

TELUS Communications Inc.

Annual Report to the Director

2018 Calendar Year

Reporting period January 1 – December 31, 2018

Submitted to: BC Ministry of Environment
Director, Extended Producer Responsibility Programs
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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, 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	<p>http://about.telus.com/community/english/about_us/for_our_customers/regulations %26 policies/environmental_policy/ewaste stewardship</p>

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 instructions including a 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>Eleven collection facility locations:</i></p> <ul style="list-style-type: none"> - <i>Communication Test Design Inc. (CTDI), Delta BC</i> - <i>Archway, Richmond BC</i> - <i>eCycle Solutions, Chilliwack BC</i> - <i>GEEP, Edmonton AB</i> - <i>Metalex Products Ltd, Richmond BC</i> - <i>Sumas Environmental Services, Burnaby BC</i> - <i>Archway, Mississauga ON</i> - <i>Canadian Energy, Burnaby BC</i> - <i>Call2Recycle, Vancouver BC</i> - <i>WiMacTel Canada Inc., Calgary AB</i> - <i>Fleet Complete, Mississauga ON</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>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>
Part 2, section 8(2)(d)	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. 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 2018 is 990.54 metric tonnes Total Program Product Distributed into BC in 2018 is 699.59 metric tonnes Total Program Product Recovery Rate in 2018 is 141.59% See section 7 for details</i></p>
Part 2, section 8(2)(e.1)		<p>[See Section 7 for breakdown per regional district] <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] <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>2018 Target of 77.5% recovery</i>	<i>141.59% overall recovery</i>	<i>TELUS continues to look at process improvements to increase our returns as well as investigating opportunities for reusing products.</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 18 years and was added to its World Index as of 2016, one of only nine telecommunications companies globally to be recognized with this distinction. Notably, we are one of only six Canadian companies to be named to the World Index across 24 sectors.

Environmental compliance

TELUS believes that an effective environmental management system provides the foundation for our environmental sustainability initiatives. In 2018 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 2018. 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 2018 include:

- *TELUS' Waste Reduction Working Group is 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*

These information-gathering exercises helped us identify factors that are influencing our diversion rates. Over the course of 2018 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;

Eleven 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*
- *Metalex Products Ltd, Richmond BC*
- *Sumas Environmental Services, Burnaby BC*
- *Archway, Mississauga ON*
- *Archway, Richmond BC*
- *Canadian Energy, Burnaby BC*
- *Call2Recycle, Vancouver BC*
- *WiMacTel Canada Inc., Calgary AB*
- *Fleet Complete, Mississauga, ON*

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*

Over the year, we have deepened our third party relationships, leveraging our distributor capabilities to reduce operating complexity and brought our warehousing and refurbishment operators under one roof to cut down on freight and reduce turnaround times. We have broadened the portfolio of goods that we are sending for refurbishment reducing environmental impacts and lowering operational costs.

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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.

2018 Accomplishments

In 2018 we operationalized waste diversion programs that we piloted in 2017 and tested a new recycling program that will be fully implemented in 2019.

We continued to build on our objective to extend the useful life of equipment and divert products from waste. In 2018, through collaboration with our technical team and logistics partners, we deployed a program which recovered, tested and re-used 234,199 power supplies, yielding savings of \$1.6 million. In 2019, we plan to extend this program to additional devices.

In mid-2018, the Supply Operations team piloted the onsite recycling of residential equipment returns from our field technicians at two warehouses in British Columbia. By recycling end-of-life devices earlier in the process, we reduced handling and freight costs by \$13,000 and lowered our emission footprint. Our goal in 2019 is to expand this program to all major centres, with a target to save \$250,000 annually.

Supplier Code of Conduct

We strive to award business to suppliers who demonstrate a strong commitment to sustainable development. This involves adhering to ethical, privacy, labour, health and safety, and environmental principles that align with ours, and ensure the well-being of our customers, suppliers' employees, contractors and communities. Our Supplier Code of Conduct (SCOC) is fundamentally aligned with TELUS' commitment to be a leading corporate citizen. All TELUS' procurement contractual templates, including our standard PO Terms & Conditions, include an obligation to comply with the SCOC. The SCOC goes beyond legal compliance, drawing upon internationally recognized standards to advance social and environmental responsibility and business ethics.

In 2018, we relaunched our SCOC to ensure it reflects best in class practices and TELUS' leadership in this field. A cross functional team of subject matter experts from Environment, People & Culture, Security, Data & Trust, Sustainability, Legal, Supply Chain were involved in a comprehensive review of the previous SCOC including a significant effort in benchmarking, to ensure the updated version is best in class and fit for purpose.

The updated version of the Code has further granularity around key obligations such as responsible sourcing of materials including conflict materials, has more robust language around privacy and information security, and contains new sections around Accessibility and Supplier Diversity aligned with TELUS' sustainability commitments. It is recognized by our stakeholders as a significantly stronger Code than the previous version, reflective of future state needs.

In 2019, TELUS will continue its focus on the SCOC internally and externally, challenging ourselves—together with our suppliers—to set an example of the highest standards and continue to evolve to exceed our customer needs and expectations.

The new version of the SCOC is available at www.telus.com/suppliercodeofconduct.

Monitoring our critical suppliers' Corporate Social Responsibility

TELUS monitors the corporate social responsibility of its critical suppliers by partnering with globally recognized organizations that offer insights to evaluate a variety of factors within our existing supplier base. In 2018, we worked with EcoVadis using their global sustainability rating system that combines expertise and technology to deliver easy-to-understand supplier Corporate Social Responsibility (CSR) Scorecards. These scorecards address critical issues, including environment, labour practices and ethics on a

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global scale. TELUS' critical suppliers are assessed through a questionnaire, sector-based benchmarks and third-party reporting to manage risks, reduce costs and drive innovation in the supply chain.

The scorecard also contains detailed qualitative information, allowing TELUS to easily understand issues and provide clear feedback to suppliers on critical improvement areas.

In 2018, we followed up with 19 critical suppliers who were assessed in 2017. Four of these suppliers were identified as medium risk. We launched a follow-up campaign and initiated corrective action plans to address theme-specific issues. None of the four suppliers identified had deficiencies related to fair business practices.

Looking ahead to 2019, TELUS will focus on two priority areas:

- *Furthering our efforts to manage risk by introducing a new platform for supplier risk management, as well as strengthening our framework for supplier due diligence.*
- *Increasing the effectiveness of how we manage equipment from customers who cancel TELUS services.*

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 14001:2015 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.

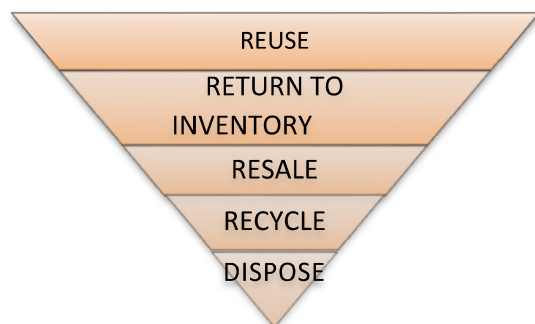
Program Products collected are reported by End of Fate by level on the Pollution Prevention Hierarchy:

- *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 2018 FFH reuse rate was 37 percent and 29 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 2018 over 991 mt of electronics and the associated batteries was recycled from our products collected in BC. TELUS purchased a portion of Alarm Force in the Spring of 2018. As a result, TELUS technicians have been recovering legacy equipment from Alarm Force customers to ensure the products are kept out of the landfill. Although the legacy Alarm Force equipment is out of scope for 2018 we are happy to report that 1137 kilograms of Alarm Force legacy electronics were recycled through TELUS' authorized electronics recycler, eCycle Solutions.*
- *Recover into energy: There currently are no processes for recovery into Energy although TELUS closely monitors developments in this industry.*

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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. In 2018, 2,524 kilograms of non-hazardous waste was sent to the landfill by our electronics recyclers due to not being a recyclable or reusable commodity within the product (examples are non-recyclable packaging materials, rubber feet).

Disposition Hierarchy



Acceptable Product End of Fate

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

Estimated Product End of Fate Data for the year ended December 31, 2018

Product Type	Reuse (%)	Recycle (%)	Recovery (%)	Residual Waste Landfilled (%)	Unknown (%)
TELUS TV Equipment	37%	63%	0	0.0643%	0
TELUS TV Accessories	29%	71%	0	0.0643%	0
Network Equipment	30%	70%	0	0.0643%	0
Telsets	0%	100%	0	0.0643%	0
GPS	5%	95%	0	0	0
Batteries <2 kg	0	100	0	0	0
Batteries >2 kg	0	100	0	0	0

Residual waste landfilled percent based on 2524 kg waste out of 981,407 kg electronics recycled, averaged between the four product types.

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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) and landfill
Telsets		100%	Processed for material recovery (metals, precious metals, plastics) and landfill
GPS		100%	Processed for material recovery (metals, precious metals, plastics) and landfill
Network Equipment		100%	Processed for material recovery (metals, precious metals, plastics) and landfill
Batteries <2 kg	46%	54%	Processed for material recovery (nickel, cobalt, cadmium, lead, iron, copper, stainless steel) and landfill
Batteries >2 kg	100%	0%	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 2018 was 699.59 metric tonnes (mt)*
The amount of circuit cards (network) distributed was based on self-reporting as 1-1 as we do not have the data indicating the distribution of circuit cards. However, we do know that for each card removed from our switch a new card is installed in its place.

7.2 Program Product Collection Volumes (by weight):

- *Program product equipment 846.68 mt*
 - *>2 kg Batteries 142 mt*
 - *Consumer Batteries 1.82 mt*
- Total program product collection volumes during 2018 was 990.54 mt*

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Equipment Recovered by Regional District

Regional District Name	Equipment Recovered (kilograms)*
Alberni-Clayoquot	162.82
Bulkley-Nechako	3673.33
Capital	16,875.05
Cariboo	6164.03
Central Kootenay	6388.24
Central Okanagan	25,121.57
Columbia-Shuswap	6,094.14
Comox Valley	1835.88
Cowichan Valley	2400
East Kootenay	5234.64
Fraser Valley	12472.58
Fraser-Fort George	10781
Greater/Metro Vancouver	616,507
Kitimat-Stikine	2567.89
Kootenay Boundary	2895.58
Mount Waddington	1028.07
Nanaimo	18,950.05
North Okanagan	7196.68
Okanagan-Similkameen	4565.09
Peace River	4372.96
Powell River	1242.18
Skeena-Queen Charlotte	1.08
Squamish-Lillooet	2887.67

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Strathcona	855.13
Sunshine Coast	1908.65
Thompson-Nicola	16163.3
Provincial Total	775,644.11 kg

7.3 Program Product Recovery Rate:

- Overall program product recovery rate for 2018 was 141.59%; this is based on the weight of units collected and the weight of units distributed.
- 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 2018 was 37% 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	2018 Results	Strategies for Improvement
1. Target of 77.5% recovery was committed for 2018	Overall recovery rate was 141.59%	Process improvement projects are in progress

Recovery rate is higher than products distributed due to excess inventory recycled/resold as well as decommissioning projects.

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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



Independent practitioner’s reasonable assurance report on non-financial information included in TELUS’ Annual Report to the Director, Environment Quality Branch, British Columbia Ministry of Environment and Climate Change Strategy

To the Management of TELUS Communications, Inc.

We have undertaken a reasonable assurance engagement on the 2018 Annual Report to the Director, Environment Quality Branch, British Columbia Ministry of Environment and Climate Change Strategy (“the Report”) of TELUS Communications, Inc. (“TELUS”), as part of TELUS’ commitments under the Extended Producer Responsibility (“EPR”) program for the year ended December 31, 2018.

Management’s responsibility

Management is responsible for the preparation of the Report in accordance with sections 8(2)(b), 8(2)(d), 8(2)(e) and 8(2)(g) established in the British Columbia Regulation 449/2004 Recycling Regulation (“the criteria”). Management is also responsible for such internal control as management determines necessary to enable the preparation of the Report that is free from material misstatement.

Our responsibility

Our responsibility is to express a reasonable assurance opinion on the Report based on the evidence we have obtained. We conducted our reasonable assurance engagement in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3000, *Attestation Engagements Other than Audit or Reviews of Historical Financial Information*.

This standard requires that we plan and perform this engagement to obtain reasonable assurance about whether the Report is free from material misstatement.

Reasonable assurance is a high level of assurance, but is not a guarantee that an engagement conducted in accordance with this standard will always detect a material misstatement when it exists. The nature, timing and extent of procedures selected depends on our professional judgment, including an assessment of the risks of material misstatements, whether due to fraud or error, and involves examining evidence about management’s preparation of the Report in accordance with the criteria.

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

Inherent limitations

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the Report 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 judgements. Furthermore, the nature and methods used to determine such information, as well as the evaluation criteria and the precision thereof, may change over time. It is important to read our report in the context of evaluation criteria.

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

PricewaterhouseCoopers LLP
PwC Place, Suite 1400, 250 Howe Street, Vancouver, BC, Canada V6C 3S7
T: +1 604 806 7000, F: +1 604 806 7806



bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

The firm applies Canadian Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance Engagements* 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.

Opinion

In our opinion, TELUS' 2018 Annual Report to the Director, Environment Quality Branch, British Columbia Ministry of Environment and Climate Change Strategy for the year ended December 31, 2018 has been properly prepared, in all material respects, in accordance with the criteria.

Purpose of statement and restriction of use and distribution

The Report has been prepared to report to the BC Ministry of Environment and Climate Change Strategy as part of TELUS' commitments under the Recycling Regulation. As a result, the Report may not be suitable for another purpose.

Our report is intended solely for TELUS and the BC Ministry of Environment and Climate Change Strategy, in accordance with the terms of our engagement, and should not be distributed to or used by parties other than TELUS and the BC Ministry of Environment and Climate Change Strategy.

PricewaterhouseCoopers LLP

Chartered Professional Accountants

Vancouver, BC
June 17, 2019



Appendix A – Findings and Evaluation Criteria

- 1. Section 8(2)(b) of the Recycling Regulation - the location of collection facilities, and any changes in the number and location of collection facilities from the previous report**

TELUS' reported result:

The number of collection facility locations is 11 (2017: 13).

Reference: page 7 of TELUS's 2018 Annual Report to the Director

Basis of preparation:

- "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., CTDI and Archway;
 - o Processors - e.g., GEEP, Metalex, Edmonds Recycling;
 - o Spare Central Stock – e.g., CTDI warehouse location for spare network equipment; or
 - o Redeployment Centres/Forward logistics - e.g., TELUS, CTDI and Archway 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. Section 8 (2) (d) of the Recycling Regulation - the description of how the recovered product was managed in accordance with the pollution prevention hierarchy

TELUS' reported result:

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, 2018

Product Type	Reuse (%)	Recycle (%)	Recovery (%)	Residual (%)	Unknown (%)
TELUS TV Equipment	37	63	0	0.0643	0
TELUS TV Accessories	29	71	0	0.0643	0
Network Equipment	30	70	0	0.0643	0
Telsets	0	100	0	0.0643	0
GPS	5	95	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	46	54	Processed for material recovery (nickel, cobalt, cadmium, lead, iron, copper, stainless steel)
Batteries >2 kg	100	0	Processed down to commodities for reuse or further processing (lead, acid, plastic, sulfur)

Reference: page 10 and 11 of TELUS's 2018 Annual Report to the Director



Basis of preparation:

- “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 Aluminium, 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. Section 8 (2) (e) of the Recycling Regulation - the description of the total amounts of the producer's product sold and collected and, if applicable, the producers' recovery rate

TELUS' reported result:

Total amount of producer's product sold is estimated as 699.59 mt

Total amount of producer's product collected is estimated as 990.54 mt

Reference: page 11 of TELUS's 2018 Annual Report to the Director

14.66 mt of the amount of producer's product sold was based on self-reporting. Our assurance report does not extend to providing an opinion over the accuracy of the self-reported data.

The recovery rate is reported under criteria 4 below.

Basis of preparation:

- "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 Program equipment utilized externally by customers
 - TELUS TV equipment (Set-top boxes, PVRs, Receivers, Remote Controls)
 - TELUS Internet Equipment (Routers, Modems, Gateways)
 - Satellite TV equipment
 - Cordless Phones (wireline)
 - Corded Phones
 - VOIP phones
 - VOIP Analog Terminal Adapter
 - GPS equipment
 - Optical Network Terminal Battery (GPON battery)
 - Video and telephone conferencing equipment
 - Servers
 - o Program equipment utilized by TELUS
 - Cordless and corded desktop phones
 - VOIP Over IP (VOIP) phones
 - Global Positioning Systems (GPS) equipment
 - Obsolete network equipment (switches, servers, mainframes, circuit cards, etc.)
 - Public Access Equipment (payphones, smartcard readers)
 - External Customer Network Infrastructure Equipment – but located on TELUS premises (servers, mainframes, tapes etc.)
 - Video and telephone conferencing equipment
 - Optical Network Termination Equipment located on customers' premises
 - Batteries associated with these electronics
- Products not included in the program are mobile devices and their associated accessories.



4. Section 8 (2) (g) of the Recycling Regulation - the performance for the year in relation to targets in the approved stewardship plan under Sections 8(2)(b), (d), and (e)

TELUS' reported result:

141.59% recovery rate for the year ended December 31, 2018 compared to a target of 77.5%

Reference: page 13 of TELUS's 2018 Annual Report to the Director

Basis of preparation:

- Recovery rate is calculated as:

$$\text{Total weight of units collected} / \text{Total weight of units distributed (sold)}$$

TELUS Communications Inc. 2018 Report to Director, Waste Management

TELUS Corporation ISO 14001:2015 Certificate

Certificate CA15/640105.00

The management system of

TELUS Corporation

3777 Kingsway
Burnaby, BC V5H 3Z7, Canada

has been assessed and certified as meeting the requirements of

ISO 14001:2015

For the following activities:

Provision of Telecommunication Services

This certificate is valid from 20 July 2018 until 19 July 2021
and remains valid subject to satisfactory surveillance audits.
Re certification audit due before 23 April 2021.
Issue 2. Certified since 20 July 2015.

Authorized by



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