A New Dawn for the Demand Side in the Energy Sector

Hans Nilsson

Chairman of the IEA DSM Programme

The IEA 30 years

- Founded as an autonomous body within the OECD in 1974, in the wake of the first oil shock.
- To work for stability in world energy markets.
  - ***Commitments to hold oil stocks, co-ordinate emergency responses, share oil***
  - ***Work to reduce reliance on oil***
  - ***Dialogue with oil producers***
  - ***Production of oil market statistics***

Reduce reliance on oil- but how?

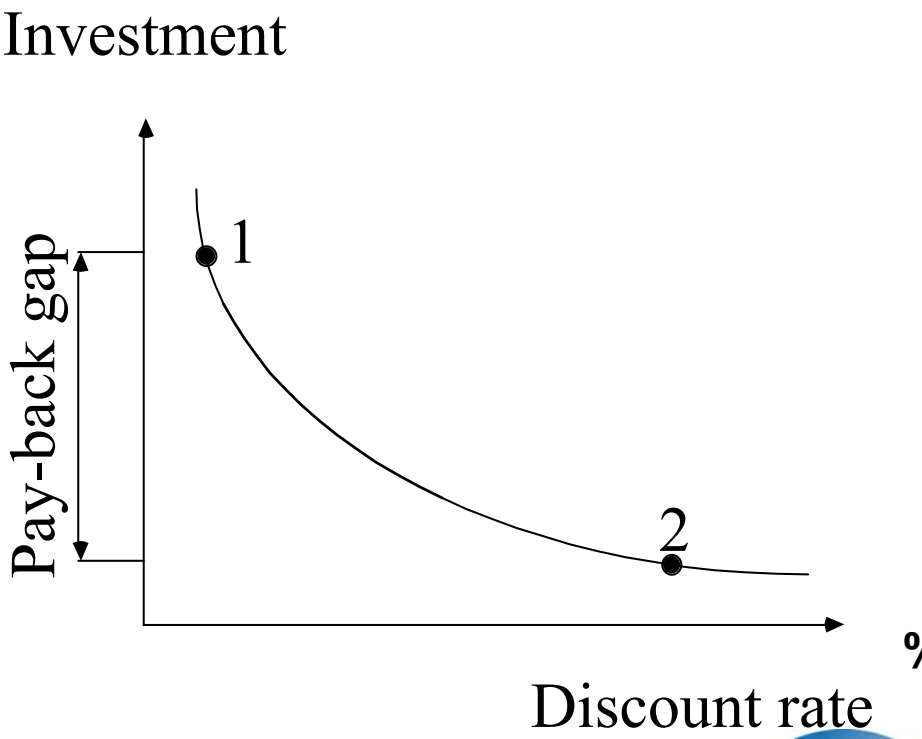
- Share resources for research in common Programmes (Implementing Agreements)
- To date more than 40 Programmes
- Of which 17 on end-use of energy
- and 9 on renewable fuels
- Total turnover 150 MUSD per year
- Benefit 700-1000 MUSD per year
- Cost-sharing and Task-sharing

The IEA DSM Programme

- Begun 1993
- 17 Countries
- Five tasks
  - I. Database on DSM (INDEEP)
  - II. Communication Technology
  - III. Cooperative Procurement
  - IV. Methods for Integrated Resource Planning
  - V. Implementation of DSM in the Market Place
- Influenced by, but not limited to, the Monopolised Utilities role on the market

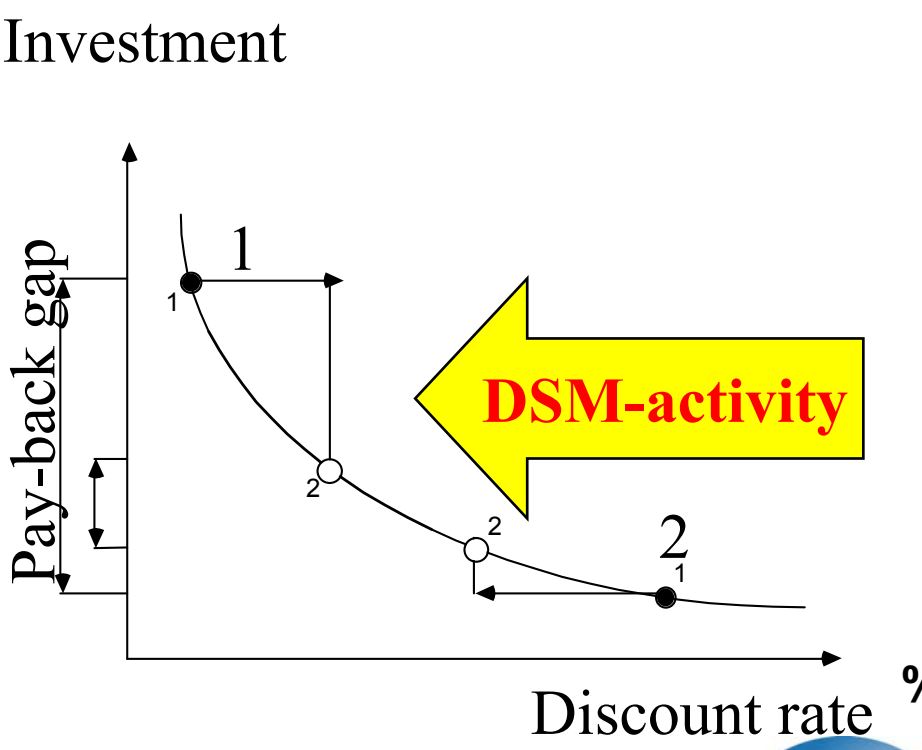
What was the problem?

- 1. Supply side invested in expensive generation with little risk
- 2. Demand Side invested little with because of lack of knowledge (perceived high risk)
- The difference is "**The Pay-back gap**"
- Integrated Resource Planning (IRP) and Demand Side Activities should close the gap from 2-1



Then came deregulation!

- There was a higher risk on the supply side
- But it did not close the gap!
- There is still a need to give greater confidence to Demand Side Investments



New concerns entered the agenda

- Environment
- Climate (codified in the Kyoto-Agreement)
- Governance (who has the responsibility?)
- Can we make business out of these concerns?

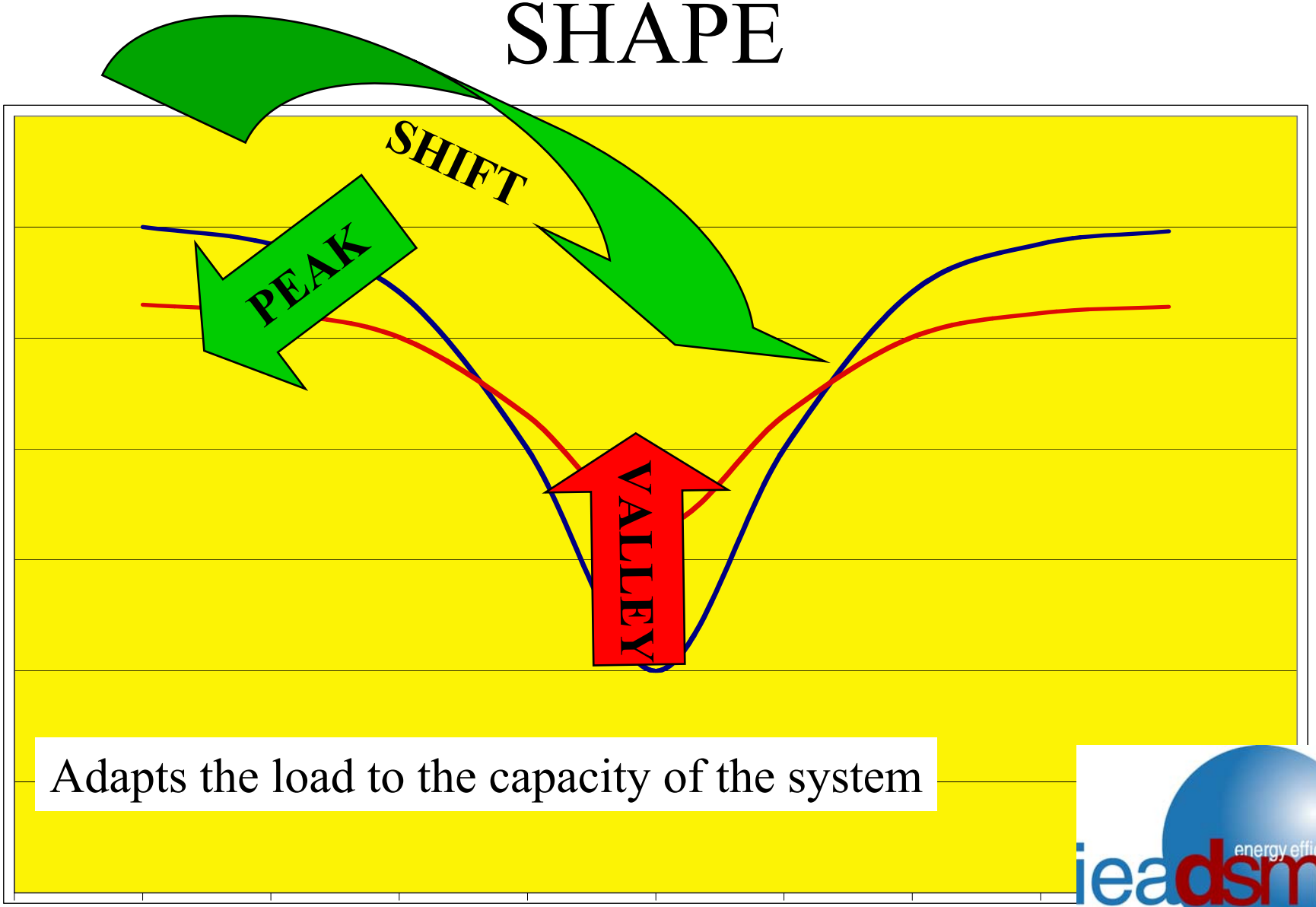
The DSM Tasks developed

- New and reformulated tasks
  - I. Evaluation Handbook for Kyoto-related projects
  - VI. DSM in a changing Electricity Business environment
  - VII. Market Transformation
  - VIII. Demand Side bidding in a competitive market
  - IX. The role of municipalities in a liberalised system
  - X. Performance Contracting (ESCO)
- 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.

Then came new concerns about

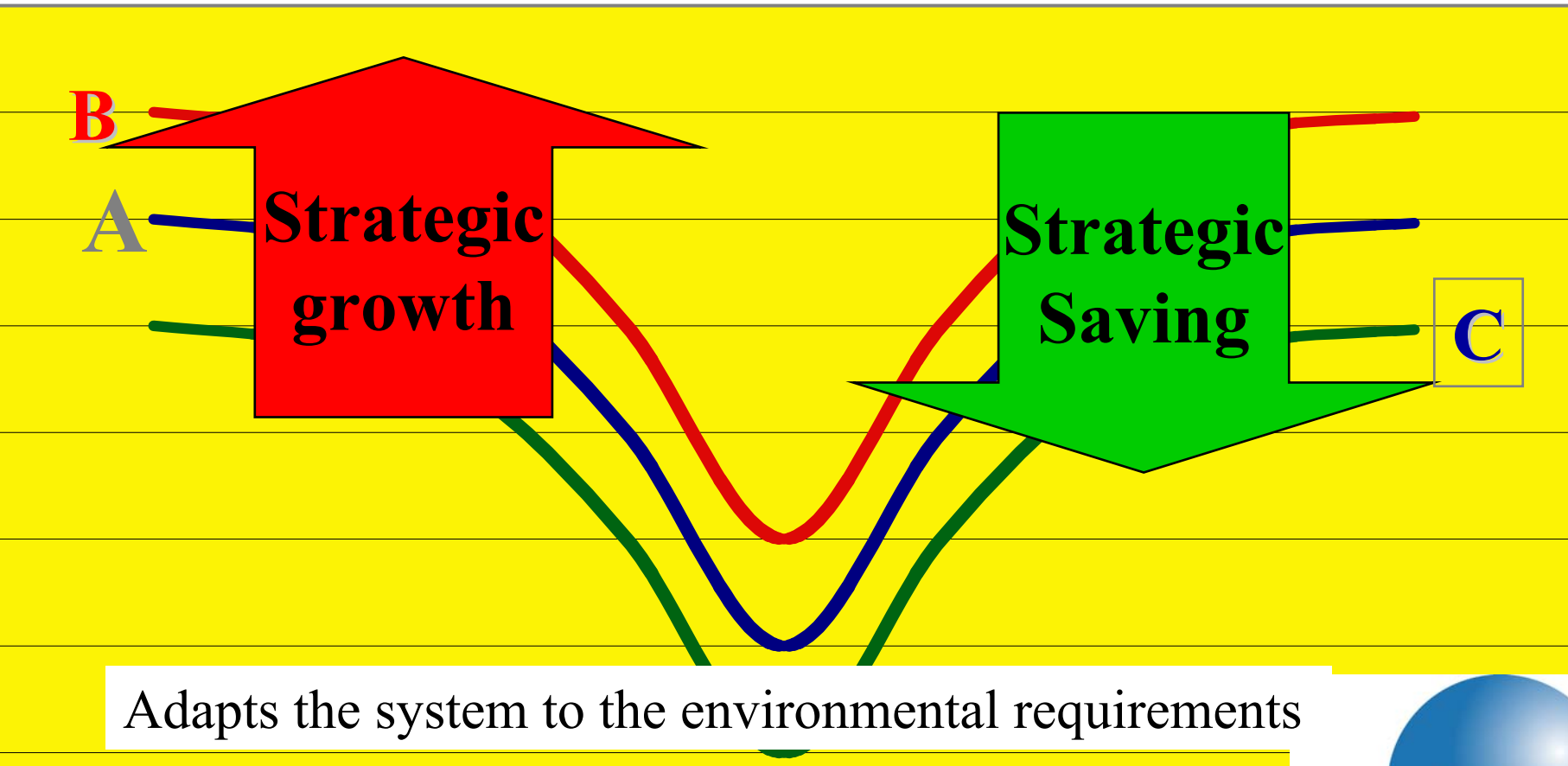
- Systems reliability (e.g. black outs)
- Customer market role (price taker or player)
- ----------
- The basic systems problem remains, and..
- DSM is still a tool for optimisation of systems

DSM can Change the LOAD SHAPE



Adapts the load to the capacity of the system

DSM can Change the LOAD LEVEL



Adapts the system to the environmental requirements

The DSM new work

- In the area of load shape DSM
  - XI. Time of use pricing
  - **XIII. Demand response Resources**
  - Network driven DSM
- In the area of load level DSM
  - XII. Energy Standards and labelling
  - **White Certificates**
  - Advanced Lighting Programmes

The DSM Programme new strategy

- *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. The Programme should also deliver technology and applications that either facilitate operations of energy systems or facilitate necessary market transformations.*

The new business environment

- Fragmented stakeholder structure on the market: Generators, Regulators, Transmission, Distribution, System responsible parties, traders,etc
- More and more international companies
- Everybody will gain from a more predictable market, but who wants to pay for getting there?

Challenges that remain!

- And the new HUGE economies? (Brazil, China; Russia, South Africa, etc)
- And the daunting tasks? Electrification for 2 billion people that do not have access today
- And the new systems configuration? Decentralised power systems

http://dsm.iea.org