

March 11, 2015

## DEFECT INFORMATION REPORT

1. Vehicle Manufacturer Name:

Toyota Motor Manufacturing Canada Inc. ["TMMC"]  
1717 Dundas Street, Woodstock, Ontario, Canada N4S 0A4

Affiliated U.S. Sales Company

Toyota Motor Sales, USA, Inc. ["TMS"]  
19001 South Western Avenue, Torrance, CA 90501

Manufacturer of the Electric Vehicle Traction Motor Assembly

Tesla Motors  
3500 Deer Creek Road, Palo Alto, CA 94304  
Telephone: 1 (650) 681-5000

Country of Origin: U.S.A.

2. Identification of Involved Vehicles:

Based on production records, we have determined the involved vehicle population as in the table below.

Make/ Car Line	Model Year	Manufac- turer	VIN		Production Period
			VDS	VIS	
Toyota/ RAV4 EV	2012- 2014	TMMC	YL4DV	CW001001 - EW003538	July 24, 2012 through August 29, 2014

Note: (1) No other Toyota and Lexus vehicles use the same Electric Vehicle Traction Motor Assembly as the subject vehicles.

3. Total Number of Vehicles Potentially Involved:

2,497

4. Percentage of Vehicles Estimated to Actually Contain the Defect:

Unknown

5. Description of Problem:

The Electric Vehicle Traction Motor Assembly in the subject vehicles is part of the propulsion system, which contains a drive inverter (DI), DI electronic control unit (ECU), electric motor, motor speed sensor, shift control actuator, and transaxle assembly. The motor speed sensor detects the electric motor speed and rotational position, and sends this information as a signal to the DI ECU. Due to a software issue, the DI ECU may not be able to determine the rotational position of the motor, which causes a speed sensor error code. This will trigger a “Check EV System” warning message on the instrument panel, turn on a malfunction indicator lamp (MIL), and cause the electric motor to shift to “neutral”, resulting in a complete loss of drive power. A complete loss of drive power may increase the risk of a crash.

6. Chronology of Principal Events:

January - May 2014

Toyota received a dealer report indicating the subject vehicle lost power. Toyota investigated the vehicle. The traction motor assembly was collected and sent to the supplier for analysis. The supplier examined the returned traction motor assembly and found no signs of physical damage. The supplier reviewed the production process and confirmed that there were no changes which could possibly lead to damage of the traction motor assembly. Toyota presumed that this was an isolated case and decided to monitor the field information.

June - October 2014

Toyota received two additional reports in June and September 2014 indicating the loss of drive power. The traction motor assemblies were collected for analysis by the supplier. The investigation of the returned traction motor assemblies found no signs of physical damage and the supplier was not able to identify the cause of the loss of drive power.

November 2014 - February 2015

Additional reports were received, and the supplier continued to investigate the cause of the loss of drive power. During further investigation, the supplier determined that hardware variance is larger than firmware (software) tolerance. This can cause the drive inverter to be unable to determine the rotational position of the motor. If this occurs, a "Check EV System" warning message on the instrument panel will be triggered, a malfunction indicator lamp (MIL) will come on, and the electric motor will shift to "neutral", resulting in a complete loss of drive power.

March 6, 2015

Based on the above investigation, Toyota decided to conduct a voluntary safety recall campaign on the subject vehicles.

As of March 5, 2015, Toyota is not aware of any accidents or injuries caused by this condition. Three Toyota field reports and eight warranty claims have been received that relate or may relate to this condition. Multiple counts of the same incident are counted separately.

7. Description of Corrective Repair Action:

All known owners of the subject vehicles will be notified by first class mail to return their vehicles to a Toyota dealer to have the electric vehicle traction motor assembly repaired.

Reimbursement Plan for pre-notification remedies

The owner letter will instruct vehicle owners who have paid to have this condition remedied prior to this campaign to seek reimbursement pursuant to Toyota's General Reimbursement Plan.

8. Recall Schedule:

Notifications to owners will begin late April 2015. A copy of the draft owner notification letter(s) will be submitted as soon as it is available.

9. Distributor/Dealer Notification Schedule:

Notifications to distributors/dealers will be sent on March 11, 2015. Copies of dealer communications will be submitted as they are issued.