



INTRODUCTION TO E-WASTE IN CANADA

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WHAT IS E-WASTE ACCORDING TO THE GOVERNMENT?

E-waste

From: [Innovation, Science and Economic Development Canada](#)

Electronic waste (e-waste) includes unwanted electronic equipment, such as smart devices and used cables, as well as batteries and fluorescent lights (including compact fluorescent lights). Electronic equipment contains toxins such as [mercury](#), lead, cadmium, beryllium and arsenic. E-waste, if not managed properly, can be harmful to human health and to the environment. Fluorescent lights, for example, contain mercury and cannot be disposed of in regular garbage.

Additionally, the parts that make up your electronics, such as steel, glass, copper, aluminum, iron, plastics and precious metals, can be recovered and made into new products. Consider donating or selling your electronic item instead of disposing of it in your garbage.



WHAT IS E-WASTE?

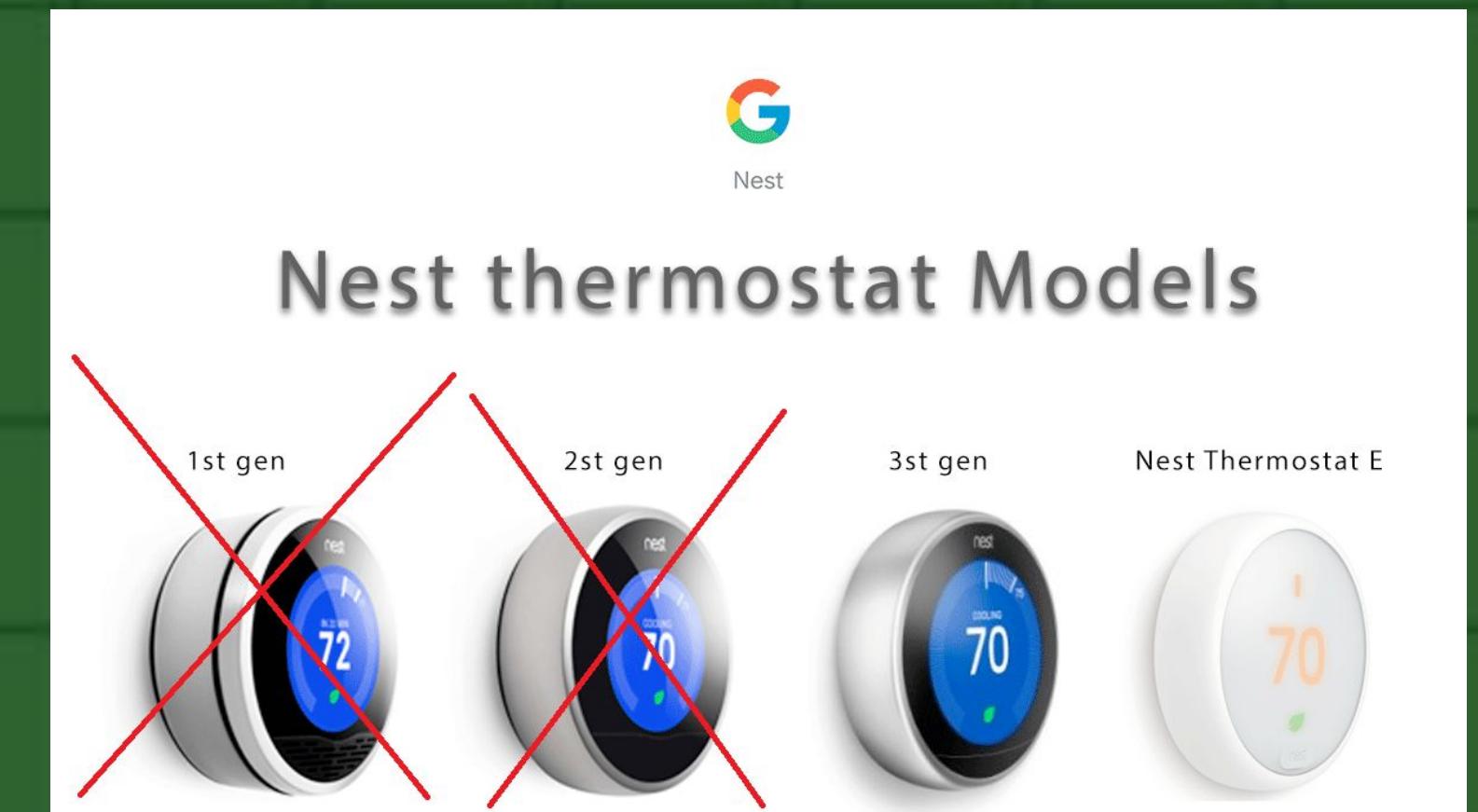
E-WASTE (ELECTRONIC WASTE) IS ANY POST-USE* MATERIAL OF AN ELECTRONIC PRODUCT THAT CANNOT BE SEPARATED FROM ITS CIRCUITRY OR OTHER ELECTRONIC COMPONENTS AT THE END OF ITS LIFE CYCLE¹

POST USE - THE NEED FOR *INTENDED* PURPOSE OF THE ITEM HAS FINISHED
LIFE CYCLE - FROM THE POINT OF CREATION, TO POST USE

WHAT DEFINES A LIFE CYCLE?

A LIFE CYCLE IS OFTEN DEFINED AS
'THE PERIOD OF TIME AN ITEM IS IN
A USEABLE STATE'

E WASTE HAS A PARTICULAR
PROBLEM WITH PLANNED
OBSOLESCENCE



THE UNIQUE CHALLENGE OF E-WASTE

- CONSTANTLY EVOLVING LANDSCAPE
- VARYING LIFE CYCLES
- ENORMOUS SCOPE OF MATERIALS AND MANUFACTURING PROCESSES
- DEEPLY INGRAINED IN OUR CONSUMPTION ECOSYSTEM
- OFTEN IRREPARABLE BY VIRTUE OF DESIGN

BONUS
QUESTION!

WHAT IS THE MOST MANUFACTURED ITEM ON
THE PLANET?
HOW MANY ARE THERE?



A: THE TRANSISTOR!

- THERE ARE AN ESTIMATED
13,000,000,000,000,000,000+
TRANSISTORS ON EARTH!
- THERE ARE AN ESTIMATED
75,000,000,000,000,000 GRAINS OF
SAND ON EARTH!



A TRANSISTOR CAN BE ~45 NM
A HUMAN HAIR IS 80-100,000 NM

WHAT'S SO BAD ABOUT

E-WASTE (BEFORE IT BECOMES WASTE) IS INCREDIBLY RESOURCE INTENSIVE.

- RARE EARTH METALS
- HEAVY METALS
- PETROLEUM PRODUCTS
- LARGE MANUFACTURING PROCESS

- THERE WILL NEVER BE A STANDARD WAY TO RECYCLE E-WASTE! IT IS FAR TOO BROAD, AND REQUIRES SPECIALIZED EQUIPMENT
- DOWNCYCLING AND CIRCULAR ECONOMY ARE THE CURRENT BEST APPROACHES IN ADDITION TO RIGHT TO REPAIR LAWS



WHO HANDLES WASTE?

SHARED RESPONSIBILITY: FEDERAL, PROVINCIAL, & MUNICIPAL²

- MUNICIPAL - MANAGE COLLECTION, RECYCLING, COMPOSTING, AND DISPOSAL OF WASTE
- PROVINCIAL - IMPLEMENT WASTE REDUCTION POLICIES/PROGRAMS AND MANAGE DISPOSAL FACILITIES
- FEDERAL - OVERSEES INTERNATIONAL AND INTERPROVINCIAL MOVEMENT OF HAZARDOUS WASTE
 - PROVIDES BEST MANAGEMENT PRACTICES TO MINIMIZE ENVIRONMENTAL IMPACTS OF WASTE



EXTENDED PRODUCER RESPONSIBILITY



NEW REGULATION INTRODUCED IN 2021: ONTARIO REGULATION 522/20

- COLLECTION AND MANAGEMENT OF END OF LIFE EEE SHIFTS TO PRODUCERS
- INCENTIVIZES PRODUCERS TO MAKE PRODUCTS THAT ARE EASIER TO REUSE AND RECYCLE

WHICH...

- REDUCES THE AMOUNT OF WASTE
- REDUCES GHG
- IMPROVES THE LIFECYCLE OF PRODUCTS
- PREVENTS ILLEGAL EXPORTATION OF E-WASTE



PRODUCER RESPONSIBILITY ORGANIZATION'S (PROS) - EPRA

- NOT FOR PROFIT ORGANIZATION
- REGULATES RECYCLING PROGRAMS ACROSS CANADA
- CURRENTLY OPERATES IN 9 PROVINCES
- EVEN WITH EPRA THERE IS ONLY A 20% COLLECTION RATE AND OF THAT ONLY 15% IS ACTUALLY RECYCLED⁷ (3% OVERALL)



20 PROS EXIST NATIONALLY ACROSS ALL MATERIAL TYPES BUT EPRA (RECYCLE MY ELECTRONICS) IS THE MOST USED

QUEBEC

STEPS TO FOLLOW QUEBEC'S REGULATION (Q-2 R40)⁸

- REGISTER WITH RPRA (RESOURCE PRODUCTIVITY AND RECOVERY AUTHORITY) SET AND MEET TARGETS
- FUNDED THROUGH ENVIRONMENTAL HANDLING FEES (EHF)
- CENTRALIZED PRO
- VAST ACCEPTED ITEMS



ONTARIO



STEPS TO FOLLOW ONTARIO'S REGULATION EEE (R522/20):

- REGISTER WITH PRO/RPRA (RESOURCE PRODUCTIVITY AND RECOVERY AUTHORITY) OR CREATE SELF COMPLIANCE PLAN
- *GET RECYCLERS
- PRODUCER FUNDED
- NARROWER LIST OF PRODUCTS

APPLE V GEEP CANADA 2020:

- GEEP RESOLD NEARLY 100,000 DEVICES DEEMED “DESTROYED”
- CASE WAS DISMISSED IN JANUARY 2025



WHAT IS EVERYONE ELSE DOING?



LEY N 20.920
(2016)⁴

- NATIONAL EPR FRAMEWORK
- STRONG SANCTIONS
- FUNDS FOR MUNICIPALITIES



DIRECTIVE ON
WEEE (2012)⁶

- PROMOTES RECOVERY OF SECONDARY RAW MATERIALS
- SET TARGETS ACROSS MEMBERS
- STRONG CONTROL ON EXPORTS
- COMPARE REGISTRIES



ORDER OR STATE
N 551 (2009)⁵

- NATIONAL LAW
- TARGETS TIED TO FUNDS
- PENALTIES
- INFORMAL SECTOR

KEY DRIVERS SHAPING THE POLICY LANDSCAPE

KEY DRIVERS

TECHNOLOGICAL & MARKET

ENVIRONMENTAL & HEALTH

REGULATORY & ECONOMIC

- CIRCULAR ECONOMY GOALS
- RAPID GROWTH OF E-WASTE
- CONSUMER HABITS
- RESOURCE RECOVERY
- TOXICITY
- EXTENDED PRODUCER RESPONSIBILITY (EPR)
- RIGHT-TO-REPAIR

ACTIVE MOVEMENTS IN CANADA

FEDERAL FOCUS: STRENGTHENING CROSS-BORDER CONTROL

BASEL CONVENTION

GOAL

- MINIMIZE THE CREATION OF HAZARDOUS WASTE.
- PROTECT PEOPLE AND THE PLANET FROM DANGEROUS WASTE.

ACTION

- STRICTLY CONTROL THE MOVEMENT OF HAZARDOUS WASTE BETWEEN COUNTRIES.



CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

GOAL

- PROVIDE A STRONGER LEGAL FRAMEWORK FOR TIGHTENING ENVIRONMENTAL REGULATIONS RELATED TO TOXIC SUBSTANCES.

“(A.2) PROTECT THE RIGHT OF EVERY INDIVIDUAL IN CANADA TO A HEALTHY ENVIRONMENT AS PROVIDED UNDER THIS ACT, SUBJECT TO ANY REASONABLE LIMITS;”

ACTIVE MOVEMENTS IN CANADA

PROVINCIAL SHIFT: DEEPENING PRODUCER RESPONSIBILITY

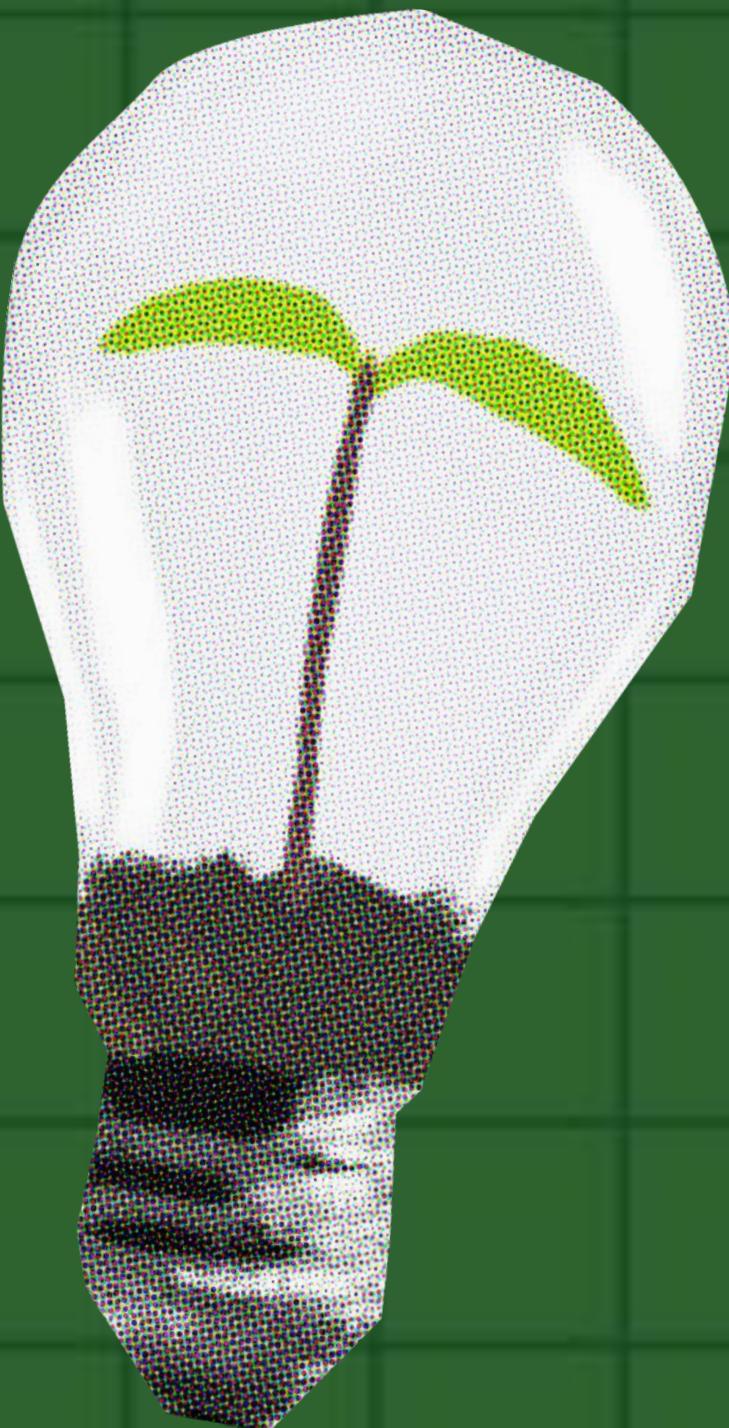
FULL PRODUCER RESPONSIBILITY (FPR)

GOAL

- PROMOTE WASTE DIVERSION
- GIVE PRODUCERS INCENTIVE TO REDESIGN PRODUCTS AND MAKE THEM EASIER TO RECYCLE.

ACTION

- PRODUCERS WILL BE RESPONSIBLE FOR MANAGING AND PAYING FOR THE FULL LIFE-CYCLE OF THEIR PRODUCTS TO MAKE RECYCLING EASIER AND MORE ACCESSIBLE ACROSS THE PROVINCE.



ACTIVE MOVEMENTS IN CANADA

INDUSTRY & ADVOCACY: PRODUCT LIFE EXTENSION

THE RIGHT-TO-REPAIR MOVEMENT

BILL C-244.

“41.121 (1) PARAGRAPH 41.1(1)(A) DOES NOT APPLY TO A PERSON WHO CIRCUMVENTS A TECHNOLOGICAL PROTECTION MEASURE FOR THE SOLE PURPOSE OF MAINTAINING OR REPAIRING A PRODUCT, INCLUDING ANY RELATED DIAGNOSING...”

ELECTRONIC RECYCLING ASSOCIATION (ERA)

GOAL

- REDUCE ELECTRONIC WASTE AND ITS IMPACT ON THE ENVIRONMENT BY SECURELY REPURPOSING AND RECYCLING UNWANTED ELECTRONICS.

ACTION

- ENHANCED RECYCLING INFRASTRUCTURE
- COMMUNITY ENGAGEMENT
- GLOBAL OUTREACH



THANK YOU!

REFERENCES

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2. [HTTPS://WWW.CANADA.CA/EN/ENVIRONMENT-CLIMATE-CHANGE/SERVICES/MANAGING-REDUCING-WASTE/MUNICIPAL-SOLID/SHARED-RESPONSIBILITY.HTML](https://WWW.CANADA.CA/EN/ENVIRONMENT-CLIMATE-CHANGE/SERVICES/MANAGING-REDUCING-WASTE/MUNICIPAL-SOLID/SHARED-RESPONSIBILITY.HTML)
3. [HTTPS://CCME.CA/EN/RES/CAP-EPR_E.PDF](https://CCME.CA/EN/RES/CAP-EPR_E.PDF)
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7. KUMAR, A., & HOLUSZKO, M. (2016). ELECTRONIC WASTE AND EXISTING PROCESSING ROUTES: A CANADIAN PERSPECTIVE. *RESOURCES*, 5(4), 35. [HTTPS://DOI.ORG/10.3390/RESOURCES5040035](https://DOI.ORG/10.3390/RESOURCES5040035)
8. [HTTPS://WWW.LEGISQUEBEC.GOUV.QC.CA/FR/DOCUMENT/RC/Q-2.%20R.%2040.1?utm_source=CHATGPT.COM&langcont=EN](https://WWW.LEGISQUEBEC.GOUV.QC.CA/FR/DOCUMENT/RC/Q-2.%20R.%2040.1?utm_source=CHATGPT.COM&langcont=EN)
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FIGURES:

1. https://epra.ca/provincial-programs?utm_source=chatgpt.com
2. <https://www.albertarecycling.ca/epr/#:~:text=Under%20Alberta%27s%20EPR%20framework%20producers%20produce%20Variable%20Recyclable%20waste%20Total%20waste>