

The Use of SLCA in the Development of an Extended Producer Responsibility Policy: Testing End of Life Scenarios for Computer Products in Québec

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Outline

- RECYC-QUÉBEC and Quebec Policy on Residual Materials
- Context of the study and environmental LCA results
- Social LCA : methodological issues
 - ◆ Goal and scope
 - ◆ Data collection
 - ◆ Results
 - ◆ Review process
- Recommendations for practitioners

RECYC-QUÉBEC

Mission:

RECYC-QUÉBEC orients, implements and coordinates activities targeting the development of waste management programs in Quebec, in ensuring the management of some programs, in developing the pertinent knowledge, and in mobilizing various stakeholders in order to reduce the generation of waste and to reduce the quantities to be eliminated.

Québec Policy on Residual Materials

Strategy 9:

Know, inform, raise awareness, and educate

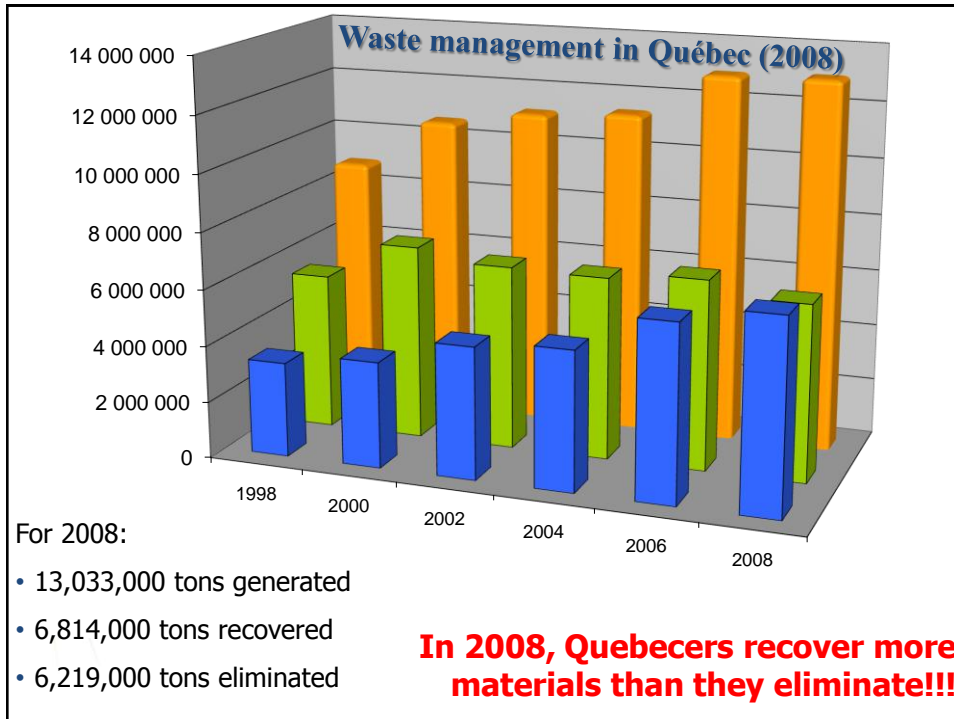
- *In the next five years, the government will earmark \$3.5 million (2,5 M€) for studies that foster the life cycle approach to improve residual materials management knowledge.*

RECYC-QUÉBEC and LCA

- Partner of CIRAIG since 2007
- Partner of UNEP/SETAC
- RECYC-QUÉBEC is committed to use LCA as a decision-making tool for implementing sustainable development in waste management

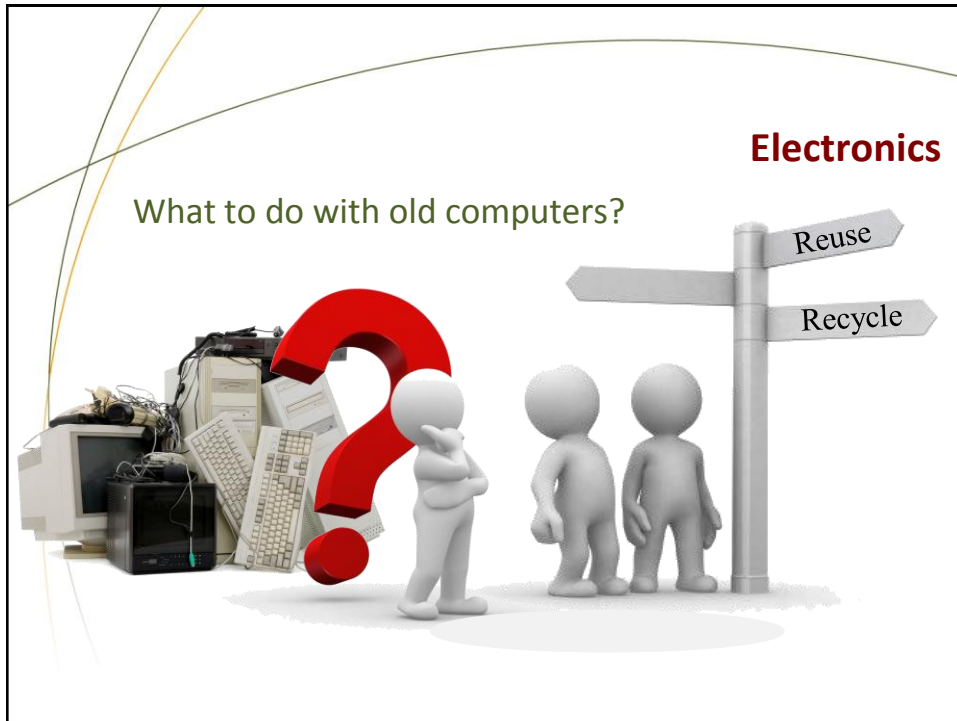
Use of LCA by RECYC-QUÉBEC

- LCA on collection bins for refundable containers (not publish)
- LCA on beer containers : reuse vs recycle
- <http://www.recyc-quebec.gouv.qc.ca/client/fr/rubriques/documentation.asp?idTypeLib=27>
- LCA on various scenarios of management of end-of-life plastics and fibres (in review)
- LCA on Product with recycled contained (in progress)
- SLCA on end of life scenarios for computer Products in Quebec.



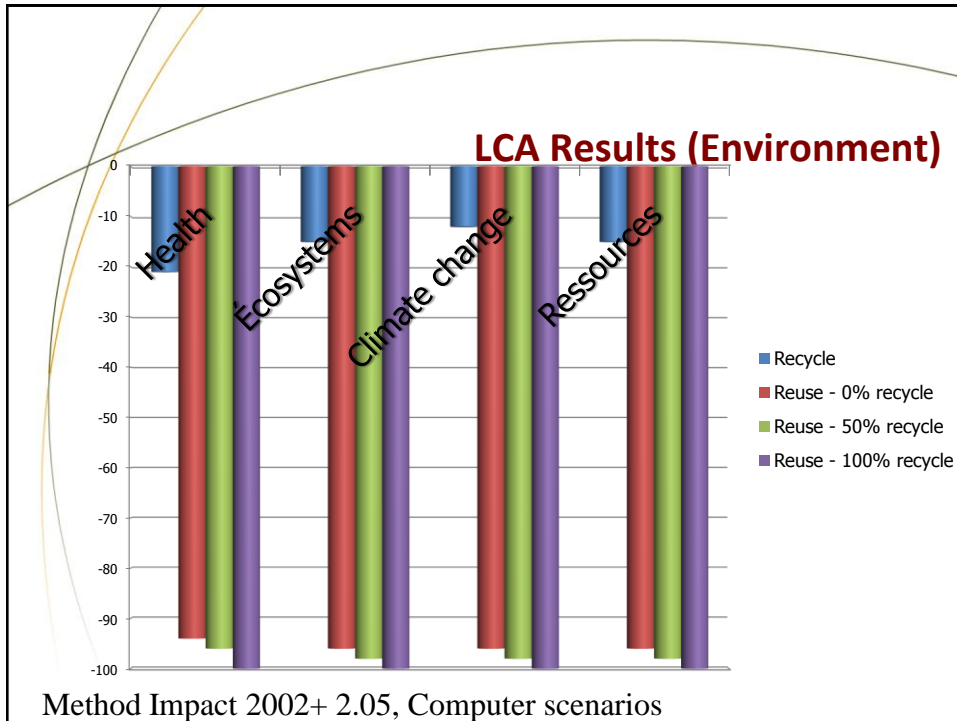
Québec Policy on Residual Materials

- Extended Producer Responsibility (EPR) is one of the key principle of the next policy
- Draft bill prescribing a framework determining compensation paid by industry for municipal recovery and reclamation services of recyclable materials
- New regulation extends EPR to 3 types of products:
 - ◆ **Electronics**, batteries and mercury-containing light bulbs



An LCA and SLCA

- Function: Manage end of the life computer coming from industrial, commercial or institutional sectors.
- The functional unit : To manage 1000 computers or 1000 screens CRT or 1000 LCD monitors from the ICI sector.



- ### LCA Results (Environment)
- Results are dependent from the context
 - ◆ It is assumed that using a refurbished computer avoids the production and use of a new one
 - ◆ A credit for the life cycles of the avoided new computers is then given
 - ◆ This is important since the credited life cycles of new computers dominate the results



AND NOW THE RESULTS FOR SLCA...



Groupe AGÉCO

- Consulting group, based in Quebec City
- Specializes in socio-economic analysis, applied to the agrifood sector and the environment, as well as social responsibility
- In a partnership with CIRAIG and QUANTIS
- Just starting in Europe

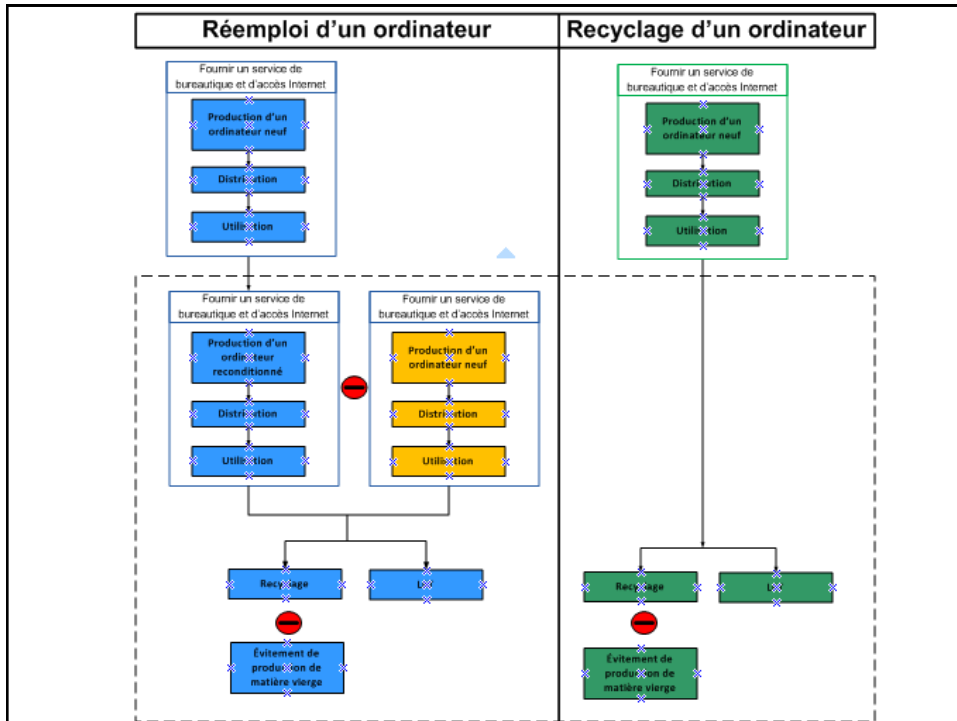
Methodological issues

- Multi-functionality of the systems
- Knowledge of the sectors under study
- Data collection
- Unexpected information regarding recycling rates
- Scenarios of comparison and results presentation
- Review process

Multi-functionality

Multi-functionality of the systems

- In addition to the function of managing computers at the end of their life, the systems fulfilled two more functions :
 - ◆ Offering computer office work services and Internet access
 - ◆ Producing recycled raw materials
- This forced us to assume that the refurbished computer was replacing a new computer
- This implied a boundary extension



Multi-functionality

Issue : the hypothesis that a refurbished computer is replacing a new computer is inconsistent with one of the social functions of the reemployment :

the reemployment of computers give access to computers to individuals and organisations that would not have access otherwise

⇒ This hypothesis was therefore not kept for the SLCA and functional equivalency not fully respected

Goal and scope definition

Scope

- ◆ Computers from companies located in the province of Quebec
- ◆ State of the art : no exportation in developing countries
- ◆ Recycling industry : mostly private companies
- ◆ Refurbishing industry: mostly community oriented NFPO

Issue : lack of knowledge and information about both the recycling and the refurbishing industries of Quebec

Data collection

- Phone interviews, face-to-face interviews, literature review and documentary review
- Refurbishing industry profile (phone survey)

Contributors to data collection, SLCA

Contributors	Sectors
RECYC-QUÉBEC	Recycling and refurbishing
Insertech Angus OPEQ	Refurbishing value chain
Réseau des CFER GEEP Global FCM Lavaltrie PC Recycle	Recycling value chain

Data collection

Issue : Data was collected from specific enterprises and most of the indicators are related to their specific behaviours

⇒ Results might not be representative of the whole sector and generalization had to be made carefully

Unexpected information

- Recycling rates might be different in the two systems
- Two scenarios of comparison
 1. Comparison of reuse of computers and recycling at the second end-of-life
With
Recycling of computers (first end of life)
 2. Comparison of reuse of computers and burying at the second end-of-life
With
Recycling of computers (first end-of-life)

Stakeholders mapping

Stakeholder categories	Life cycle stages				
	System 1 : refurbishing and reuse			System 2 : recycling	
	Reception and refurbishing	Distribution/ sale of refurbished computers	Utilisation	Recycling	Elimination
Employees	X	X		X	X
Local community	X	X	X	X	X
Youth in integration or training program	X	X			
Society	Quebec society				
Consumers (clients)		Individuals, NFPO, Schools, Others	Individuals, NFPO, Schools, Others	X	
Actors of the value chain	Suppliers : large companies and institutions			Suppliers : large companies and institutions	X

Impact inventory and assessment

- Based on UNEP/SETAC 2009 *Guidelines for SLCA of products*
- Same stakeholders and impact categories

Stakeholder categories	Impact categories
Workers	Human rights
Consumers	Working conditions
Local community	Health and safety
Society	Cultural heritage
Value chain actors	Governance
Youth in integration or training program	Socio-economic repercussions

Scales for social impact assessment

- Assessment of social risks



High risk



Medium risk



Low risk

- Assessment of social benefits

0 No benefits + Low benefits ++ Medium benefits +++ High benefits

- Unquantifiable benefits : yes / no scale

Results – scenario 1

- Society

Impact sub-category	Indicator	Scenario 1	
		Reuse	Recycling
Public commitments to sustainability issues	Public commitments related to sustainable development	++	++
Respect of the 3Rs	Nature of the activities in relation to the 3Rs	●	◆
Contribution to economic development	Job creation	+++	+
	R&D investments	Yes	No
	Added value creation	+++	+

Results – scenario 1

- Local community

Impact sub-category	Indicator	Scenario 1	
		Reuse	Recycling
Community engagement	Volunteer work, sponsorship, financial support and other participation in community organisations and initiatives	+++	+
	Commitment with and involvement of community stakeholders	●	●
	Neighbourhood-related problems, annoyances (noise, odours, heavy trucking, visual annoyances, etc.)	●	●
Local employment	Local employment preferences, (production jobs, executive jobs)	+++	+++
	Buy-locally practices and policies	++	+
Access to material resources	Access to computer equipment	Yes	n/a
Access to immaterial resources	Access to community-based services	+++	0
	Access to citizenship (reduction of digital gap)	Yes	No

Results – scenario 1

- Youth in integration or training program

Impact sub-category	Indicator	Scenario 1	
		Reuse	Recycling
Access to immaterial resources	Access to training	Yes	n.a.
	Access to labor market	Yes	n.a.
Access to material resources	Access to a salary	Yes	n.a.

Allocation of impacts to computer parts

Issue : for the SLCA, the computer was considered as a whole, given that most of the social impacts were qualitative and related to companies' behaviours rather than to functional unit.

Therefore, it did not make no sense to allocate impacts to computer parts

Results – scenario 1

• Summary

- ◆ No important social issues in the two systems
- ◆ More benefits related to reemployment than recycling for all stakeholder categories :
socio-economic repercussion and respect of the 3Rs (society), access to material and immaterial resources (local communities and youth in integration and training programs), responsible procurements (consumers), social responsibility promotion (actors of the value chain)
- ◆ Protection of confidential data and end-of-life responsibility were the only risks that were higher in the reemployment system (no certification)

Critical review

- Study communicated to the public
 - ⇒ Review process
 - ◆ No expert would accept to be president for both dimensions of the study : two committees were then formed
 - ◆ Each had one president and two stakeholders (same stakeholders for both)
 - ◆ The two review processes were not concurrent
 - * Redundant commentaries
 - * Coordination difficulties (time consuming)
 - * Separate review reports

Conclusions

- Importance of documenting the value chains
- Importance of working jointly since the very beginning of the LCA and at every step
 - ◆ Goal and scope
 - ◆ Data collection
 - ◆ Analysis of the results and... presentation
 - ◆ Critical review
- The nature of the social data and of the impacts assessed poses great challenges for presenting integrated results

Thank you!

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Québec 

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