



European Commission

**Summary of the G7 Value Retention Policies Workshop:
Advancing Remanufacturing, Refurbishment, Repair and Direct Reuse**

Montreal, 21-22 June 2018

Around sixty policy experts and industry leaders from across the G7 and beyond discussed actions and opportunities for remanufacturing, refurbishment, repair and direct reuse of products – collectively Value Retention Processes (VRPs) – over 2 days in Montreal. This was the second G7 workshop focused on VRPs; the first discussed the interim findings of the International Resource Panel study on ‘Assessment of Resource Efficiency and Innovation in Circular Economy through Remanufacturing, Refurbishment, Repair and Direct Reuse (working title) in 2017. The present document provides a brief summary of discussions in Montreal. A more detailed report is forthcoming.

Workshop discussions revealed significant opportunities for economic, environmental and social gains in amplifying VRPs. The opportunities lie in expansion of VRPs into consumer product markets such as **smartphones, computers, white goods, etc.** – and extension of VRP activities in markets where they are already highly successful such as **automobiles, heavy duty machinery, and industrial printers, etc.**

Discussions at the workshop explored the role of international definitions and standards in supporting the expansion of VRPs, demonstrated the opportunities and potential in the consumer products sector, and touched on the role of governments and market-based measures to incentivize VRPs (see workshop programme in Annex 1). Some key takeaway actions discussed by workshop participants to further exploit these opportunities include:

Governments, businesses and NGOs can:

Action	Rationale
<ul style="list-style-type: none"> Bring the opportunities discussed at the workshop to political discussions – including to the G7 Environment Ministers' Meeting in Halifax 	<p>The extent of economic and environmental gains from value retention processes are not widely known and current policy frameworks may be an important barrier to expanding VRPs. Political support at the international level would galvanize the necessary momentum for change.</p>
<ul style="list-style-type: none"> Work together to support the expansion of VRPs 	<p>Collaboration is essential in expanding VRPs to different product categories, industrial sectors and market segments. Policy makers, industry and researchers could collaborate in sharing of best practices, increasing consumer confidence, researching market opportunities, quantifying resource efficiency gains, and exploring effective reverse logistic solutions beyond B2B.</p>
<ul style="list-style-type: none"> Expand the global potential for VRPs with China, Brazil and other emerging economies 	<p>International co-operation is essential to ensure enabling policies, standards, trade, etc. are in place as recently industrialized economies enter and scale up remanufacturing, refurbishment, and repair.</p>

G7 and other governments and implicated international bodies can:

Action	Rationale
<ul style="list-style-type: none"> Update product-related policies to support VRP expansion and enable frameworks which rewards innovation 	Expansion of VRPs and penetration of their products in the marketplace require level-playing field policies; policies up-to-date with technological potential; economic incentives for product categories with lower resale value but high value retention potential; incentives for and de-risking investments in innovation.
<ul style="list-style-type: none"> Clarify definitions in existing international frameworks dealing with waste and end-of-life products 	The challenge in expanding VRPs can be impeded by the lack of clarity in or full understanding of international legal definitions for waste vs. end-of-life products, the consequences of which may be: end of life products getting labelled as waste which limit VRP opportunities through international trade; mislabelled end-of-life products imported by facilities ill-equipped for safe handling of these products.
<ul style="list-style-type: none"> Urge the development of standards for (i) remanufactured and refurbished products and (ii) product design standards in national and international standardization bodies 	Standards for remanufactured and refurbished products build consumer confidence and create a level playing field amongst producers. In addition, product design standards that enable ease of remanufacturing, refurbishment, and repair allow for integration of VRPs into business models, eliminating a number of barriers in scaling up businesses and processes.
<ul style="list-style-type: none"> Ensure that regulations and standards balance concerns for consumer safety and privacy with the need for third-party access to product information and parts 	Given the increasing complexity and diversity in design of consumer products, value retention practices require access to product information and parts; however, in creating an enabling environment, policy makers must also take into account any risks posed to consumers' safety (e.g., manufacturer recall, defects caused by faulty repair) and privacy.
<ul style="list-style-type: none"> Incorporate value retention considerations as part of procurement and asset management practices 	Given the governments' scale of operations and ability to shift demand, integration of VRPs and wider resource efficiency considerations in public procurement and service acquisition could create the enabling environment for VRPs to scale up. Similarly, innovative asset disposal practices aimed at resource efficiency could also result in a number of social and economic co-benefits.

Industry can:

Action	Rationale
<ul style="list-style-type: none"> Explore the economics and expansion of VRPs in high-volume markets like smart-phones, computers, textiles, and white goods 	The current market share of remanufactured and refurbished products in high-volume markets is yet to reach its true limits. However, existing innovative companies (e.g., Remade, Dutch Awareness, Fnac-Darty) have proven the possibility of successful circular business models and the extent of market potential for VRPs.
<ul style="list-style-type: none"> Explore, consider, and make use of the innovative and cost-effective reverse logistic solutions, enabled by ICT and diversification of services 	The considerable costs associated with reverse logistics could be prohibitive for companies considering VRPs. Innovative operations (e.g. Dutch Awareness, Panalpina) show what is currently possible in reverse logistics – tracking and managing products over the life-cycle in a cost effective way, and incorporating value-added services in reverse logistic operations.
<ul style="list-style-type: none"> Find ways to facilitate greater repair in consumer product sector whilst preserving or enhancing brand value 	The resource efficiency gains from repair in consumer products are not yet fully realized. Design for repair, easy access to repair networks, and building consumer confidence could amplify the amount of repair activities carried out.

A select number of presentation summaries are provided below (more will follow in a future report):

Remade (France): Premium smartphones and laptop refurbishment

Remade refurbishes 6,000 iPhones per day; employs 850 staff; delivers in 17 countries; and is projected to earn €250 in revenues in 2018 (more than 10 times in earnings since 2014). Mr. Dave Stritzinger, CEO of Remade, emphasized that success has hinged on gaining consumer confidence by offering high-quality products, distribution in premium channels, offering 1-year warranty, in-house customer support, and top quality accessories – transforming the transaction from a risk to a premium customer experience. (For this presentation, click [here](#))

iFixit (USA): Enabling repair at scale by providing free repair guides

iFixit is an online community of people sharing repair know-how. The website currently offers 42,770 free repair manuals used by professionals and product users around the world; in 2017, iFixit had 7 million users. Mr. Kyle Wiens, CEO of iFixit highlighted the technical and legal challenges in expanding repair, including: lack of parts, complex software, design that does not allow disassembly and repair, and lack of policies that balance the consumers' right to information for repair and manufacturers concerns around brand liability. (For this presentation, click [here](#))

Fnac-Darty (France): Linking retail and repair as customer service

Fnac-Darty is a leading French retail chain offering white and brown goods. An important aspect of the company's business model is offering after-sale services, including repair (around 2.5 million in 2017). Mr. Régis Koenig, Director of Customer Experience and Service Policies explained that replacement of a defective product is the primary reason for purchase of a new electronic device in France. Accessible repair options (product information, costs, and service network) would enable consumers to extend the use of their products. Product design (for durability, reparability, and updatability) is another important driver for extending product life. Major barriers in this area include lack of open access to software, documentation, and spare parts for white goods and electronics. (For this presentation, click [here](#))

Dutch Awearness (Netherlands): Closing the loop on logistics

Dutch Awearness designs textile, work and corporate wear to be 100% recyclable and reused, and is a leading company in circular chain management for the textile industry. The company's Circular Content Management Systems (CCMS) tool is a circular track and trace system in which all partners in the supply chain – from raw material vendors to end-users – are involved to ensure that material at the end-of-use is tracked and retained in the chain for reuse. Mr. Rien Otto, Director and Founder of Dutch Awearness highlighted that lack of information on a product's composite material is the main obstacle in recycling and reuse. The CCMS tool is easily adaptable for other industries, allowing for greater VRPs in other product categories through tracking of information on raw materials and production treatments. (For this presentation, click [here](#))

Compugen Finance (Canada): Resource efficiency in support of climate change mitigation

Compugen Finance offers end-of-first-life IT asset disposition solutions to the corporate and institutional sector. The company recently launched an innovative initiative centered on voluntary carbon credits – first of its kind in the world. The CarbonBank Program generates carbon offsets based on the amount of greenhouse gas emissions saved through refurbishment of IT products. Organizations that dispose of IT assets through this program earn carbon credits to offset emissions in other aspects of their operations. Mr. Steve Glover, President of Compugen Finance explained that companies could pool carbon credits from various sources, including those from IT disposition, to reach carbon neutrality across their

operations. He highlighted that the need for frequent software updates results in considerable amount of IT disposal. Carbon credits could be part of the solution in fostering greater VRPs, while contributing to an organization's overall sustainability goals. (For this presentation, click [here](#))

Computers for Success (Canada): Government asset management in support of resource efficiency

Computers for Success Canada, a long standing Government of Canada initiative was originally designed to extend the value of disposed government IT asset by redistributing refurbished computers to public education institutions. Currently, the program offers an internship to provide hands on IT refurbishment training to youth and has expanded its list of eligible recipient to include non-for-profit organizations, low-income families, new immigrants, and refugees. Mr. Toby Harper-Merrett, Executive Director of Computers for Success highlighted the program's success in realizing a number of policy co-benefits by offering marketable skills and job training to over 6,700 interns, addressing the underrepresentation of select groups in the digital economy, and achieving resource efficiency by refurbishing over 1.5 million computers. (For this presentation, click [here](#))

International Resource Panel (UN): Understanding the economic and environmental benefits of Value Retention Processes (VRPs)

For the past three years, the UN's International Resource Panel (IRP) has gathered and analyzed information for a report on the benefits and barriers of VRPs, in particular remanufacturing of heavy-duty and off-road equipment, automobile parts, and industrial imaging equipment. Dr. Nabil Nasr, the lead author of the report explained that the greatest opportunities lie in revision of regulation (on trade, markets and product standards), facilitating product design change, the coupling of forward and reverse logistics and in the support and development of innovative business models. The research identifies a need for a systemic approach to support expansion – use of several connected policy changes and actions by business. The final IRP report is expected to be available in October 2018. (For this presentation, click [here](#))

Europe's Circular Economy Strategy: Evolving product policy framework

EU policies are evolving to promote innovation and VRP expansion, with product design and business model innovation as the starting points. Ms. Fulvia Raffaelli, Head of Unit at the European Commission's Directorate-General for Industry highlighted how traditional linear systems of production and consumption are no longer options for a competitive and sustainable economy. The EU's Eco-design Directive is an example of one such policy to enable greater VRP through design considerations. The EU is pioneering multiple-actor discussions so that supply chains can communicate on disruptive innovation that could be scaled; and cross-fertilization amongst different policies. Smart green procurement (worth 250 billion) has incredible potential for supporting market transition. In the EU green procurement criteria have been developed for 20 product categories. (For this presentation, click [here](#))

European Remanufacturing Council (EU): Beyond the G7 and a €73bn market opportunity in the EU

China has recently adopted a wide-ranging program of legislation updating and innovation support for remanufacturing, including 1000 innovation projects, and inclusion of remanufacture in the development program of 151 Chinese cities. In the EU, scoping suggests a potential market to €73bn by 2030, if policy frameworks are supportive. The opportunities for remanufacture increase with: product price, ease of de-manufacture and the product's robustness to the pace of technological change. (For this presentation, click [here](#))

Annex 1 – Workshop Programme and Participant List

Thursday 21 June 2018	
09:00-9:15	Registration and refreshments
09:15-09:30	<p>Opening session</p> <p>Welcome address – <i>Mr. Marc D’lorio, Environment and Climate Change Canada</i></p> <p>Welcome address – <i>Ms. Fulvia Raffaelli, European Commission</i></p>
09:30-12:30	<p>Session 1: Setting the scene – Recap of Brussels, International Resource Panel Final Report, and Implications for Business and Policy</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> Recap and review the key messages and findings from the Brussels 2017 RRRDR workshop Present and review the final International Resource Panel (IRP) report on these themes Explore and compare some of the conclusions and recommendations drawn in the IRP report in order to create a shared understanding of goals and challenges, with a temporal and geographical lens
09:30-10:15	<p>Introduction – <i>Mr. Christian Hudson, GiZ</i></p> <p>Recap of the 2017 Brussels workshop on RRRDR¹ – <i>Mr. Luca Marmo, European Commission</i></p> <p>Presentation on IRP final report on Assessment of Resource Efficiency and Innovation in Circular Economy through Remanufacturing, Refurbishment, Repair and Direct Reuse – <i>Mr. Nabil Nasr, Golisano Institute for Sustainability</i></p>
10:15-10:30	Q&A
10:30-10:50	Refreshment Break
10:50-11:20	<p>Panel discussion on the Implications of the IRP report, value retention trends, potentials and strategies for policy and business action – moderator: Mr. Christian Hudson, GiZ</p> <p>Mr. David Parker, European Remanufacturing Council (EU)</p> <p>Mr. Warrington Ellacott, Whirlpool & U.S. Chamber of Commerce’s Global Resource Efficiency and Sustainability Task Force (USA)</p> <p>Mr. Wilfried Oppermann, Siemens (Germany)</p>
11:20-12:20	Q&A and Interactive panel discussions with presenters
12:20-12:30	Round up of discussions, lessons, and framing for the workshop
12:30-14:00	Lunch break
14:00-15:30	<p>Session 2: Reverse Logistics – Supply of Core and Products for Value Retention Processes (VRP)</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> Explore the necessary conditions for firms to obtain sufficient core or end-of-first-use products for VRP and discuss solutions to achieve that supply

¹ http://ec.europa.eu/environment/international_issues/pdf/7_8_february_2017/workshop_report_Brussels_7_8_02_2017.pdf

14:00-14:30	Introduction and goal setting by chair: Jay Illingworth, Electronics Products Recycling Associations of Canada Mr. Rien Otto, Dutch aWEARness (Netherlands) Mr. Dimitri Brink, Canada rep - Panalpina (Switzerland) Mr. Clayton Miller, Revolution Recycling (Canada)
14:30-15:30	Interactive panel discussion and Q&A
15:30-15:50	<i>Refreshment break</i>
15:50-18:00	Session 3: Removing Unwanted Barriers to Supply – Waste Definitions and International Standards <i>Objectives:</i> <ul style="list-style-type: none"> • Explore solutions for resolving perceived and real business risks to trade in core and VRP products from application of regulations on trade in waste • Understand the state of work, advantages, and opportunities for developing international standards for remanufactured products and cores to facilitate trade
15:50-16:35	Introduction and goal setting by chair: Ms. Fulvia Raffaelli, European Commission – 5 min Ms. Yvonne Ewang, Basel Secretariat (UN) Ms. Cindy Coutts, Yamais International (Canada) Mr. Christophe Garnier, Schneider Electric (France) Ms. Sarah Kelly, British Standards Institution (UK)
16:35-16:45	Q&A
16:45 – 17:30	Small working groups on goals and actions in this area Working Groups 1 and 2 – waste definitions Working Groups 3 and 4 – international standards
17:30-18:00	Sharing the results of the round table discussions, questions and plenary discussion of ways forward

Friday 22 June 2018	
08:45-09:00	Registration and refreshments
09:00-09:15	A chaired discussion on participants' take-aways from Thursday's discussions
9:15-12:30	Session 4: Consumer Product Groups and Markets for RRRDR <i>Objectives:</i> <ul style="list-style-type: none"> • Examine RRRDR in product categories other than those studied in the IRP report and the Brussels workshop (i.e., motor-vehicle parts, commercial imaging products, and heavy-duty equipment) • Explore current and emerging market and technological trends that impact the viability of RRRDR in these product groups • Draw conclusions for policy response(s)
9:15-10:00	Introduction and goal setting by chair: Mr. Dave Parker, European Remanufacturing Council Mr. Dave Stritzinger, Remade (France) Mr. Pierre Larabie, Danby Products Inc. (Canada)

	<p>Mr. Régis Koenig, Fnac-Darty (France) Mr. Kyle Wiens, iFixit (USA)</p>
10:00-10:15	Q&A
10:15-10:30	<i>Refreshment break</i>
10:30-11:30	Group discussions on the opportunities and barriers in different product groups
11:30-12:00	<p>Feedback and structured discussions with panellists and participants around <u>common policy implications</u></p> <p>Summary of discussions on major policy opportunities</p>
12:00-13:00	<i>Lunch break</i>
13:00-14:30	<p>Session 5: Opportunities for expanding demand for RRRDR – Market and Government Incentives</p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> • Examine the circular business models and other strategies that enable and foster VRP • Explore market failures and government interventions
13:00-13:30	<p>Introduction and goal setting by chair – Mr. Tim Reeve, Municipal Collaboration for Sustainable Procurement (Canada)</p> <p>Mr. Steve Glover, Compugen Finance Inc. (Canada)</p> <p>Mr. Guillaume Martel, Provencher Roy Architects (Canada)</p> <p>Ms. Fulvia Raffaelli, European Commission (EU)</p> <p>Mr. Toby Harper-Merrett, Computers for Success (Canada)</p>
13:30-14:30	<p>Small group discussions</p> <p><i>Moderators facilitate small group discussions amongst all group members (government actions & market measures)</i></p>
14:30 – 15:00	Session 6: The Path Forward and Future Areas of Action
14:30 – 15:00	<p>Recap of day 1 and day 2 discussions</p> <p><i>Closing remarks</i></p> <p>Mr. Luca Marmo, European Commission</p> <p>Ms. Jacinthe Séguin, Environment and Climate Change Canada</p>

List of participants

Name	Organization
Mr. Alastair Handley	Carbon Credit Solutions (Canada)
Mr. Avery Gottfried	British Columbia Ministry of Environment and Climate Change Strategy (Canada)
Mr. Christian Hudson	Deutsche Gessellschaft für Internationale Zusammenarbeit (GIZ)
Mr. Christophe Garnier	Schneider Electric (France)
Mr. Clayton Miller	Revolution Recycling (Canada)
Mr. David Parker	European Remanufacturing Council (EU)
Mr. David Refkin	GreenPath Sustainability (USA)
Mr. David Stritzinger	Remade (France)
Mr. Dimitri Brink	Panalpina Inc. (Switzerland)
Mr. Francesco Bruno	Ministry of the Environment, Land and Sea (Italy)
Mr. Gary Litman	U.S. Chamber of Commerce (USA)
Mr. Guillaume Martel	Provencher_Roy Architects / Canada Green Building Council (Canada)
Mr. Jay Illingworth	Electronic Products Recycling Association of Canada
Mr. John Disharoon	Caterpillar Inc. (USA)
Mr. Kazunobu Onogawa	Institute for Global Environmental Strategies (Japan)
Mr. Kyle Wiens	iFixit (USA)
Mr. Luca Marmo	Environment Directorate-General - European Commission (EU)
Mr. Marc D'iorio	Environment and Climate Change Canada
Mr. Marc Morel	Remade (France)
Mr. Michel Iliesco	Cascades Inc. (Canada)
Mr. Mike Mullin	Brambles Ltd (Australia)
Mr. Moritz Mues	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Germany)
Mr. Nabil Nasr	Golisano Institute for Sustainability (USA)
Mr. Paul Sandage	Environment and Climate Change Canada
Mr. Pierre Larabie	Danby Products Ltd. (Canada)
Mr. Regis Koenig	Fnac-Darty (France)
Mr. Rick Goss	Information Technology Industry Council (USA)
Mr. Rien Otto	Dutch Awareness (Netherlands)
Mr. Stephen Seccareccia	Compugen Finance Inc. (Canada)
Mr. Steve Glover	Compugen Finance Inc. (Canada)
Mr. Tim Reeve	Municipal Collaboration for Sustainable Procurement (Canada)
Mr. Toby Harper-Merrett	Computers for Success - Canada Inc.
Mr. Warrington Ellacott	Whirlpool Corporation (USA)
Mr. Wilfried Oppermann	Siemens AG (Germany)
Mr. Christian Mascle	Université de Montréal (Canada)
Ms. Brianna Besch	U.S. Environmental Protection Agency (USA)
Ms. Chika Aoki-Suzuki	Institute for Global Environmental Strategies (Japan)
Ms. Cindy Coutts	Yamais Canada Ltd (Canada)
Ms. Diep Duong	Northwest Territories Ministry of Environment and Natural Resources (Canada)
Ms. Doris Nicklaus	Ministère de la transition écologique et solidaire (France)
Ms. Fulvia Raffaelli	Internal Market, Industry, Entrepreneurship and SMEs Directorate-General - European Commission (EU)
Ms. Hannah Schellander	Department for Environment, Food and Rural Affairs (UK)

Ms. Hélène Gervais	RECYC-QUÉBEC (Canada)
Ms. Jacinthe Seguin	Environment and Climate Change Canada
Ms. Jennifer Lusk	Manitoba Ministry of Sustainable Development (Canada)
Ms. Kimberly Cochran	U.S. Environmental Protection Agency (USA)
Ms. Leah Canning	Environment and Climate Change Canada
Ms. Lisa Pearlman	Apple Inc. (USA)
Ms. Marie Dussault	Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, Québec (Canada)
Mr. Nicolas Boisselle	Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, Québec (Canada)
Ms. Rosemary Dohan	Canadian Council of Ministers of the Environment (Canada)
Ms. Sarah Kelly	British Standards Institution (UK)
Ms. Shelagh Kerr	Electronic Product Stewardship (Canada)
Ms. Sonya Sundberg	British Columbia Ministry of Environment and Climate Change Strategy (Canada)
Ms. Yvonne Ewang	Basel Convention Secretariat (UN)