

# **GE Aviation**

## **Annual Report to the Director**

### **2012 Calendar Year**

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**June 26, 2013**

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**1. Executive Summary**

GE Aviation Canada, an operating unit of General Electric Canada, purchases electrical and electronic equipment from its parent company, the General Electric Company (acting through its GE Aviation division), and subsequently imports such electrical and electronic equipment for use in Canadian military helicopter and naval vessels. Although GE Aviation Canada imports products into British Columbia ("BC") to support the Canadian military, it does not operate or own a manufacturing facility in BC. The products are manufactured and shipped to Canada by the GE Aviation division of the General Electric Company.

GE Aviation Canada has established a product stewardship plan (the "stewardship plan") for Phase 5 of the electronic and electrical product category under British Columbia's ("BC") Recycling Regulation (the "Phase 5 Category").

<p><b>Products within plan</b></p>	<p>Per Schedule 3, Section 2.3 of the BC Recycling Regulation (effective July 1, 2012), the electronic and electrical product category was expanded to include the following products:</p> <p>(f) electronic or electrical information technology or telecommunication devices, equipment or media;</p> <p>(h) electronic or electrical monitoring and control instruments, including, without limitation, alarm systems, heating regulators and appliances for measuring, weighing or adjusting, but not including thermostats or smoke detectors;</p> <p>(j) accessories for use with any products referred to in this Schedule, including cables, adapters, connection cords and chargers;</p> <p>(k) batteries for use in an electronic or electrical product referred to in this section, including primary and rechargeable batteries.</p> <p>Electrical and electronics equipment installed on aircraft and military ships are likely, or may be, included in the Phase 5 Category. These products could include:</p> <ul style="list-style-type: none"> <li>• Pressure, temperature, vibration and tank level sensors</li> <li>• Pressure transducers</li> <li>• Thermocouples</li> <li>• Electronic engine control units</li> <li>• Fuel metering units</li> <li>• Exciter and electrical harnesses</li> <li>• Ignition exciters</li> <li>• Solenoid valves</li> <li>• Signal conditioners</li> <li>• Flame and ice detectors</li> <li>• Power lever actuator motors</li> </ul>
<p><b>Program website</b></p>	<p><a href="http://www.ge.com/ca/en/">www.ge.com/ca/en/</a>  <a href="http://www.geaviation.com/">www.geaviation.com/</a></p>

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Recycling Regulation Reference	Topic	Summary (5-bullet maximum)
Part 2, section 8(2)(a)	<a href="#">Public Education Materials and Strategies</a>	<ul style="list-style-type: none"> <li>• GE Aviation does not sell product to the public.</li> <li>• Consultation was held with customers to which covered products are provided.</li> </ul>
Part 2, section 8(2)(b)	<a href="#">Collection System and Facilities</a>	<ul style="list-style-type: none"> <li>• Vector Aerospace Helicopter Services of Richmond, BC for our T700 products lines.</li> <li>• DND for the LM2500 production line.</li> </ul>
Part 2, section 8(2)(c)	<a href="#">Product Environmental Impact Reduction, Reusability and Recyclability</a>	<p>Government customers require products to be managed and/or destroyed according to strict Canadian government-mandated procedures.</p> <p>GE Aviation had 2012 <i>ecomagination</i> goals to reduce the generation of hazardous waste by 15% and non-hazardous waste by 10%. All GE Aviation sites participate in this program.</p>
Part 2, section 8(2)(d)	<a href="#">Pollution Prevention Hierarchy and Product / Component Management</a>	GE manages products in adherence to the order of preference in the pollution prevention hierarchy when possible. However, government customers require products to be managed and/or destroyed according to strict Canadian government-mandated procedures.
Part 2, section 8(2)(e)	<a href="#">Product Sold and Collected and Recovery Rate</a>	The recovery rate for LM2500 was 100%. The recovery rate for Vector was 100%.
Part 2, section 8(2)(e.1)		<b>See Section 7 for details</b>
Part 2, section 8(2)(f)	<a href="#">Summary of Deposits, Refunds, Revenues and Expenses</a>	This section is not applicable to GE Aviation. Our business does not charge deposits.

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<b>Comparison of Key Performance Targets</b>		
Part 2 section 8(2)(g); See full list of targets in <a href="#">Plan Performance</a>		
<b>Priority Stewardship Plan Targets</b> (as agreed with ministry file lead)	<b>Performance</b>	<b>Strategies for Improvement</b>
GE's objective is to achieve a recovery rate of 75% of the actual products that are available for disposal, based on an average over a five year period.	100%	Not applicable – target met

## 2. Program Outline

GE Aviation sales occur through intermediaries to the Canadian government, as well as directly to the Department of National Defence (DND). To develop the stewardship plan, GE Aviation consulted with Vector Aerospace Helicopter Services, which assembles and services helicopter engines for the Canadian military in British Columbia. Vector has agreed to utilize established collection points to facilitate the proper disposition of covered waste electrical and electronic equipment that was originally provided by GE Aviation. Affected parts that are supplied to DND directly are already collected by GE Aviation for recycling and further processing, so current processes will continue as part of this stewardship plan.

There are two product lines/programs covered by the plan. These are the T700 program and the LM2500 program. The T700 program includes military helicopter engines and spare parts necessary to maintain the engines. The LM2500 program includes the LM2500 Gas Turbine Engine, as well as the enclosure, lubrication oil storage and conditioning assembly, and tooling/spares for maintenance and support of the shipboard engine installations.

## 3. Public Education Materials and Strategies

GE Aviation recognizes that stakeholder involvement starts at the design of the consultation plan. It is important to note that, for the products under the stewardship plan, GE Aviation does not sell, offer for sale or distribute the products to retail consumers. Sales occur through intermediaries to the Canadian government, as well as directly to the DND. As such, public consultations, notices, comment periods and/or webinars are not warranted. However, communications with parties directly responsible for collecting covered products in accordance with GE Aviation's Product Stewardship Plan on behalf of the Canadian government (GE Aviation's customer) were initiated in 2012.

In accordance with regulatory requirements, a draft version of the stewardship plan was posted to the following GE Canada website for 45 days in January/February 2013.

[http://www.ge.com/ca/en/products\\_services/index.html](http://www.ge.com/ca/en/products_services/index.html)

## 4. Collection System and Facilities

Vector has agreed to utilize established collection points at their site to facilitate the proper disposition of covered waste electrical and electronic equipment that was originally provided by GE Aviation.

In the case of the LM2500 program, GE Aviation, under contract to the Canadian Government, is the issuing authority for all spare parts issued to ships using the LM2500. Waste parts that were supplied to DND by GE Aviation Canada are collected by a GE Technician. Once reclaimed, the parts are sent to a GE Aviation Canada facility in Halifax for repair - unusable controlled goods are destroyed and sent off-site for recycling.

## 5. Product Environmental Impact Reduction, Reusability and Recyclability

GE Aviation repairs covered products for reuse if feasible. If products are not repaired, GE Aviation recycles waste product components to the greatest extent possible.

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*Identify ways in which producers or the agency contributes to the reduction of environmental impact. For example, utilization of certified processors, R&D performed to improve recyclability / reuse of the product or components, examples of design for environment mechanisms used by producer members of the agency, reduction of greenhouse gas emissions. The producer may also wish to report on the status of any studies being undertaken to assist with the measurement of environmental impacts. Identifying successes is encouraged.*

**Reference:** *Recycling Regulation – Part 2, section 8(2)*

*(c) efforts taken by or on behalf of the producer to reduce environmental impacts throughout the product life cycle and to increase reusability or recyclability at the end of the life cycle;*

### 6. Pollution Prevention Hierarchy and Product / Component Management

GE Aviation had 2012 goals to reduce the generation of hazardous waste by 15% and non-hazardous waste by 10%. As such, GE managed the products in adherence to the order of preference in the pollution prevention hierarchy.

The pollution prevention hierarchy is, in descending order of preference:

- Reduce the environmental impact of producing the product by eliminating toxic components and increasing energy efficiency and resource efficiency without compromising safety and reliability.
- Redesign the product to improve reusability or recyclability without compromising safety and reliability.
- Eliminate or reduce the generation of unused portions of a product that is consumable.
- Reuse the product taking into account DND and FAA requirements.
- Recycle the product.
- Recover material or energy from the product.
- Otherwise dispose of the waste from the product in compliance with law.

Recovered electronic components destined for destruction are recycled as much as practicable as specified by the Canadian military. Canadian military contract requirements do not give GE Aviation the flexibility to further reuse or recycle electronic components because they must be dealt with in accordance with the requirements of Canada's controlled goods program. The Canadian controlled goods program establishes procedures to be followed for the disposal of controlled goods. Items that are deemed "controlled" are identified as such in the Canadian Catalogue of Material (CGCM).

Under GE Aviation's LM2500 service contract with DND, controlled, non-repairable LM2500 electronic components that are removed from service aboard Halifax-class frigates are collected and returned to GE Aviation's facility in Halifax, Nova Scotia. Because they remain DND property and controlled goods, they are then destroyed in the presence of a qualified government witness and disposed of in accordance with DND-mandated procedures. Recyclable waste generated from this process is turned over to a recycling company. Any items that are not controlled goods are rendered unusable and sent directly to a recycling company.

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Under the T700 contract with Vector, recovered non-controlled electronic components that are no longer usable are sent to a facility where the waste is ground into chips and then shipped overseas for recycling. For controlled goods, each one will be reviewed by IMP Aerospace, the agent under contract to the DND. If the controlled electronic good is determined to be unrepairable, IMP Aerospace will coordinate with DND and either the controlled good is sent to IMP Aerospace in Halifax for disposal or Vector Aerospace will send the item to their third party recycling vendor. Note that the majority of the controlled electrical goods are determined to be repairable, and are not sent off to be recycled.

*Provide a brief overview of the way in which the collected product is managed and how those outcomes relate to the pollution prevention hierarchy. Provide breakdowns by weight or percentage of product managed at each level. Please also refer to third party assurance FAQs (original version dated November 22, 2012), distributed to stewardship programs by the Ministry.*

**Reference:** Recycling Regulation – Part 2, section 8(2)

*(d) a description of how the recovered product was managed in accordance with the pollution prevention hierarchy;*

### 7. Product Sold and Collected and Recovery Rate

DND Collection Point - In 2012, one electronic transducer (L44780P01) was sold into BC to support the LM2500 program but was returned; no waste products were generated by the customer for collection.

Vector Aerospace Collection Point - A total of 44 electronic items were sold into BC in support of the T700 program in 2012; 20 waste electronic items were generated by the customer and all 20 items were collected as follows.

Item Description	Quantity	Date
LEAD,IGN - 4052T54P03	12	1-Jun-12
IGNITER,SPARK,GAS T - 5044T67P13	8	23-Aug-12

*Provide a summary of the total amount of product sold, collection volumes and, if applicable, recovery rates achieved by the program based on the approach included in the approved program plan. Also provide a summary of total product recovered by regional district.*

**Reference:** Recycling Regulation – Part 2, section 8(2)

*(e) the total amount of the producer's product sold and collected and, if applicable, the producer's recovery rate;*

*(e.1) effective for a report required on or before July 1, 2013 and for every report required under subsection (1) after that date, the total amount of the producer's product recovered in each regional district;*



## 8. Summary of Deposits, Refunds, Revenues and Expenditures

This section is not applicable to GE Aviation. Our business does not charge deposits.

***For those programs that charge deposits only:***

*Include a summary of deposits received and refunds paid in British Columbia by the producers (by plan if agency manages more than one plan). Attach a copy of the current year's independently audited financial statements as an appendix.*

***For those programs that charge a visible ecofee only:***

*Include a summary of fees / rates charged by the agency and provide a summary of total revenues and expenses in British Columbia (by plan if agency manages more than one plan). Attach a copy of the current year's independently audited financial statements as an appendix.*

***Reference: Recycling Regulation – Part 2, Section 8(2)***

*(f) independently audited financial statements detailing*

- (i) all deposits received and refunds paid by the producers covered by the approved plan, and*
- (ii) revenues and expenditures for any fees associated with the approved plan that are charged separately and identified on the consumer receipt of sale;*

## 9. Plan Performance

GE Aviation is committed to achieving the highest recovery rates feasible for the products, in light of all applicable circumstances, including the nature of the products and the purchasers of the products, which do not include sales to retail consumers. Generally, the recovery rate is a measurement of what is collected over what is sold. Aviation and naval products have a long lag time between time of purchase and disposal of a used product. As such, it is difficult to accurately determine a recovery rate over a short time period. Given the nature of these products, GE Aviation's objective is to achieve a recovery rate of 75% of the actual products that are available for disposal, based on an average over a five year period.

*Using the table below, provide a brief overview of the performance of the plan for the current year compared to the stated performance requirements and targets specified in the approved plan. If no specific targets have been set (e.g. new plans in first year of operation), specify baseline results, significant achievements and identify when targets will be set.*

***Reference: Recycling Regulation – Part 2, section 8(2)***

*(g) a comparison of the approved plan's performance for the year with the performance requirements and targets in this regulation and the approved plan*

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Plan Target	2012 Results	Strategies for Improvement
75% of actual products that are available for disposal, based on an average over a five year period	100% recovered	Not applicable - target met

### Appendices / Additional Information and Third Party Assurance

The third-party assurance review is occurring in June 2013. The assurance report will be provided separately to the BC Ministry of Environment by July 15, 2013 per communications between Dr. H. Roland Hosein (GE Canada Vice President, Environmental, Health & Safety) and BC Ministry of Environment personnel.

*Attach any additional documentation that is required.*

*Include:*

- *Financial Statements (if applicable),*
- *Third Party Assurance Statement for Non-Financial Information, and*
- *Other items related to plan commitments such as greenhouse gas or other studies, consumer awareness surveys, detailed information on depot locations, etc.*

**Reference:** *Recycling Regulation – Part 2, section 8(2)*

*Including section 8(2)(h), any other information specified by the director*