International cooperation. Lessons learnt

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IEA DSM Programme

What can we learn from each other (and why)?

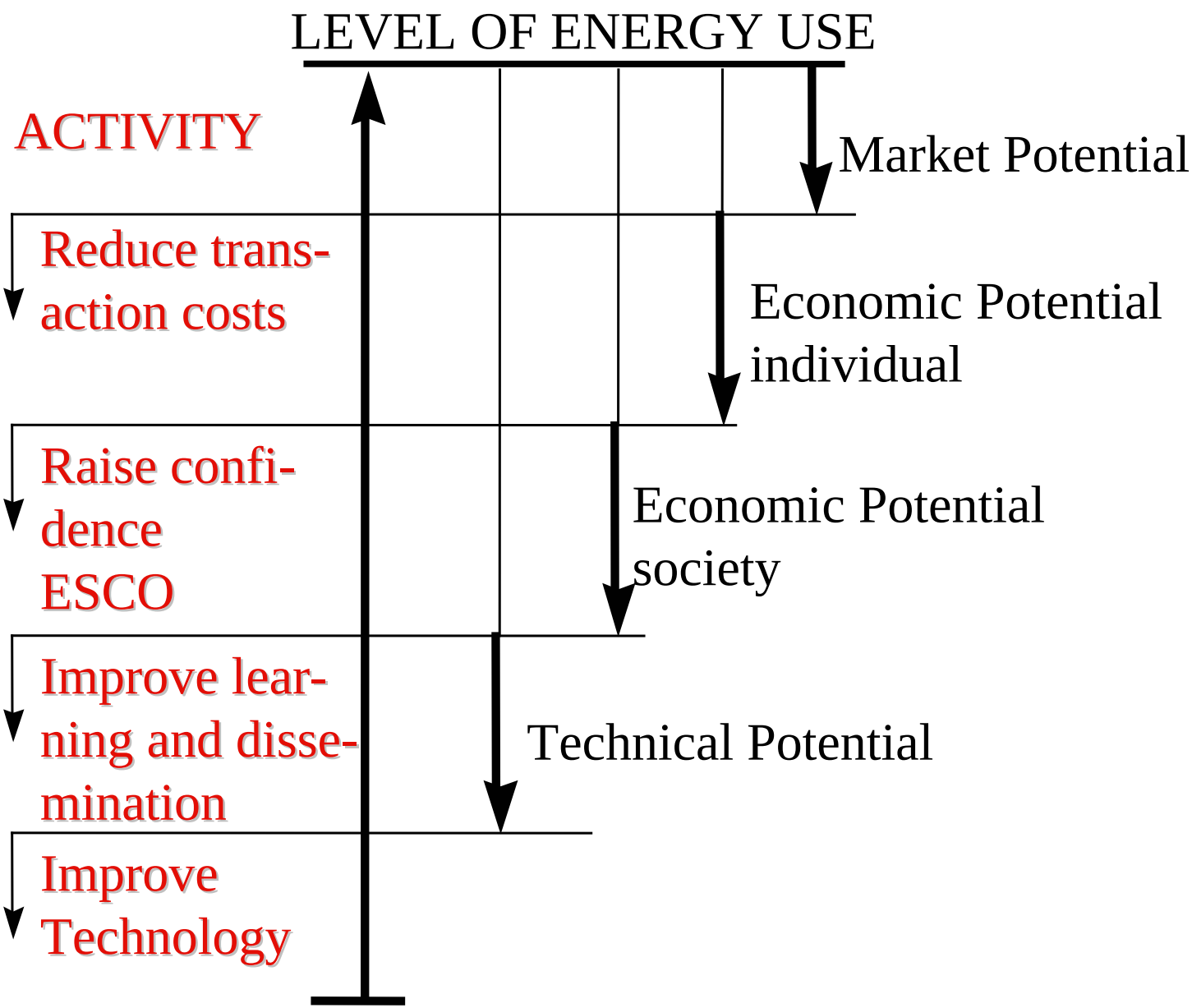
- Can energy efficiency at all contribute **significantly** to solve the climate problems?
- If it is so good why isn't it **applied** already and everywhere (or at least somewhere)?
- Is not our country so **different** from others that there is nothing to learn?

Potential and significance

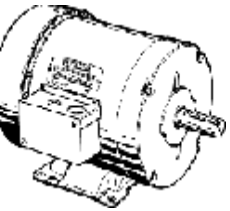
POTENTIALS (according to WEA)*

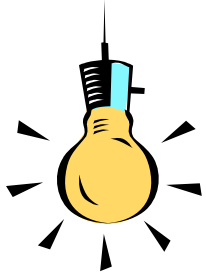
Region	Potential for economic savings in sector (%)		
	Industry	Buildings	Transport
Western Europe	15	20	20
North America	10	30	15
Australia	15	20	10

*World Energy Assessment, UNDP


LEVEL OF ENERGY USE
ACTIVITY
Market Potential
Reduce trans-
action costs
Economic Potential
individual
Raise confi-
dence
ESCO
Economic Potential
society
Improve lear-
ning and disse-
mination
Technical Potential
Improve
Technology

European Carbon Saving Potential (1)

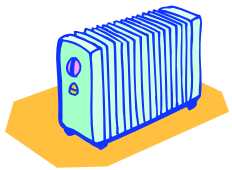




Electricity end-use technologies	**Savings potential identified in the ECCP (in $MtCO_2$)**	**Ex. of specific contacts for data refinement**
Electric motor driven systems	39	Motor Challenge pgm stakeholders (co-ordinated by JRC)
Office equipment	34	EU Energy Star pgm stakeholders
Lighting	24	GreenLight pgm stakeholders (co-ordinated by JRC)

Source: Vincent Berutti, EU JRC Ispra, Italy

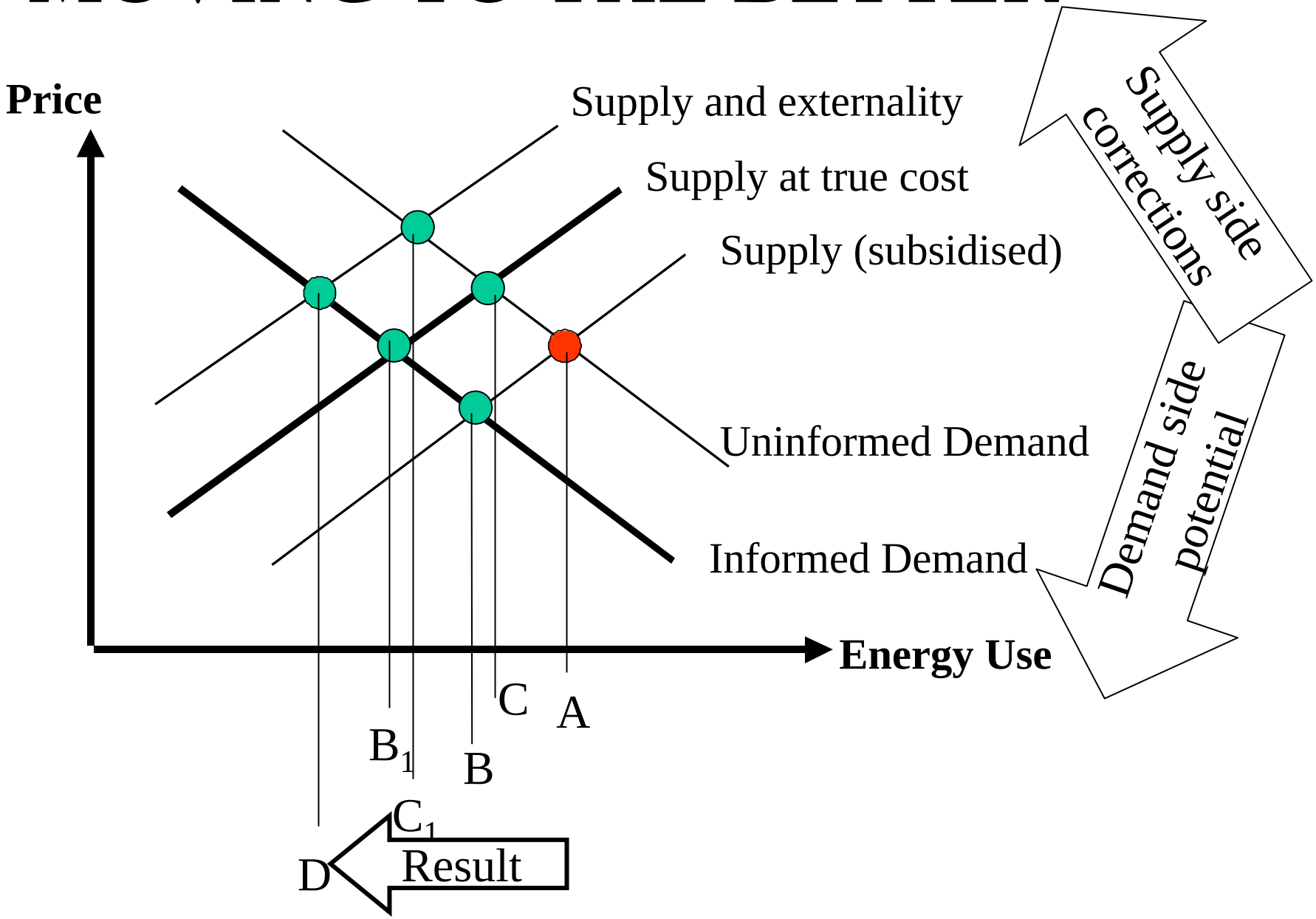
European Carbon Saving Potential (2)

	Electricity end-use technologies	Savings potential as identified in the ECCP (in $MtCO_2$)	Ex. of specific contacts for data refinement
	Consumer electronics	14	IEA; Industry (ee codes of conduct are managed by JRC)
	Electric heating, ventilation and A/C	8	Key experts
	Domestic refrigeration and other appliances	7	GEA network; CECED

Total savings potential = 126 $MtCO_2$ = ~ 30% of Kyoto target

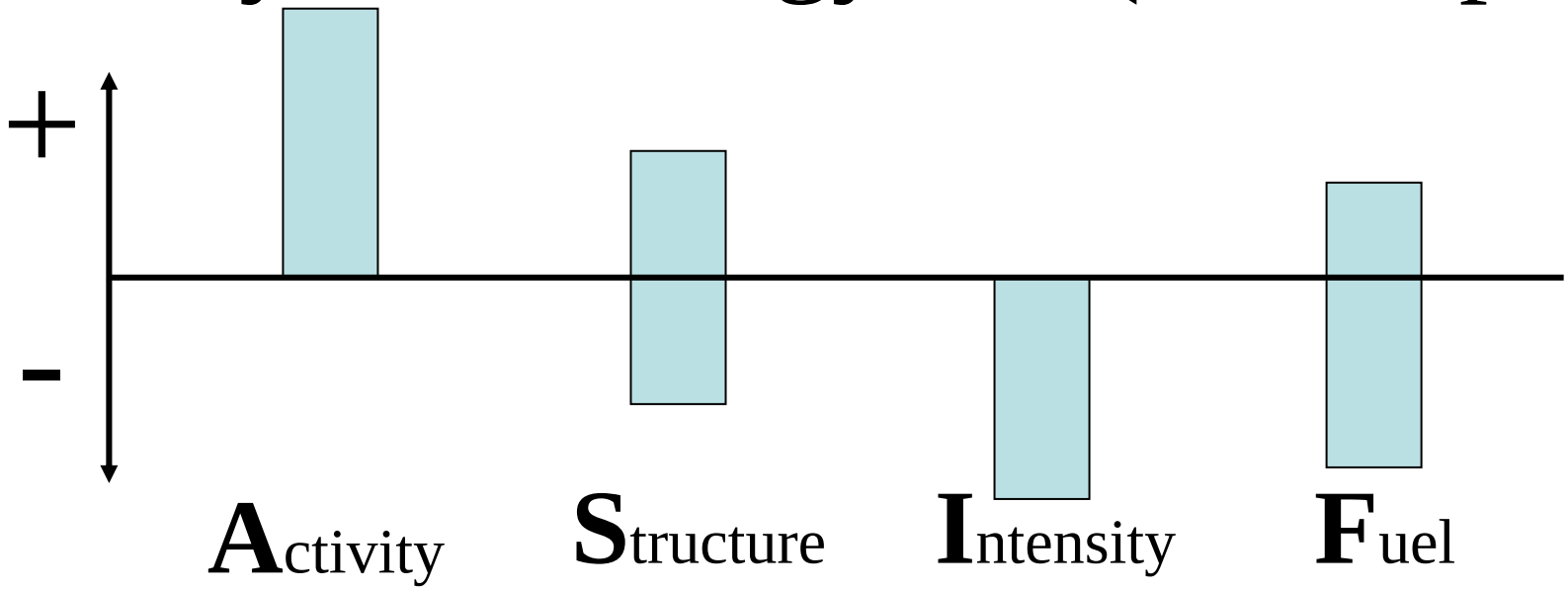
Source: Vincent Berutti, EU JRC Ispra, Italy

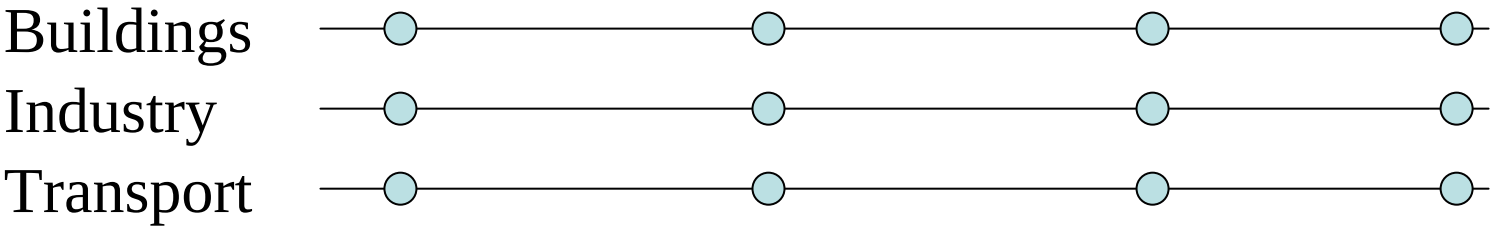
MOVING TO THE BETTER



Application

Analysis of energy use (and impact)

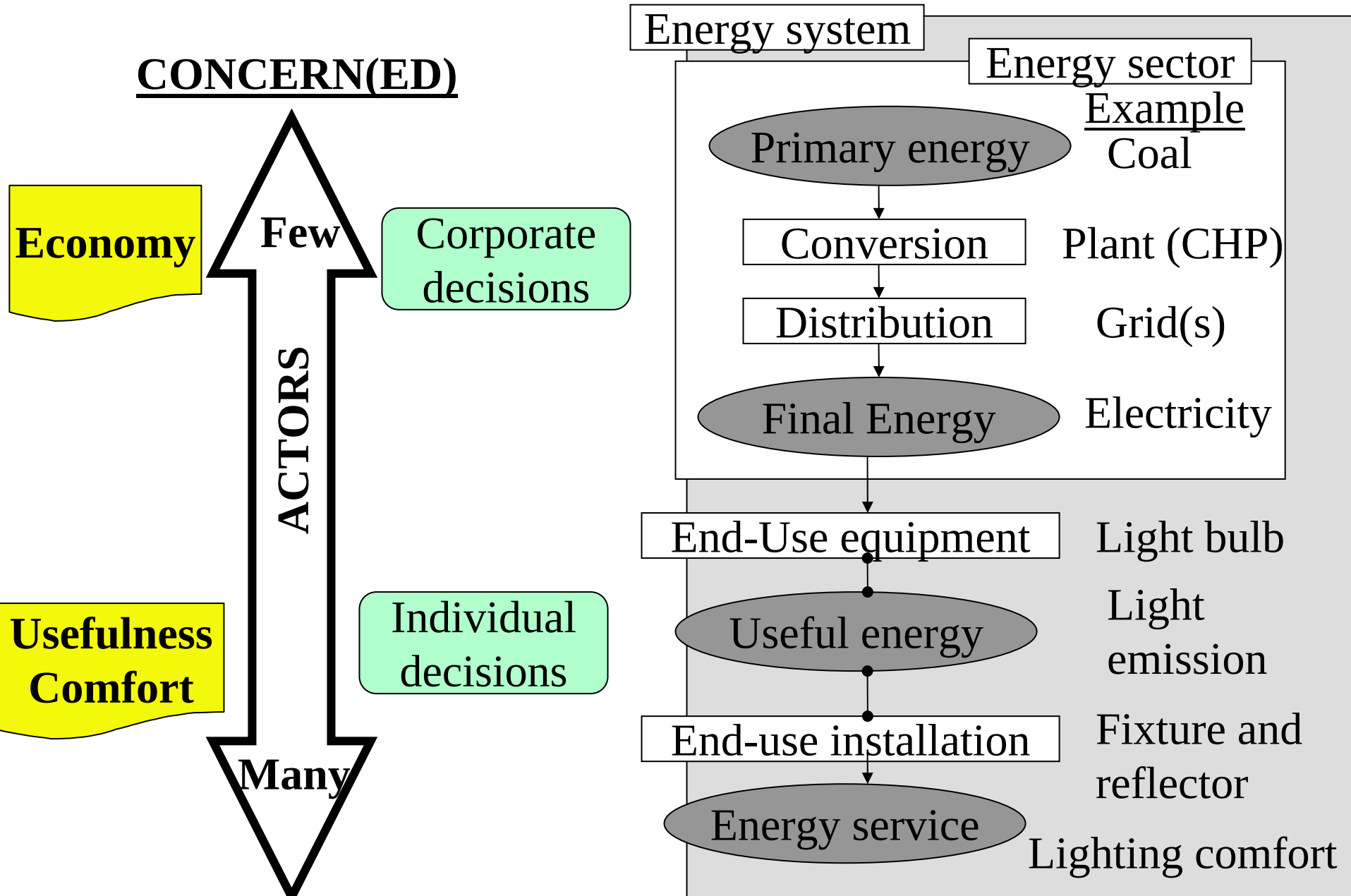




http://www.iea.org/envissu/cop7sus.pdf

http://www.odyssee-indicators.org/

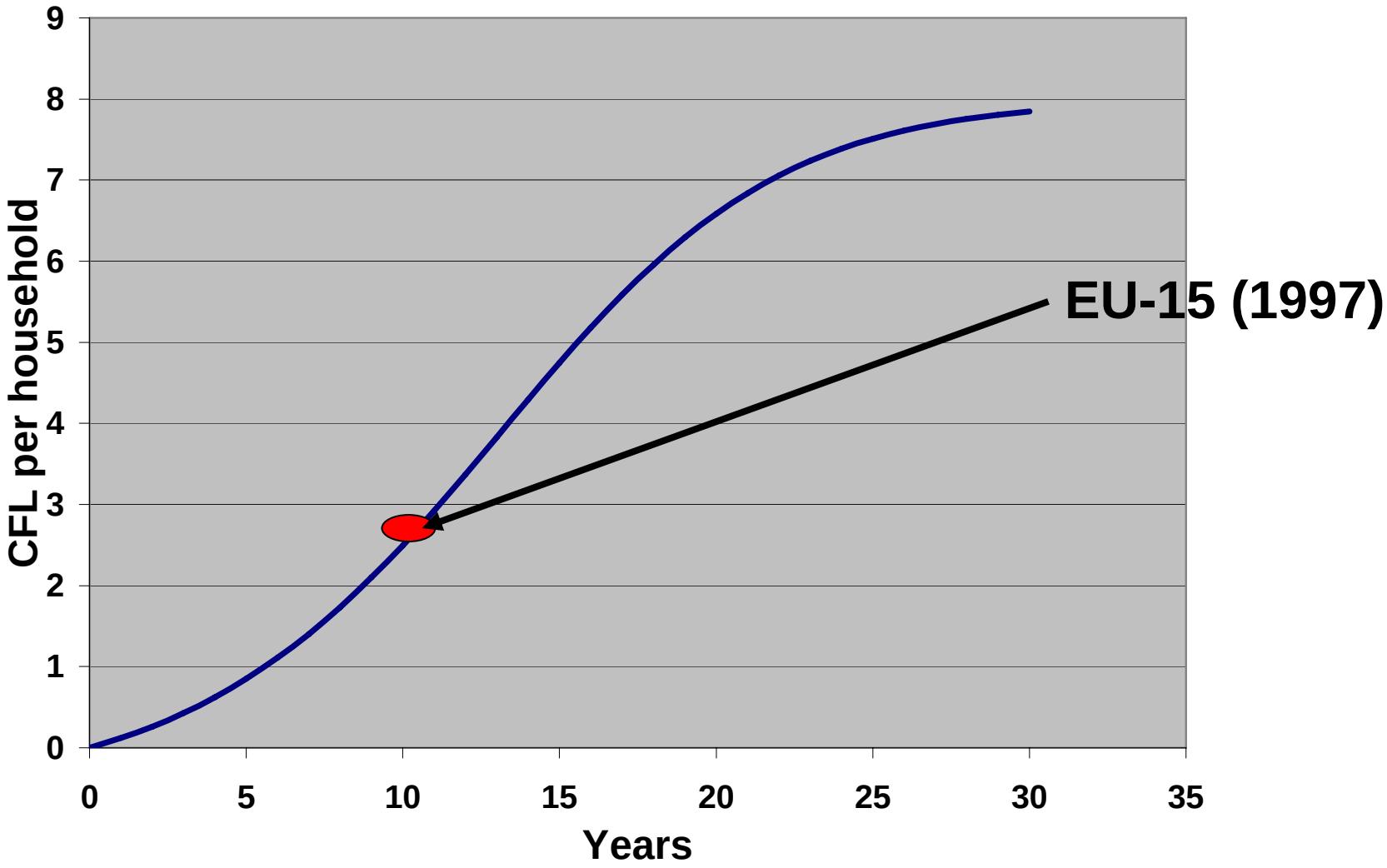
Structure for decisions



Individual decisions are biased

Unit size	Frequency of Change	Basis for choice of replacement	Energy and savings as objective	End-Use Activity Type	Decision strategy
Very small (20-100 W)	Often	Habit	Never	Household lamps	Mainly along Heuristic rules (if not purely by habit and tradition)
Small (100-1000 W)	Regular	Routine	Occurs	Small appliances	
Small (1-10 kW)	Normal	Planned	Important	Commercial maintenance, (e.g. motors)	Rational within delegated responsibilities
Big by unit size or aggregation (10-5000 kW)	Not often	Calculated	Important	Industrial & Commercial. Retrofit (e.g. lighting)	Rational in context of purpose
Huge (> 2 MW)	Seldom	Investment	Depends	Production and process technology (e.g. casting)	

Dissemination (CFL in Europe)



Difference and context

Creating Markets

- Analysis of 22 projects from IEA-countries
- Barriers, R&D and Market Transformation. Three models to find the components of success
- Technology learning is the key
- Challenge technology nepotism, Identify niches and satisfy users desires

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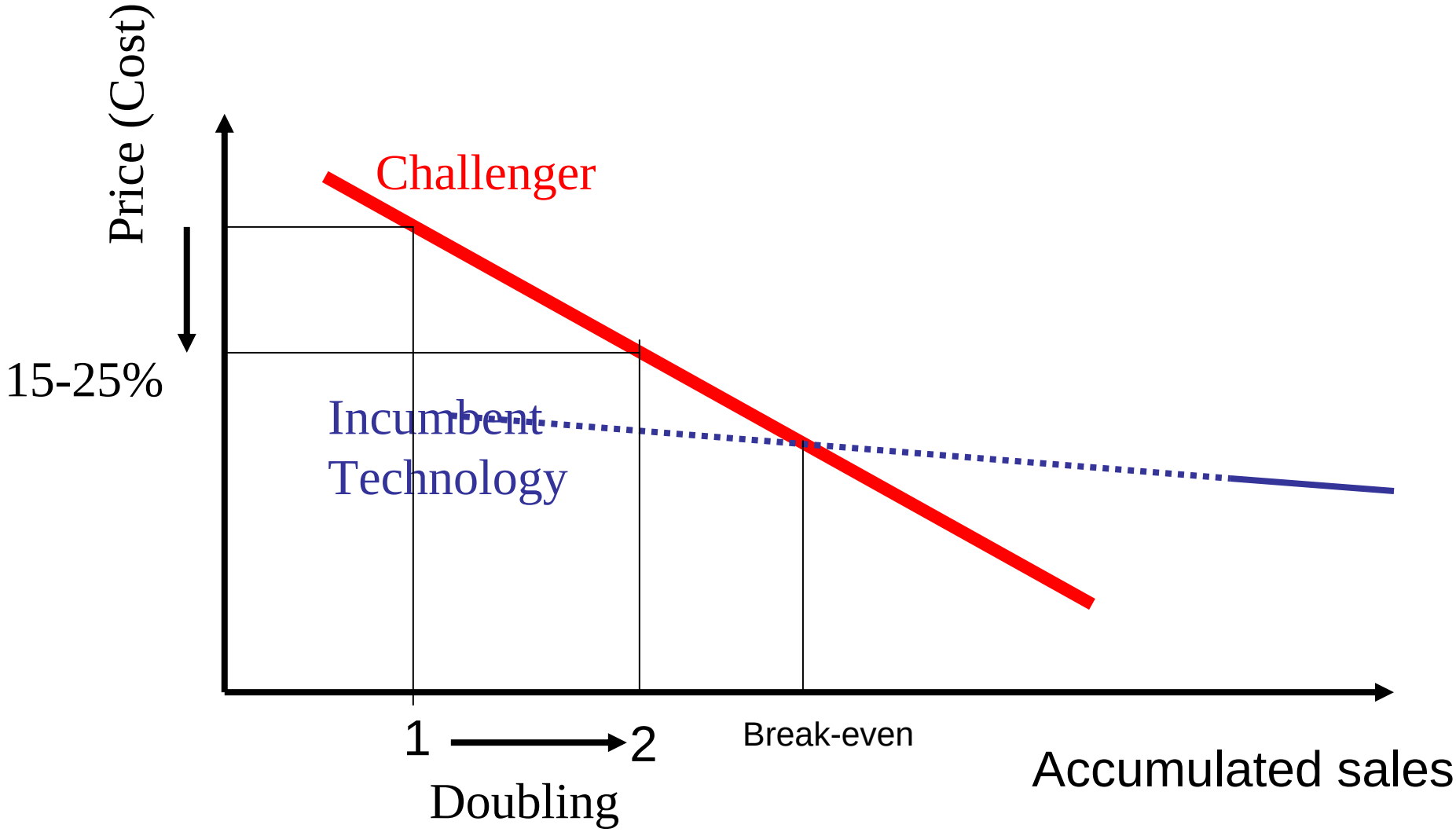
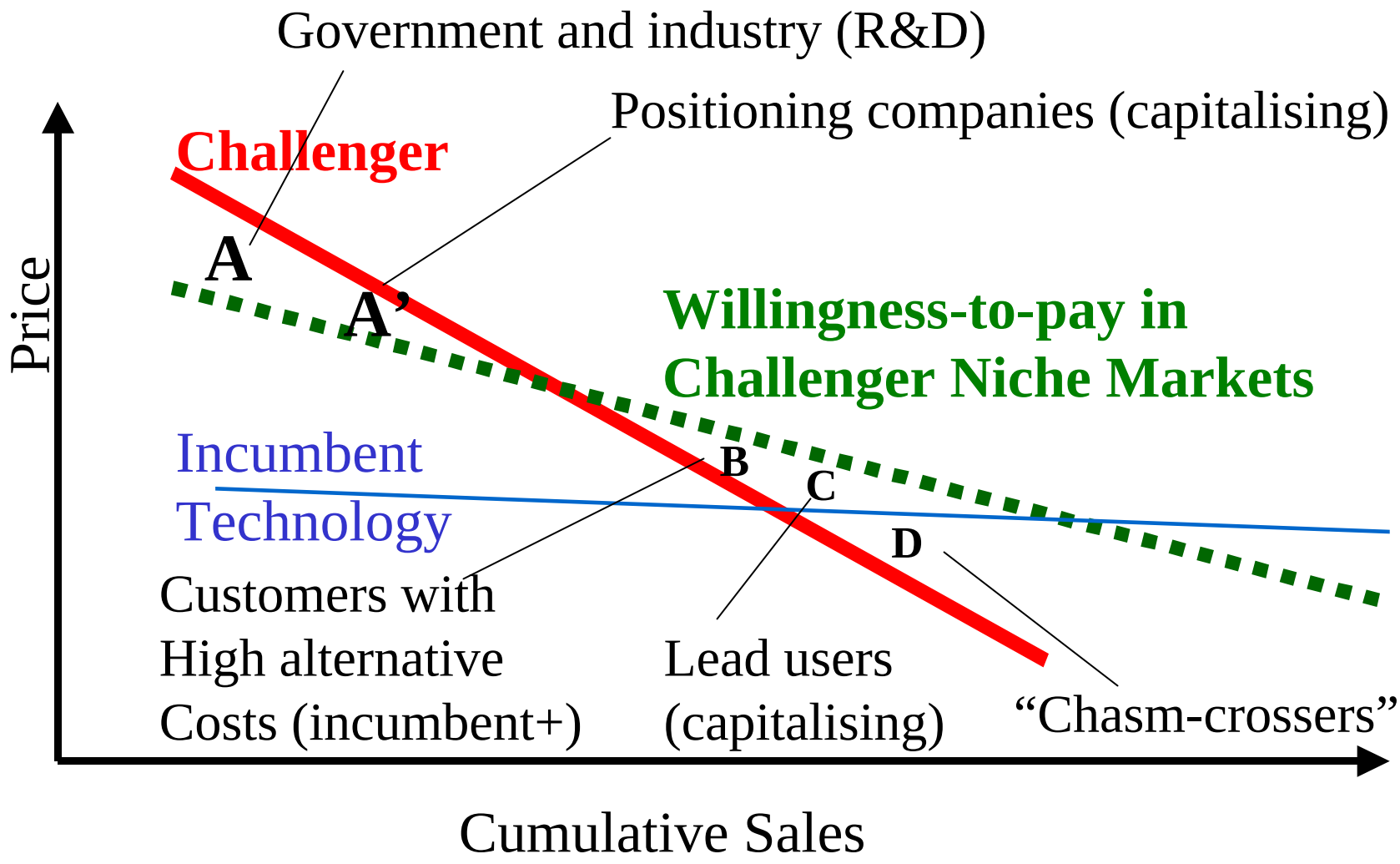
Foto - JPEG-dekomprimerare
krävs för att kunna se bilden.

The learning curve

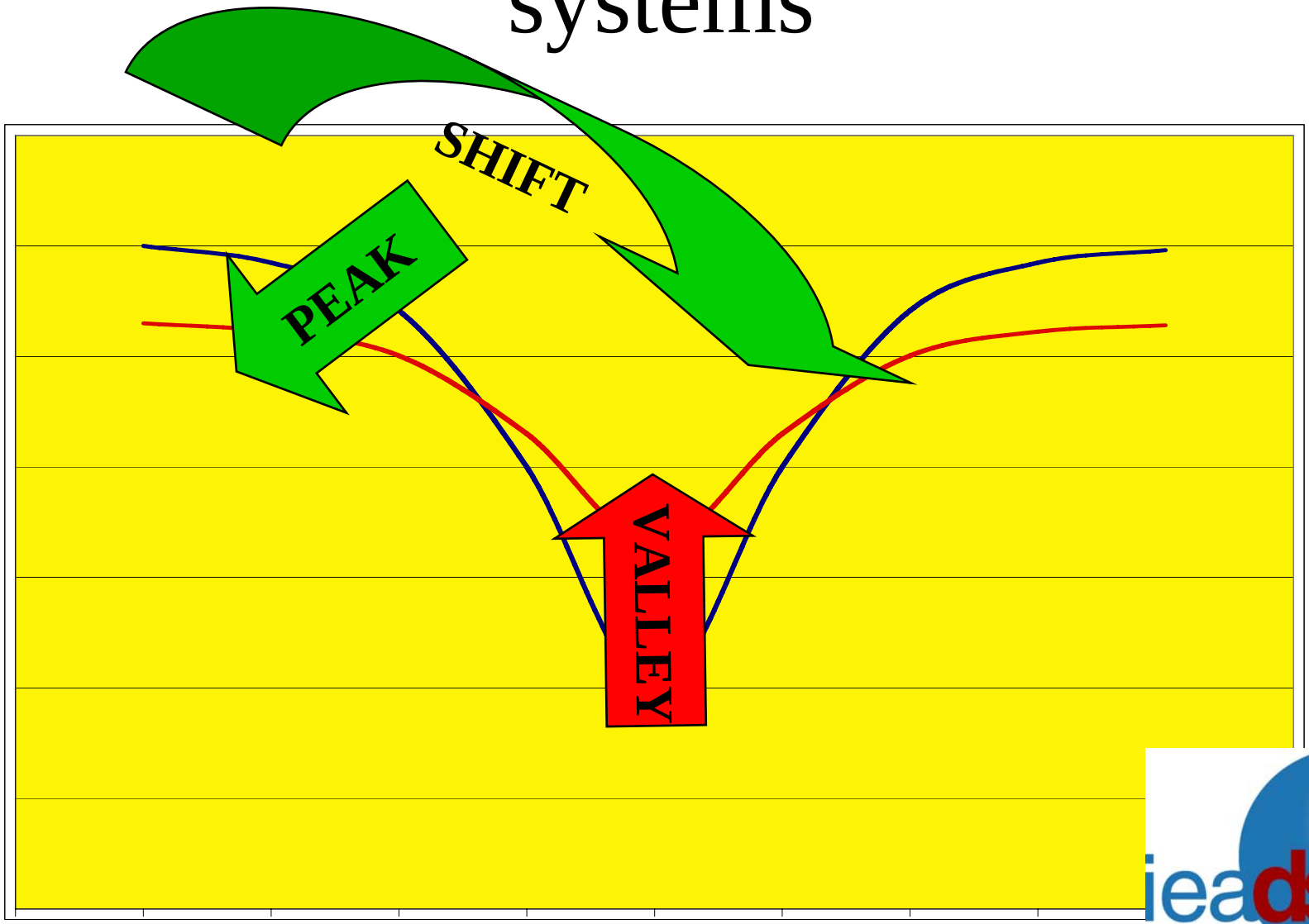


Niches

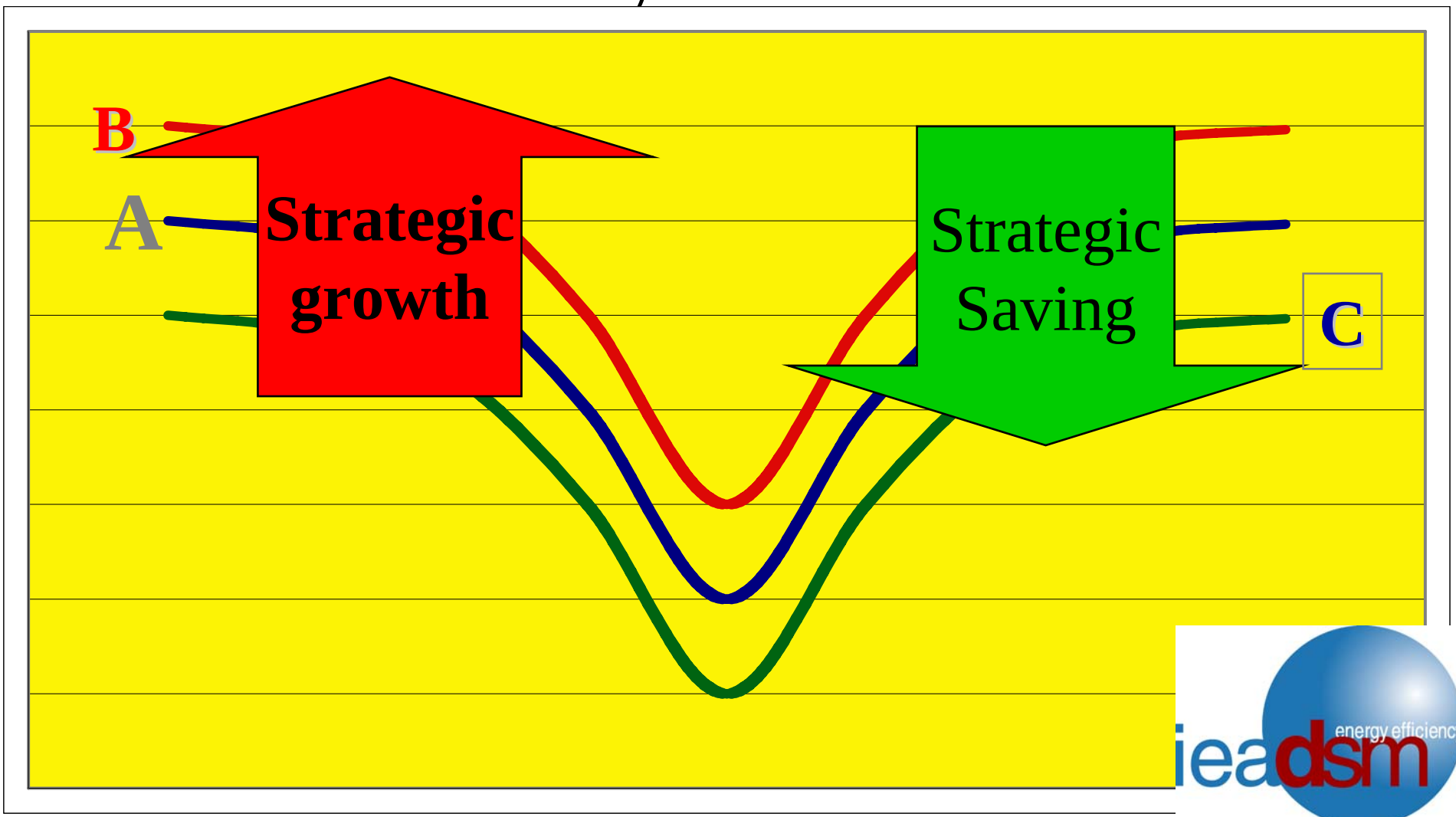

Government and industry (R&D)
Positioning companies (capitalising)
Challenger
A
A'
Willingness-to-pay in
Challenger Niche Markets
Incumbent
Technology
B
C
D
Price
Customers with
High alternative
Costs (incumbent+)
Lead users
(capitalising)
"Chasm-crossers"
Cumulative Sales

http://dsm.iea.org

DSM is a tool for optimisation of systems



DSM is a tool for optimisation of systems



DSM ISSUES

- Reliability (system available at any given time)
- Security (System less dependent as regards fuel, technology, supplier etc)
- Global Warming (Kyoto Targets for GHG) and
- Environment (Emissions)
- Service as a Commodity (Business aspects, delivery of services)
- Market Organisation (Responsibility)

The DSM Programme is a natural vehicle for learning

- The Programme has kept pace with the development towards liberalised markets,
  see “Public policy analysis of energy efficiency and load management in changing electricity business” Energy Policy 31 (2003) 405-430.
- Several new proposals that will also involve new actors
  (Demand Response, Metering and Pricing, White Certificates, Lighting Programmes, Energy Standards, Network DSM)

Country	TASKS										
	I		II	III	IV	V	VI	VII	VIII	IX	X
	Indeep	Evalua-tion	Communications technologies	Co-operative Procurement	Integrated Resource Planning	Marketing and implementation	DSM in changing business environment	Market Transformation	Demand Side Bidding	The role of municipalities	Energy Service Companies
Australia,					X		OA				
Austria,					X					X	(X)
Belgium	X	X					X				
Canada,		X									
Czech Republic											
Denmark,	X	X		X	X		X	X			
European Commission				X	X		X				
Finland,			X	X	X	X	X	X	X		X
France,	X	X			X		X			OA	X
Greece,							X		X		
Italy,		X			X						X
Japan, N	X				X		X				X
Korea,	X	X		X	X		X	X			
Netherlands,	OA	OA	X	X	X	X	X	X	X	X	X
New Zealand											
Norway,	X				X	X	X	X	X		X
Spain,				X	X	OA	X		X	X	
Sweden,	X	X		OA	X	X	X	X	X	X	OA
United Kingdom,			OA	X	X		X	OA	OA		
United States,				X	OA						X
Tanzania (WB)						X