



**IGES**

## **EPR Policies for Electronics in Developing Asia: A Phase-in Approach**

Yasuhiko Hotta, PhD  
Lewis Akenji  
Sustainable Consumption and Production Group  
Institute for Global Environmental Strategies

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## **1** Increasing Concerns on E-waste

- Rapid increase in consumption of e-products.
- Possible source of recyclable resources.
- Informal and often improper treatment of e-waste.
- Disguised and illegal trade of e-waste for resource recovery purposes.
- Heavy metal pollution and air pollution such as dioxin from de-soldering, wet chemical leaching of PCBs, and open burning of plastics and wires.

## Three Priority Areas for Implementing Recycling Policy

### Institution/governance

- Establishment of formal collection and management mechanisms.
- Established capacity of local government to implement regulation.
- Clear policy priorities and direction and financial support.

### Recycling industrial infrastructure

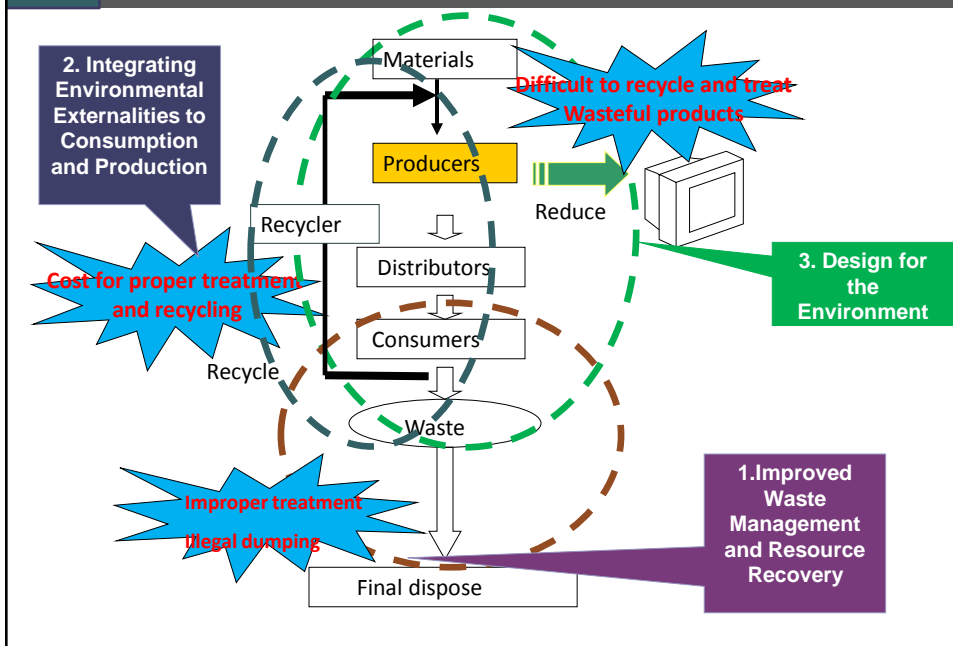
- Technology and industrial infrastructure backed by proper environmental management
- Development of recycling industries with scale and financial base

### Recycling market

- Environmentally unsound and cheap treatment of EOL goods only by evaluating economic and resource value.
- Needs of reform in supply-demand control which only depends on market

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## 2 Three objectives of Extended Producer Responsibility



### 3 Current Status of EPR in Asia

	Industrialized (e.g. Japan's <i>Home Appliance Recycling Law</i> )	Emerging (e.g. China's <i>Regulations on Recovery Processing of Waste Electrical and Electronic Products</i> )	Least developed (e.g. Cambodia)
EPR-related specific legislation for e-waste	○	□	×
Producers' responsibility for take-back in legislation	□	□	□ (products in general)
Producers' responsibility for take-back in practice	□	×	×
Producers' responsibility for recycling and treatment in legislation	○	×	×
Producers' responsibility for recycling and treatment in practice	○	□	×
Existence of strong informal market	For export of second-hand goods and scraps	○	○
Monitoring/enforcement	○	□	×
Financial mechanism	○	□	×

○, Full application/development; □, partial application/development; ×, no application/development.

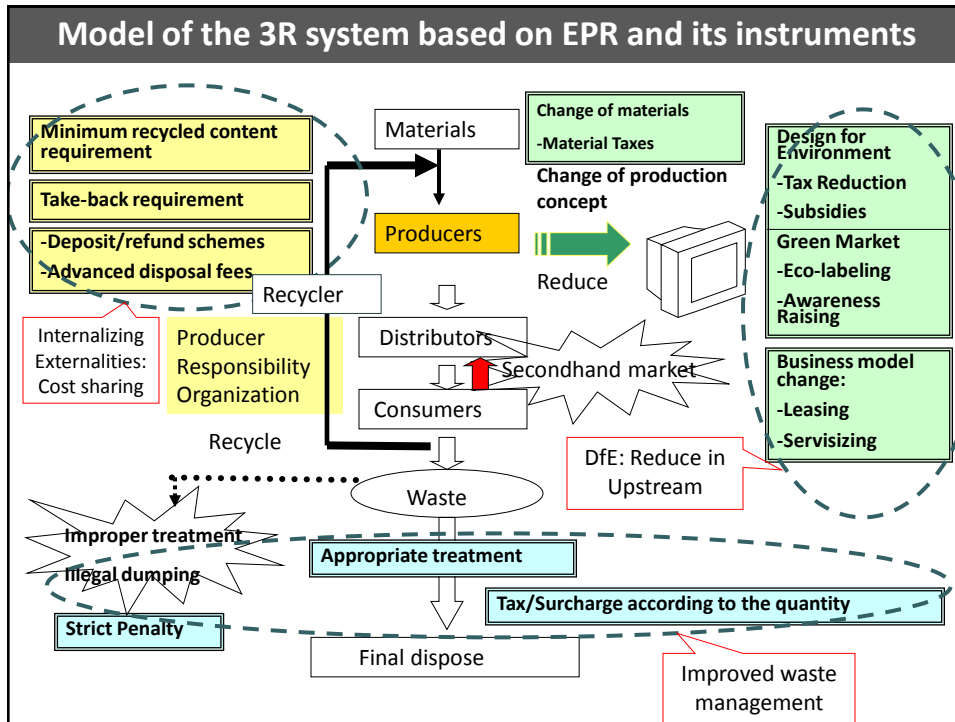
Akenji et. al. 2011 in *Waste Management and Research*, September 2011 29: 919-930

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### Progress of EPR Legislations in Asia

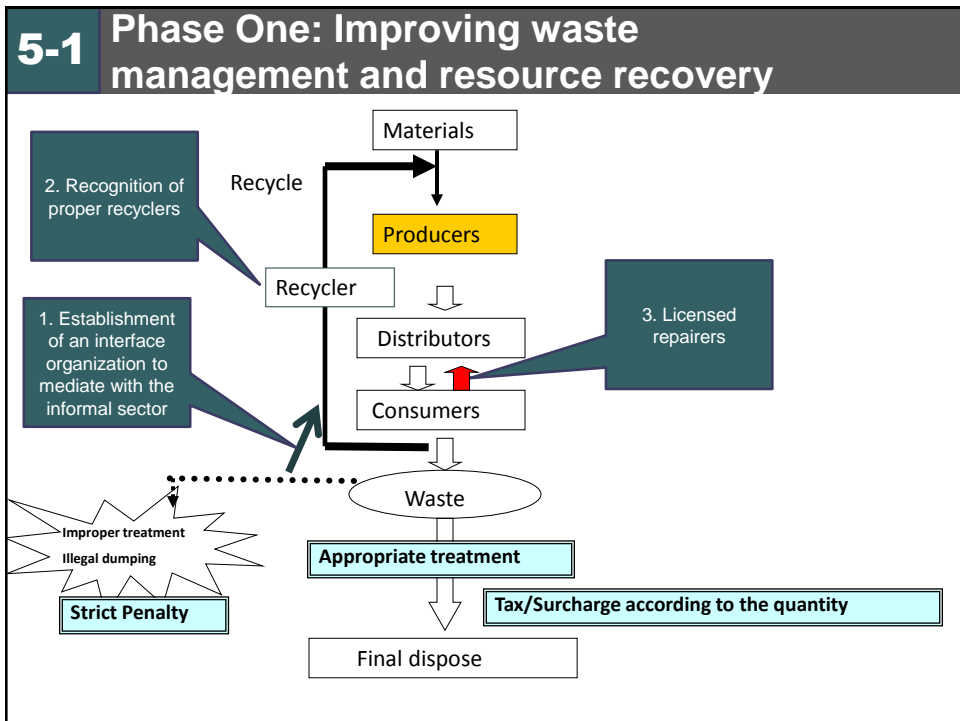
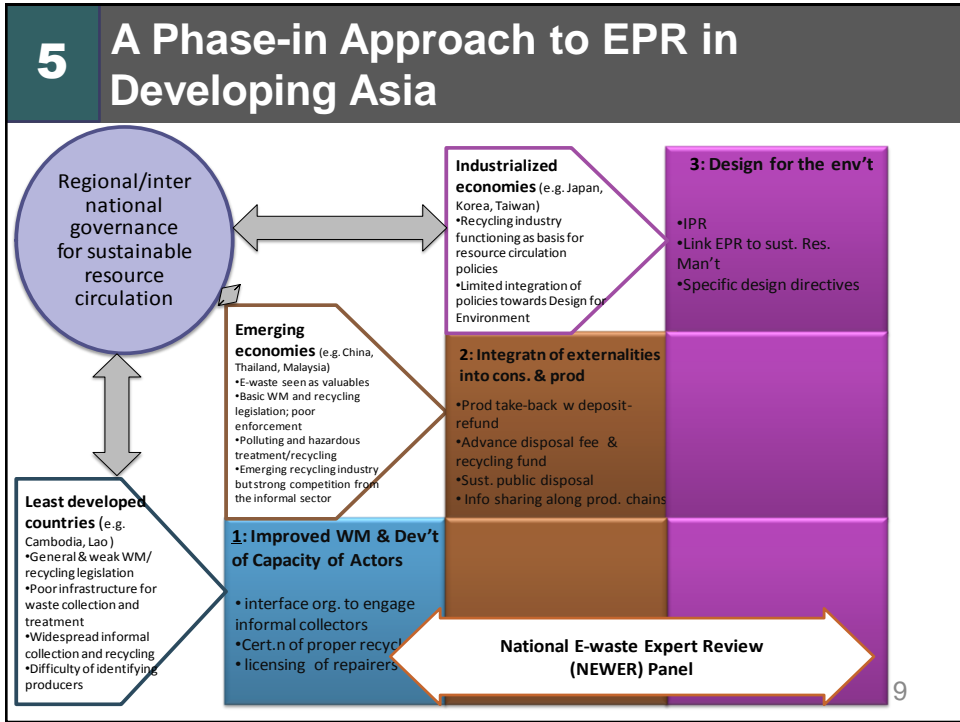
Countries	Specific legislation or draft legislations
<b>China</b>	Rules on the Administration of the Recovery and Disposal of Discarded Electronic and Electrical Products (promulgated in 2009, effective in 2011)
<b>India</b>	E-waste Management and Handling Rules (promulgated in 2010, effective in 2012)
<b>Indonesia</b>	specific article on EPR is under preparation under Solid Waste Management Act 2008.
<b>Malaysia</b>	specific article on take-back and deposit refund in Solid Waste and Public Cleansing Management Act 2007. Draft Regulation on Recycling and Disposal of End-of-life Electrical and Electronic Equipment.
<b>Thailand</b>	WEEE Strategic Plan in 2007 and Draft Act on Economic Instruments for Environmental Management (under development)
<b>Viet Nam</b>	Draft regulations on the reclamation and treatment processes for disposal products (under planning: draft was released in 2010)

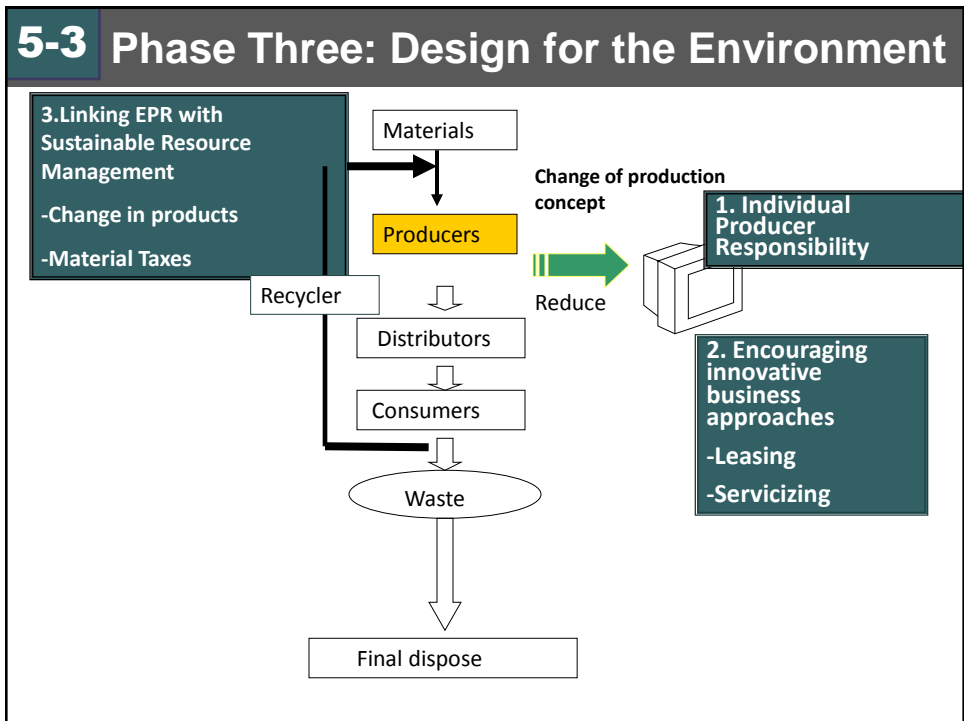
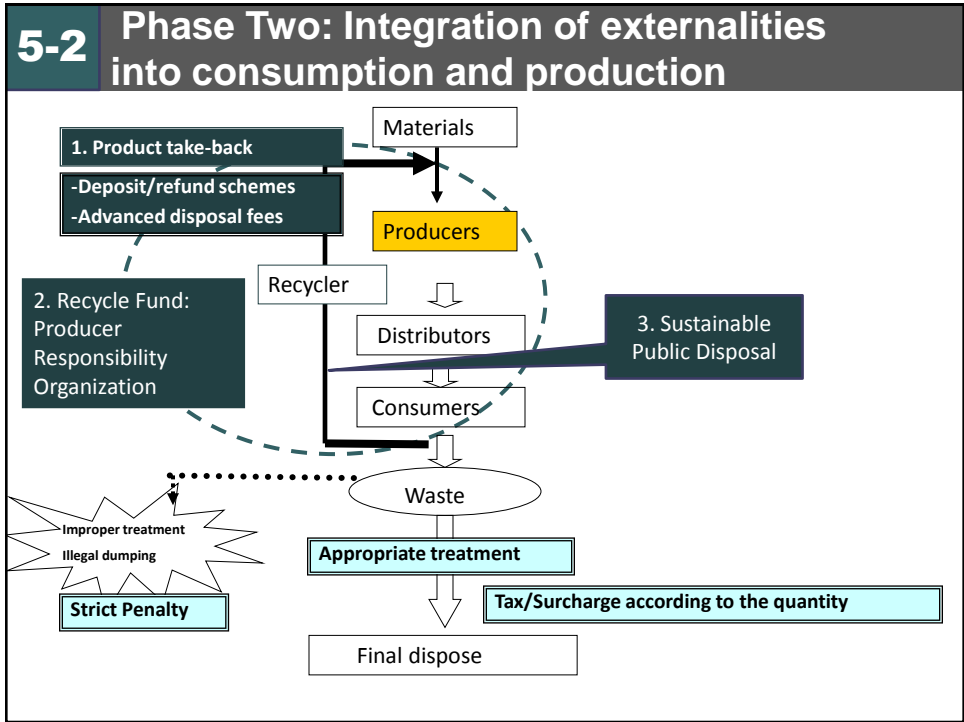
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## 4 Implementation Challenges for Policy Makers in Developing Asia

1. Poor infrastructure for waste collection and treatment
2. Perception of e-waste as valuables
3. Competition with the informal waste management sector
4. Difficulty of identifying the producer
5. Needs for better control of international movement of e-waste





## 5-4 Regional/international collaboration

1. Domestic EPR system can be undermined by international trade of e-wastes.
2. At the same time, many countries face difficulties in dealing e-waste domestically.
3. The major existing global financing mechanisms emphasizes climate change.
4. If EPR is extended to export of secondhand e-products, we can estimate about 14.8 billion to 22 billion Japanese yen will be collected for exported used electronics and home appliances in Japan.
5. This approach may become a significant source of funding for international collaboration for sustainable resource circulation both domestically and internationally.

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Phase-in for Sustainable Resource Management	
Phases	Examples of Policy Concepts
<b>Phase 1 Improvement in Resource Recovery and Capacity of Actors</b>	<ul style="list-style-type: none"> <li>●Interface organization to engage the informal sectors</li> <li>●Nurturing formal industries for resource recovery</li> <li>●Subsidies for recyclers</li> <li>●Certification of good recyclers</li> </ul>
<b>Phase 2 Internalizing Externalities</b>	<ul style="list-style-type: none"> <li>●EPR</li> <li>●Zero waste factory</li> <li>●Eco-industrial parks</li> <li>●Quality standards for recyclables</li> <li>●Green public disposal</li> <li>●Product replacement campaign</li> </ul>
<b>Phase3: Reconsideration of Product System and Social Infrastructure</b>	<ul style="list-style-type: none"> <li>●Greening of Supply chain</li> <li>●Green purchasing</li> <li>●Ban of throw-away products</li> <li>●Virgin material tax</li> <li>●EPR to IPR</li> <li>●Local production and consumption</li> </ul>
<b>Phase 4: International Collaboration</b>	<ul style="list-style-type: none"> <li>●Climate co-benefit</li> <li>●Multi-lateral financial mechanism for sustainable resource management and resource circulation</li> <li>●Policy collaboration on resource reduction</li> <li>●International funds for sustainable resource management</li> </ul>

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## 6 Conclusion

- **EPR should be adjusted to the level of national economic development, capacity for environmental policy enforcement, market structure of products and recyclables.**
- **EPR implementation should go from a basic focus on improved waste management to finally achieving design for environment.**
- **Regional collaboration is needed for improved management of e-waste not only between developed and developing countries. Such scheme can include international certification of good recyclers or international fund for recycling.**

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## Reference

- **IGES Policy Brief**  
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 Download:  
<http://enviroscope.iges.or.jp/modules/envirolib/view.php?docid=3347>
- **Journal Article**  
 Akenji Lewis, Hotta Yasuhiko, Bengtsson Magnus, Hayashi Shiko (2011) EPR policies for electronics in developing Asia: an adapted phase-in approach. *Waste Management and Research*, September 2011 29: 919-930.
- **IGES Report**  
 Hotta, Yasuhiko, Hayashi, Shiko, Bengtsson, Magnus, & Mori, Hideyuki (eds.) (2009), *Extended Producer Responsibility Policy in East Asia – in Consideration of International Resource Circulation* -, IGES, Hayama, Japan.

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