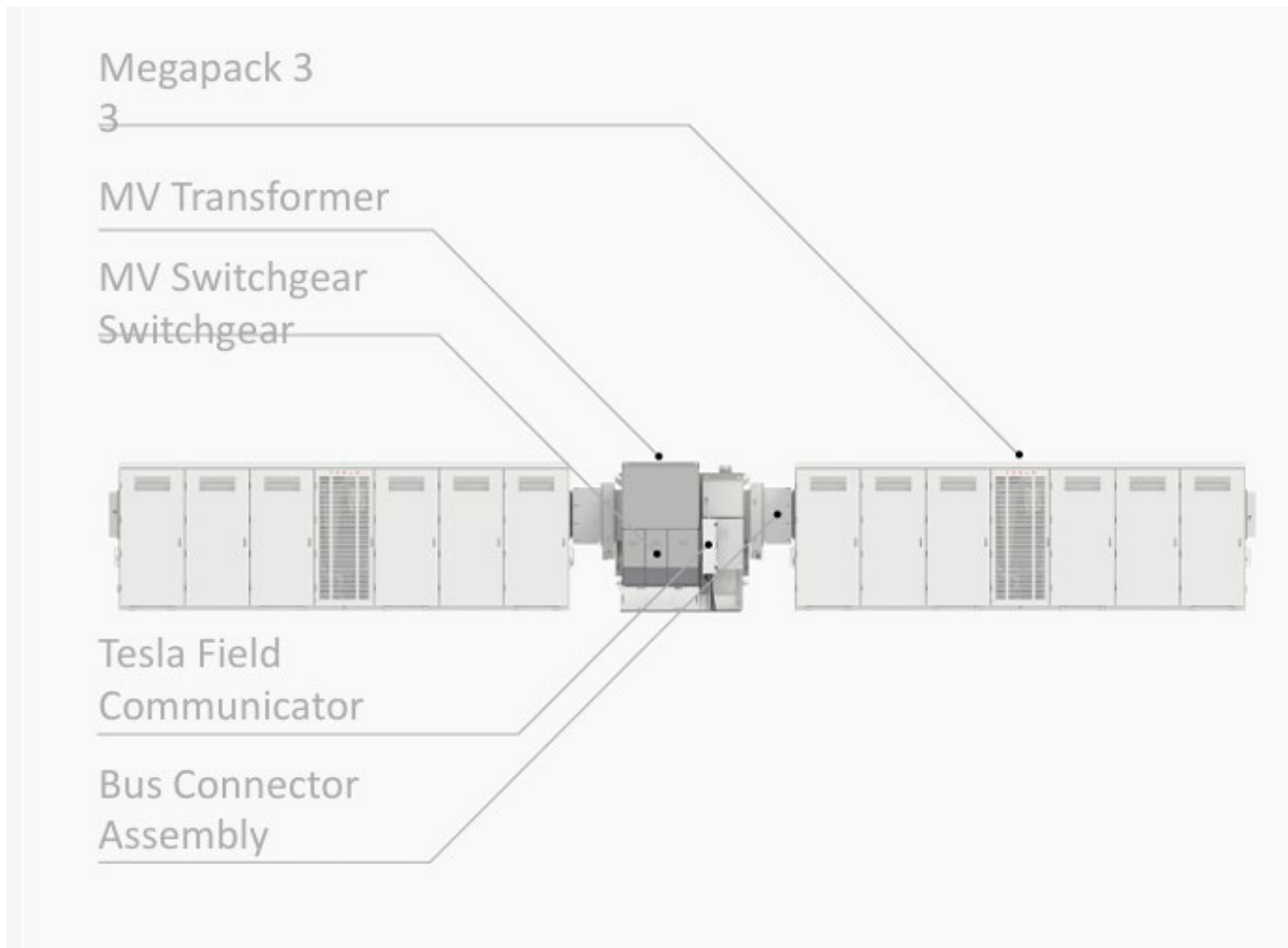
Unpacking the key building blocks



104

<sup>1</sup> Source: Tesla.

105 *Image 2<sup>2</sup>*



106

107

108 **Q. Please describe the Project's energy storage system cabinets.**

109 A. The Project will include multiple self-contained energy storage system cabinets that  
 110 house the battery modules, the battery management system, and the PCS (inverters).  
 111 The energy storage system cabinets will be installed on concrete foundations or piles.  
 112 The cabinets are clustered in groups of four, with two on either side of a transformer  
 113 that then connects to the collection system. The cabinets and transformers are shown  
 114 on Image 3 below.

115

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<sup>2</sup> Source: Tesla.

116 *Image 3<sup>3</sup>*



117

118

119 **Q. Please describe the Project's battery modules.**

120 A. Within the energy storage system cabinets, individual lithium-ion, or similar  
121 technology, battery cells are connected to form battery modules. The battery modules  
122 are located on self-supporting racks and electrically connected in parallel. In turn, the  
123 self-supporting racks are connected in parallel to provide the total BESS power rating.

124

125 **Q. Has Harmony Storage, LLC ("Harmony Storage") finalized the battery type that**  
126 **will be used for the Project?**

127 A. Yes. Harmony Storage plans to use the Tesla Megapack 3.

128

129 **Q. Please describe the Project's Battery Management System.**

130 A. Each battery module within a storage system cabinet is equipped with a BMS that  
131 continuously monitors and regulates critical parameters, such as voltage,  
132 temperature, and state of charge, to maintain operational integrity and safety. The  
133 BMS ensures that the electrical components effectively respond to dispatch  
134 instructions and provide a secondary safety system designed to safely shut down the  
135 system in the event of an emergency.

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<sup>3</sup> Source: Tesla.

136

137 **Q. Please describe the Project's Power Conversion System.**

138 A. Each battery module within a storage system cabinet is also equipped with a PCS  
 139 (also referred to as an inverter) to convert the DC stored within the battery modules to  
 140 AC suitable for grid integration. The PCS consists of an inverter, protection  
 141 equipment, DC and AC circuit breakers, filter equipment, equipment terminals, and a  
 142 connection cabling system.

143

144 The PCS is bidirectional and can convert electric energy from AC to DC when energy  
 145 is transferred from the grid (or the Harmony Solar Project) to the battery modules and  
 146 from DC to AC when energy is transferred from the battery modules to the grid.

147

148 **Q. Please describe the Project's On-Site Maintenance Infrastructure areas.**

149 A. The OMI areas are dedicated areas designed to support the construction, operation,  
 150 and maintenance of the Project. The OMI areas may host two storage containers,  
 151 designated service staging zones with canopies, and a gravel pad area that, during  
 152 construction, may host a temporary office trailer. The storage containers provide  
 153 secure storage for tools, spare parts, and maintenance equipment, while the covered  
 154 staging zones support maintenance activities, equipment handling, and temporary  
 155 storage during maintenance events.

156

157 **Q. Please describe the Project's stormwater management facilities.**

158 A. Harmony Storage will manage stormwater through the installation of stormwater  
 159 management facilities (e.g., retention basins) designed to control runoff and reduce  
 160 erosion during periods of heavy rainfall. The preliminary location of the detention  
 161 basin is on the eastern edge of the fenced area. The stormwater facilities will be  
 162 located within the fenced perimeter.

163

164 **Q. Please describe the permanent fencing that will be installed for the Project.**

165 A. Permanent security fencing will be installed around the Project's aboveground  
 166 permanent facilities. The security fencing will consist of an approximately seven-foot-

167 tall chain-link fence topped with a one-foot section of three-strand barbed wire, and  
168 two locked gates. The fencing will be installed in accordance with industry standards  
169 and will comply with the National Electrical Code.

170  
171 **Q. In addition to utilizing the Harmony Solar Project's collection substation, will**  
172 **Harmony Storage also utilize that project's operations and maintenance facility**  
173 **instead of constructing its own?**

174 A. Yes.

175  
176 **Q. What is battery augmentation in the context of a BESS?**

177 A. BESS projects are initially sized to meet a certain full nameplate capacity from the  
178 start of operations. However, as batteries naturally degrade over time, their capacity  
179 and efficiency decrease, necessitating augmentation (adding batteries) to offset the  
180 gradual capacity degradation in the original batteries and maintain a BESS's energy  
181 capacity. This process involves adding new battery modules to maintain the system's  
182 energy capacity.

183  
184 **Q. Is battery augmentation planned for the Project?**

185 A. Based on current design, the Project is anticipated to have minimal augmentation. If  
186 needed, augmentation may occur after year seven of operations, depending on the  
187 actual degradation as measured by periodic capacity tests and findings from routine  
188 inspections.

189  
190 **Q. Has Harmony Storage accounted for potential battery augmentation in the**  
191 **layout and analysis presented in the Application?**

192 A. Yes. The Project's design and layout presented in the Application, including the  
193 footprint and impact calculations, accounts for potential augmentation. Additionally,  
194 as discussed below, the sound modeling conducted for the Project also accounted for  
195 potential future augmentation.

**Q. Will the Project's nameplate capacity change as a result of the potential battery augmentation?**

A. No. The nameplate capacity will remain the same and will not be increased by augmentation.

### **III. SOUND**

**Q. What components of the Project emit sound?**

A. The main source of sound from the Project during operation will come from the cooling fans on the BESS units (energy storage system cabinets) and medium voltage transformers.

**Q. Does Harmony Township have a sound requirement for energy storage systems?**

A. Yes. Harmony Township's zoning ordinance provides that sound levels from a BESS may not exceed 45 A-weighted decibel ("dBA") within 100 feet of an inhabited residence or a community building, unless waived in writing by the owner of the inhabited residence or community building.

**Q. Was a sound modeling analysis conducted for the Project to determine compliance with Harmony Township's sound requirement?**

A. Yes. The sound modeling report is included as Appendix D to the Application (proposed Exhibit 1).

**Q. Did the sound modeling analysis account for potential future battery augmentation?**

A. Yes. Two scenarios were modeled to account for potential future battery augmentation: (1) the first year of operation; and (2) the last year of augmentation.

**Q. What receptors were used for the sound modeling analysis?**

A. The sound modeling report provided modeled sound levels at the three closest inhabited residences to the Project. There are also two other inhabited residences within one mile of the Project Area (see Project Figure, proposed Exhibit 2); although not included in the report, sound modeling was conducted for those two residences and the modeled sound levels are provided in the Project Receptor Chart (proposed Exhibit 3). There are no community buildings within one mile of the Project Area.

**Q. Based on the sound modeling analyses, what are the expected sound levels from Project equipment?**

A. The results of the modeling demonstrate that sound from the Project is expected to comply with Harmony Township's sound requirement. Sound levels are expected to be 40 dBA within 100 feet of the closest receptor (Residence R01) under both scenarios modeled.

**IV. PROJECT CONSTRUCTION**

**Q. Discuss the personnel that will be involved in the construction of the Project.**

A. The Project is expected to create up to 150 temporary construction jobs, both skilled and unskilled, to support Project construction.

**Q. Please provide an overview of the sequence of Project construction.**

A. A variety of activities must be completed to carry the Project through construction. Prior to commencement of construction, Harmony Storage will prepare detailed engineering design plans of the BESS, electrical collection system, and access roads. During the construction phase, Harmony Storage will start by preparing the site and constructing laydown areas. Harmony Storage will then construct access roads and install the collection system, BESS, and other electrical components. Following completion of construction, Harmony Storage will restore disturbed areas not hosting permanent aboveground facilities, test Project facilities, and begin commercial operation.

**Q. Will Harmony Storage participate in the North Dakota One-Call program, both prior to construction and as a facility owner once the Project is constructed?**

A. Yes.

## **V. PROJECT OPERATION AND MAINTENANCE**

**Q. Discuss the personnel that will be involved in the operation and maintenance of the Project.**

A. The Project is expected to create up to two to three full-time jobs during operations. These employees are expected to reside locally.

**Q. Will there be routine, scheduled inspections of the Project to ensure it is operating appropriately?**

A. Yes. Following construction, the Project will undergo detailed inspection and testing procedures before becoming operational. Once operational, the Project will undergo routine inspections consistent with industry standards. For more information on these routine inspections, see Section 5.1 of the Application (proposed Exhibit 1).

**Q. How will the Project be monitored between inspections?**

A. The Project will be monitored remotely and by operations staff via a SCADA system. The SCADA system allows 24/7 monitoring of the Project and provides data on key battery metrics, including state of charge, battery health, current, voltage, temperature, and alarm indicators for abnormal conditions. Permanent operations staff will perform maintenance and service of the Project with the aid of this system.

**Q. Will the Project be designed, constructed, and operated in compliance with all applicable federal, state, and local regulations?**

A. Yes.

**Q. Will Harmony Storage develop an emergency response plan for the Project?**

A. Yes.

**Q. Will Harmony Storage coordinate with local first responders on development of the emergency response plan?**

A. Yes.

## **VI. DECOMMISSIONING**

**Q. What is the estimated life of the Project?**

A. The expected life of the Project is 30 years, but it may be extended through equipment upgrades.

**Q. Please discuss Harmony Storage's plans for decommissioning and restoration of the Project site.**

A. There are no existing local or state rules or regulations governing decommissioning of energy storage systems; however, Harmony Storage will submit a decommissioning plan and decommissioning financial assurance to the North Dakota Public Service Commission ("PSC") in accordance with the PSC's existing rules governing solar energy conversion facility decommissioning and financial assurance requirements under North Dakota Administrative Code ("NDAC") Chapter 69-09-10.

When the Project is decommissioned, Harmony Storage will restore the site in accordance with landowner agreements and applicable regulations and commitments.

## **VII. CONCLUSION**

**Q. Does this conclude your Testimony?**

A. Yes