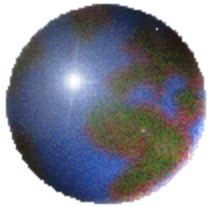


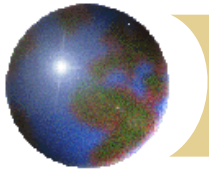
**Annual Green Growth Knowledge Platform
(GGKP) conference**
Paris, 4-5 April 2013



Greening global value chains - *Implementation challenges*

Bernard Sinclair-Desgagné

International Economics and Governance Chair
HEC Montréal

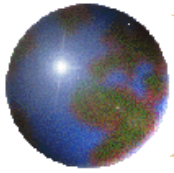


Outline

- ✦ Getting the right picture
 - ❑ Who's involved?
 - ❑ ... under what conditions?
 - ❑ ... and with what kind of environmental information?

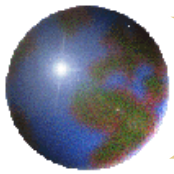
- ✦ Setting proper incentives
 - ❑ Within firms
 - ❑ Within chains
 - ❑ Within national borders
 - ❑ At the global level

- ✦ Moving jointly, and effectively

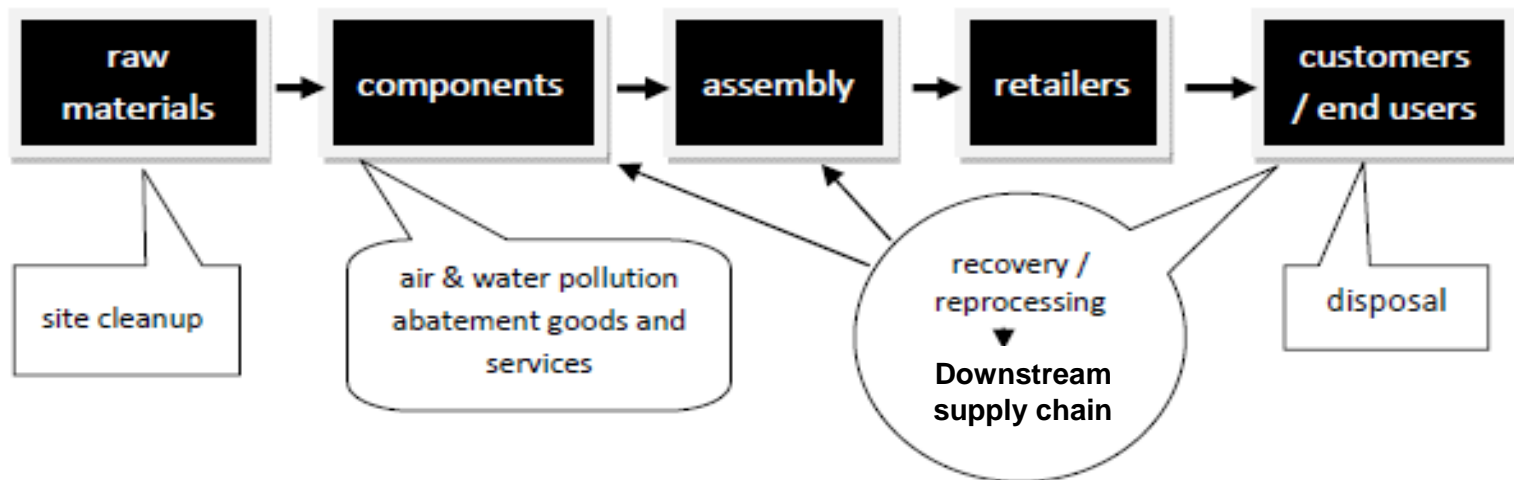


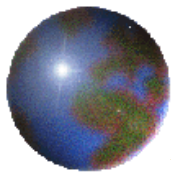
Who's involved?





Who's involved?

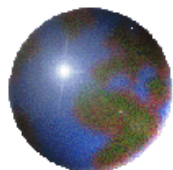




The EGS industry – a snapshot

Market Segment	2004	2005	2006	2007	2008	2009	2010	2011	2012
<i>Equipment</i>									
Water Equipment & Chemicals	52.0	54.2	56.4	59.3	63.2	60.7	62.5	65.0	67.6
Air Pollution Control	40.6	42.5	43.9	45.3	45.1	38.8	39.7	40.7	41.8
Instruments & Info Systems	7.6	8.2	8.6	8.9	9.3	8.9	9.2	9.6	10.1
Waste Mgmt Equipment	33.4	34.1	35.1	36.3	36.6	33.7	34.0	35.1	36.1
Process & Prevention Tech	3.6	3.7	3.9	4.1	4.4	4.5	4.5	4.6	4.7
<i>Services</i>									
Solid Waste Management	130.1	133.6	136.7	139.7	142.8	142.1	144.3	146.1	148.0
Haz Waste Management	21.4	21.8	22.2	22.6	22.9	21.7	21.5	21.7	21.9
Consulting & Engineering	36.1	38.3	40.1	41.7	45.2	44.7	46.8	48.2	49.6
Remediation/Ind'l Services	37.7	40.0	42.0	44.1	45.7	44.3	44.8	45.3	45.7
Analytical Services	4.7	4.8	4.9	5.1	5.3	5.2	5.3	5.4	5.5
Water Treatment Works	88.0	90.6	93.1	95.9	100.8	104.2	106.8	108.5	110.2
<i>Resources</i>									
Water Utilities	97.2	100.5	103.5	106.5	111.5	113.8	116.4	118.7	121.1
Resource Recovery	43.3	49.0	53.9	63.6	50.0	42.5	43.8	44.6	45.5
Clean Energy Systems & Power	30.5	40.3	59.2	76.9	99.1	111.0	123.3	136.1	150.2
Total	626.3	661.4	703.5	749.9	781.9	776.2	803	830	858

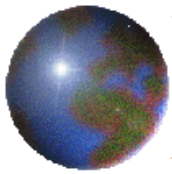
SOURCE: Environmental Business International, Inc., San Diego, Calif., units in US \$bil revenues generated by private and public sector entities



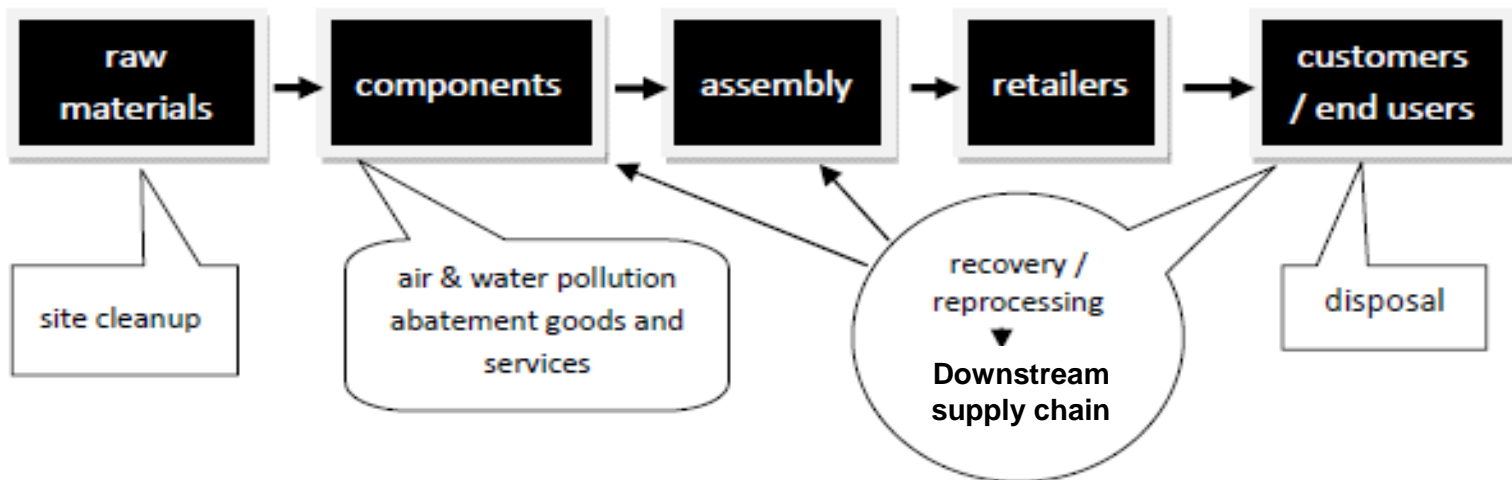
The EGS industry – a snapshot

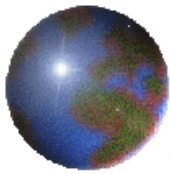
By Region	2009				2009		
	Market	Exports	Imports	Balance	Exports	Imports	Industry
USA	292.1	40.5	27.5	13.0	13%	9%	305.1
Western Europe*	219.6	55.8	39.8	16.0	24%	18%	235.6
Japan	95.8	19.1	7.2	11.9	18%	8%	107.7
Rest of Asia	67.0	5.2	22.2	-17.0	10%	33%	50.0
Mexico	6.3	0.8	3.0	-2.2	18%	47%	4.1
Rest of Latin America	20.6	1.1	8.5	-7.4	8%	41%	13.3
Canada	19.7	2.8	3.1	-0.3	14%	16%	19.4
Australia/NZ	12.9	3.7	1.8	1.9	26%	14%	14.8
Central & Eastern Europe	15.0	0.9	6.2	-5.2	9%	41%	9.8
Middle East	18.5	0.6	7.4	-6.8	5%	40%	11.7
Africa	8.7	0.2	4.2	-3.9	5%	48%	4.8
Total	776.2	130.7	130.7	0.0			776.2

SOURCE: Environmental Business International, Inc., San Diego, Calif. units in \$bil. *Note: each country within the region, not as a block: i.e. German sale to Italy is an export and an import

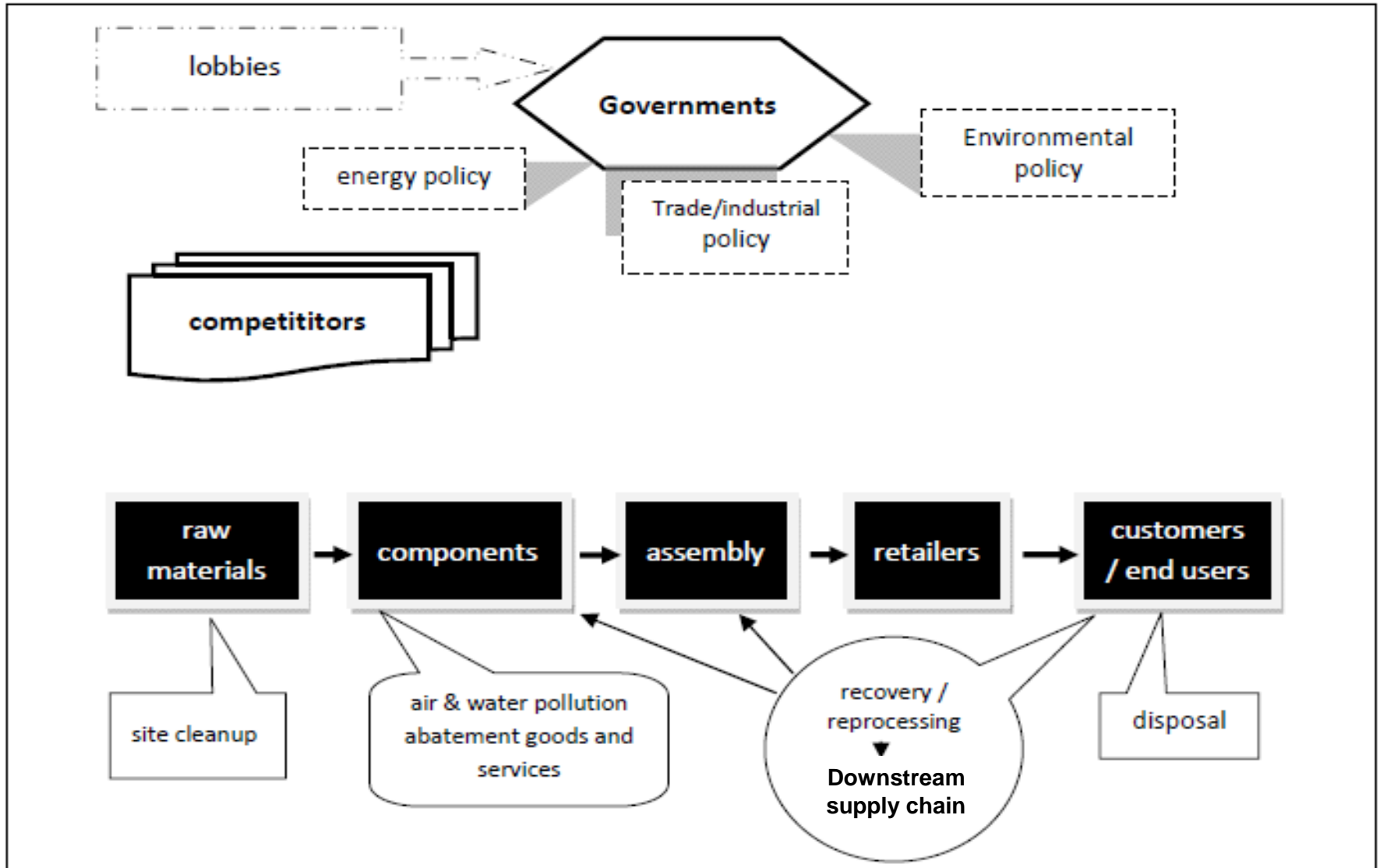


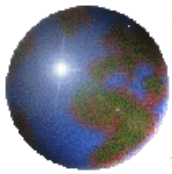
... under what conditions?



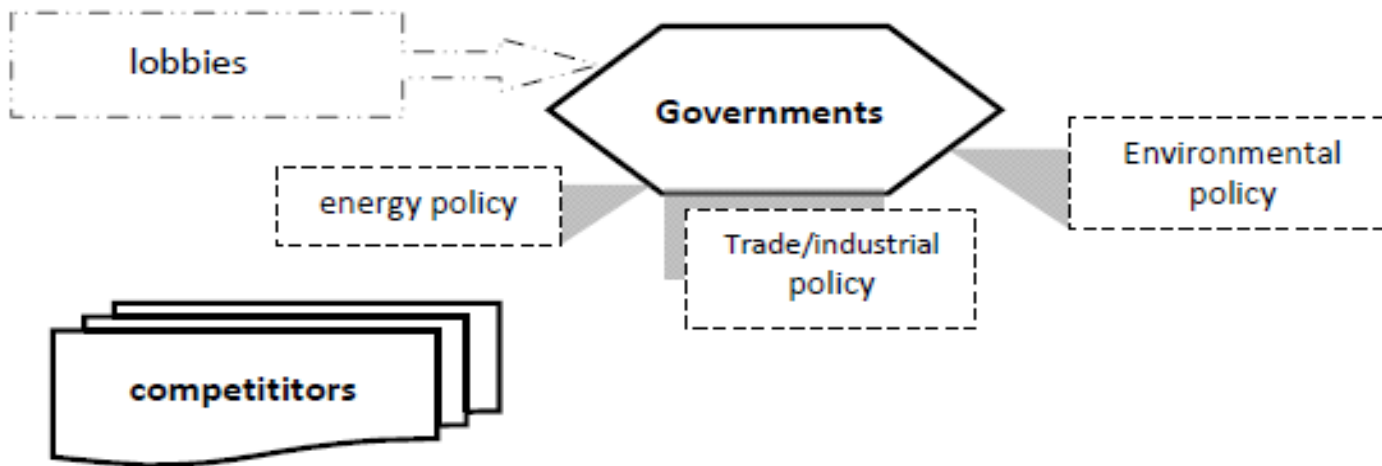


... under what conditions?

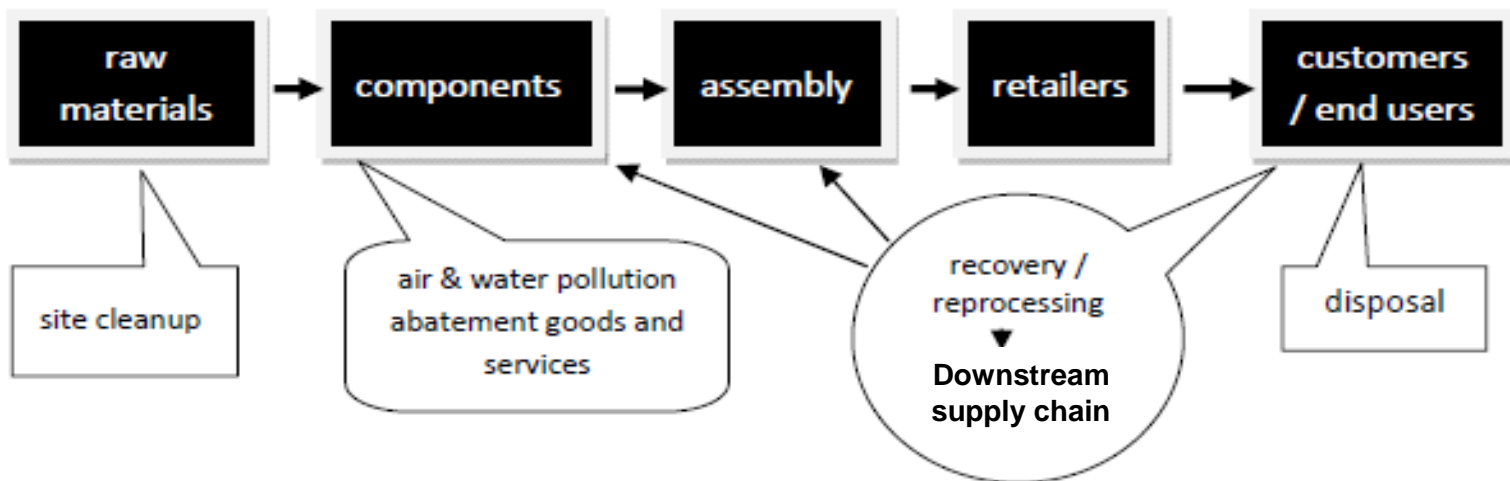


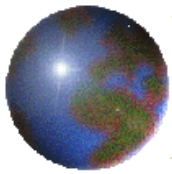


... under what conditions?

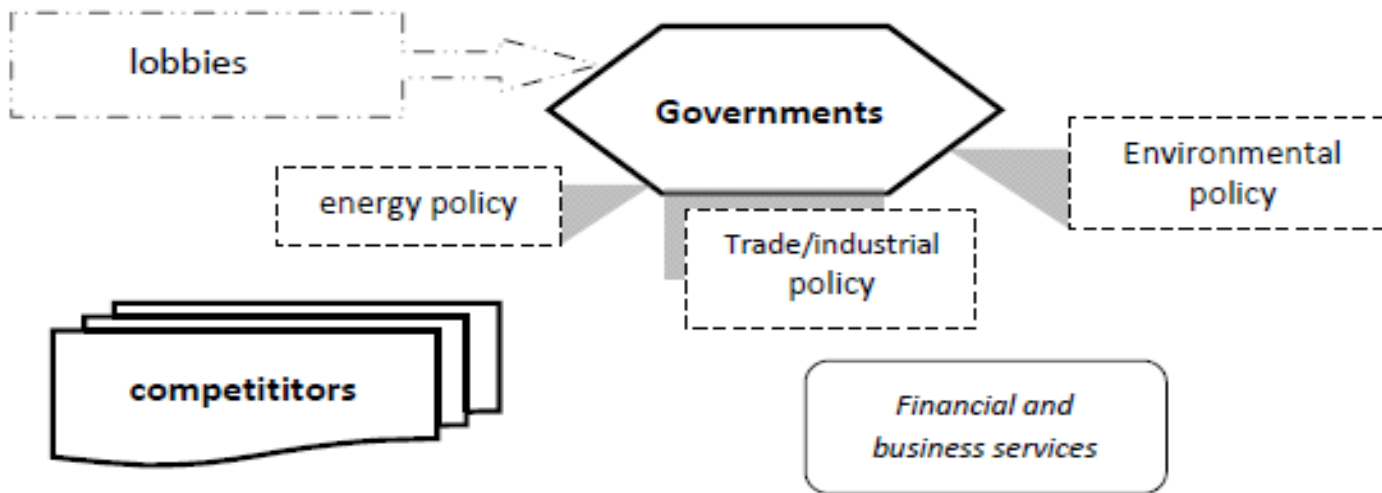


Local/global infrastructures : institutions, cultures, education, health, transportation, communication, energy, water

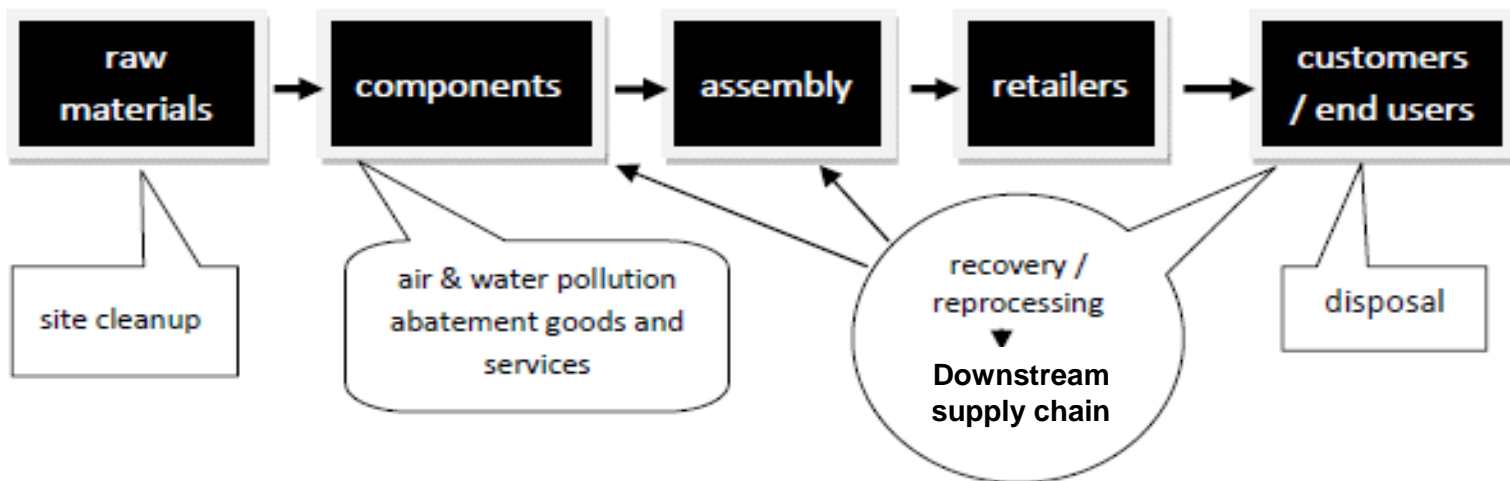


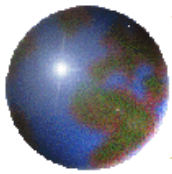


... under what conditions?

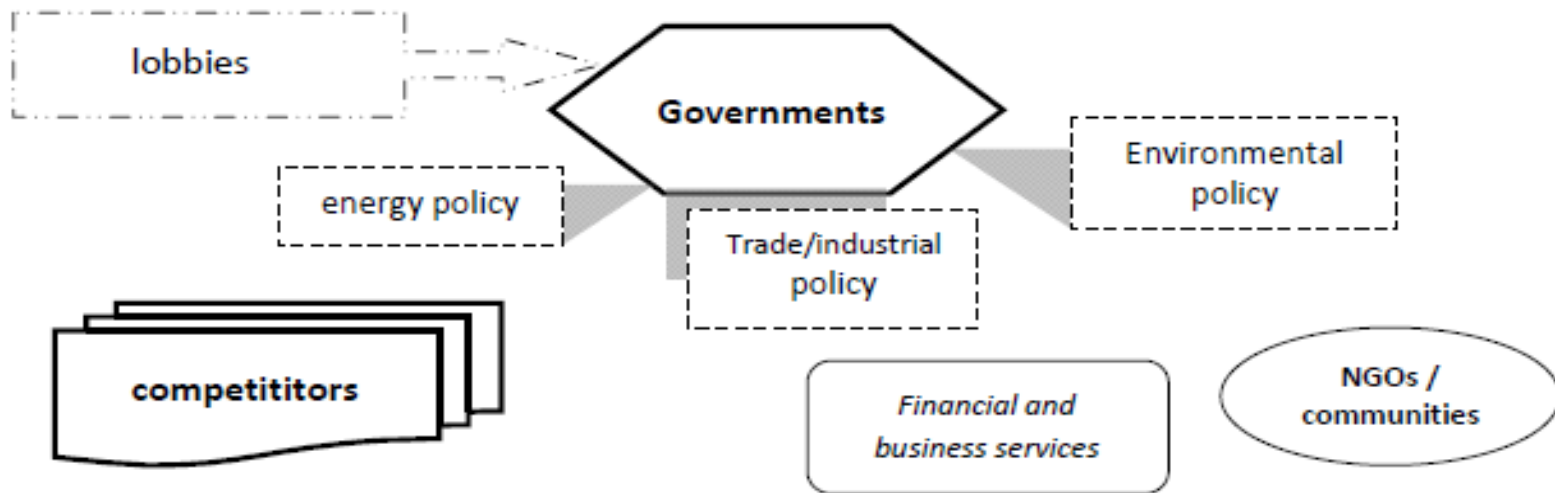


Local/global infrastructures : institutions, cultures, education, health, transportation, communication, energy, water

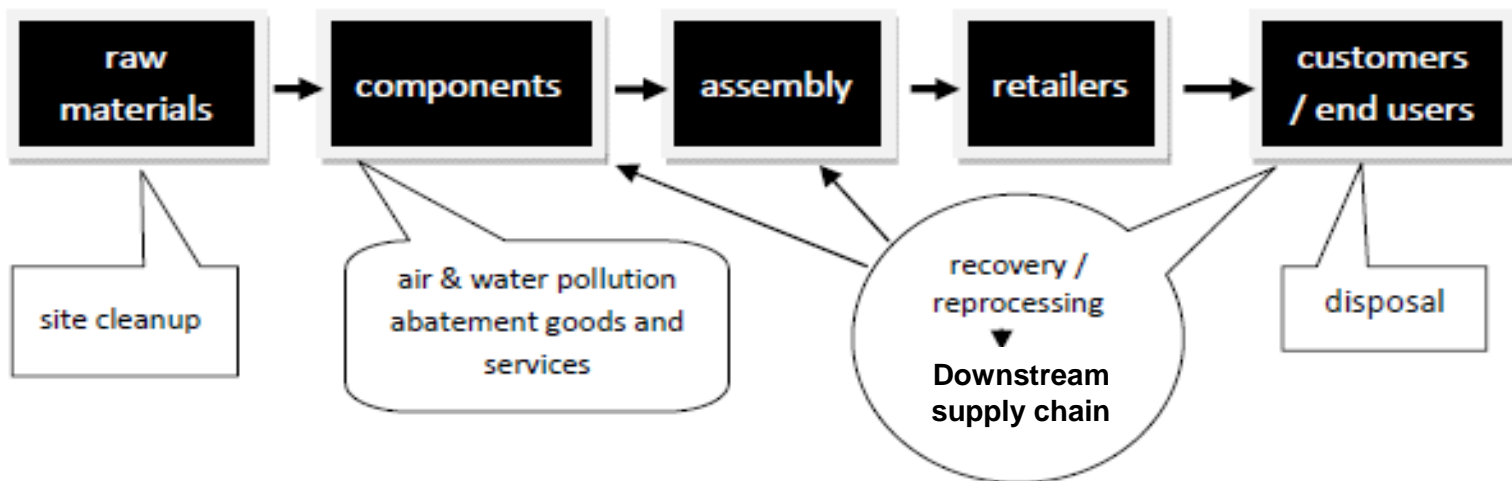


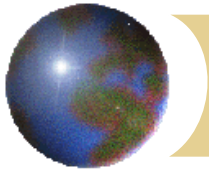


... under what conditions?



Local/global infrastructures : institutions, cultures, education, health, transportation, communication, energy, water

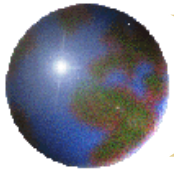




... and with what kind of information?

- ❖ Greening GVCs requires:
 - ❖ A systemic approach
 - ❖ Traceability
 - ❖ Transparency

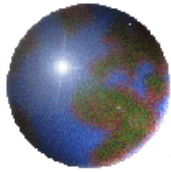
- ❖ Important hurdles are that:
 - ❖ Environmental information may not be comparable across firms and countries.
 - ❖ Many small and medium firms may lack the necessary technology and expertise.
 - ❖ Parties will often be asymmetrically informed.



Setting proper incentives

✚ Within firms:

- Performance rewards *
- Monitoring and auditing *
- Internal pricing
- Task design and allocation *
- Centralization or delegation of decision making *
- Staffing and training *
- Improvement of corporate culture *



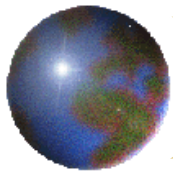
Setting proper incentives

✚ Within chains:

- Selecting and terminating relationships
- Designing effective contracts - contract framing

*A **prevention frame** leads to an interpretation of a goal as minimal (something that must be met), which induces high-intensity negative emotions if the goal is not achieved and low-intensity positive emotions if the goal is met. (...) Conversely, under a **promotion frame**, parties view the same goal as maximal (something that would be ideal if reached). If a maximal goal is missed, low-intensity negative emotions are experienced, whereas if a maximal goal is reached, high-intensity positive emotions are induced. Thus, in an effort to reach the maximal goal and avoid sins of omission, parties display more flexible and creative behavior.*

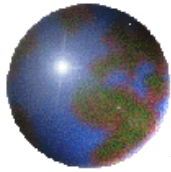
- Taking full advantage of market incentives



Setting proper incentives

✚ Within national borders:

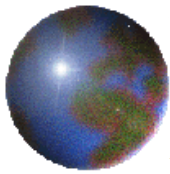
- **Regulations** (ex: *Extended producer responsibility*)
- **Competition policy:** Beware of the EGS industry's market power.
- Counter corruption
- **Socio-economic development**
 - Education and training
 - Consumer awareness
 - Adapted business models



Setting proper incentives

✦ At the global level:

- **International agreements**
(**ex:** *the Basel Convention on the control of hazardous wastes and their disposal*)
- NGOs
- Disclosure programs and worldwide medias



Moving jointly and effectively

