

20 years of DSM.

From regulatory straightjacket
to centre of excellence

Hans Nilsson

Chairman of the IEA DSM-Programme



The imperative logic of Demand Side Management

- A better use of resources equals **lower cost** for service
- A balanced use of resources means more **secure and reliable** energy supply
- An expansion for products/services using less energy is an injection for **future business**
- A step change in improved energy efficiency is the only way to achieve wide-spread **welfare** without resources depletion

The IEA DSM Programme

- Work begun in 1993
- With 17 OECD Countries (but open to all countries in the world)
- Influenced by, but not limited to, the Monopolised Utilities role on the market
- Basically an issue of “least cost” application to make best use of resources

The strategy of the IEA DSM Programme

- Vision: *Demand side activities should be **active elements and the first choice** in all energy policy decisions designed to create more reliable and more sustainable energy systems.*
- Mission: *Deliver to its stakeholders, materials that are **readily applicable** for them in crafting and implementing policies and measures.....*

What is DSM?

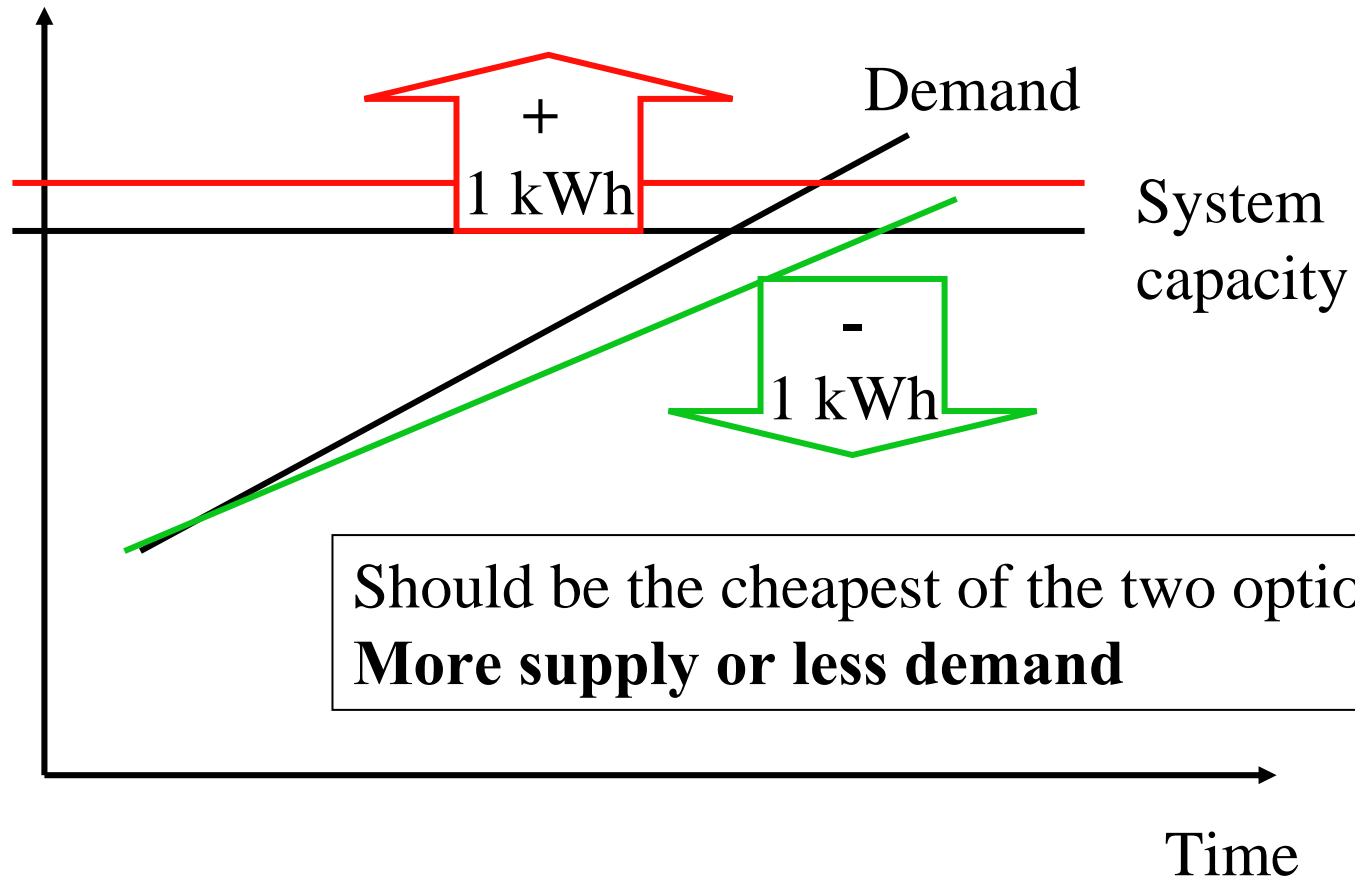
- The **planning and implementation** of those utility activities designed to **influence the customer use** of electricity in ways that will produce **desired changes** in the utility's **load shape** - i.e. changes in the pattern and magnitude of a utility's load.
- DSM encompasses the entire range of management functions (**planning, evaluation, implementation and monitoring**)

But DSM is universal and does not only apply to utilities, electricity or monopolies!!

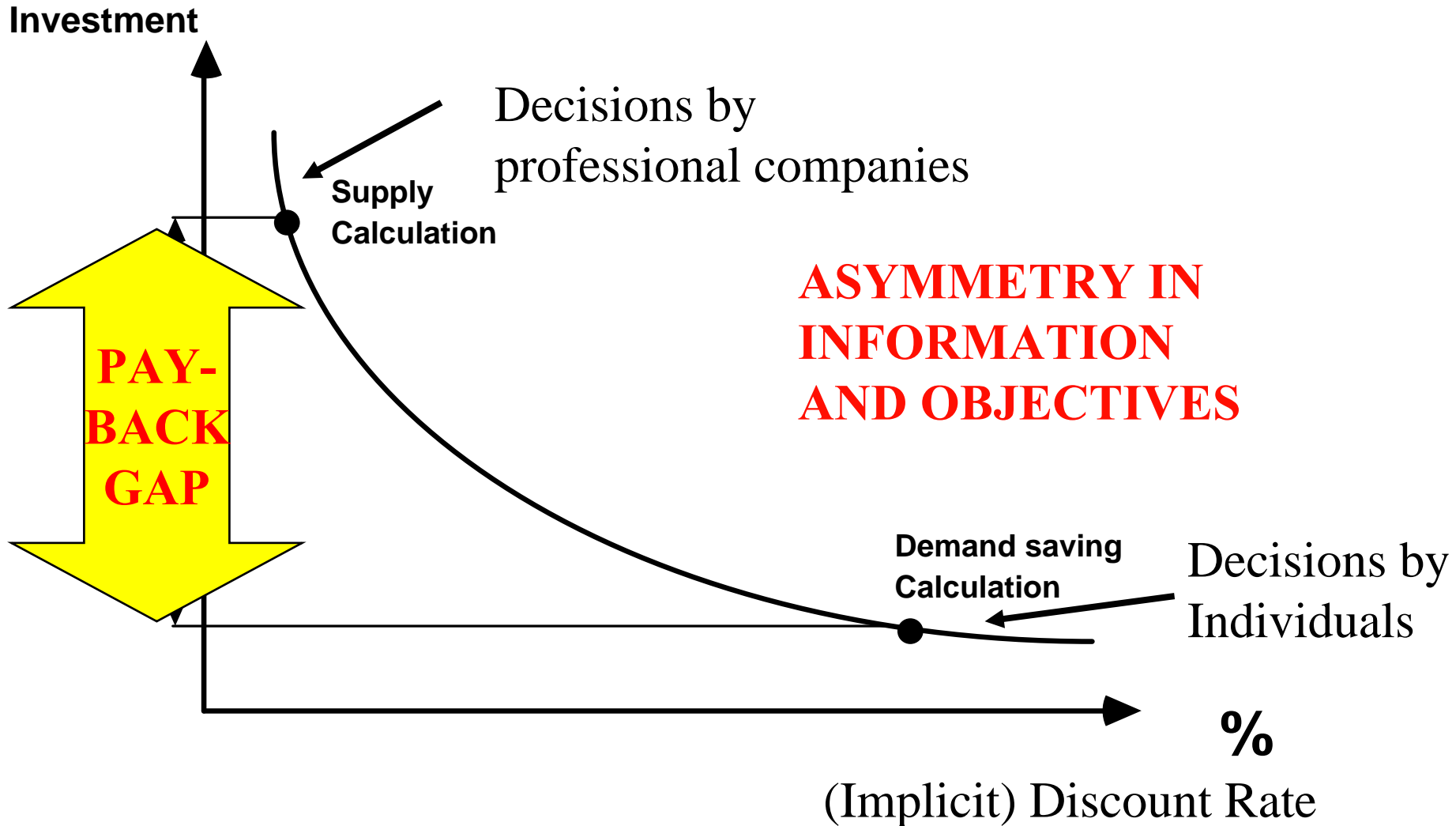
- DSM still make sense when the word **utility** is either taken away or replaced with some other entity, such as “**Government/country**”, “**Municipality/community**” or “**Company**”
- And **electricity** could be replaced with “**energy**” thus including, gas, oil, heat etc.

*“The planning and implementation of those (**utility**) activities designed to influence the customer use of **electricity /energy** in ways that will produce desired changes in the (**utility’s**) load shape - i.e. changes in the pattern and magnitude of a (**utility’s**) load.”*

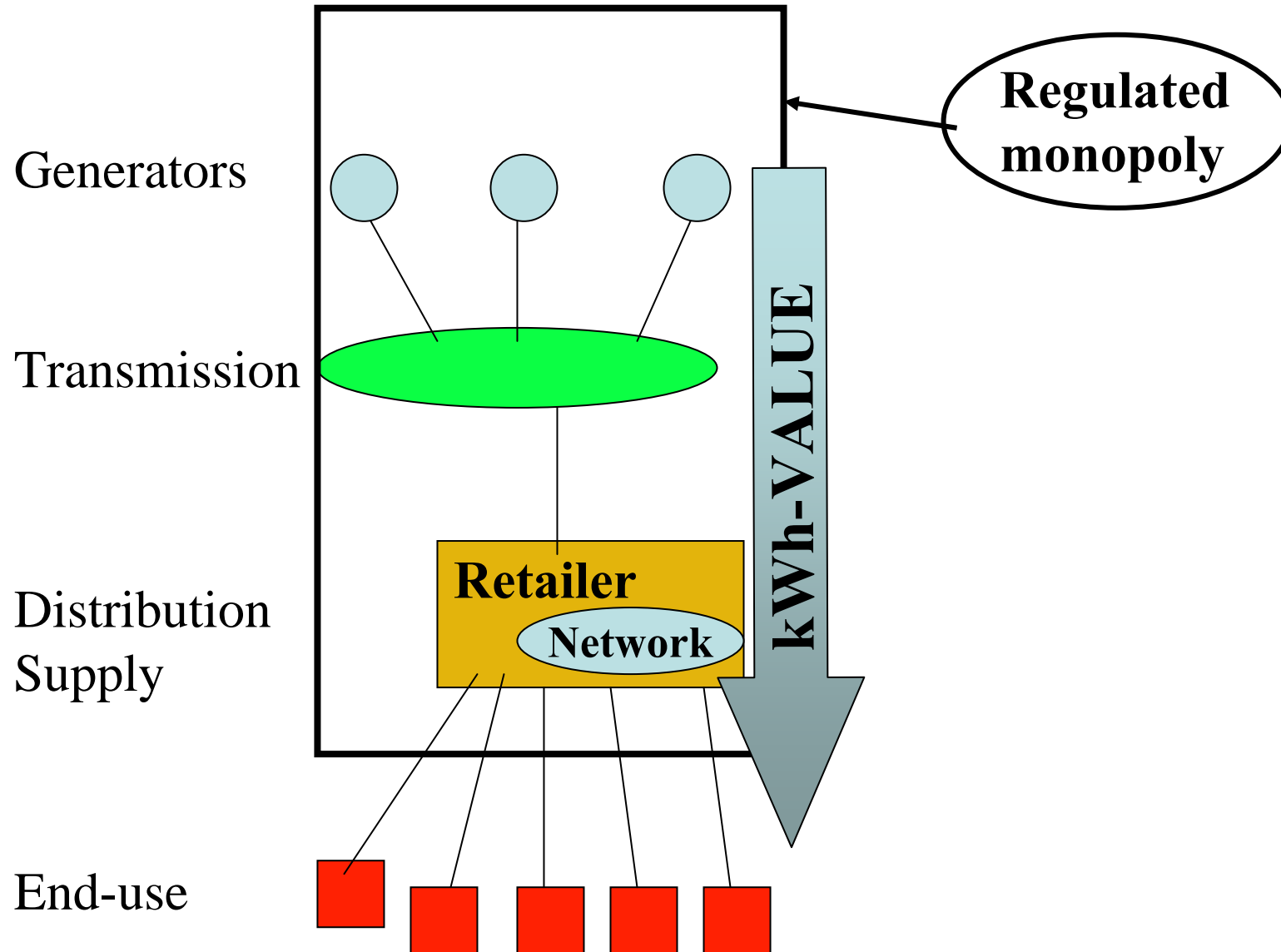
The best way to satisfy a growing need for energy services



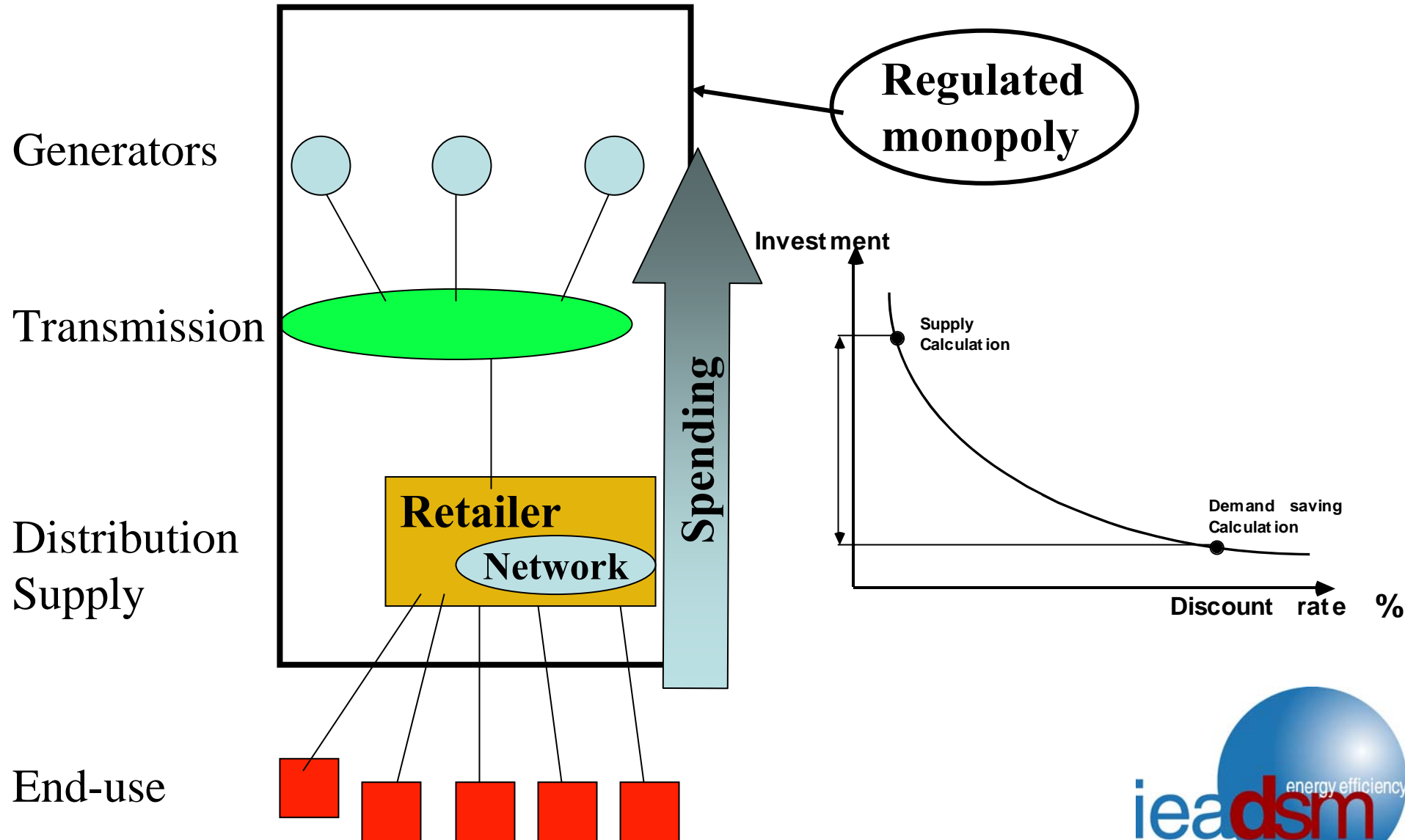
Demand Side decisions are different



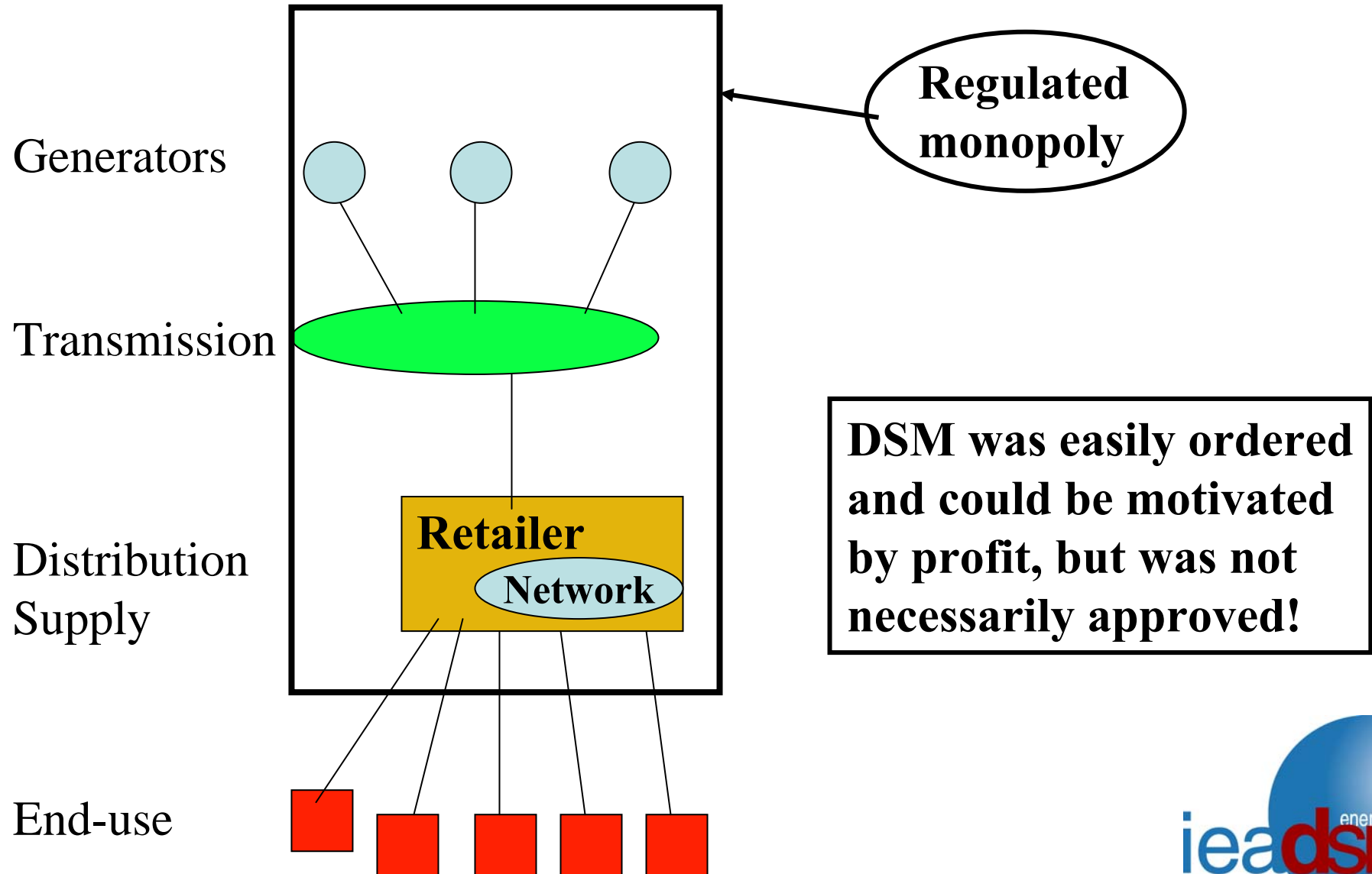
The value chain used to be vertical..



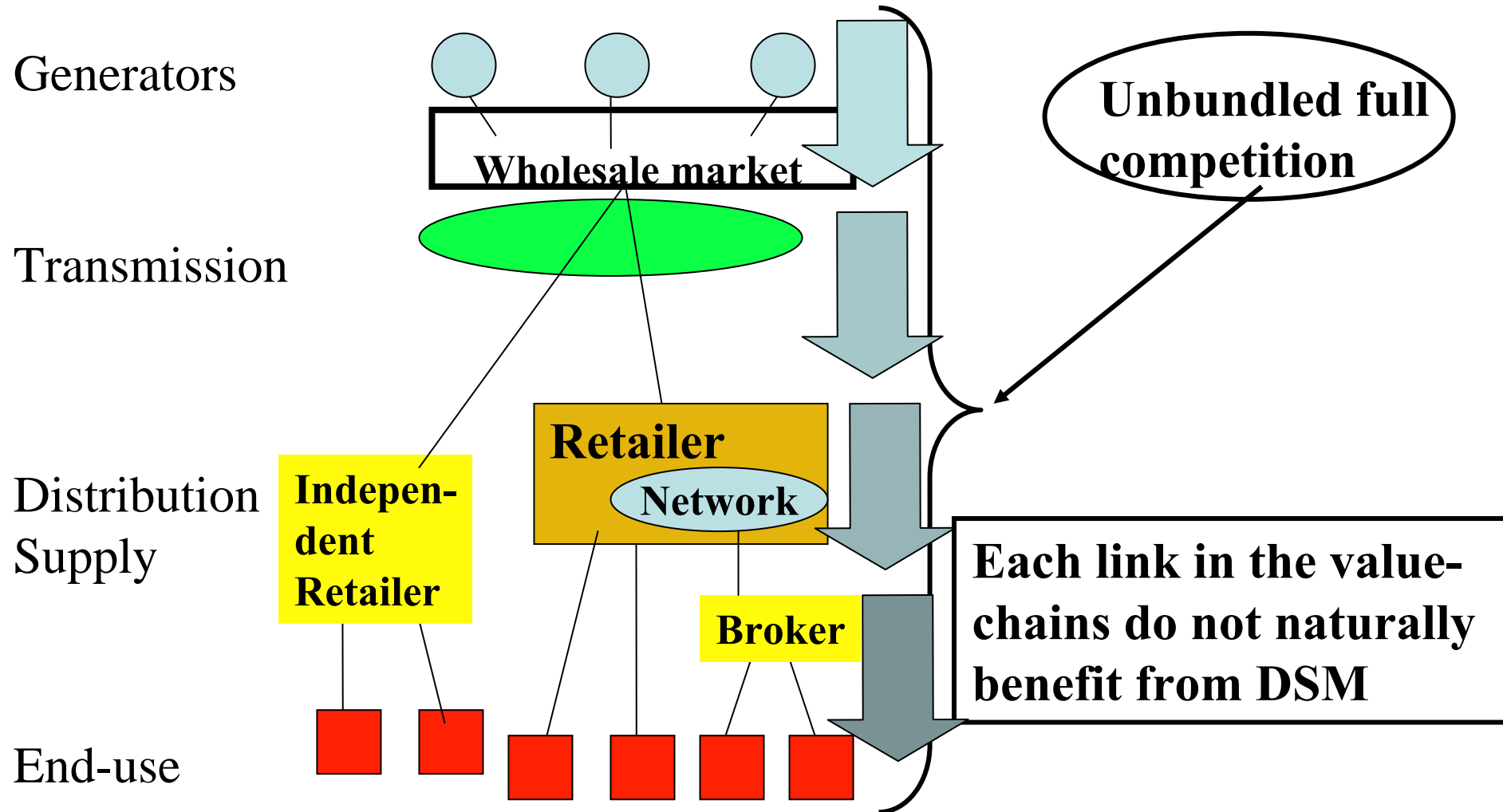
..but the spending in systems reversed



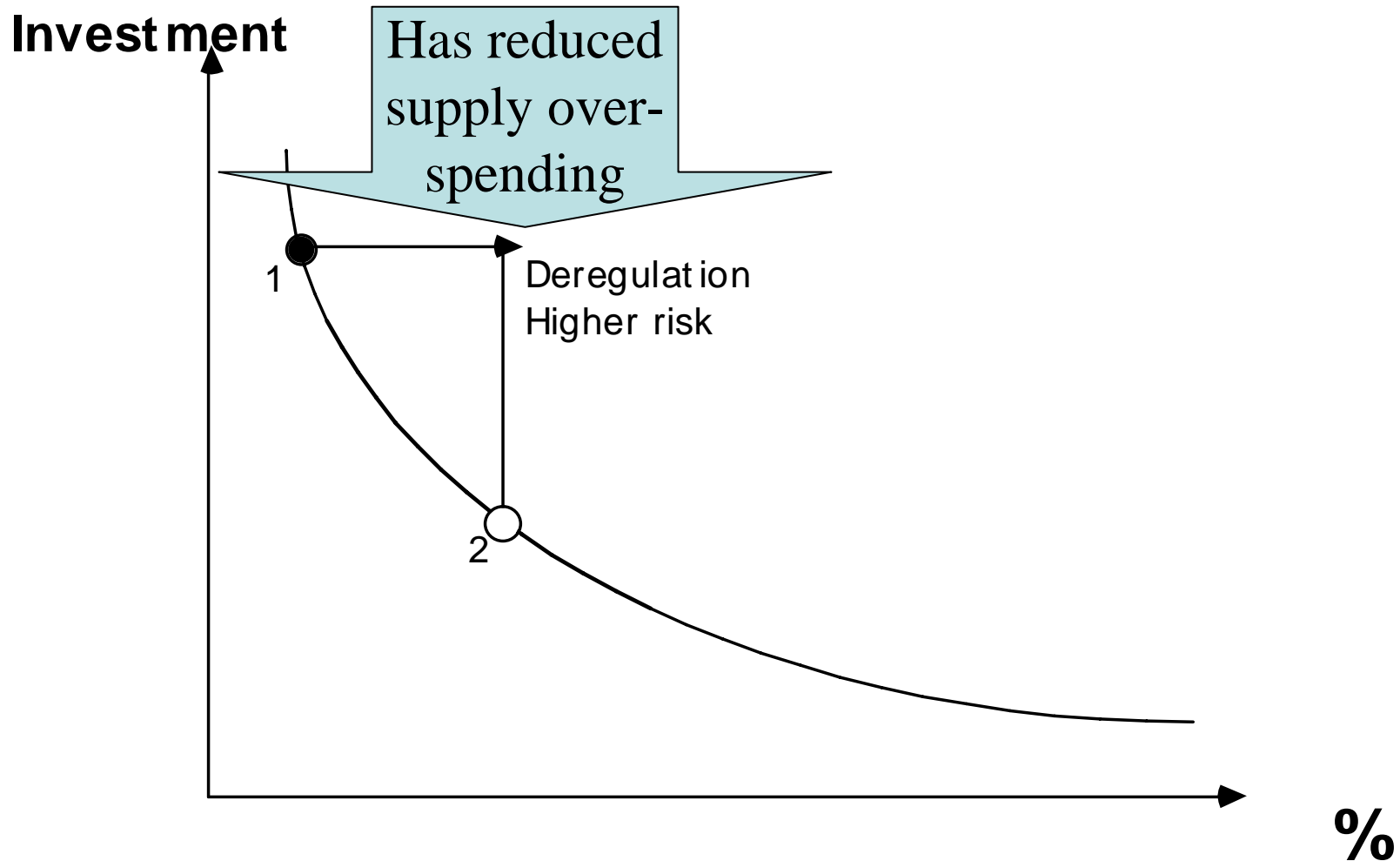
The value chain used to be vertical



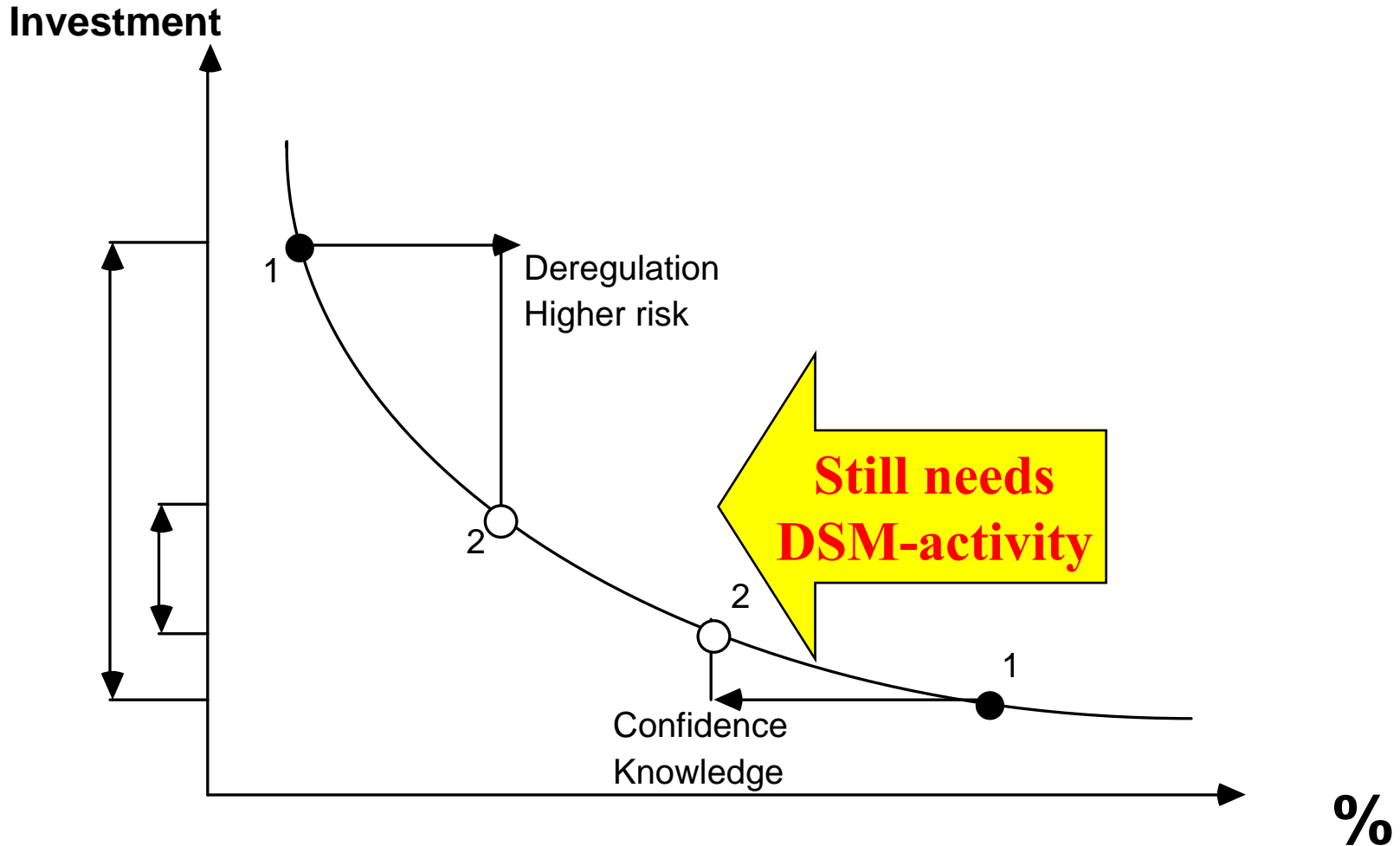
...but with liberalisation
the value chain is fragmented



Liberalisation of markets



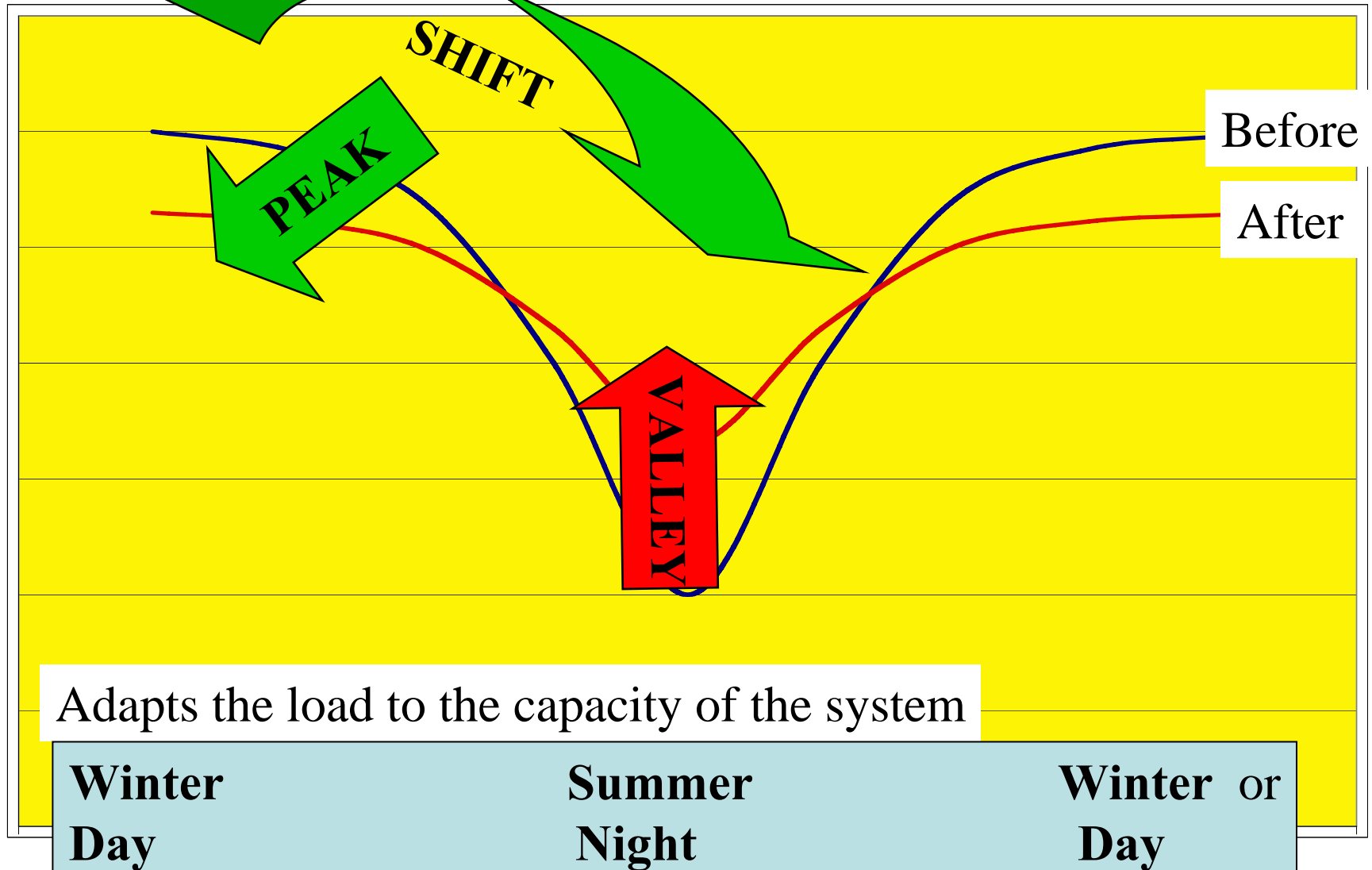
CLOSING THE GAP



The Mechanics of DSM



DSM can Change the LOAD SHAPE



The DSM work on LOAD SHAPE

FINALISED

- II. Communication Technologies
- VIII. Demand-Side Bidding in a Competitive Electricity Market

ACTIVE

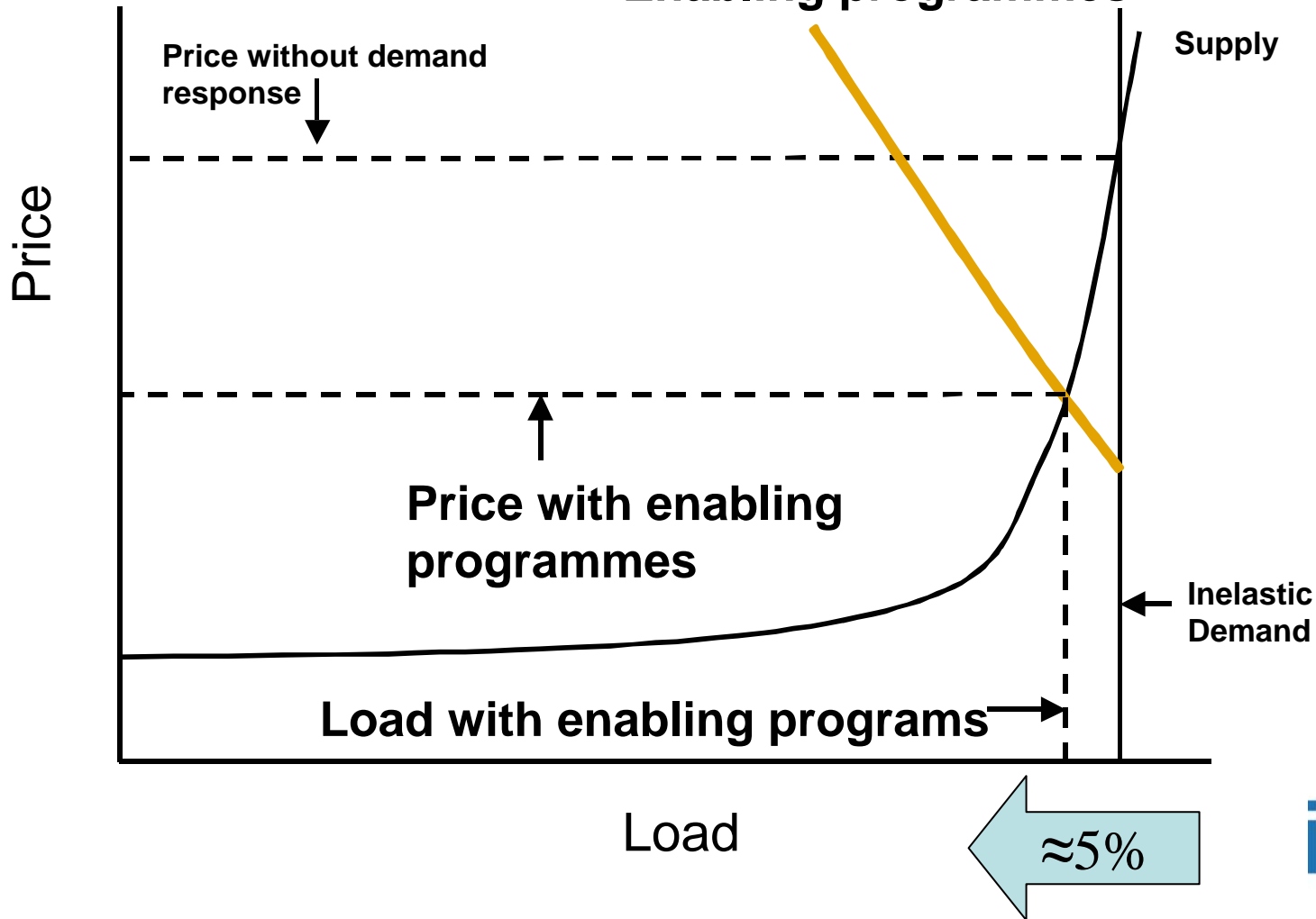
- XI. Time of use pricing
- XIII. Demand response Resources, DR
- XV. Network driven DSM

Why do we want to change the load shape?

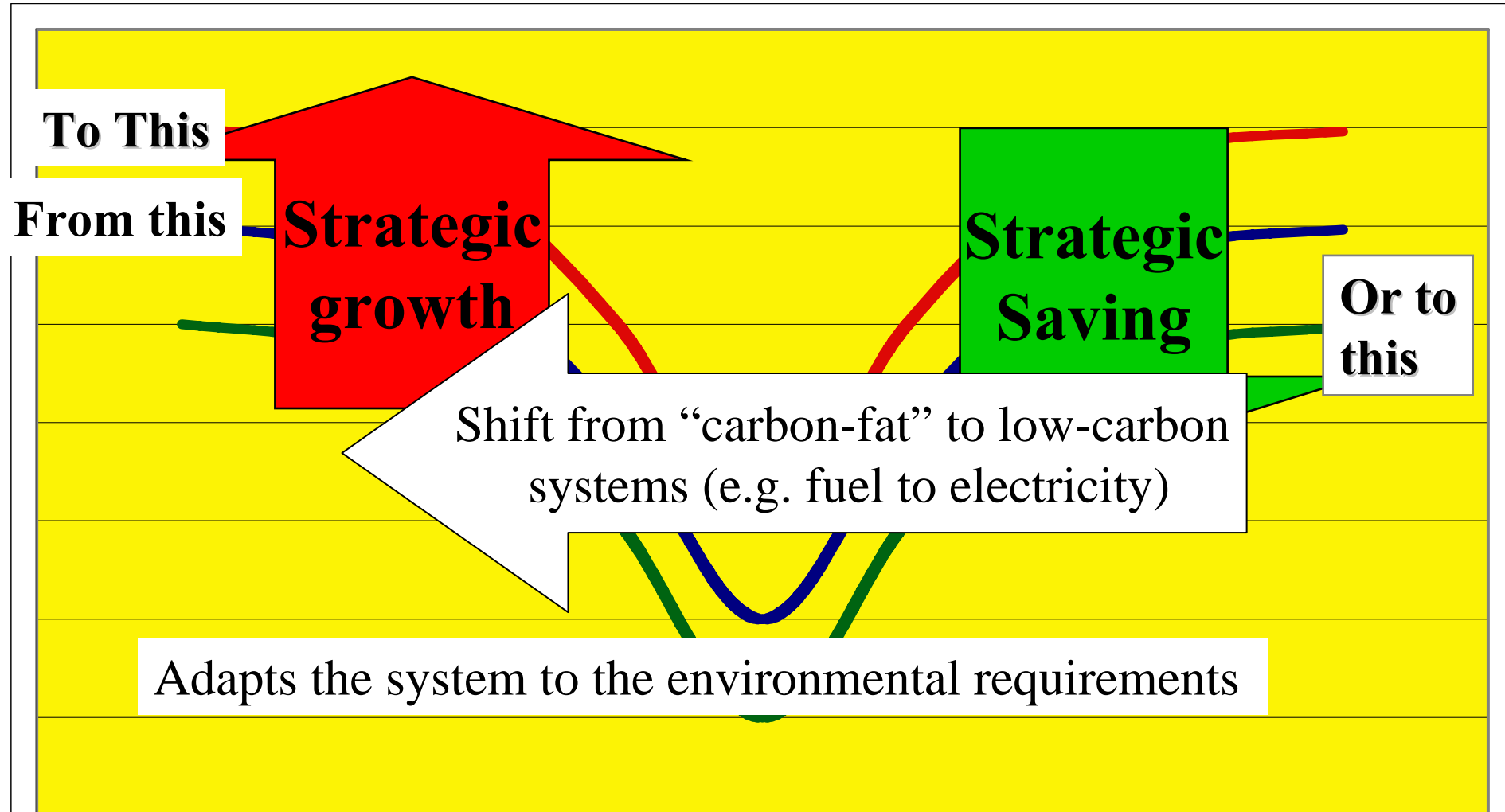
- Reduce **Price Volatility** (**by improving short term price elasticity**)
- Improve **System Reliability** (**by reducing peaks and adding to safety margins**)
- Enhance **System security** (**by reducing dependency on vulnerable supply resources**)
- Improve **Restoration capacity** (**by dispatching in/after emergency situations**)

Demand response and price volatility

Demand with Enabling programmes



DSM can change the LOAD LEVEL



The DSM work on LOAD LEVEL

FINALISED

- III. Cooperative Procurement
- IV. Methods for Integrated Resource Planning
- V. Implementation of DSM in the Market Place
- VI. DSM in a changing Electricity Business environment
- IX. The role of municipalities in a liberalised system

ACTIVE

- **I. Database on DSM (INDEEP) + Evaluation Handbook for Kyoto-related projects**
- **VII. Market Transformation**
- **X. Performance Contracting (ESCO)**
- **XII. Standards and labels**
- **XIV. White Certificates**

IN PREPARATION

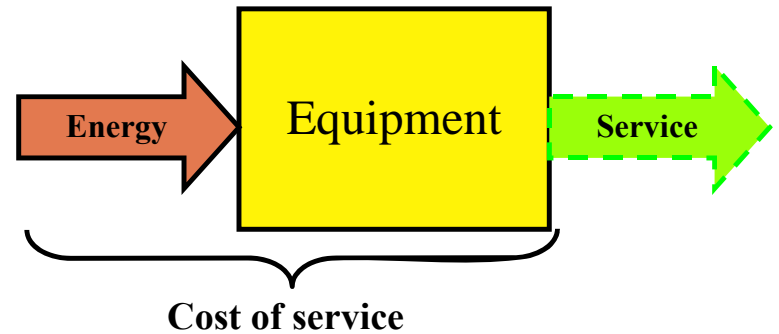
- **Advanced lighting programmes**

Some roles of municipalities in a liberalised system

- Promote energy efficiency where the market finds that it is not sufficiently profitable for themselves.
- Use a local utility as a tool
- Maintain local energy efficiency activities
- Play a leading role in the development of total energy production systems (e.g. CHP)

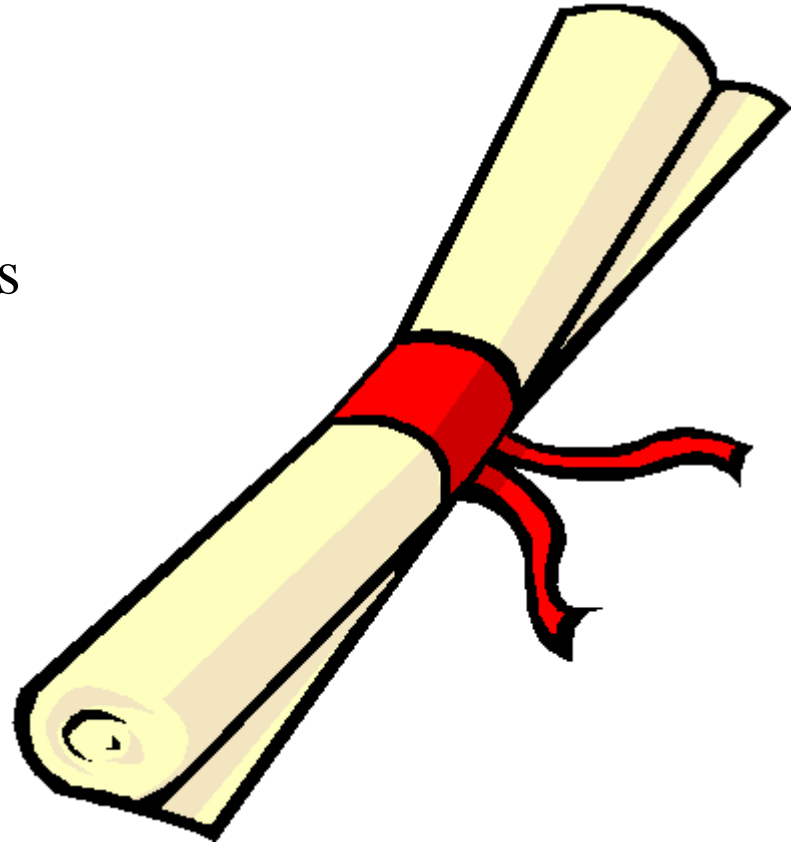
Energy Service Companies (ESCO, Performance Contracting)

- To make a **PRODUCT** of the service (**commoditise**)
- To deliver a complete function
- To fill in competence and capacity with the customer

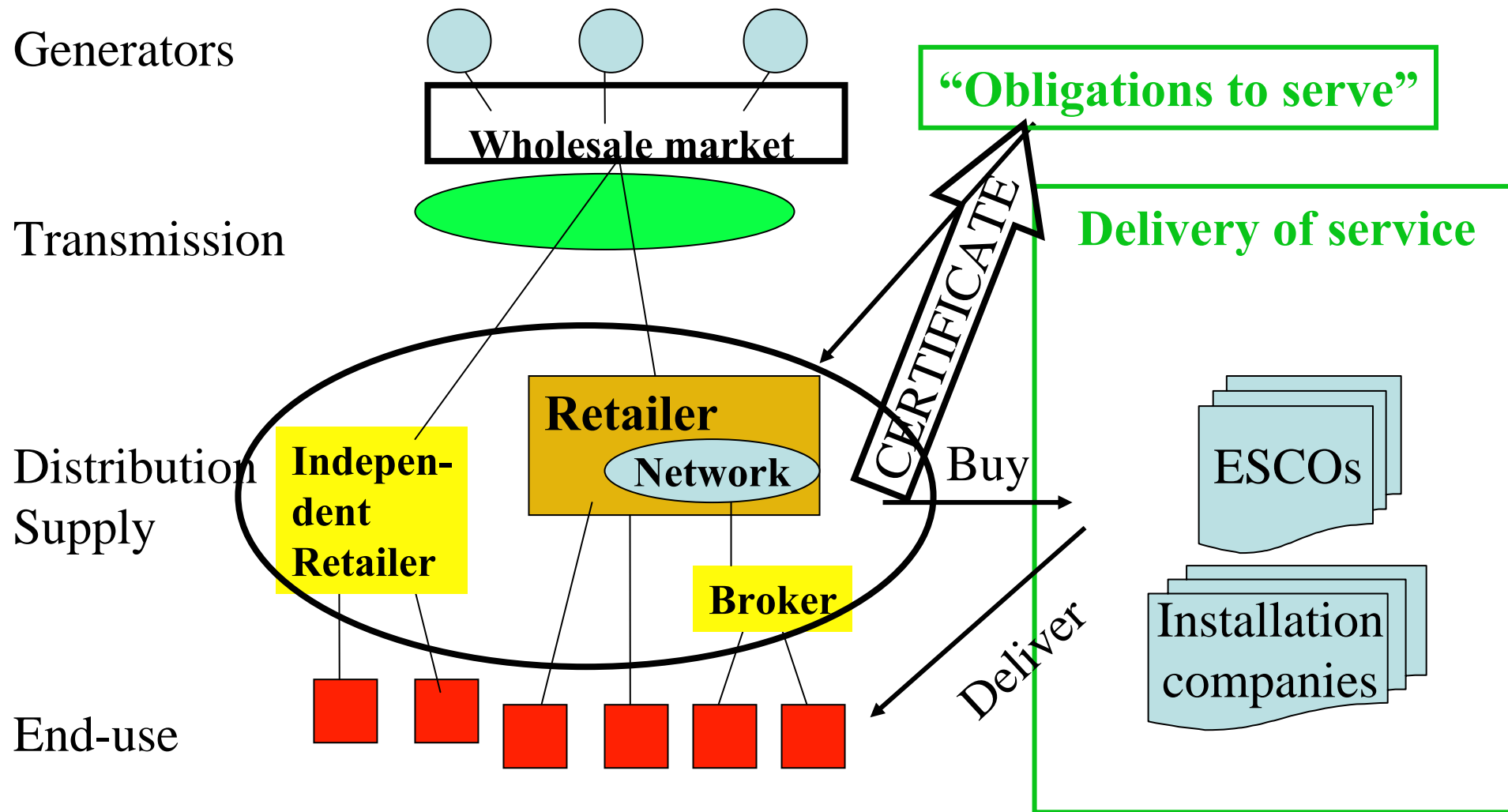


White Certificates (Commitments)

- To mobilise the energy supply and/or distribution
- To reach the un-engaged customer with favourable offers

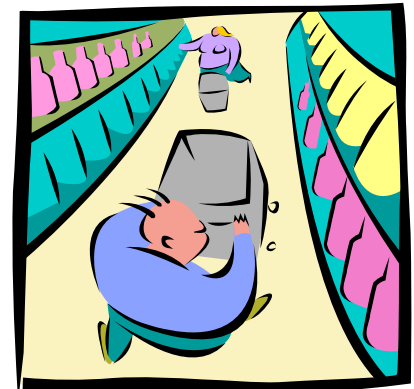
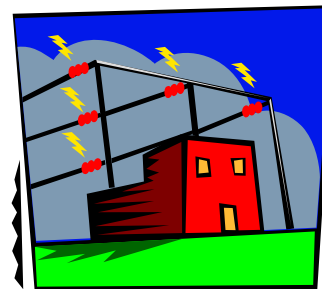
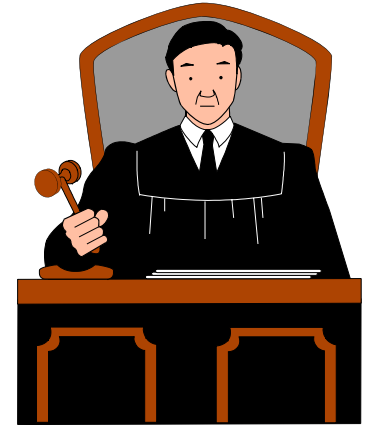


Creating a certificates market (Commitments)

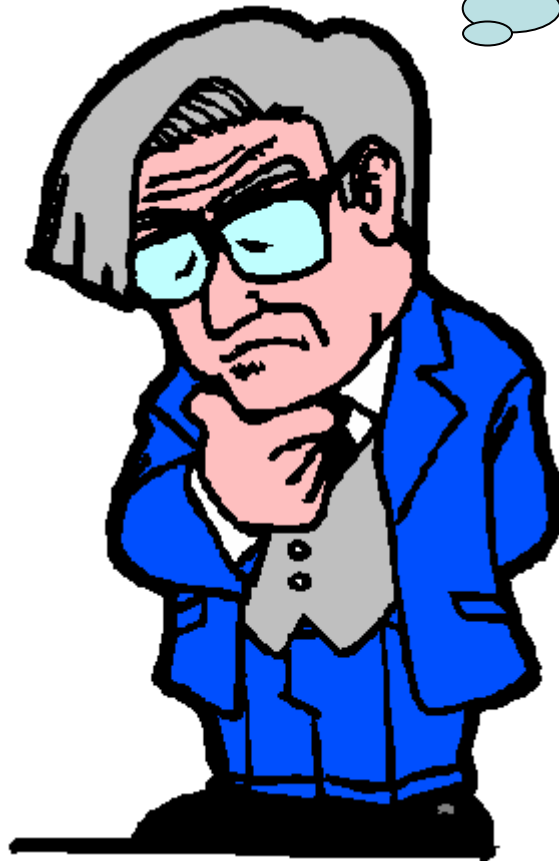


New concerns on the agenda

- **Environment and Climate** (codified in the Kyoto-Agreement)
- **Governance** (who has the responsibility?)
- Can we **make business** out of these concerns? (ESCOs, emissions trading)
- **Systems reliability** (e.g. black outs)
- **Customer market role** (price taker or player)

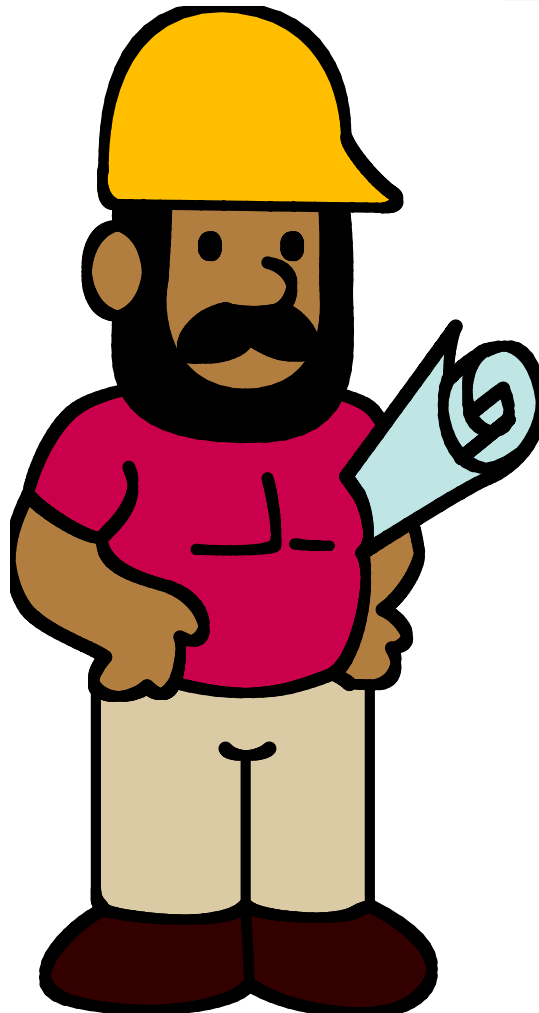


What is holding us back?



Energy Efficiency is not a Product, but a characteristic with a product.

So someone has to organise the DSM!



And then use the market to have energy efficiency to be delivered...



And in the future...?

- DSM is changing and may take into account supply (distributed generation)
- DSM has an impact on security of supply, diversification and systems reliability that has to be quantified and recognised
- DSM will be much more business oriented
- The IEA DSM-Programme will be “the best show in town” for those who want to stay in the forefront.

<http://dsm.iea.org>



The centre of DSM excellence