Trend of IEA/DSM and DSM policy

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IEA – DSM Chair

This presentation

- Trend of IEA
- Interlude: what can we handle?
- DSM Policy (And work)

Trend of IEA

Abstract of quotes of Maria van der Hoeven, IEA Executive Director IEA, September 2011 (1/3)

- IEA has 2 priorities:
  - Energy supply
  - Transition to low carbon supply, driven by climate issues
- Contribution of IEA:
  - Representation of 28 consuming countries in their interest in fossil fuels
  - Policy advice based on worldwide assessment of total energy mix based on collected data

Trend of IEA

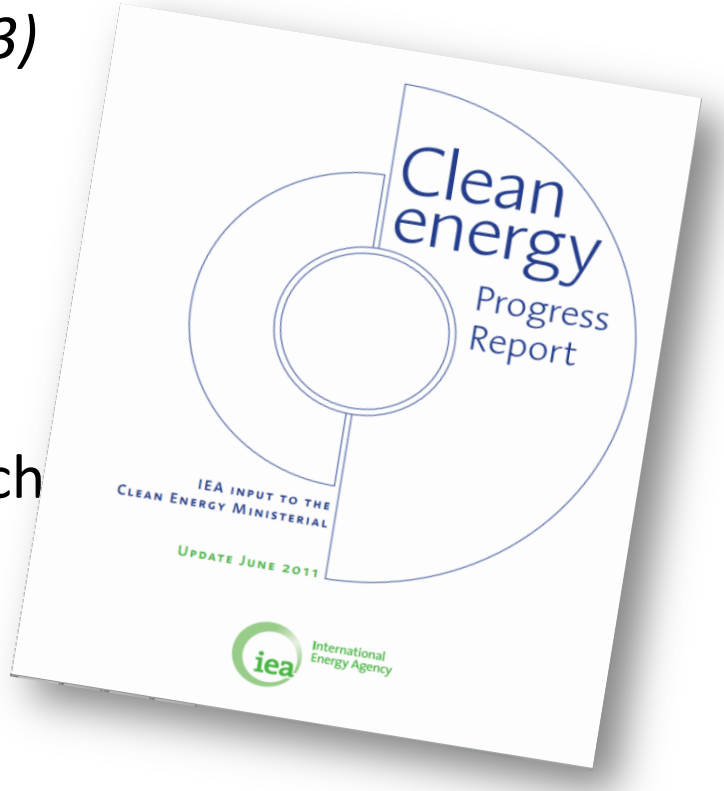
Abstract of quotes of Maria van der Hoeven, IEA Executive Director IEA, September 2011 (2/3)

- The energy need will grow as 1.6 billion people are not connected to energy.
- An increasing and accelerating share of energy supply has to be renewable.
- As such the work has to be global, and not just the “28”
- The Technology Network can play an important role in the transition but:
  - It has to be more than technology for technology
  - Efforts has to based on outcomes that lead to change
  - The collaboration with the private sector has to increase even more

Trend of IEA

Abstract of quotes of Maria van der Hoeven (3/3)

- The collaboration between governments and industry can lead to economic growth and a more sustainable society. Good examples:
  - India: Coal tax M$ 500 in clean research and clean projects
  - Green deal of Korea



Trend of IEA – Clean Ministerial Report

- Since the early 1970s, global energy intensity has improved at 1.7% per year
- Without energy-efficiency improvements, final energy use in 2006 would have been 63% higher in the OECD-11
- Global estimated savings from energy productivity improvements was 3.6 gigatonnes of oil equivalent (Gtoe) in 2008, or almost 30% of primary energy consumption (WEC, 2010).
- Energy efficiency's potential has barely been tapped.
- The economic crisis and resulting stimulus programs, and the rising fuel costs, have acted as strong drivers of recent energy efficiency, yet these are offset by increased consumer demand and willingness to invest and lend in times of economic recession.

Trend of IEA – Clean Ministerial

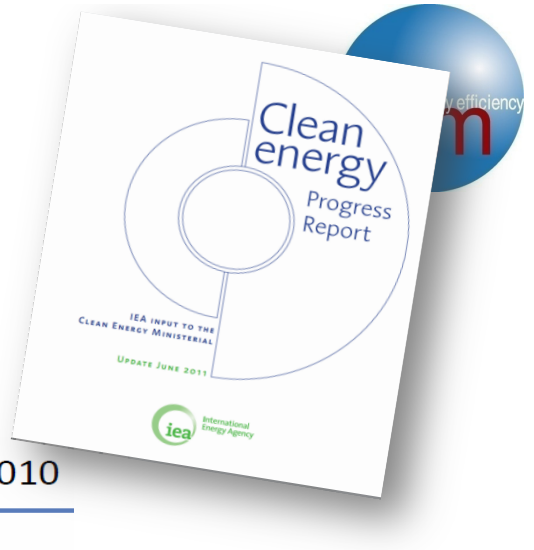
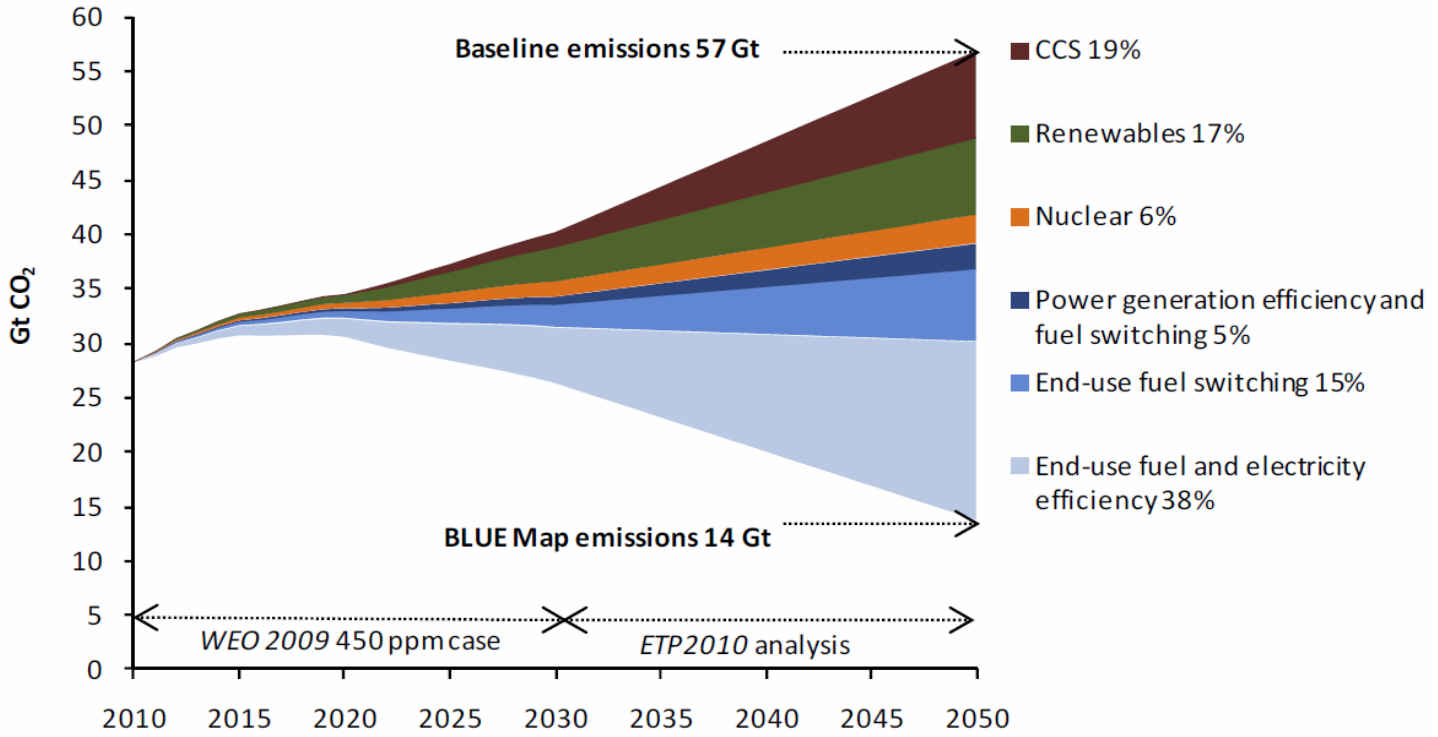


Figure 4. Key technologies for reducing CO_2 emissions under the BLUE Map scenario, 2010

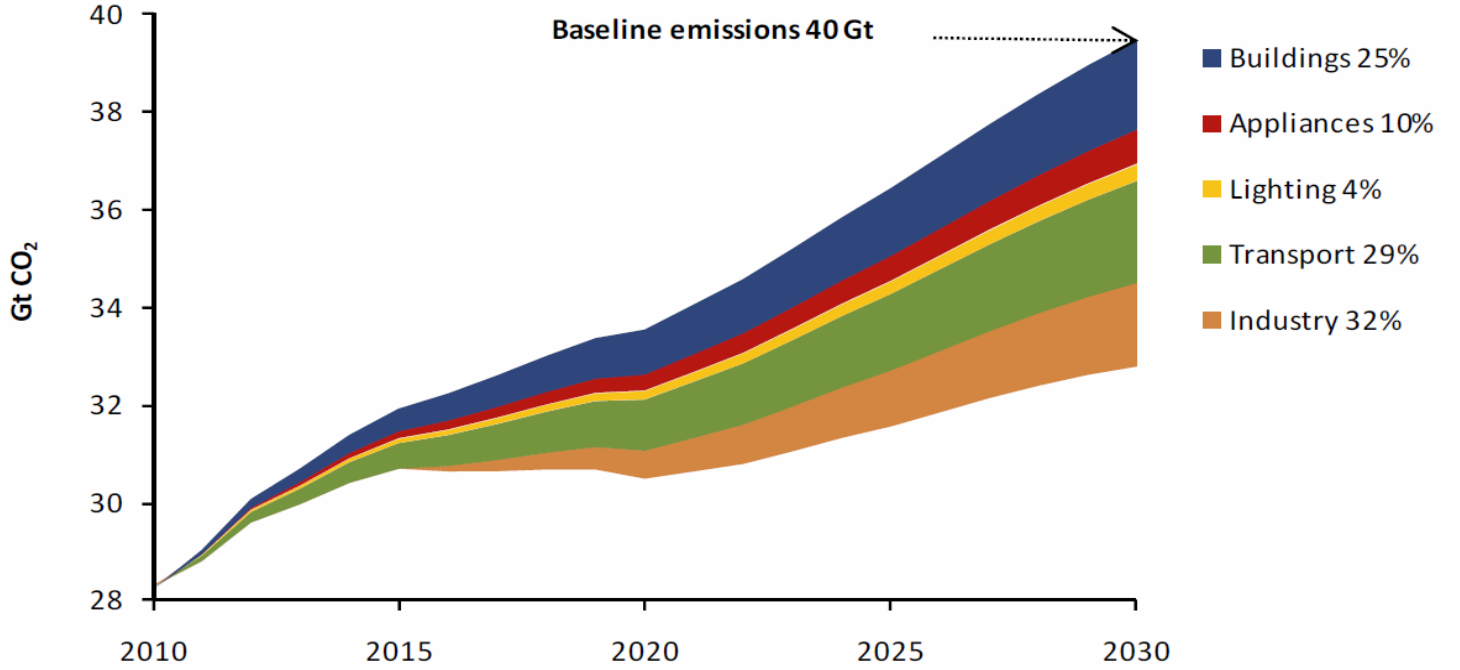


Trend of the IEA – Clean Ministerial Report

- Seven priority areas:
  - cross-sectoral activity,
  - buildings,
  - appliances,
  - lighting,
  - transport,
  - Industry
  - power utilities
- 25 Policy recommendations (2009): 57% implemented

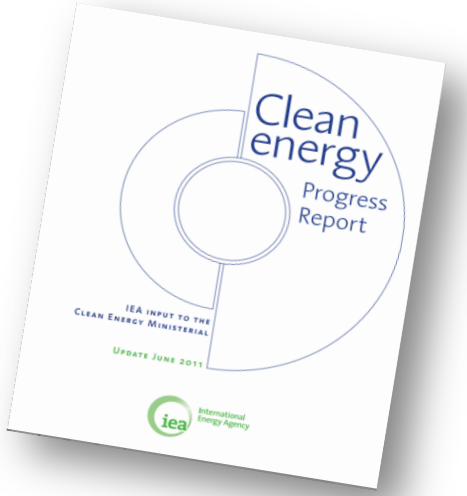
Trend of IEA

Figure 5. Estimate of potential CO_2 emissions savings through implementation of IEA 25 energy-efficiency policy recommendations



Trend of IEA

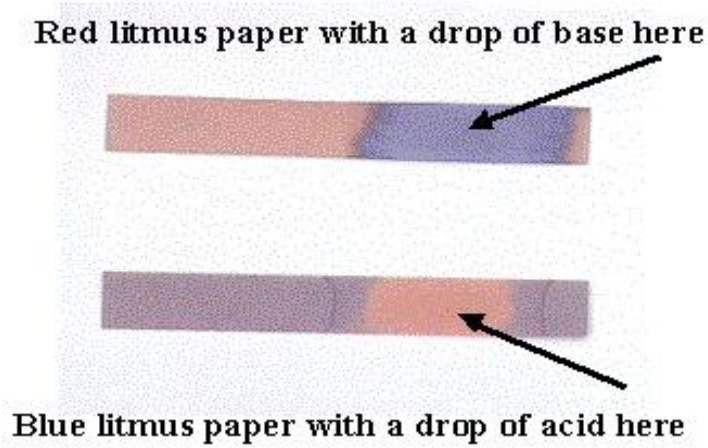
- New CERT mission in line with quotes
- Improving communication: website, outreach
- Increasing attention for crosscutting issues and behavioural/ organisational change
- WEO 2012

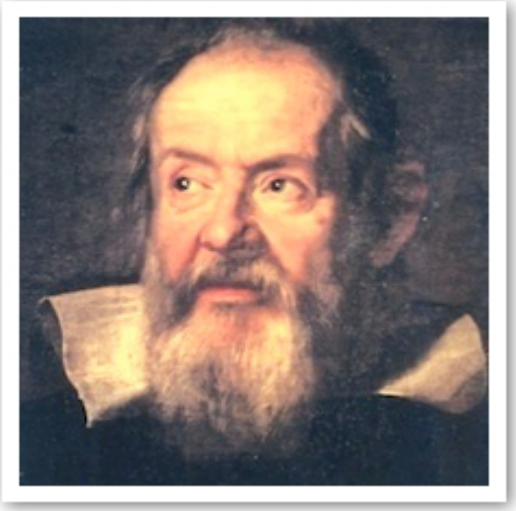


What can we handle?

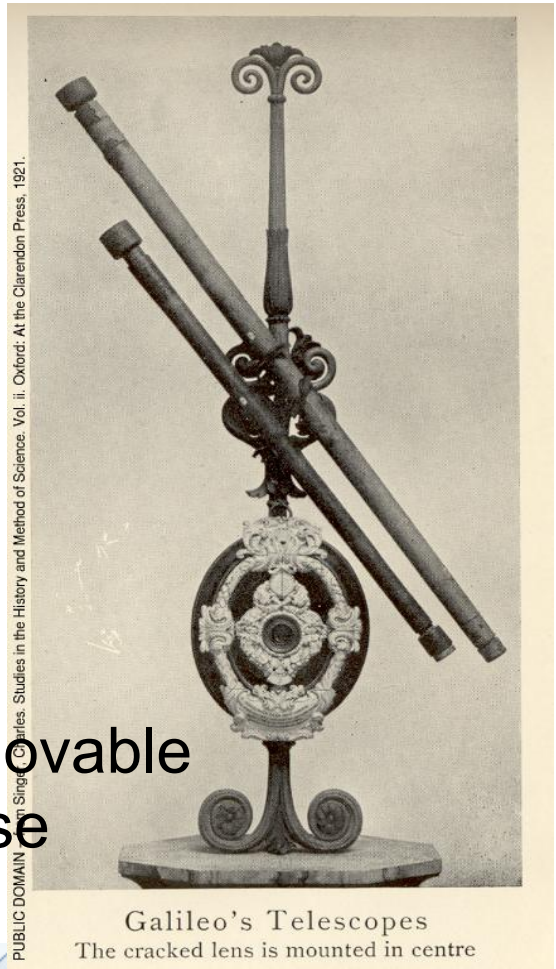
- Back to high school

litmus test





Earth is not the immovable centre of the universe

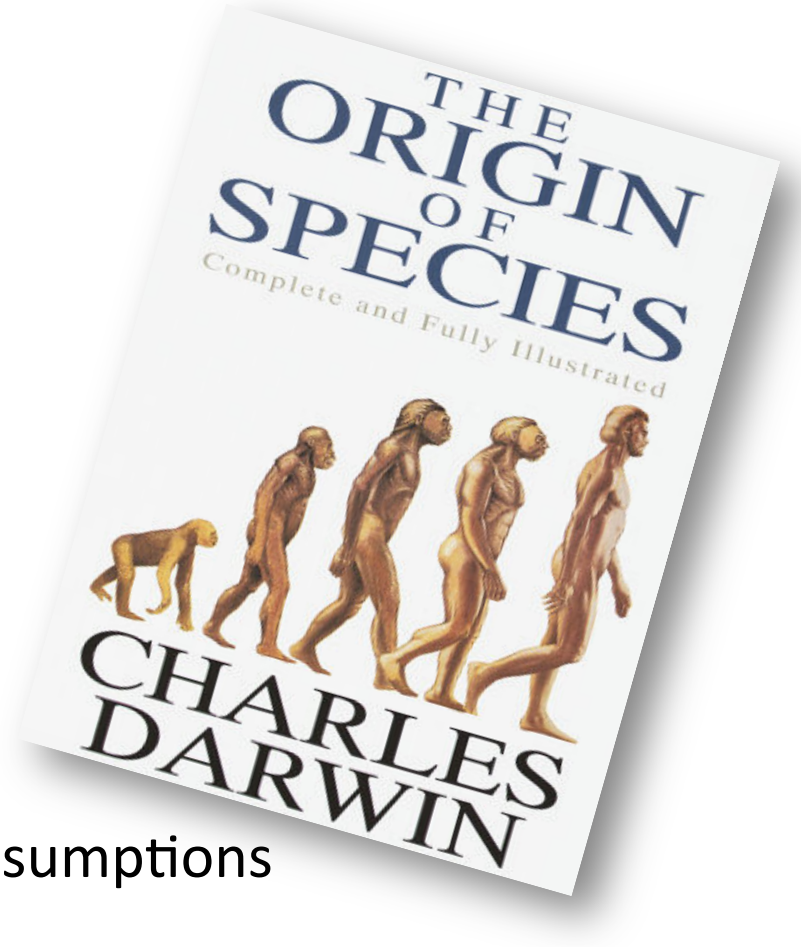


What can we handle?

Evidence for evolution:

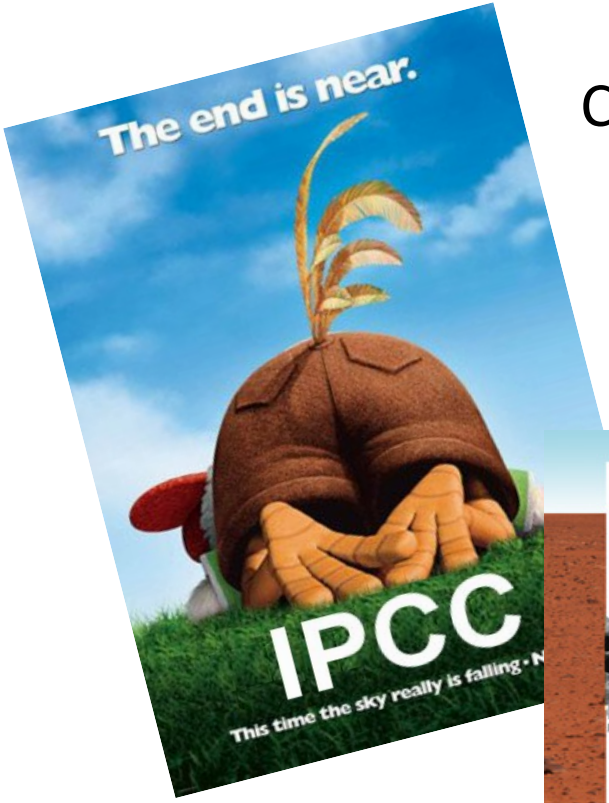
- Geology
- Carbon dating
- Genetics
- Fysiology

- But:
  - We can “repeat” it
  - In conflict with some religious assumptions



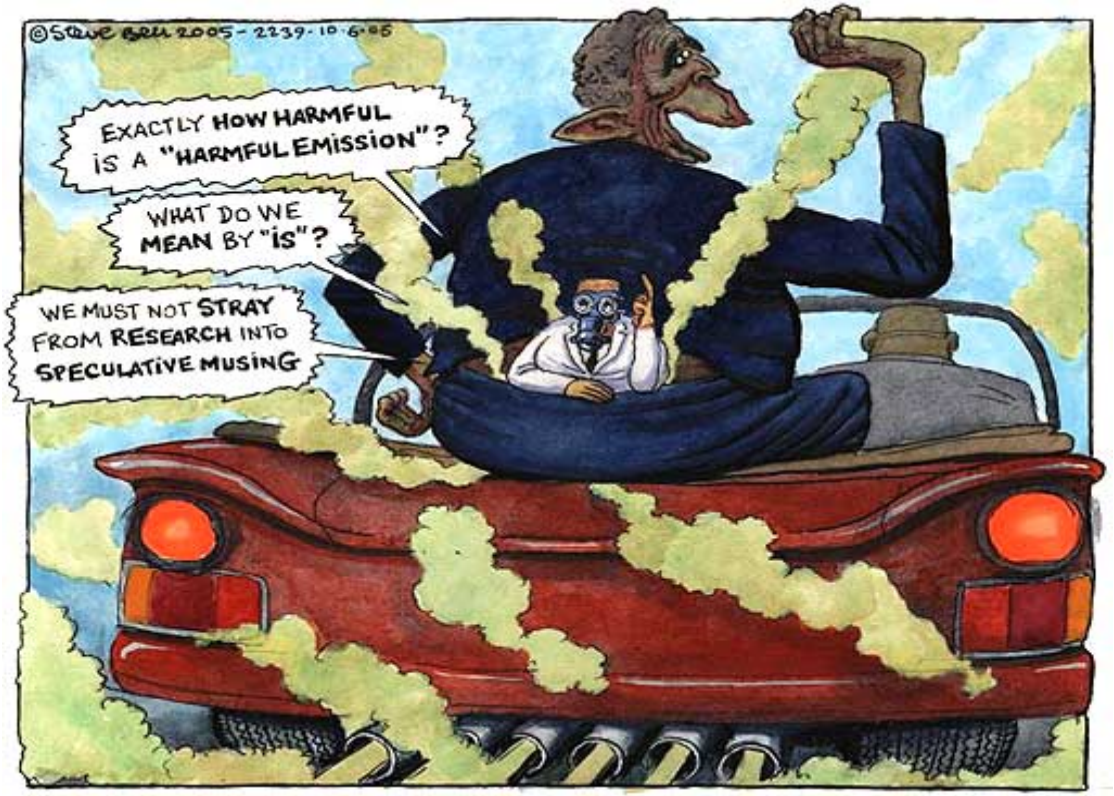
What can we handle?

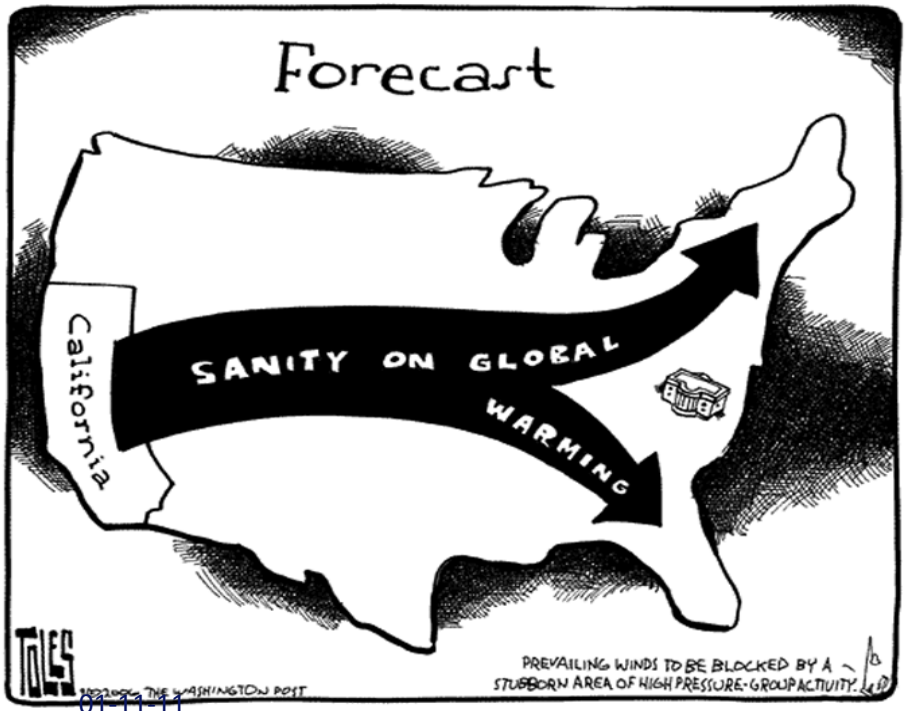
Climate Change



DSM

- Wait for the debate?





DSM Europe

The price of failure is too high.

- Energy is the life blood of our society. The well-being of our people, industry and economy depends on safe, secure, sustainable and affordable energy. At the same time, energy related emissions account for almost 80% of the EU's total greenhouse gas emissions.
- The energy challenge is thus one of the greatest tests which Europe has to face. It will take decades to steer our energy systems onto a more secure and sustainable path. Yet the decisions to set us on the right path are needed urgently as failing to achieve a well-functioning European energy market will only increase the costs for consumers and put Europe's competitiveness at risk

Energy 2020

A strategy for competitive, sustainable and secure energy

Europe

The new energy strategy focuses on five priorities:

1. *Achieving an energy efficient Europe;*
2. *Building a truly pan-European integrated energy market;*
3. *Empowering consumers and achieving the highest level of safety and security;*
4. Extending Europe's leadership in energy technology and innovation;
5. Strengthening the external dimension of the EU energy market.

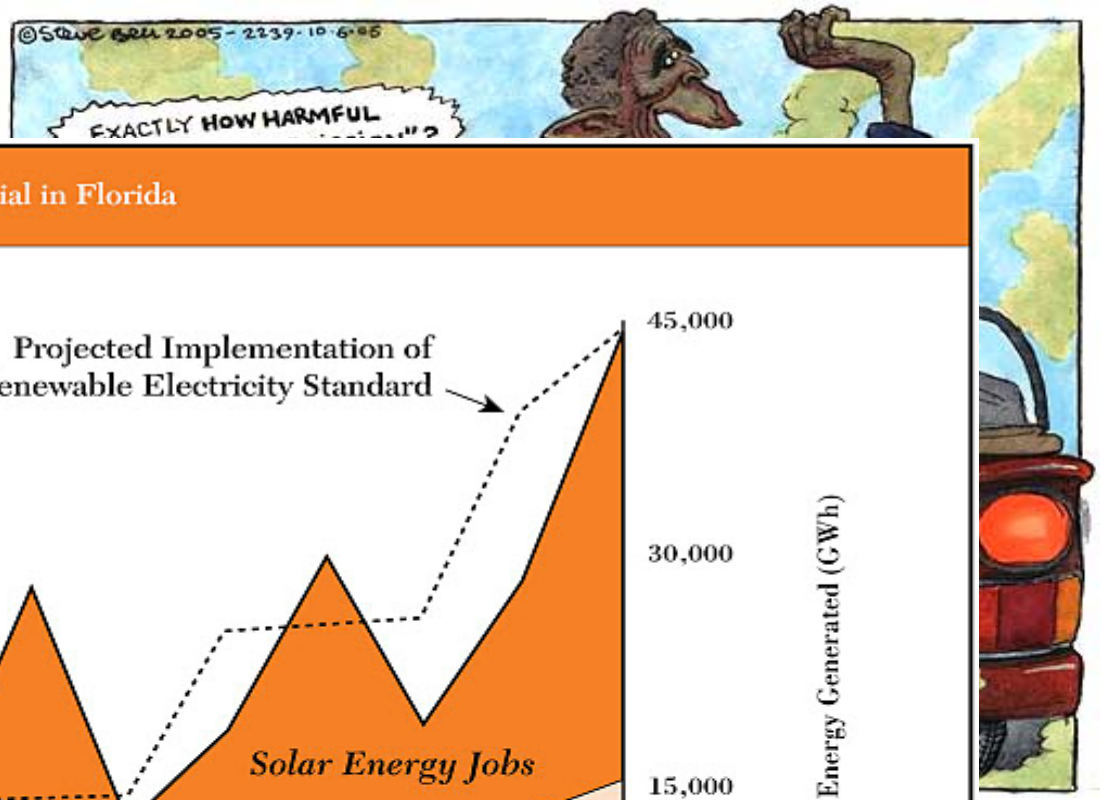
Europe 2020

Policies considered:

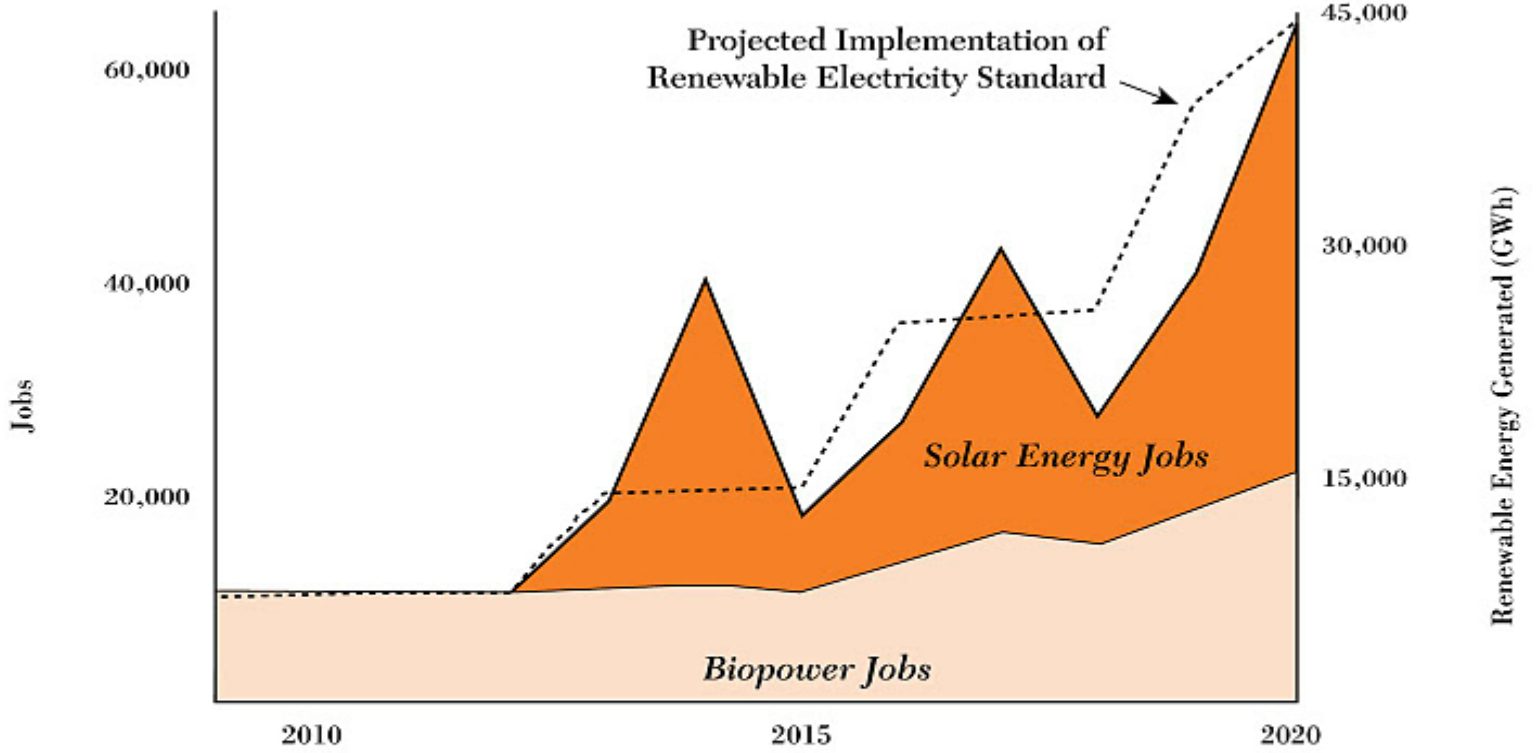
- Binding targets for 2020
- 3% EE in public buildings/year.
- White certificates
- Suppliers obligation
- Sustainable procurement
- Audits
- Metering & Informative billing
- CHP
- Monitoring & evaluation (NEEAPS)

Prediction:

- Won't happen, states oppose
- If it happens it will be voluntary / lower
- Not on EU level
- Strong opposition by suppliers
- If it's economically sound
- Only voluntary (Except ETS)
- But no smart meters, as this is in conflict with consumer protection
- ?????
- "Harmonized"

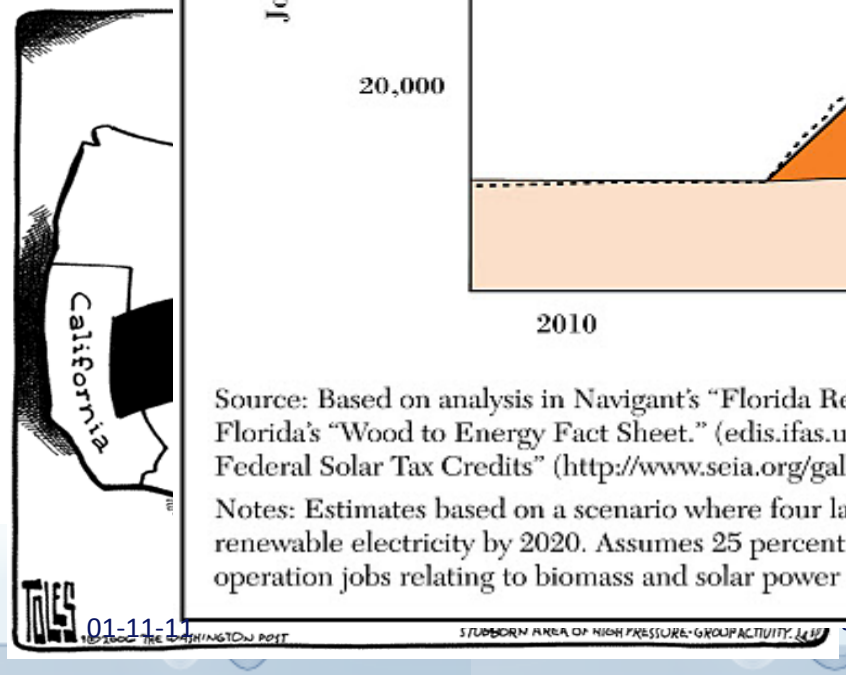


Renewable Energy Job Growth Potential in Florida



Source: Based on analysis in Navigant's "Florida Renewable Energy Potential Assessment" and job estimate data from University of Florida's "Wood to Energy Fact Sheet." (edis.ifas.ufl.edu/pdffiles/FE/FE69700.pdf) and Navigant's "Economic Impacts of Extending Federal Solar Tax Credits" (http://www.seia.org/galleries/pdf/Navigant%20Consulting%20Report%209.15.08.pdf).

Notes: Estimates based on a scenario where four large investor-owned utilities in the state are required to meet a goal of 20 percent renewable electricity by 2020. Assumes 25 percent of solar manufacturing occurs in Florida. Job estimates include construction and operation jobs relating to biomass and solar power only (other renewable resources in Florida would create 500 additional jobs).



The strategy of the IEA DSM Programme

- Vision: Demand side activities should be the first choice in all energy policy decisions designed to create more reliable and more sustainable energy systems.

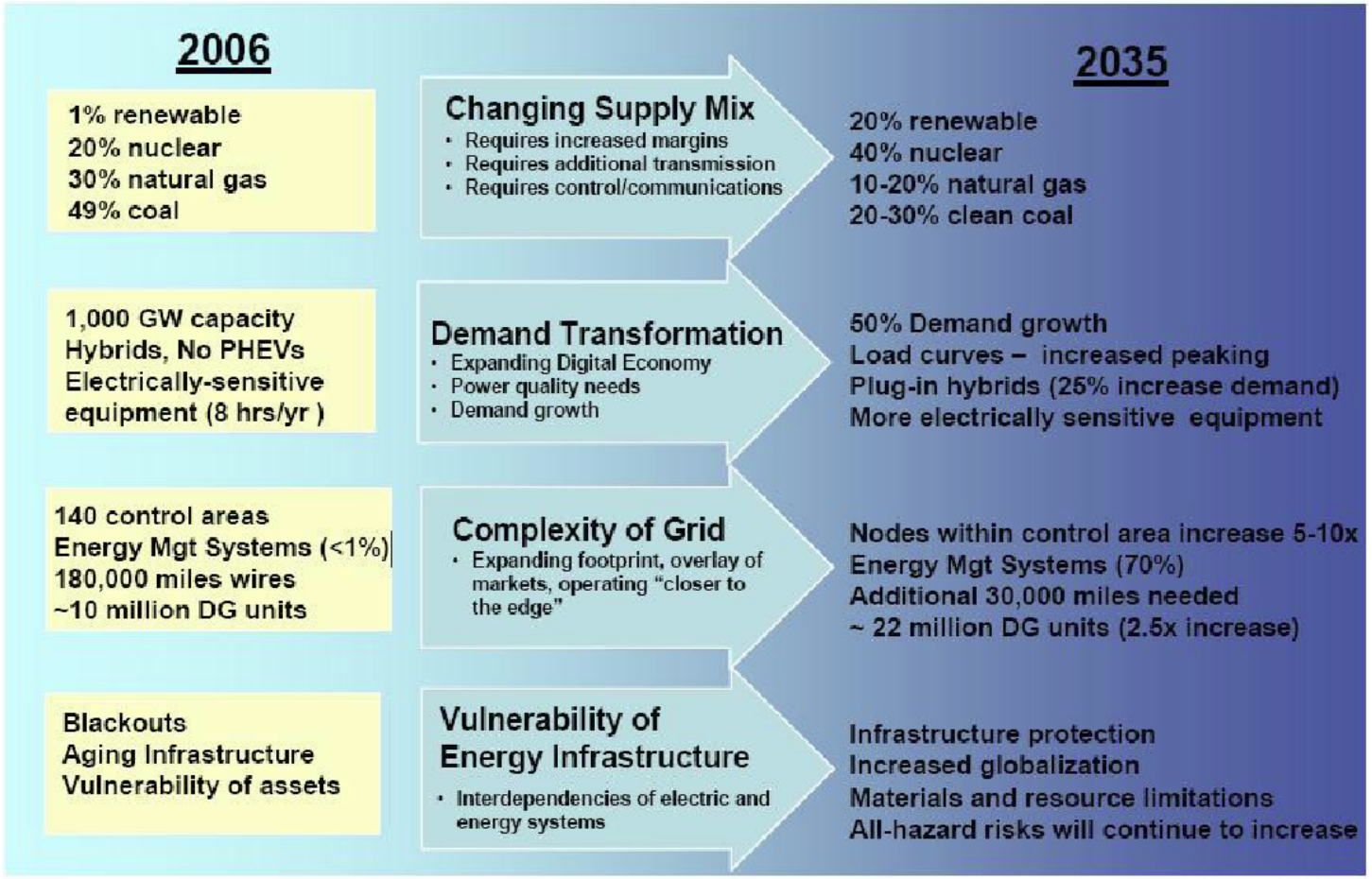
- Mission: To deliver to our stakeholders useful information and effective guidance for crafting and implementing DSM policies and measures, along with the necessary technologies and applications, which together can transform markets and facilitate energy system operations.

IEA DSM - The simplified problem

- Load shape
  - high peaks,
  - little reserve capacity,
  - bottlenecks in transmission and distribution
- Load level
  - a wasteful demand requires too much supply for the specific needs *(The customer do not need energy! They need the service that energy, combined with an installation, provides)*
- Market responsibilities
  - who is the owner of the problem?

DSM – Distribution & Load shape

Annex 7: Country report of USA



IEA-DSM policy – and tasks

Integration of Demand Side Management, Energy Efficiency, Distributed Generation and Renewable Energy Sources

- Quantitative and country specific effects of Distributed Energy Resources (DER) technologies on the power system and on the involved stakeholders.
- Over 50 case studies and demonstration projects from Austria, Finland, Italy, Netherlands, South Korea, Spain, and the US.

- The penetration of DER technologies (for example, HP, EVs, PV, micro CHP, SM and energy storages) at customer sites. An essential part of this work is to discuss future scenarios for 2020 and 2030.

Result

"... a country can decrease the problems caused by distributed generation and increase the market value of the intermittent energy.“

Seppo Kärkkäinen

Task Operating Agent

- Integration with other IA’s might even increase the value of this *Task XVII, Integration of Demand Side Management, Energy Efficiency*

Load level

A wasteful demand requires too much supply for the specific needs

(The customer do not need energy! They need the service that energy, combined with an installation, provides)

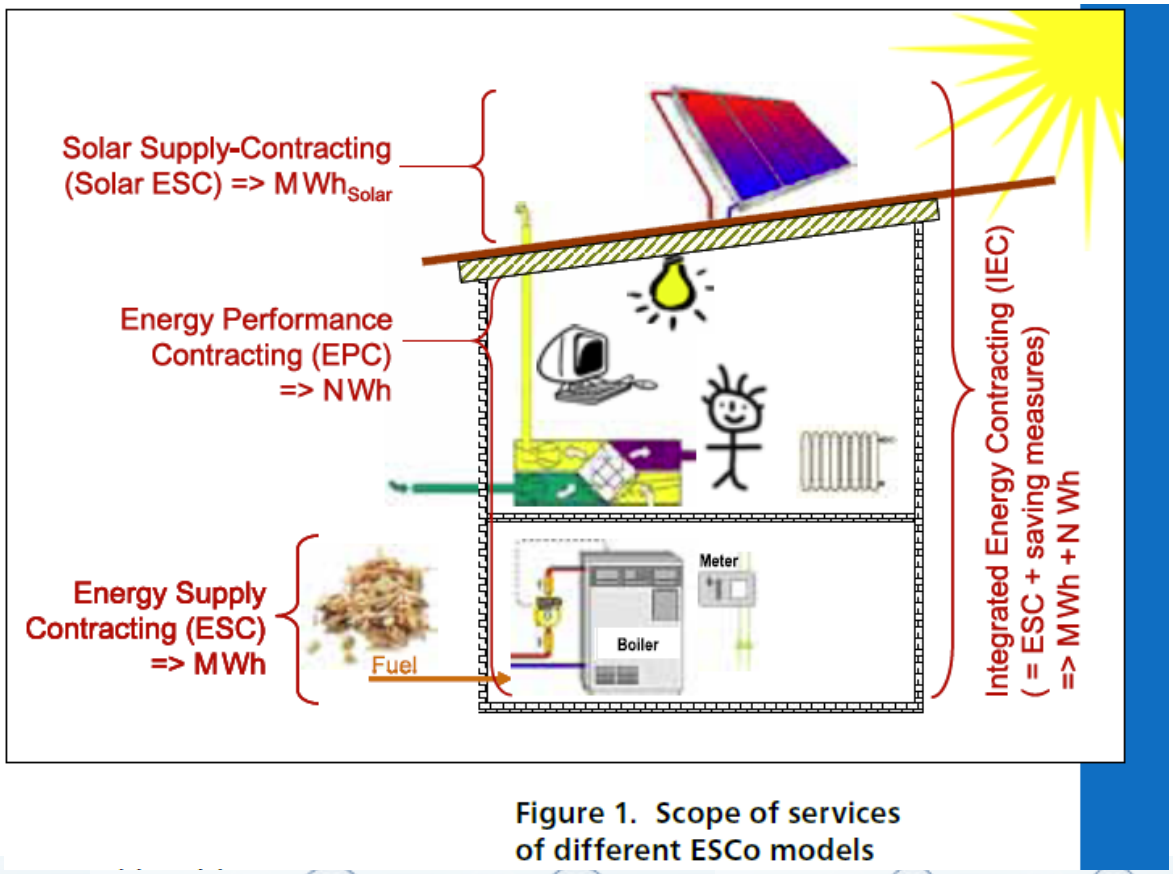
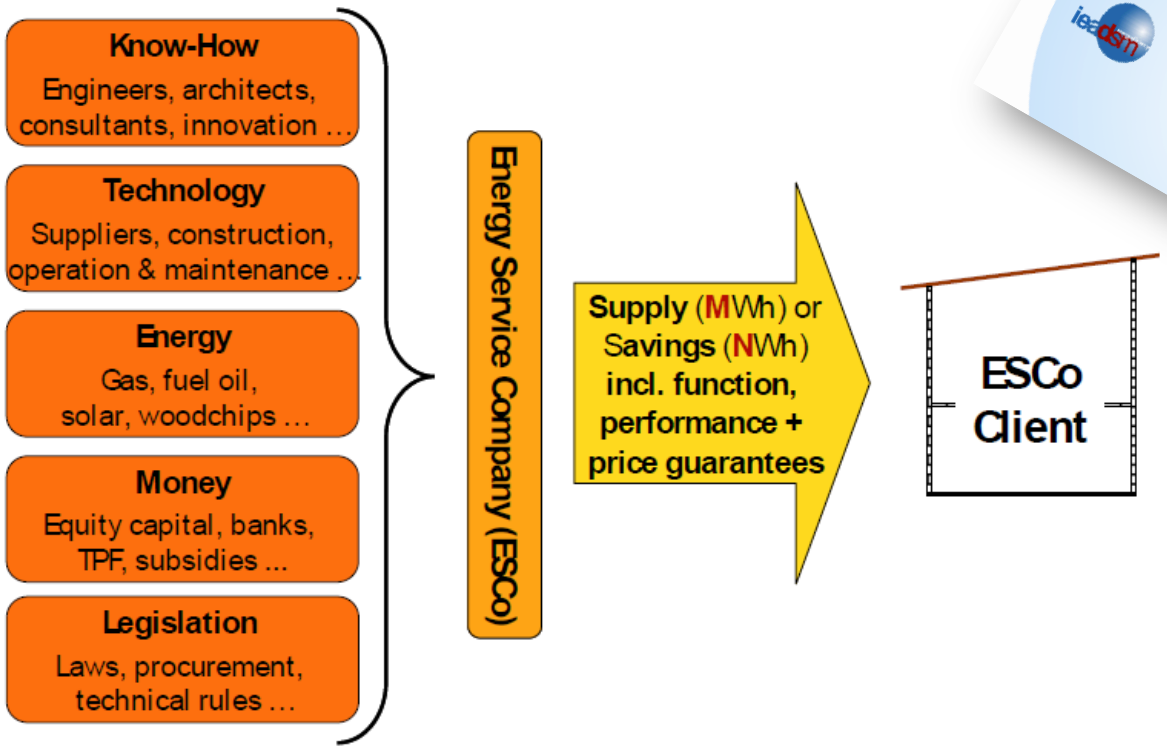


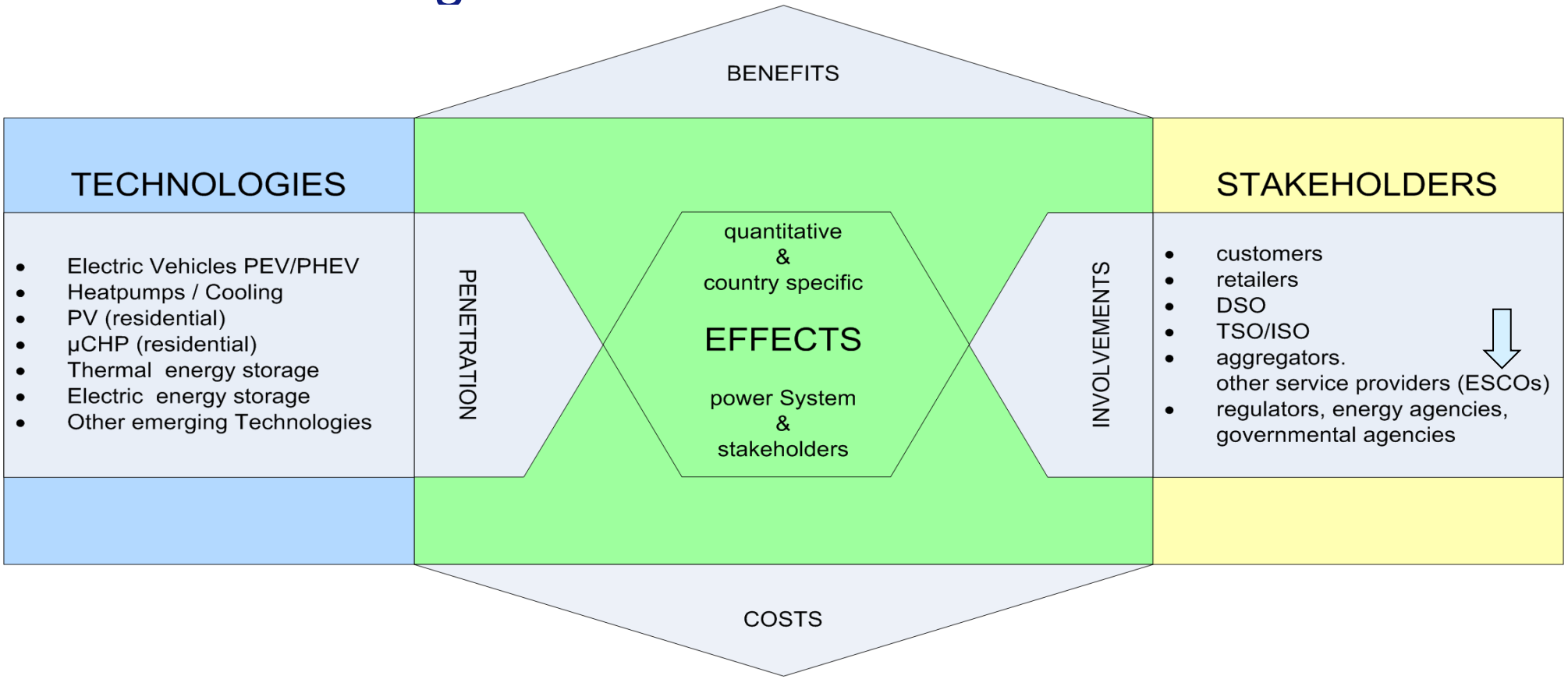
Figure 1. Scope of services of different ESCo models

Task XVI: Competitive Energy Services



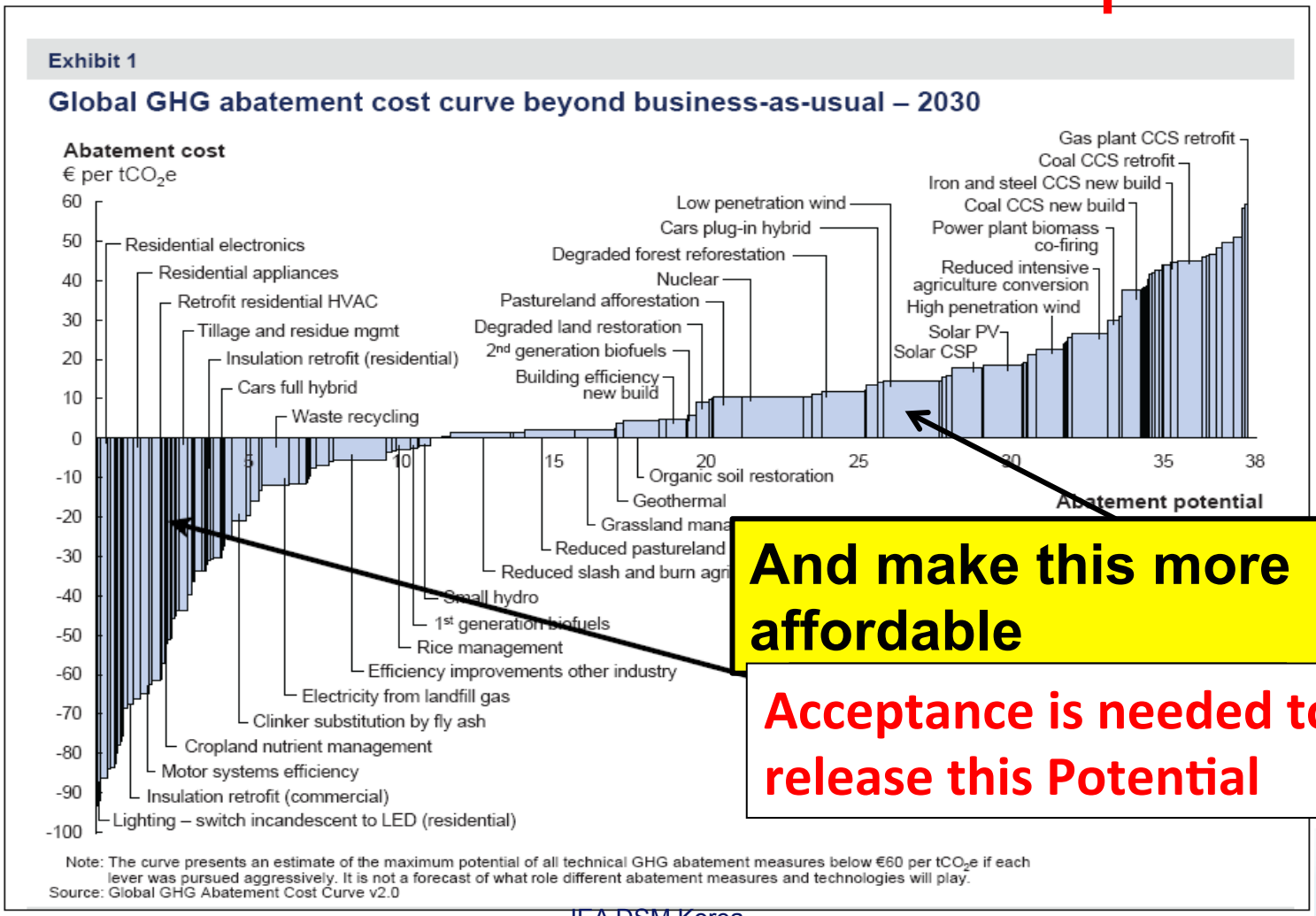
Energy-Contracting: Components of service package and outsourcing of interfaces and guarantees to an ESCo

Load Management: the model to work in IEA-DSM



Market responsibilities: Efficiency is under-utilized, since...

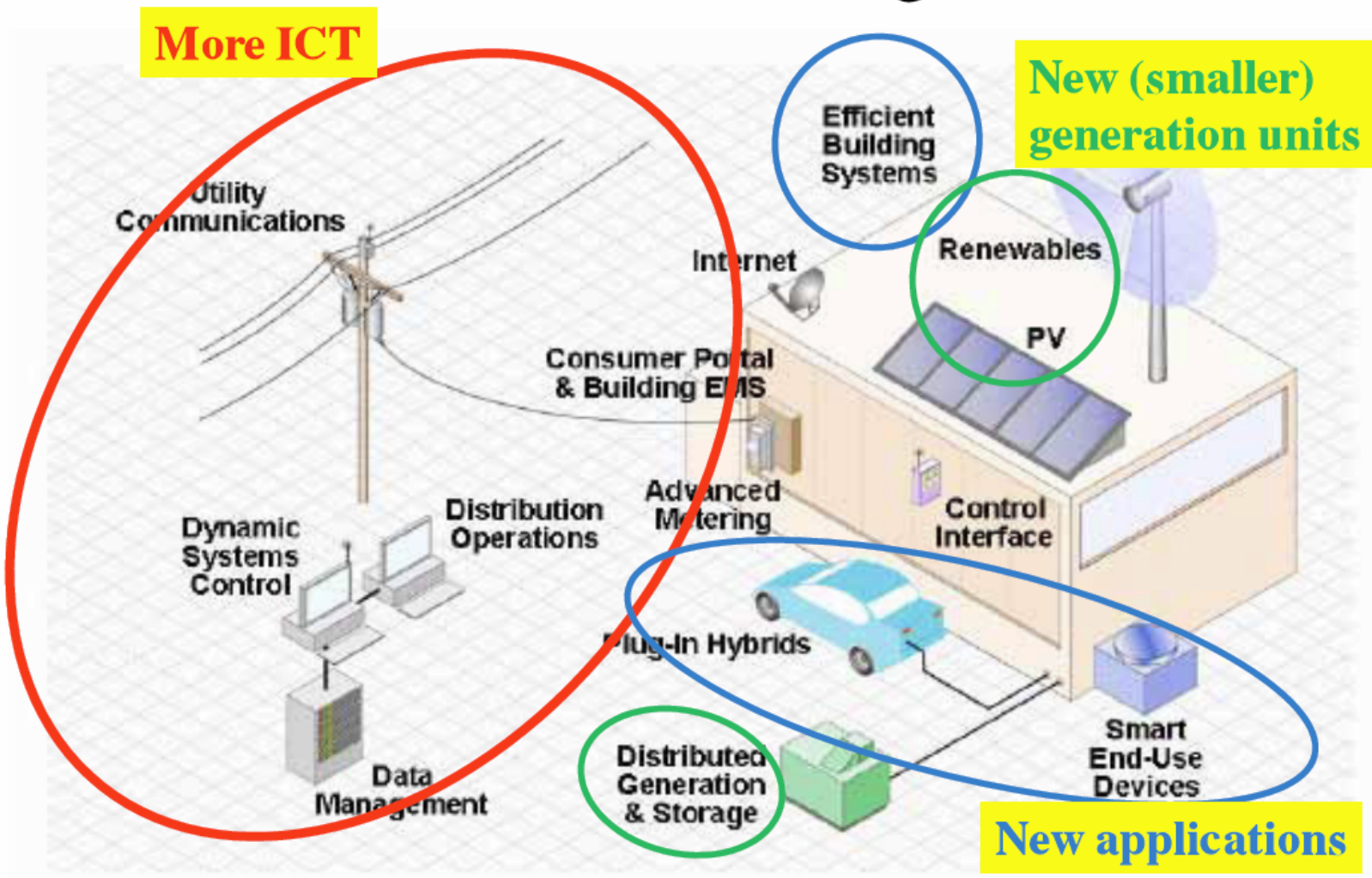
.... Result = Potential * Acceptance



And make this more affordable

Acceptance is needed to release this Potential

New Technologies



Source: An EPRI Initiative to Advance the Efficient and Effective Use of Energy

Still enough challenges

- On top of examples we will increase knowledge on:
  - Energy efficiency standards (beyond labelling, India)
  - Increased knowledge on the link technology/socio-economic sciences
  - Monitoring

- And we will stimulate the outreach of this knowledge.

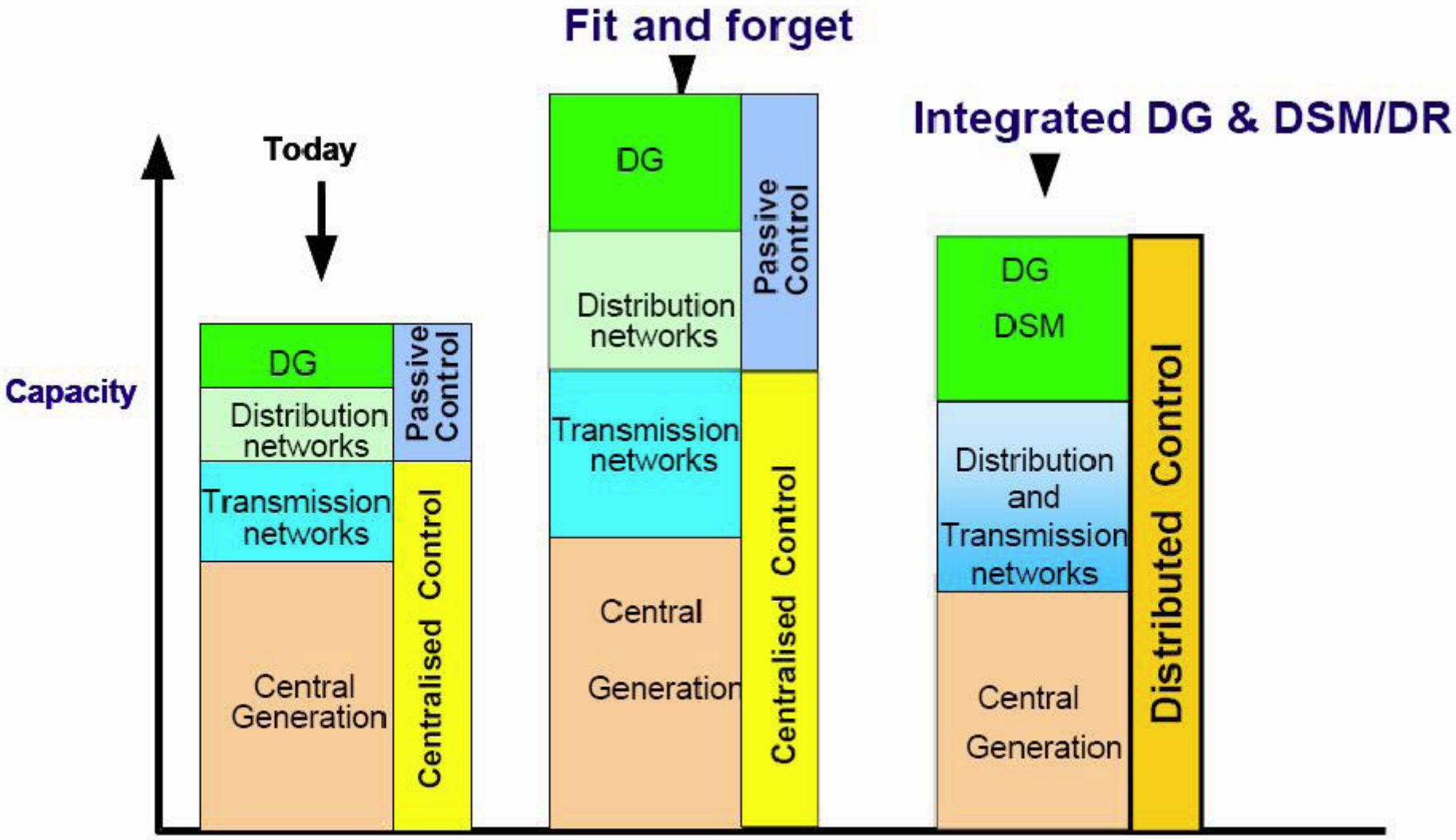


Figure 3. Impact of a smart grid on the need for energy system capacity. Two basic alternatives for the future electric systems: "Fit and forget" and "Integrated DG&DSM/DR" (Distributed Generation, Demand Side Managment/Demand Response

And there is change..

PHILIPS
sense and simplicity

PHILIPS
sense and simplicity

Links:

- www.ieadsm.org
- www.iea.org

Thank you!

Q&A?