



DSM: On the cutting edge of Energy Efficiency (Examples of what we do)

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Implementing Agreement on Demand Side Management Technologies and Programmes

Who we are...

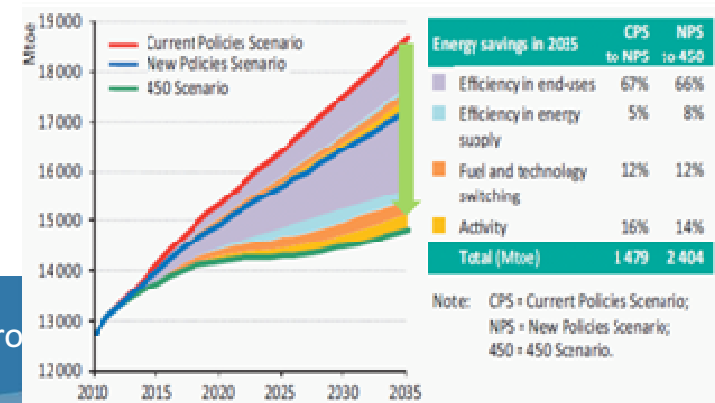
- 14 Members
 - Austria, Belgium, Finland, India, Italy, Netherlands, Norway, New Zealand, Korea, Spain, Sweden, Switzerland, United Kingdom, USA
 - European Copper Alliance, R.A.P.
- 23 Tasks (17 finished, 6 current)



www.ieadsm.org



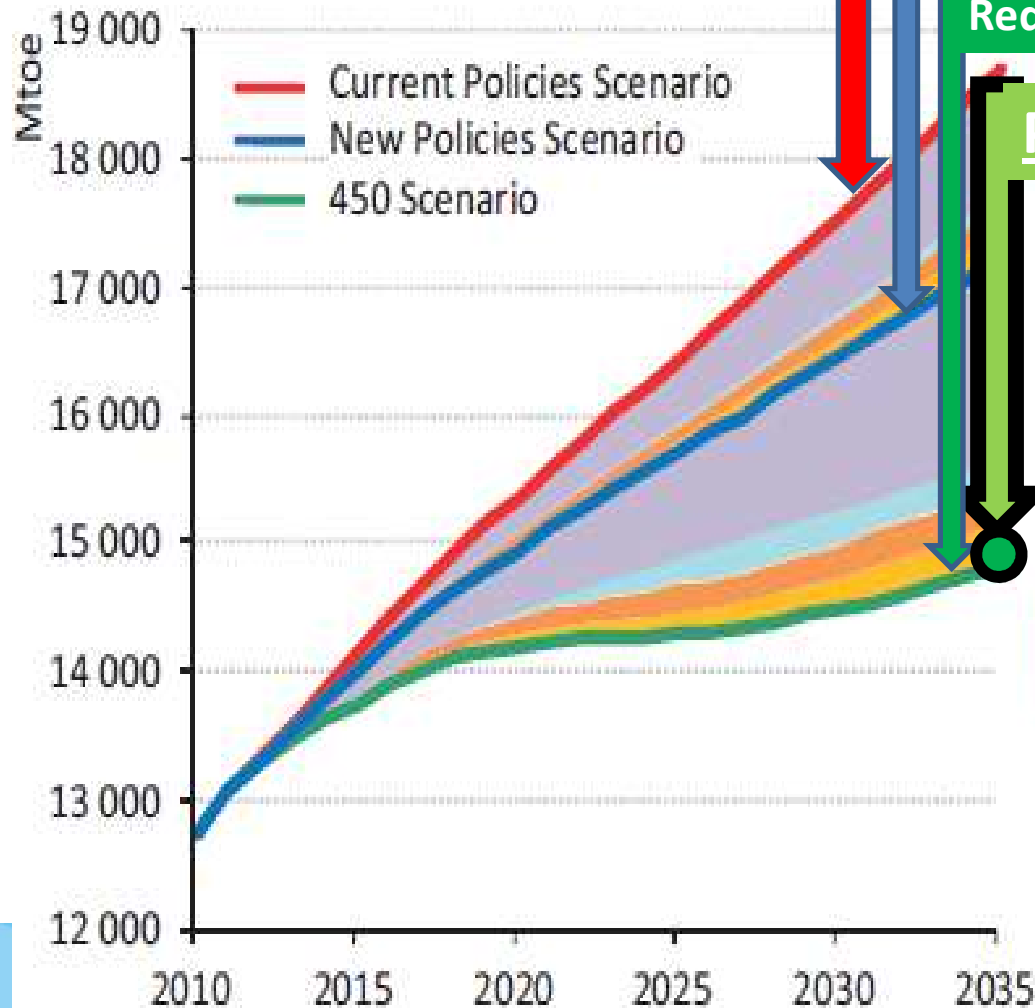
What is an energy efficiency?



Because we need one. WEO 2012

Where we are heading

Coming up?



Energy services in 2035	CPS to NPS	NPS to 450
Efficiency in end-uses	67%	66%
Efficiency in energy supply	5%	8%
Fuel and technology switching	12%	12%
Activity	16%	14%
Total (Mtoe)	1 479	2 404

PROFITABLE!

Note: CPS = Current Policies Scenario;
 NPS = New Policies Scenario;
 450 = 450 Scenario.

Suppose it looks like.... This?

R3



What would it do? An early ninteens DSM question

The 90's issues!

Load level

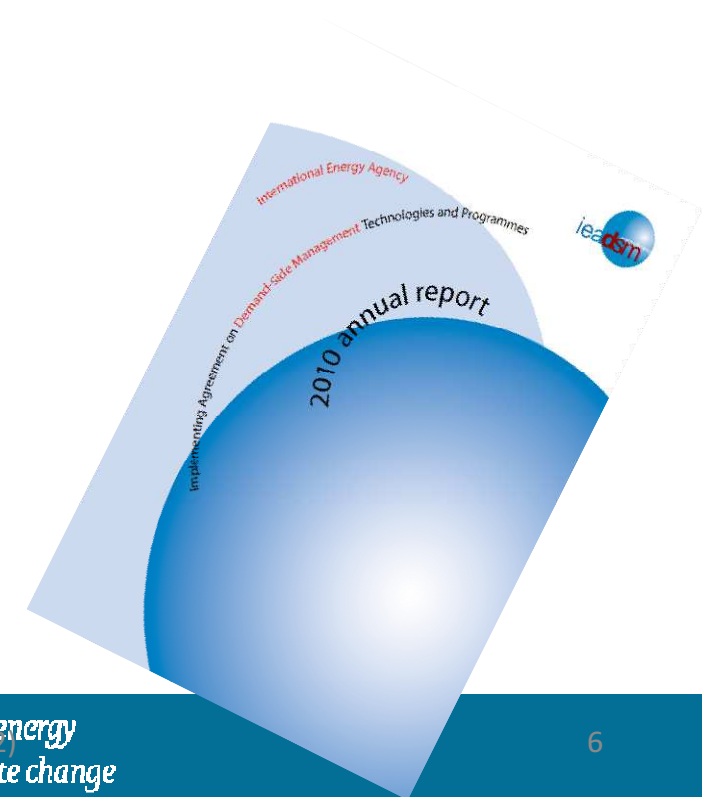
- a wasteful demand requires too much supply for the specific needs (The customer does not need energy! They need the service that energy, combined with an installation, provides)

Load shape

- high peaks,
- little reserve capacity,
- bottlenecks in transmission and distribution

Market responsibilities

- who is the owner of the problem?



Load shape, simplified “Start of DSM”

Figure 1: Load Shape changes. (Adapted from Clark Gellings, speech made 1982)⁵

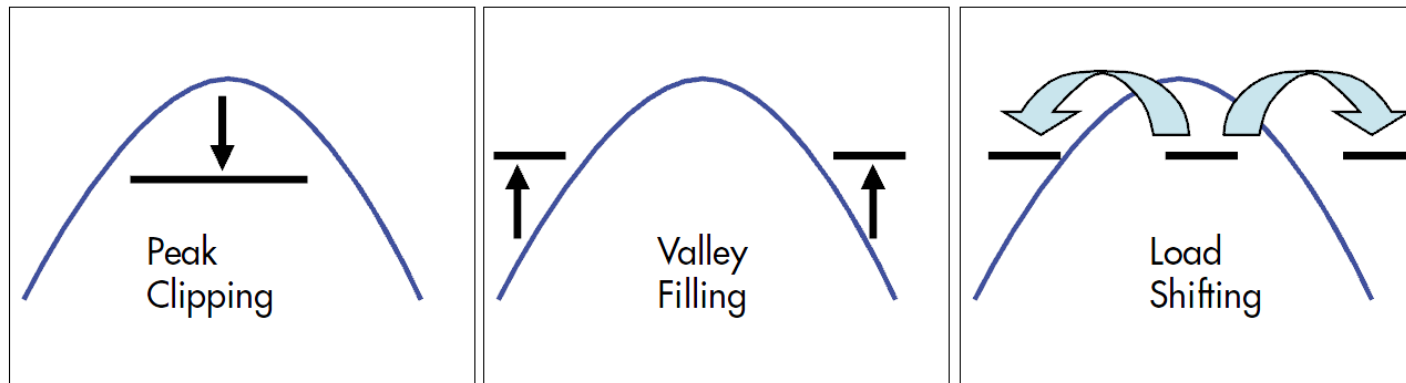


Table 1: Comparison between The IEA DSM-Programme tasks and the application “Load Management”⁶

VI	VII	VIII	IX	X	XI	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII

	Current task
	Completed task
	Most relevant for this application



The more complex reality: Load shape on national level

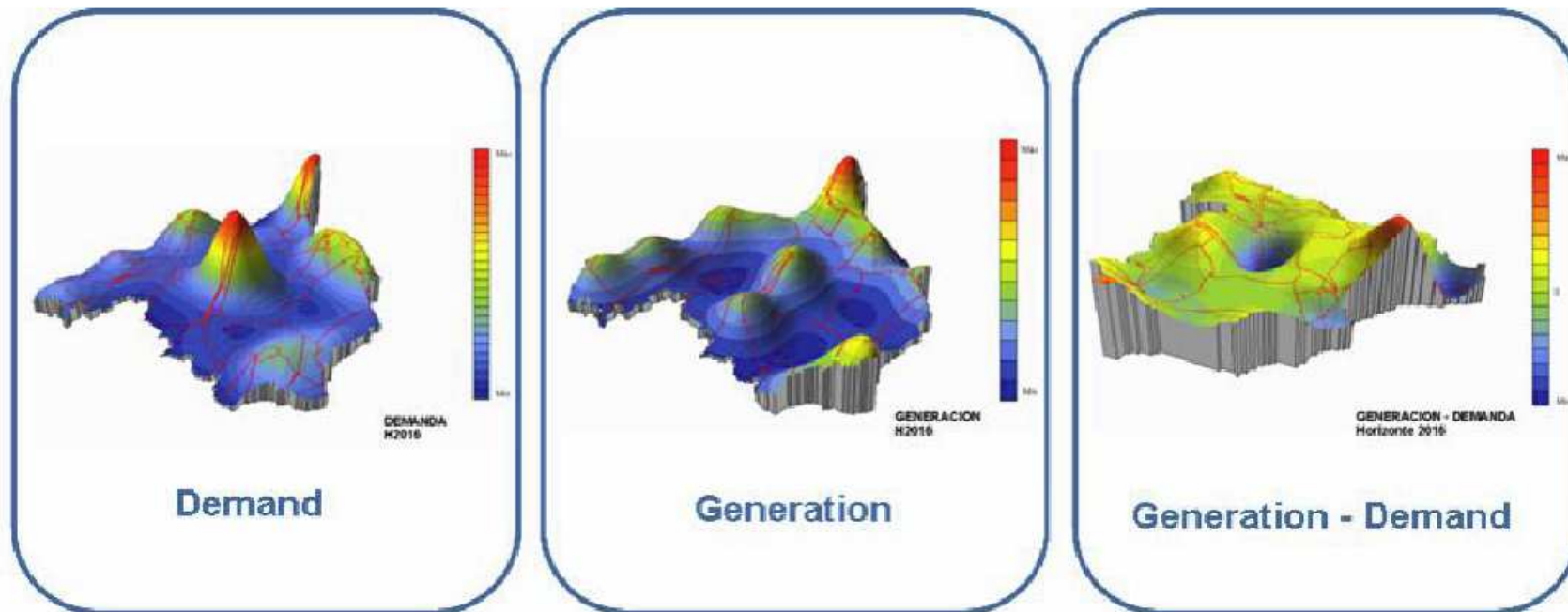
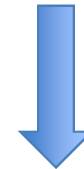


Figure : Demand and generation geographical distribution in Spain

Growing complexity (1)



Growing complexity (2)

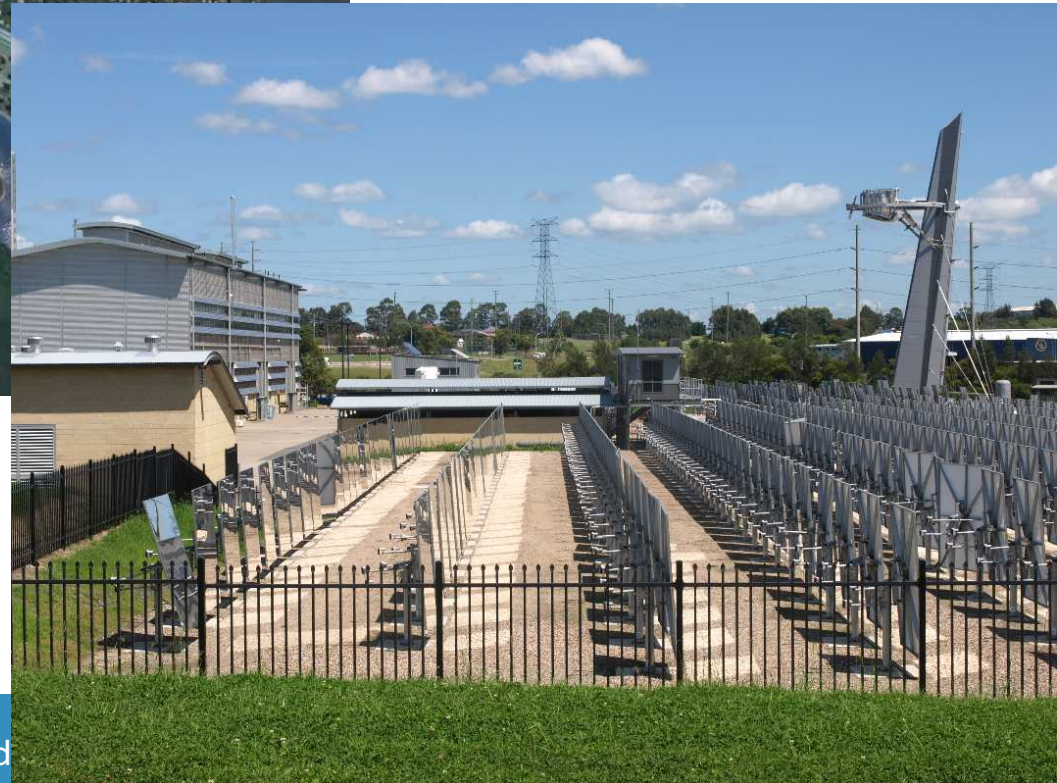
- Fossil: increasingly expensive & something with the environment



Growing complexity (3)



Large scale renewables



Growing complexity (4)

- Prosumer

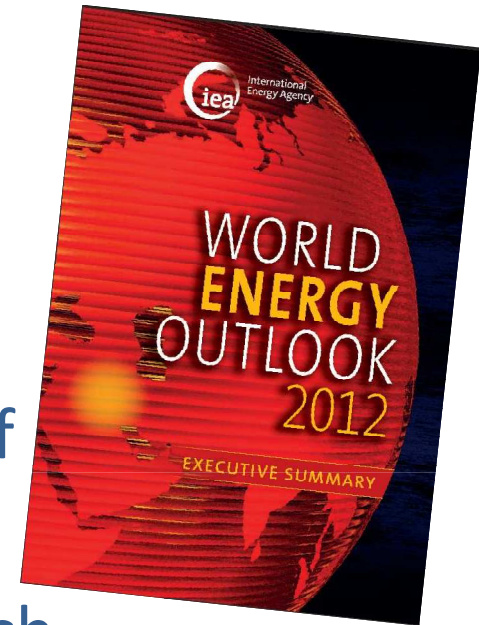


An energy efficiency starts to look like...



IEA-DSM's: some contributions

- Demand Side Management (DSM) refers to all changes that originate from the demand side of the market in order to achieve large-scale energy efficiency improvements by deployment *and use* of improved technologies.
- Depending on market organisation in each country such changes involve different actors. In many cases the utilities play an active role.



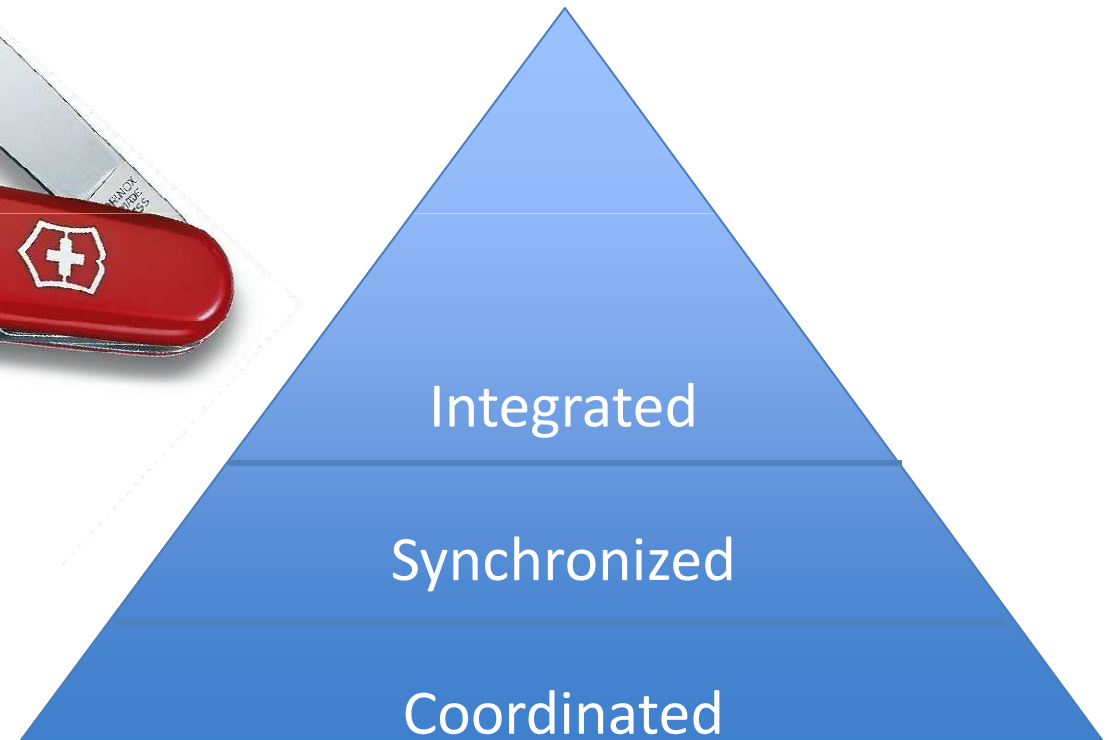
Integrated Demand Side Management

Distributed Generation

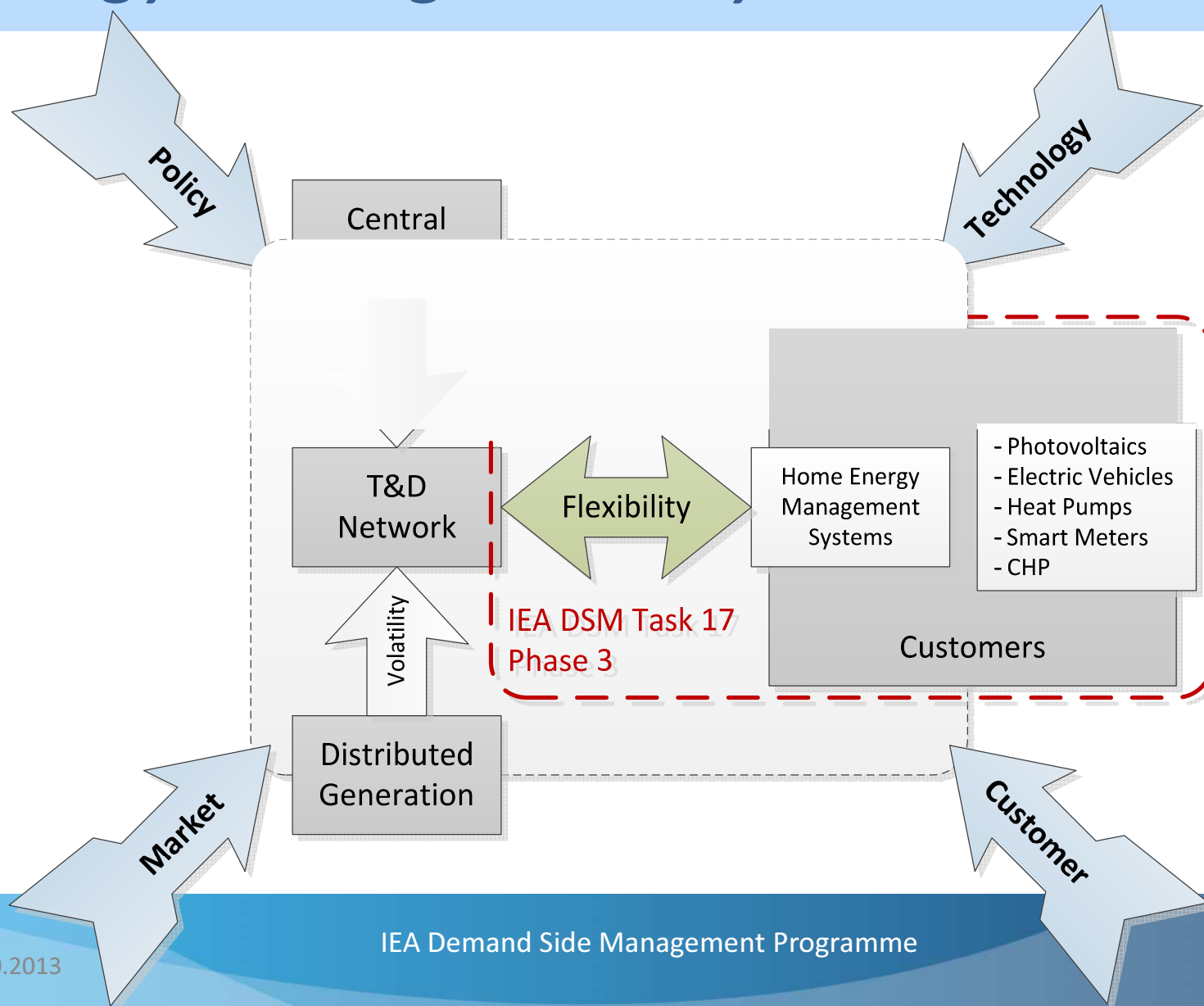
Energy Efficiency



Demand response



Energy management systems

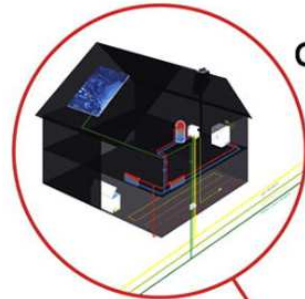


Example PowerMatcher in living lab Hoogkerk

Stakeholder setting

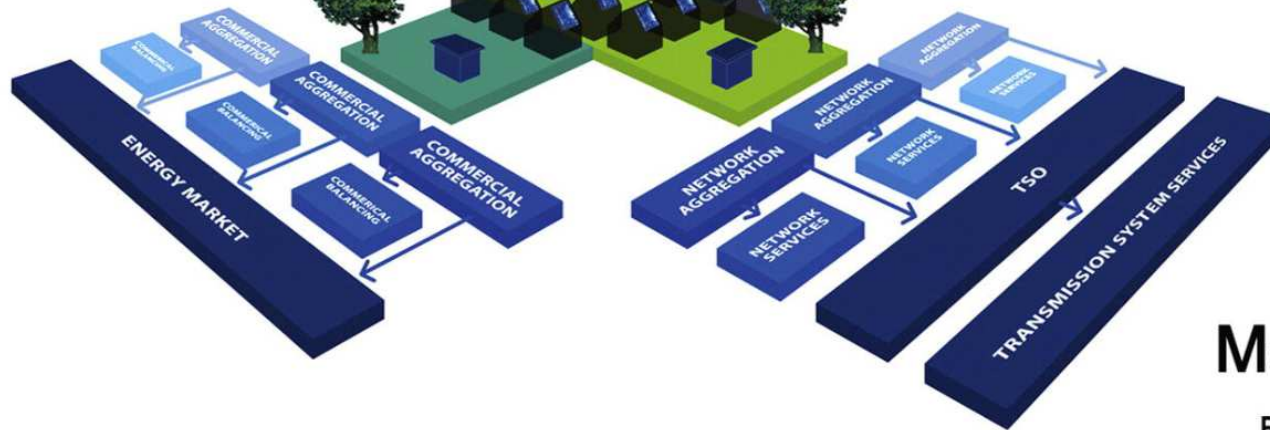
In-Home Optimization

Cost Effective use of Energy



Commercial Optimization

Virtual Power Plants



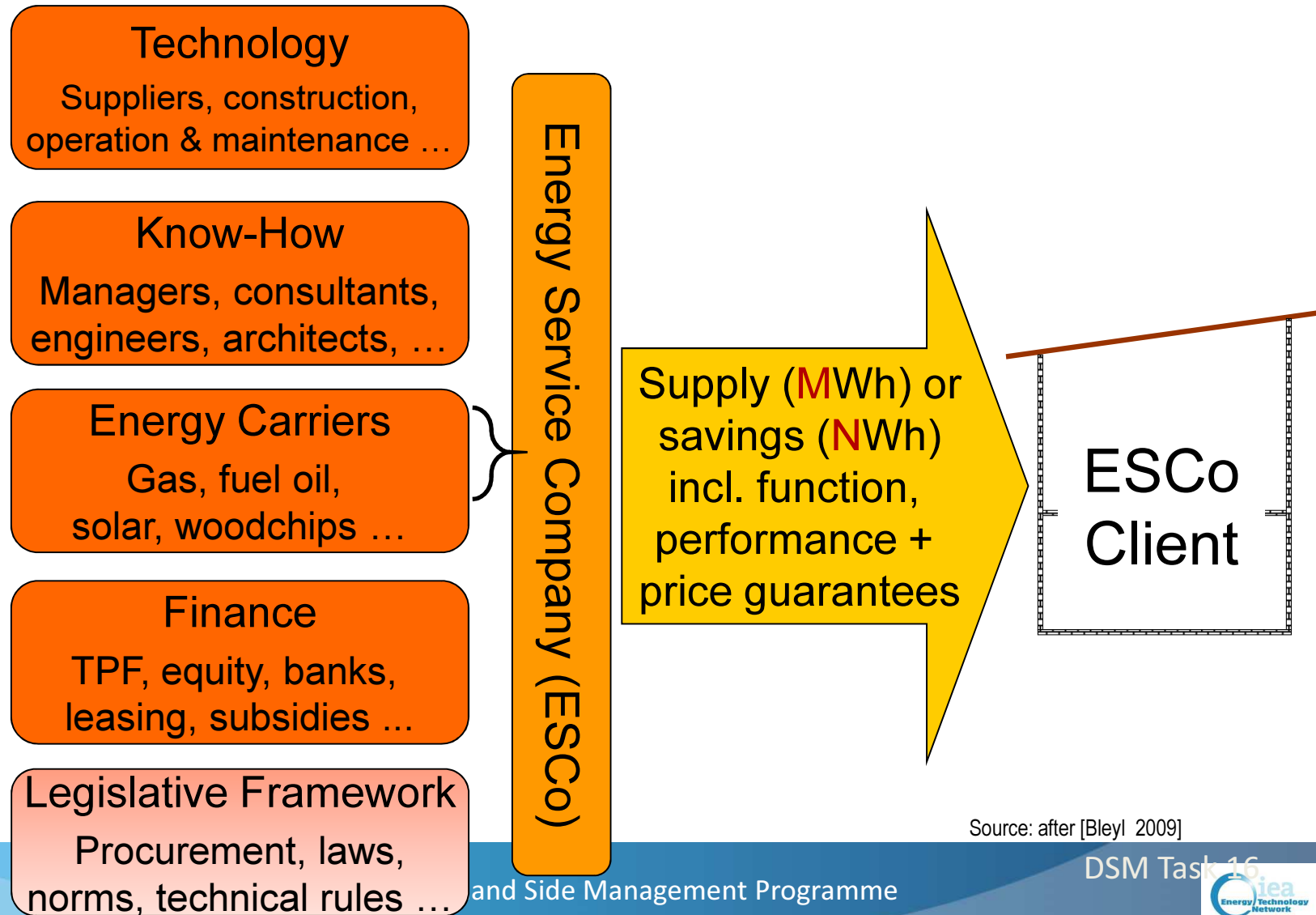
Integration of Renewable Energy

Valorization and imbalance Reduction

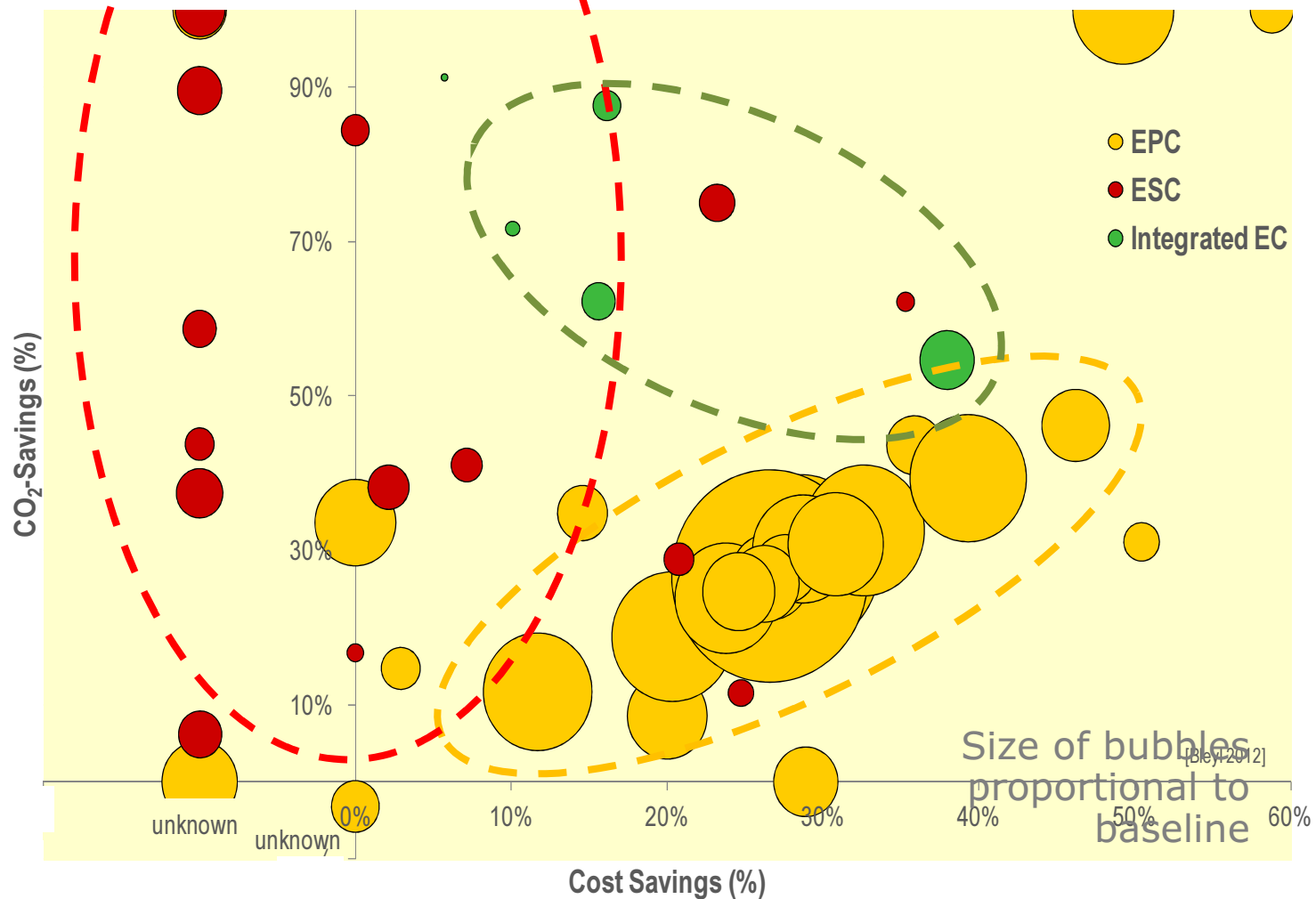
Capacity Management

Reduce Peak Loads

Energy Efficiency: also a job for pro's



CO₂ + Energy Cost Savings



The Role of Customers in Delivering Effective Smart Grids



The Role of Customers in Delivering Effective Smart Grids



Do I need an Energy Efficiency?



Energy Efficiency is
a resource!



We have to create a change in behavior



Closing the loop

The main objective is to create a global expert network and design a framework to allow policymakers, funders of DSM programmes, researchers and DSM implementers to:

- Provide a helicopter overview of behaviour change models, frameworks, disciplines, contexts, monitoring and evaluation metrics
- Provide detailed assessments of successful applications focusing on participating/sponsoring countries' needs (smart meters, SMEs, transport, built environment (in particular, refurbishment and/or renovations))
- Create an internationally validated monitoring and evaluation template
- Break down silos and enable mutual learning on how to turn good theory into best practice

CLOSING the LOOP

DAY 1



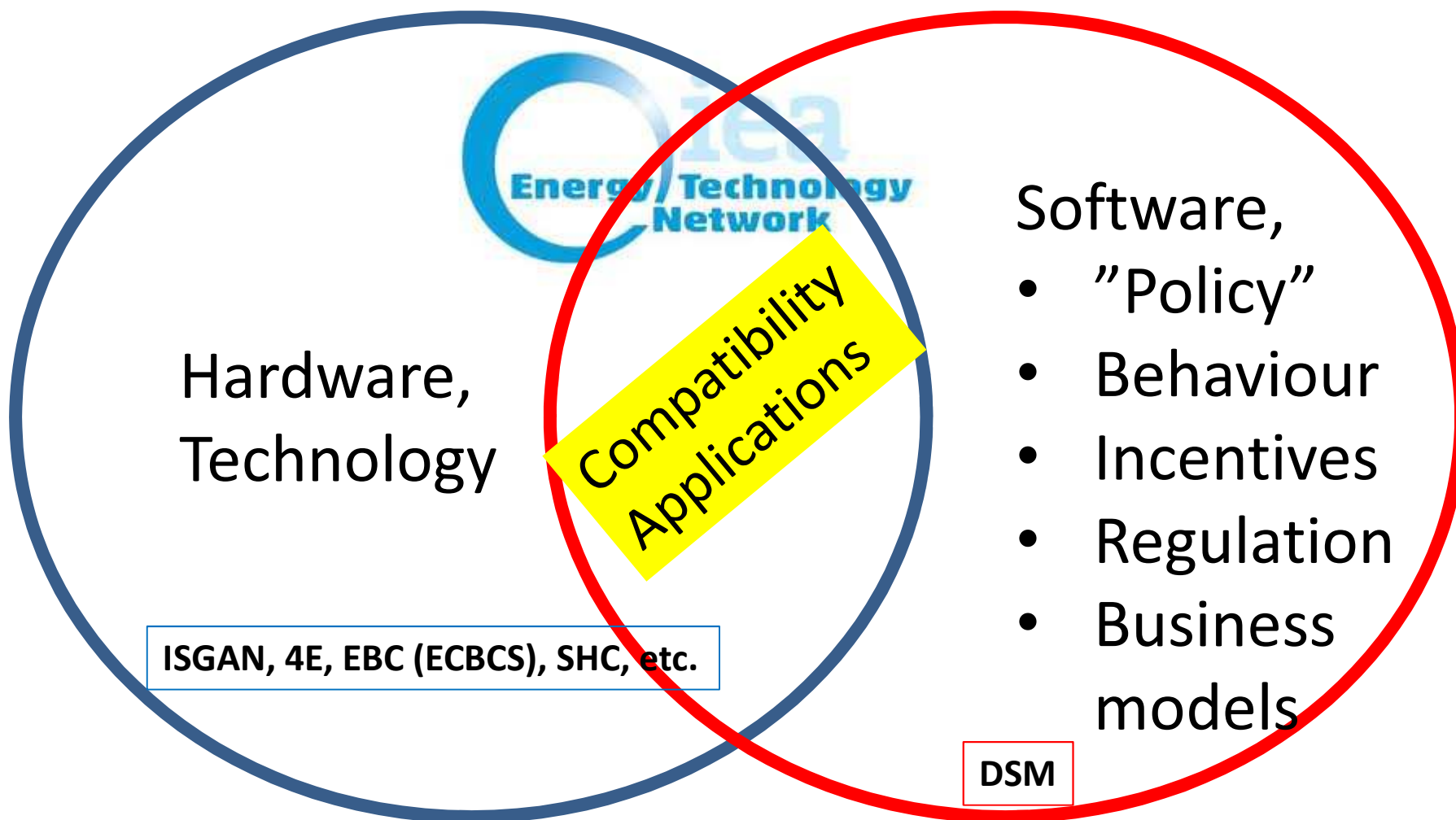
bloopers



DAY 2



IEA Implementing Agreements



We'll keep delivering the tools

- Social media
- Website (<http://www.ieadsm.org/>)
- “DSM” university for online courses and more. (coming up soon)



Q&A

So IDSM (DR, DG & EE)
will look like this...

Thank you!

