

TELUS Communications Inc.

Annual Report to the Director

2017 Calendar Year

Reporting period January 1 – December 31, 2017

Submitted to: BC Ministry of Environment
Director, Extended Producer Responsibility Programs
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TELUS Communications Inc. 2017 Report to Director, Waste Management

1. Executive Summary

Products within plan	<p><i>Telecommunication equipment:</i></p> <ul style="list-style-type: none"> ○ <i>Cordless phones and corded desktop, VOIP phones and analog terminal adapters;</i> ○ <i>Public Access Equipment;</i> ○ <i>Obsolete network infrastructure equipment (switches, servers), External customer networks, Servers</i> ○ <i>Optical network termination equipment, Internet equipment (routers, modems), Network cards;</i> ○ <i>Video and teleconferencing equipment;</i> ○ <i>TV equipment (PVRs, receivers, remote controls), Satellite TV equipment;</i> ○ <i>Global Positioning Systems (GPS);</i> ○ <i>Batteries; and</i> ○ <i>Cables/accessories.</i>
Program website	http://about.telus.com/community/english/about_us/for_our_customers/regulations_%26_policies/environmental_policy/ewaste_stewardship

Recycling Regulation Reference	Topic	Summary (5-bullet maximum)
Part 2, section 8(2)(a)	Public Education Materials and Strategies	<p>a description of educational materials and educational strategies the producer uses for the purposes of this Part</p> <ul style="list-style-type: none"> - <i>Public information posted on telus.com website providing instructions on how to return equipment to TELUS at no charge.</i> - <i>To provide information to our customers TELUS client care agents are made aware of return process by way of online system, internal communication, bulletins.</i> - <i>TELUS Technicians are made aware of return process by way of inter-company communication, bulletins.</i> - <i>Customer Mail Back kit including instructions, carton, prepaid waybill.</i>
Part 2, section 8(2)(b)	Collection System and Facilities	<p>the location of its collection facilities, and any changes in the number and location of collection facilities from the previous report;</p> <p><i>Thirteen collection facility locations:</i></p> <ul style="list-style-type: none"> - <i>Communication Test Design Inc. (CTDI), Delta BC</i> - <i>eCycle Solutions, Chilliwack BC</i> - <i>GEEP, Edmonton AB</i> - <i>Ccon Metals Inc., Abbotsford BC</i> - <i>Metalex Products Ltd, Richmond BC</i> - <i>Edmonds Recycling, Langley BC</i> - <i>Sumas Environmental Services, Burnaby BC</i> - <i>Archway, Mississauga ON</i> - <i>Happy Stan's Recycling, Port Coquitlam BC</i> - <i>Canadian Energy, Burnaby BC</i> - <i>Call2Recycle, Vancouver BC</i> - <i>WiMacTel Canada Inc., Calgary AB</i> - <i>Fleet Complete, Vancouver BC</i>

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Recycling Regulation Reference	Topic	Summary (5-bullet maximum)
Part 2, section 8(2)(c)	Product Environmental Impact Reduction, Reusability and Recyclability	<p>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;</p> <p><i>In 2017 TELUS began collecting set top box remote controls for reuse. This has resulted in over 50,000 remote controls nationally having their lifespan extended.</i></p> <p><i>Last year TELUS begun a reusable cage process with our collection facility to reduce the amount of cardboard cartons (gaylords) used to collect used wires and adapters. These cages saved cardboard being purchased for this purpose.</i></p> <p><i>Although TELUS is not a manufacturer of equipment (TELUS branded or not) that we sell or rent, we endeavor to work with our manufacturers to encourage them when designing for the environment to use minimal packaging materials; FSC certified, high recycled content, and or recyclable or biodegradable materials. Where appropriate and applicable, TELUS will also endeavor to include corporate social responsibility requirements in RFPs when selecting vendors.</i></p>
	Pollution Prevention Hierarchy and Product / Component Management	<p>a description of how the recovered product was managed in accordance with the pollution prevention hierarchy</p> <p><i>TELUS' triage of recovered equipment enables TELUS to follow the pollution prevention hierarchy, such as the regulation requires, to ensure pollution prevention is not undertaken at one level unless or until all feasible opportunities for pollution prevention at a higher level have been taken.</i></p> <p><i>See section 6</i></p>
Part 2, section 8(2)(e)	Product Sold and Collected and Recovery Rate	<p>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.</p> <p><i>Total Program Product Collection Volumes in 2017 is 1,418 metric tonnes (mt)</i></p> <p><i>Total Program Product Distributed into BC in 2017 is 1,088 metric tonnes</i></p> <p><i>Total Program Product Recovery Rate in 2017 is 130.28%</i></p> <p><i>See section 7 for details</i></p>
Part 2, section 8(2)(e.1)		<p>[See Section 7 for breakdown per regional district]</p> <p><i>See Section 7</i></p>
Part 2, section 8(2)(f)	Summary of Deposits, Refunds, Revenues and Expenses	<p>[Provide report reference to the independently audited financial statements]</p> <p><i>Not applicable as TELUS fully funds program.</i></p>

Comparison of Key Performance Targets		
Part 2 section 8(2)(g); See full list of targets in Plan Performance		
Priority Stewardship Plan Targets (as agreed with ministry file lead)	Performance	Strategies for Improvement
1. <i>2017 Target of 75.5% recovery</i>	<i>130.28% overall recovery*</i>	<i>*Due to preparation for a warehouse move surplus inventory was collected for resale or recycling during the reporting year.</i>

2. Program Outline

Overview

TELUS Communications Inc. (TELUS) developed its own BC Electronic Equipment Stewardship Plan to adhere to the requirements set in the BC Recycling Regulation – Electronic and Electrical Product Category.

The TELUS team's dedication to preserving and protecting our environment contributes to our role as a leading socially responsible corporation. Consistently recognized for our sustainability practices, TELUS has been listed on the Dow Jones Sustainability North America Index for 17 years and was added to its World Index as of 2016, one of only nine Canadian companies across 24 industry groups to share this distinction.

Environmental compliance

TELUS believes that an effective environmental management system provides the foundation for our environmental sustainability initiatives. In 2017 TELUS completed the required external audits to maintain our ISO 14001 certification. The globally recognized ISO 14001 standard has recently been updated (ISO14001:2015) and we worked to adapt our current system to the new version through 2017. Maintaining this ISO standard also requires continual improvements to our environmental management processes, and TELUS is committed to identifying even more ways to better our performance.

Products Collected

TELUS has been collecting, refurbishing for reuse, reselling, and recycling electronics using our reverse logistics processes that are established, controlled and monitored on a national basis. TELUS' Plan addresses rental and retail TELUS customer premise equipment as well as our internal use equipment. Mobile devices are not included in this Stewardship Plan as TELUS (as a remitter) submits the data to the Electronic Product Recycling Association in BC (EPRA-BC).

The following is a general list of categories of equipment with regards to the requirements outlined by the BC Recycling Regulation – Electronic and Electrical Product Category. This list is an overview and does not list accessories or additional paraphernalia that might be associated with each equipment category. TELUS is committed to be responsible for all new products TELUS introduces into the marketplace.

- *TELUS TV Equipment (Set-top boxes, PVRs, Receivers, Remote Controls)*
- *TELUS Internet Equipment (Routers, Modems, Gateways)*
- *Network Printed Circuit Cards*
- *Public Access Equipment*
- *Cordless and Corded Phones (wireline)*
- *VOIP phones*
- *VOIP Analog Terminal Adapter*
- *Satellite TV equipment*
- *Global Positioning System (GPS) equipment*
- *Video and telephone conferencing equipment*
- *Batteries associated with these electronics*

Website:

http://about.telus.com/community/english/about_us/for_our_customers/regulations_%26_policies/environmental_policy/ewaste_stewardship

3. Public Education Materials and Strategies

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

(a) a description of educational materials and educational strategies the producer uses for the purposes of this Part

Education and Strategies

1. *Call Centre Awareness – call centre representatives are informed about the program and are equipped with the online information necessary to advise customers of their equipment return options.*
2. *TELUS Call Centre representatives coordinate pickup and return of business customer equipment to TELUS.*
3. *Return mailer kits including return instructions, carton, pre-paid waybill, provided to TELUS TV and TELUS Satellite TV customers. This program was expanded to include all TELUS TV and high speed internet access (HSIA) customers.*
4. *TELUS Website – our website contains information for customers on how to return items.
http://about.telus.com/community/english/about_us/for_our_customers/regulations_%26_policies/environmental_policy/return_%26_recycle_program.*
5. *TELUS is a member of the Recycling Council of BC and participates in the BC Recycling Hotline service.*
6. *TELUS Technician Awareness – our technicians are informed about the program and TELUS' commitments to our customers with respect to equipment being returned.*
7. *TELUS Team Members Awareness –team members are provided with current information regarding the return of electronic equipment in this plan through a number of mechanisms. Mechanisms include online process information on our internal company website, inter-company bulletins, TELUS Green Teams, internal social media, and as required one on one email and phone conversations.*
8. *TELUS' Nudge Rewards app to all TELUS team members. Nudge Rewards is a mobile app that engages employees via push notifications with tidbits about the energy use of the buildings and recyclable office materials in the form of trivia, fast-facts and contests. It also calls for brainstorming. Pop-ups appear to get feedback from app users to create company-wide initiatives that everyone has a stake in.*
9. *TELUS sales contracts offer a recovery service for end of life equipment. A clause to this effect can be included on a sales contract if customers wish to use this service.*
10. *Online Training for TELUS Team Members: TELUS Integrity Course is one of the Company's key policies and is reviewed by all TELUS team members on an annual basis. This compulsory course is deployed as an online training tool which covers the legal and regulatory requirements that TELUS team members must follow while carrying out their duties. The course includes environmental case studies specific to electronic waste.*

All of our key business units and stakeholders are involved in reducing the amount of material sent to landfills and improving recycling and re-use. Our biggest successes in 2017 include:

- *A newly formed Waste Reduction Working Group, tasked with the implementing projects in our Waste Reduction Strategy*
- *Continuing to rely on our Green Teams and National Sustainability Council to build engagement and behavior change toward reducing waste across TELUS*
- *Conducting an additional 16 waste audits across Canada to gain a more complete picture of what we are sending to landfill*

These information-gathering exercises helped us identify factors that are influencing our diversion rates. Over the course of 2017 we continued on scouting a path to 90 per cent diversion, while implementing practical improvements in our operations.

4. Collection System and Facilities

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

(b) the location of its collection facilities, and any changes in the number and location of collection facilities from the previous report;

Thirteen collection facilities owned by TELUS or TELUS Contractors/Vendors receive customer returns through recovery mechanisms. Both TELUS Technicians and TELUS Contractors recover equipment from customers and return to collection facilities. To ensure that all of our customers have access to a collection facility, TELUS provides a mail back program. TELUS residential customers have access to a Canada Post retail outlet in their area and TELUS business customer are provided with a courier pickup service.

Collection facility locations:

- *Communication Test Design Inc. (CTDI), Delta BC*
- *eCycle Solutions, Chilliwack BC*
- *GEEP, Edmonton AB*
- *Ccon Metals Inc., Abbotsford, BC*
- *Metalex Products Ltd, Richmond BC*
- *Edmonds Recycling, Langley BC*
- *Sumas Environmental Services, Burnaby BC*
- *Archway, Mississauga ON*
- *Happy Stan's Recycling – Port Coquitlam BC (special network removal project)*
- *Canadian Energy, Burnaby BC*
- *Call2Recycle, Vancouver BC*
- *WiMacTel Canada Inc., Calgary AB*
- *Fleet Complete, Vancouver BC*

To provide easy access to TELUS' collection facilities in all Regional Districts, Canada Post, couriers (e.g. FedEx), and TELUS technicians act a recovery mechanisms that increase public access to the Collection Facilities. For example, Canada Post has over 6,600 retail outlets across Canada. The Canada Post retail outlets and the location of each are available on the Canada Post website at <http://www.canadapost.ca/cpotools/apps/fpo/personal/findPostOffice>

5. Product Environmental Impact Reduction, Reusability and Recyclability

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;

Overview of National Supply Chain Sustainability

TELUS is committed to selecting partners thoughtfully and in alignment with our environmental and social values in order to support our customers, team members and communities. Our commitment includes:

- *Sourcing products and services responsibly*
- *Building and maintaining strong supplier relationships*
- *Providing customers with sustainable solutions and support*
- *Managing end-of-life and reuse of equipment and facilities*

Partnering for sustainable development

From product design to raw material sourcing by our suppliers, all the way to our customer's use -- and even reuse -- of our products, supply chain sustainability practices matter. We choose to work with suppliers who demonstrate a strong commitment to sustainable development by adopting meaningful ethical, labour, health and safety, and environmental principles in their organizations. By integrating these principles, our suppliers help to ensure the well-being of employees, contractors and communities.

We demonstrated this ongoing commitment to sustainability in our supply chain in 2017 by:

- Implementing initiatives to enhance customer experience and reduce costs*
- Developing new processes to ensure supplier compliance with TELUS sustainability practices*
- Initiating process improvements to divert waste and increase recycling*
- Continuing partnerships with supplier diversity organizations and accredited vendors*
- Further strengthening our supplier governance practices, with a focus on risk.*

Monitoring our Critical Suppliers Corporate Social Responsibility Monitoring

TELUS engaged a third party vendor to monitor, identify areas of improvement, and collaborate on best practices in social responsibility and sustainability for all our critical suppliers. The monitoring and supplier assessment is based on a number of international standards including the Global Reporting Initiative, UN Global Compact and ISO 26000.

Improving TELUS' Supplier Code of Conduct

At TELUS we aim to award business to suppliers who demonstrate a strong commitment to sustainable development by adopting sustainable, ethical, labour, health and safety, and environmental principles that align with ours, and ensure the well-being of their employees, contractors and communities. Our Supplier Code of Conduct (SCOC) is incorporated in all contractual templates, and goes beyond legal compliance, drawing upon internationally recognized standards, to advance social and environmental responsibility and business ethics, and is aligned with TELUS' commitment to be a leading corporate citizen.

It is paramount that our Supplier Code of Conduct leads the industry in ethical and sustainability standards; therefore, during 2017 our team updated the SCOC to ensure it reflected best in class practices. The revised SCOC includes further granularity around obligations, including those related to responsible sourcing of minerals, and more robust language around items such as risk, privacy and information security, accessibility for our customers and team members, and supplier diversity. Additionally, suppliers are expected to be aware of TELUS' Environmental Policy and relevant aspects of our environmental management system, which is certified to the ISO 14001:2004 standard.

Process improvement

- Multi-pack initiative: Lean Principles were applied to further reduce packaging materials (cardboard and polystyrene) during the refurbishment process. This was extended to primary equipment vendor for new purchases. This led to:*
 - Savings of \$809,300 in 2017*
 - 340,629 fewer cardboard boxes purchased*
 - Improved box re-design that reduced material content by 25 per cent*
 - Improved productivity as a result of new anti-static packaging*
 - Re-used 39,000 boxes from installers, improving the quality of returned product and reducing the amount of plastic replacement parts used in the refurbishment process.*
- Double stack trailer packaging improvements allowed us to optimize pallet orientation and stacking in trailers, saving \$141,600 in direct freight costs and reducing CO2 emissions.*
- Wireline equipment kitting: TELUS streamlined the process for kitting refurbished Satellite TV equipment (adding accessories and collateral) moving it earlier in the refurbishment process. This reduced handling and the need to reopen packaged product, which led to reduced process lead time and reduced errors as well as cost savings of \$30,000.*
- Network equipment decommissioning and asset recovery: TELUS nationally decommissioned old network equipment and actively recovered assets through a centralized process. Equipment was assessed for re-use within TELUS, marketed and sold for re-use, or recycled. This led to \$2,487,135 in revenue and the recycling of 2,784 tonnes of network equipment.*
- Used reusable metal cages for our used wires and adapters avoiding almost 700 cardboard cartons (gaylords) from being used.*

Environmental Management System

Our suppliers are expected to be aware of TELUS' Environmental Policy and relevant aspects of our environmental management system, which is certified to the ISO 14001:2004 standard.

TELUS' processors that recycle our end of life electronic products are third party accredited with ISO 14001 and ISO 9001 certification, RQP (Recycler Qualification Program), R2 certification – Responsible Recycling Practices, and other certifications. The recyclers of our lead acid batteries processes are regulated by the BC Ministry of the Environment, as well as industry associations.

6. Pollution Prevention Hierarchy and Product / Component Management

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

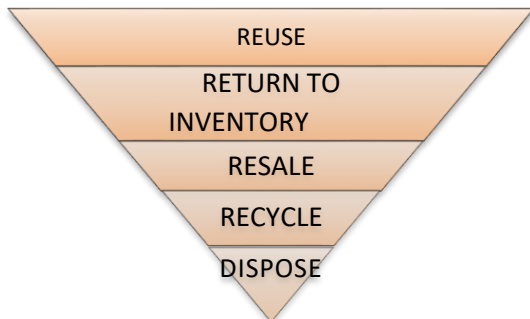
(d) a description of how the recovered product was managed in accordance with the pollution prevention hierarchy;

By virtue of the triage system TELUS utilizes for its electronics, pollution hierarchy is considered throughout the process. All recovered items are reused where possible and recycling is used as the last resort. TELUS defines what items are to be refurbished for reuse; what equipment can be sold for reuse; what is to be returned to our vendor under warranty; and what products must be recycled. Upon TELUS receiving the rental equipment it is tested. Working units are refurbished and restocked for reuse; defective units under warranty are returned to the manufacturer; defective units not under warranty that are beyond economical repair are recycled by TELUS' authorized electronics recycling contractor.

Program Products collected are reported by End of Fate by level on the Pollution Prevention Hierarchy:

- *Reuse: These are TELUS TV Future Friendly Home (FFH) devices that are either reused by TELUS or sold for the purpose of reuse or refurbishment for reuse. Our 2017 FFH reuse rate was 62 percent and 25 percent reuse rate of our accessories.*
- *Recycle: These are products that are processed into an End of fate commodity (e.g. Ferrous Steel, Plastics, Aluminum, Copper, Glass, Lead, etc.). In 2017 over 903 mt of electronics and the associated batteries was recycled from our products collected in BC.*
- *Recover into energy: There currently are no processes for recovery into Energy although TELUS closely monitors developments in this industry.*
- *Residual Waste: waste going to landfill or hazardous waste from all sources that is not reusable. For products and materials that cannot be reused or resold, TELUS pursues opportunities to recycle and divert these assets from landfills. We continue to enhance our recycling and diversion programs in our operations and are collaborating with our property managers and waste haulers with the goal of establishing waste diversion targets.*

Disposition Hierarchy



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Acceptable Product End of Fate

Product Type	Reuse	Recycle	Energy Recovery	Residual Waste
TELUS TV Equipment and accessories	Preferred	Optional	N/A	N/A
Telsets	Preferred	Optional	N/A	N/A
Network Equipment	Preferred	Optional	N/A	N/A
GPS Equipment	Preferred	Optional	N/A	N/A
Batteries <2 kg	N/A	Preferred	N/A	N/A
Batteries >2 kg	N/A	Preferred	N/A	N/A

Estimated Product End of Fate Data for the year ended December 31, 2017

Product Type	Reuse (%)	Recycle (%)	Recovery (%)	Residual Waste (%)	Unknown (%)
TELUS TV Equipment	62%	38%	0	0	0
TELUS TV Accessories	25.2%	74.8%	0	0	0
Network Equipment	29%	71%	0	0	0
Telsets	2%	98%	0	0	0
GPS	25%	75%	0	0	0
Batteries <2 kg	0	100	0	0	0
Batteries >2 kg	0	100	0	0	0

TELUS' processors provided TELUS with an end of fate flow chart that describes where our products are recycled (City and Province or Country) and the material recovered from them such as steel, copper, aluminum, precious metals, and plastics. This processing flow takes the material recovered to a point where the processor sells the material recovered to their buyers for further processing. Our electronics recycler even sends the dust from the bag-houses for processing.

Processing Pathways

Product Type	Transfer to direct processor in BC (%)	Transfer to direct processor or multi-step processor in North America (%)	End of Fate Description
TELUS TV Equipment and accessories		100%	Processed for material recovery (metals, precious metals, plastics)
Telsets		100%	Processed for material recovery (metals, precious metals, plastics)
GPS		100%	Processed for material recovery (metals, precious metals, plastics)
Network Equipment		100%	Processed for material recovery (metals, precious metals, plastics)
Batteries <2 kg		100%	Processed for material recovery (nickel, cobalt, cadmium, lead, iron, copper, stainless steel)
Batteries >2 kg	82.5%	17.5%	Processed down to commodities for reuse or further processing (lead, acid, plastic, sulfur)

7. Product Distributed and Collected and Recovery Rate

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

- (e) the total amount of the producer's product distributed 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;

7.1 Program Product Distributed into BC (by weight)

- Total program product distributed into BC during 2017 was 1,088 metric tonnes (mt)

7.2 Program Product Collection Volumes (by weight):

- Program product equipment 1,417.65 mt
 - >2 kg Batteries 66.58 mt
 - Consumer Batteries 1.83 mt
- Total program product collection volumes during 2017 was 1,486.06 mt (up from 818 mt in 2016)

Equipment Recovered by Regional District

Regional District Name	Equipment Recovered (kilograms)*
Alberni-Clayoquot	199
Bulkley-Nechako	690
Capital	6,105
Cariboo	1,679
Central Coast	67
Central Kootenay	2,532
Central Okanagan	15,283
Columbia-Shuswap	3,297
Comox Valley	427
Cowichan Valley	819
East Kootenay	1,470
Fraser Valley	5,164
Fraser-Fort George	1,611

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Greater/Metro Vancouver	1,276,612
Kitimat-Stikine	1,540
Kootenay Boundary	546
Mount Waddington	302
Nanaimo	4,377
North Okanagan	950
Okanagan-Similkameen	3,636
Peace River	2,231
Powell River	2,067
Skeena-Queen Charlotte	9
Squamish-Lillooet	74,852
Strathcona	432
Sunshine Coast	50
Thompson-Nicola	3,364
West Kootenays	4
Provincial Total	1,410,315 kg

**Other collection facilities do not have the data available to report equipment recovered by Regional District*

7.3 Program Product Recovery Rate:

- Overall program product recovery rate for 2017 was 130.28%; this is based on the weight of units collected and the weight of units distributed. Due to preparation for a warehouse move surplus inventory was collected for resale or recycling.
- TELUS' Customer Premise Equipment (Rental) Return Improvement Implementation Plan Development & Project commenced where TELUS provided return kits to our customers in an effort to increase the recovery of rental set top boxes, modems, receivers, and remotes.

7.4 Reuse Rate:

- TELUS' FFH reuse rate on the products collected in 2017 was 62% as a result of TELUS' disposition process.
- TELUS will reuse most consumer products up to three times during its lifecycle. This demonstrates the results of our focus on the Pollution Prevention hierarchy.

8. Summary of Deposits, Refunds, Revenues and Expenditures

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;

TELUS funds the TELUS BC Electronics Stewardship Plan. No customers are charged an environment handling fee.

9. Plan Performance

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

Plan Target	2017 Results	Strategies for Improvement
1. <i>Target of 75.5% recovery was committed for 2017</i>	<i>Overall recovery rate was 130.28%</i>	<i>*Due to preparation for a warehouse move surplus inventory was collected for resale or recycling during the reporting year.</i>

Appendices / Additional Information and Third Party Assurance

Appendix A - *Third Party Assurance Statement for Non-Financial Information*

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

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



June 29, 2018

Independent Reasonable Assurance Report

To the Directors of the Canadian Beverage Association on selected non-financial information included in the Canadian Beverage Association 2017 Annual Report

Scope

We have been engaged by TELUS Communications, Inc. ("TELUS") to perform a reasonable assurance engagement in respect of the following information (the "Selected Information") detailed in Appendix A, and also included within TELUS's 2017 Annual Report to the Director (the "report"), Environmental Quality Branch, Ministry of the Environment ("MOE") for the year ended December 31, 2017:

1. The location of collection facilities, and any changes in the number of collection facilities from the prior year in accordance with Section 8(2)(b) of the British Columbia Regulation 449/2004 Recycling Regulation ("Recycling Regulation");
2. The description of how recovered product was managed in accordance with the pollution prevention hierarchy in accordance with 8(2)(d) of the Recycling Regulation;
3. The total amount of the producers' product sold and collected and the recovery rate for the year ended December 31, 2017 in accordance with 8(2)(e) of the Recycling Regulation; and
4. The performance for the year in relation to targets in the approved stewardship plan under Section 8(e) in accordance with Section 8(2)(g) of the Recycling Regulation.

Responsibilities

PricewaterhouseCoopers LLP

Our responsibility is to carry out an independent reasonable assurance engagement and to express an opinion on the Selected Information based on the procedures we have performed and the evidence we have obtained. We conducted our reasonable assurance engagement in accordance with the International Standard on Assurance Engagements 3000 Revised ("ISAE 3000"), *Assurance Engagements other than Audits or Reviews of Historical Financial Information*, published by the International Federation of Accountants, and the *Guide to Third party Assurance Requirements for Non-Financial Information in Annual Reports – 2017 Reporting Year*, dated October 2017 ("Assurance Requirements"), published by the MOE.

TELUS Communications, Inc.

TELUS is responsible for the preparation and presentation of the Selected Information as listed in Appendix A. Management and the members are responsible for such internal control as management determines is necessary to enable the preparation of the Selected Information such that it is free from material misstatement. Furthermore, management is responsible for preparation of suitable evaluation criteria in accordance with the Assurance Requirements as specified by the Director under section 8(2)(h) of the Recycling Regulation.

PricewaterhouseCoopers LLP

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"PwC" refers to PricewaterhouseCoopers LLP, an Ontario limited liability partnership.



Management are responsible for providing us with information about any frauds (including alleged and/or suspected instances of fraud) or illegal (or possibly illegal) acts communicated by employees, former employees, or contractors and all related known facts known by management that may relate to the Selected Information. TELUS is also responsible for demonstrating adherence to the Recycling Regulation as outlined within Section 1 of the Report.

Our Independence and Quality Control

We have complied with the relevant rules of professional conduct / code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies the International Standard on Quality Control 1, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Methodology and Assurance Procedures

We conducted our reasonable assurance engagement in accordance with ISAE 3000 (Revised). This standard requires that we comply with independence requirements and plan and perform the engagement to obtain reasonable assurance about whether the Selected Information is free of material misstatement.

A reasonable assurance engagement includes examining, on a test basis, evidence supporting the amounts and disclosures within the Selected Information. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement in the Selected Information due to omissions, misrepresentation and errors. In making those risk assessments, we consider internal controls relevant to the entity's preparation and fair presentation of the Selected Information in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing a conclusion on the effectiveness of the entity's internal control. A reasonable assurance engagement also includes assessing the evaluation criteria used and significant estimates made by management, as well as evaluating the overall presentation of the Selected Information.

The main elements of our work were:

- Obtaining an understanding of the management systems, processes, and controls used to generate, aggregate and report the data;
- Testing relevant documents and records on a sample basis;
- Testing and re-calculating quantitative information related to the Selected Information on a sample basis; and,
- Reviewing the consistency of the Selected Information with the related disclosures in the Annual Report to the Director.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.



Inherent limitations

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the Selected Information and the methods used for determining and calculating such information. Qualitative interpretations of relevance, materiality and the accuracy of data are subject to individual assumptions and judgments. Furthermore, the nature and methods used to determine such information, as well the evaluation criteria and the precision thereof, may change over time. It is important to read our report in the context of evaluation criteria.

Conclusion

In our opinion, the Selected Information for the year ended December 31, 2017 presents fairly, in all material respects, in accordance with the evaluation criteria listed in Appendix A:

1. The location of collection facilities, and any changes in the number of collection facilities from the prior year in accordance with Section 8(2)(b) of the Recycling Regulation;
2. The description of how recovered product was managed in accordance with the pollution prevention hierarchy in accordance with 8(2)(d) of the Recycling Regulation;
3. The total amount of the producers' product sold and collected and the recovery rate for the year ended December 31, 2017 in accordance with 8(2)(e) of the Recycling Regulation; and
4. The performance for the year in relation to targets in the approved stewardship plan under Section 8(2)(e) in accordance with Section 8(2)(g) of the Recycling Regulation.

Other matters

Our report has been prepared solely for the purposes of TELUS's compliance with the reporting requirements relating to Sections 8(2)(b), (d), (e) and (g) of the Recycling Regulation and is not intended to be and should not be used for any other purpose. Our duties in relation to this report are owed solely to TELUS, and accordingly, we do not accept any responsibility for loss occasioned to any other party acting or refraining from acting based on this report.

TELUS is responsible for their website and we do not accept responsibility for any changes that may have occurred to the reported subject matter information or criteria since they were initially presented on the website.

Our opinion does not constitute a legal determination on TELUS's compliance with the Recycling Regulation.

A handwritten signature in black ink that reads "PricewaterhouseCoopers LLP".

PricewaterhouseCoopers LLP
Chartered Professional Accountants

June 29, 2018

Appendix A – Findings and Evaluation Criteria

1. The location of collection facilities, and any changes in the number and location of collection facilities from the previous report as presented in Section 4 on page 7 of TELUS' 2017 Report to the Director

Result:

The number of collection facility locations is 13 (2016: 14).

Reference: page 7 of the TELUS Annual Report to the Director 2017.

Procedures:

- Reporting Period: January 1st to December 31st;
- PwC obtained the names and locations of the collection facilities for the past three years;
- PwC agreed the prior year figures to the prior year report and working papers;
- PwC obtained an understanding of any changes to the list of collection facilities used;
- PwC selected a sample of collection facilities and contacted them directly to confirm the details provided to us, as well as to obtain a signed contract with TELUS, where one was in place.

Definitions:

- “Collection Facilities” are centres that were owned by TELUS, had a signed contract with TELUS, or non-contracted with selected TELUS vendors, for the collection of Program Products as of a December 31st of the reporting year. Collection facilities owned by TELUS or TELUS Contractors/Vendors receive customer returns through recovery mechanisms. Both TELUS technicians and TELUS contractors recover equipment from customers and return to collection facilities. Additionally, TELUS has a mail-back program whereby residential customers can return items via Canada Post outlets and business customers are provided with a courier pickup service.
- “Collection Facilities” are one of the following types of centres:
 - o Reverse Logistics/Triage Centres – e.g., Telmar, CTDI and GEEP;
 - o Processors - e.g., GEEP, Metalex, Edmonds Recycling, CCon Metals;
 - o Spare Central Stock – e.g., CTDI warehouse location for spare network equipment; or
 - o Redeployment Centres/Forward logistics - e.g., TELUS, CTDI and Telmar warehouse locations for used equipment brought back into inventory.
- “Collection Facilities” are not Canada Post, courier service providers (e.g., FedEx), technicians or Tier 2 locations (“Tier 2 locations” are TELUS locations where the technicians drop off material for return. These then are forwarded to any of the collection facilities).

2. The description of how recovered product was managed in accordance with the pollution prevention hierarchy in accordance with 8(2)(d) of the Recycling Regulation as presented in Section 6 on page 10 of TELUS' 2017 Report to Director

Acceptable Product End of Fate

Product Type	Reuse	Recycle	Recovery	Residual
TELUS TV Equipment and accessories	Preferred	Optional	N/A	N/A
Telsets	Preferred	Optional	N/A	N/A
Network Equipment	Preferred	Optional	N/A	N/A
GPS Equipment	Preferred	Optional	N/A	N/A
Batteries <2 kg	N/A	Preferred	N/A	N/A
Batteries >2 kg	N/A	Preferred	N/A	N/A

Estimated Product End of Fate Data for the year ended December 31, 2017

Product Type	Reuse (%)	Recycle (%)	Recovery (%)	Residual (%)	Unknown (%)
TELUS TV Equipment	62	38	0	0	0
TELUS TV Accessories	25.2	74.8	0	0	0
Network Equipment	29	71	0	0	0
Telsets	2	98	0	0	0
GPS	25	75	0	0	0
Batteries <2 kg	0	100	0	0	0
Batteries >2 kg	0	100	0	0	0

Processing Pathways

Product Type	Estimated transfer to direct processor in British Columbia (%)	Estimated transfer to direct processor or multi-step processor in North America (%)	End of Fate Description
TELUS TV Equipment and accessories		100	Processed for material recovery (metals, precious metals, plastics)
Telsets		100	Processed for material recovery (metals, precious metals, plastics)
GPS		100	Processed for material recovery (metals, precious metals, plastics)
Network Equipment		100	Processed for material recovery (metals, precious metals, plastics)
Batteries <2 kg		100	Processed for material recovery (nickel, cobalt, cadmium, lead, iron, copper, stainless steel)
Batteries >2 kg	82.5	17.5	Processed down to commodities for reuse or further processing (lead, acid, plastic, sulfur)

Reference: page 10 of the TELUS Annual Report to the Director 2017.

Procedures:

- Reporting Period: January 1st to December 31st;

- Collection facilities provide management with weight ticket confirmations;
- Management compile the estimated product end fate data using these confirmations

Definitions:

- “Product type” is groups of products included in the program as listed in the currently approved product stewardship plan.
- “Reuse” is any Program Product which has been either reused by TELUS or sold for the purpose of reuse.
- “Recycle” refers to the process of treating or processing a Program Product into an End of Fate commodity (e.g. Ferrous Steel, plastics Aluminum, Copper, Glass, Lead).
- “Recovery” is the process of generating energy in the form of electricity and/or heat from the incineration of waste.
- “Residual” refers to Program Products which have been sent to landfill or hazardous waste that is not reusable.
- “End of fate” is defined as the point where the product, component, and/or material is handled as a recognized commodity, is destroyed (e.g., through energy recovery), or is disposed of as waste.
- “Estimated Product End of Fate Data” is an estimate of the end fate of the type of product based on information provided by processors.
- Direct processors are those where the Program Product is processed on a single site.
- Multi-step processors are those where the Program Product is processed over more than one site.

Method of reporting:

Program Products collected are reported by end of fate both by product type and by process on the Pollution Prevention Hierarchy:

- Reuse: Reused products are reported by weight reused or sold for reuse.
- Recycle: Recycled products are reported by weight.
- Recovery: N/A - No Program Products are recovered.
- Residual: N/A – all Program Products collected are expected to be 100% recyclable. Non-program products that may be included in shipments are not recorded or reported by the program but efforts are made to dispose of them in accordance with the pollution prevention hierarchy.

3. The total amount of the producer's product sold and collected and the recovery rate as presented in Section 7 on page 11 of TELUS' 2017 Report to Director

Total amount of producer's product sold is estimated as 1,088 mt

Total amount of producer's product collected is estimated as 1,418 mt

The recovery rate is reported under criteria 4 below.

Reference: page 11 of the TELUS Annual Report to the Director 2017.

Evaluation Criteria:

- Reporting Period: January 1st to December 31st;
- Producer's product sold is calculated by selecting product SKUs relating to TELUS' Annual Report to the Director for the reporting period and running a report;
- Producers product sold utilizes daily shipping reports uploaded to TELUS' SAP system;
- Quantification of producer's product collected is based on annual reports generated by the collection facilities for the Reporting Period and includes delineation of the Program Products by province of origin
- Producer's product collected is reported as a weight. Conversion factors used for converting number of units to weight are calculated based on the average weight of the electronic. The weights are provided by the collection facilities that receive the electronic.

Definitions:

- "Product Sold" is the amount of all Program Products distributed into BC by TELUS.
- "Product Collected" is the amount of all Program Products collected from sources known to be located within the province of BC that occurred through the Collection Facilities.
- "Program Products" are all products included in the program as listed in the currently approved product stewardship plan. These include:
 - o Cordless phones and corded desktop, VOIP phones and analogue terminal adapters;
 - o Public Access Equipment;
 - o Obsolete network infrastructure equipment (switches, servers), External customer networks, Servers, Optical network termination equipment, Internet equipment (routers, modems), Network cards;
 - o Video and teleconferencing equipment;
 - o TV equipment (PVRs, receivers, remote controls), Satellite TV equipment;
 - o Global Positioning Systems (GPS);
 - o Batteries; and
 - o Cables/accessories.
- Products not included in the program are mobile devices and their associated accessories.

4. The performance for the year in relation to targets in the approved stewardship plan under Section 8(2)(b), (d) and (e) in accordance with Section 8(2)(g) of the Recycling Regulation as presented in Section 9 on page 13 of TELUS' 2017 Report to Director

Result:

130.28% recovery rate for the year ended December 31, 2017 compared to a target of 75.5%

Evaluation criteria:

- Reporting period: January 1st to December 31st;
- Target recovery rate has been taken from page 6 of "TELUS Amended Ewaste Stewardship Plan Draft 1.13.PDF". PwC notes this Stewardship Plan has not been formally approved as at the date of this report.
- Recovery rate is calculated as:

Total weight of units collected / Total weight of units distributed (sold)

Appendix B - TELUS Corporation ISO 14001:2004 Certificate

