

InovServices

A strategy for energy services in SmartGrid projects

Towards a Low Carbon Economy



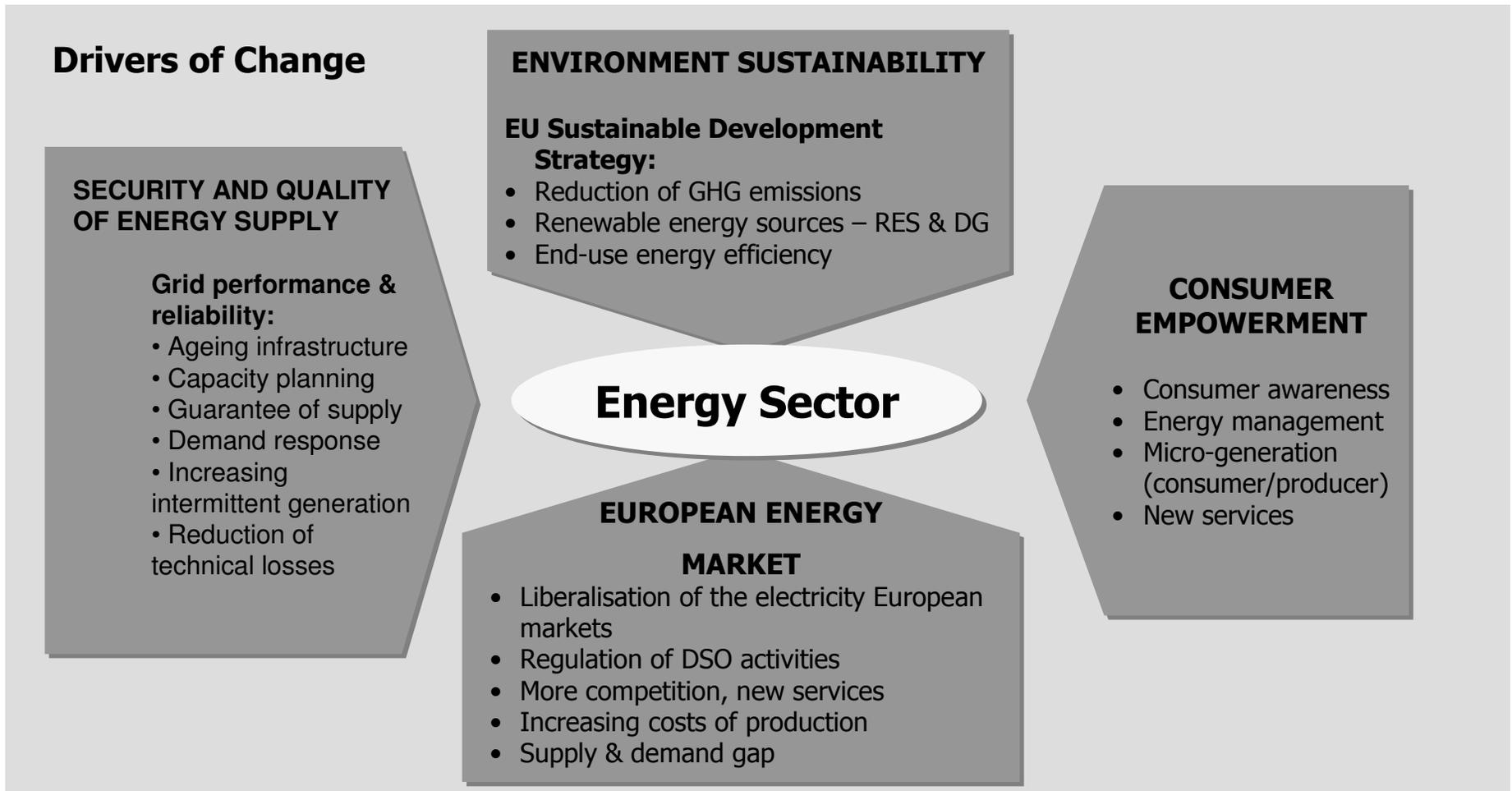
serviços e consultoria

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Challenges and trends of the energy sector

The macro economical context is pressing the energy sector and creating new challenges which will dramatically change the electrical network operation and its interaction with the consumer



EDP Distribuição project - InovGRID

 Services impact

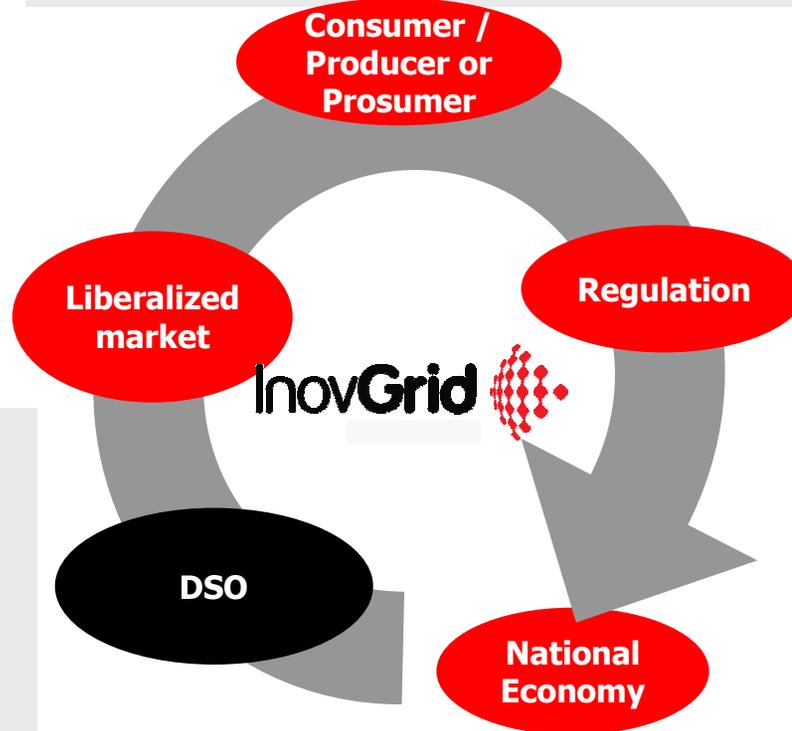
- New type of relationship with customers
- Near real time new tariffs
- Improve customer services
- Less barriers at entry

- Decentralized micro production
- Active role in demand, peak shaving,
- New tariffs, creative tariffs
- Real time information
- Saving energy and costs
- New energy services

- Competition more efficient
- New type of tariffs
- Power quality improvement
- More information about electric sector
- Modern economy

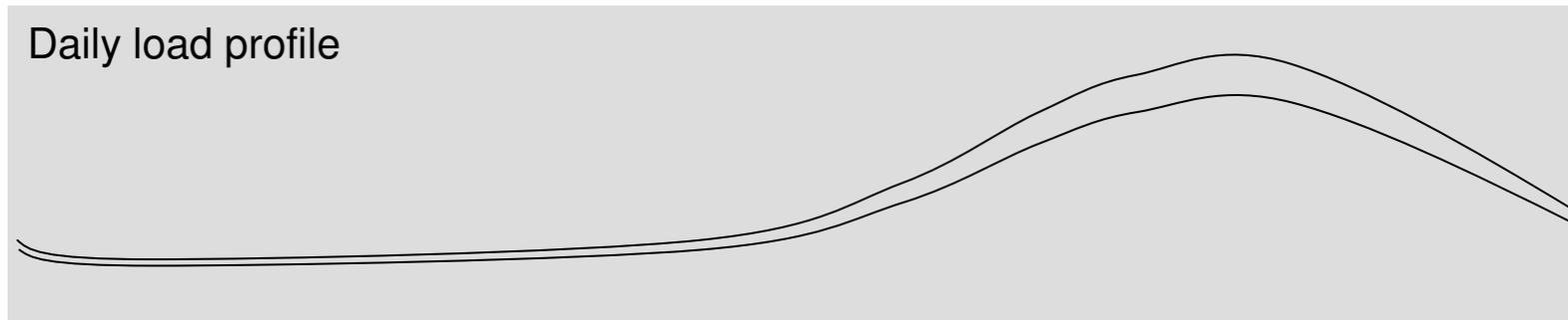
- Losses in the grid reductions
- Grid management
- Reliability in power supply
- Asset optimization
- Operational costs reduction

- Energy efficiency promotion
- Micro generation penetration – less co2
- More business and jobs
- European convergence



How can we measure the consumers advantages?

- If consumers know better where we spend money, they will take the necessary actions to save some money



What could be the necessary actions to change to a new load diagram?

Will consumers have the right incentives to change?

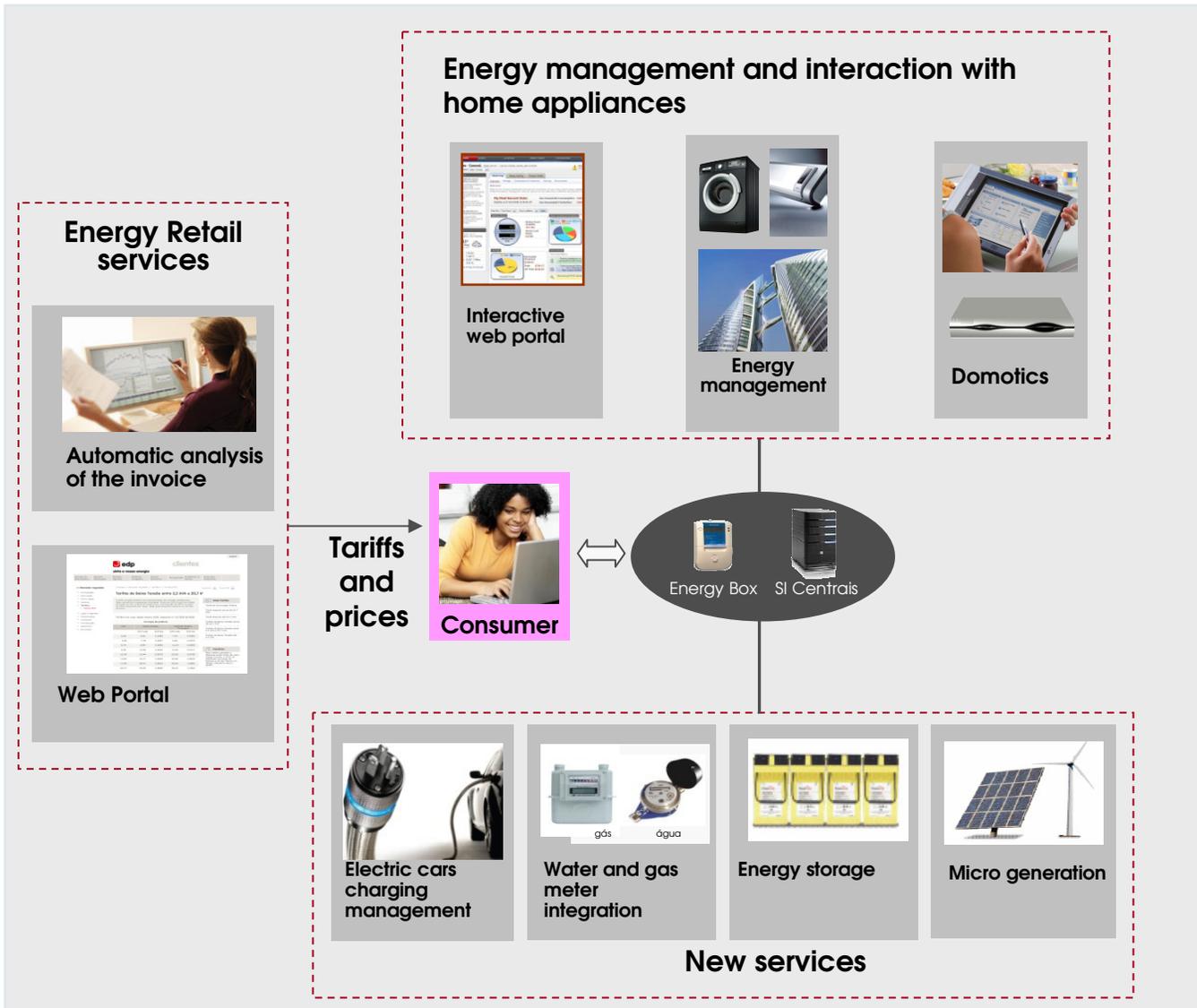
What could be the value of these savings?

Are the consumers available to share these savings to support part of the investments in the smart grid? How can someone guarantee that these savings will occur?

• Consumer advantages:

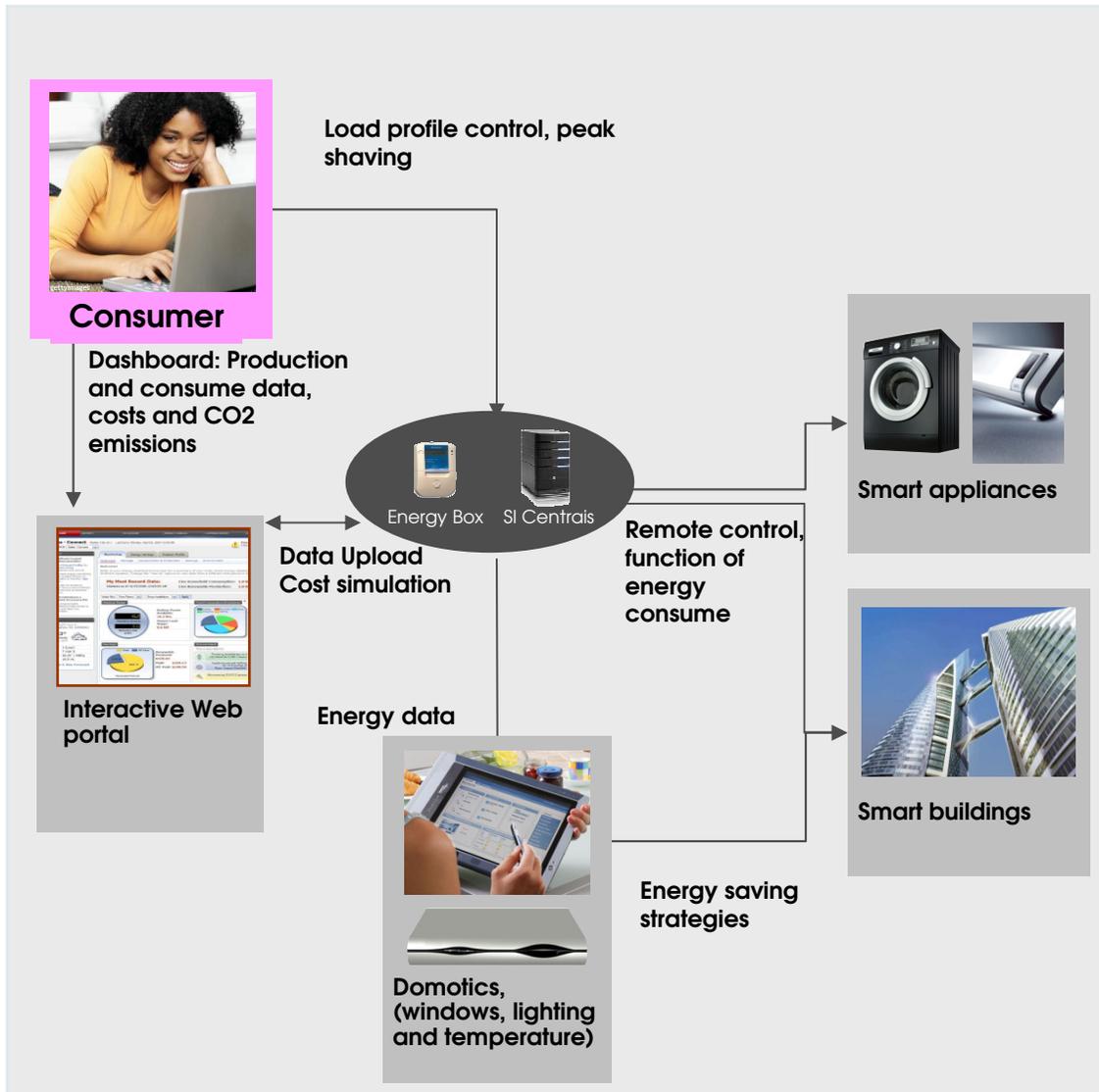
- Save money and energy. How much?
- Generalization of micro production. The consumer will be a *prosumer*

The InovGRID project and a set of new tools, could drive the consumer changes



- The consumer will have a new role. New automatic tools will allow the demand side management
- New and creative tariffs will change the relation between consumer and energy retailers
- New business opportunities in new energy services

Online energy management and automation



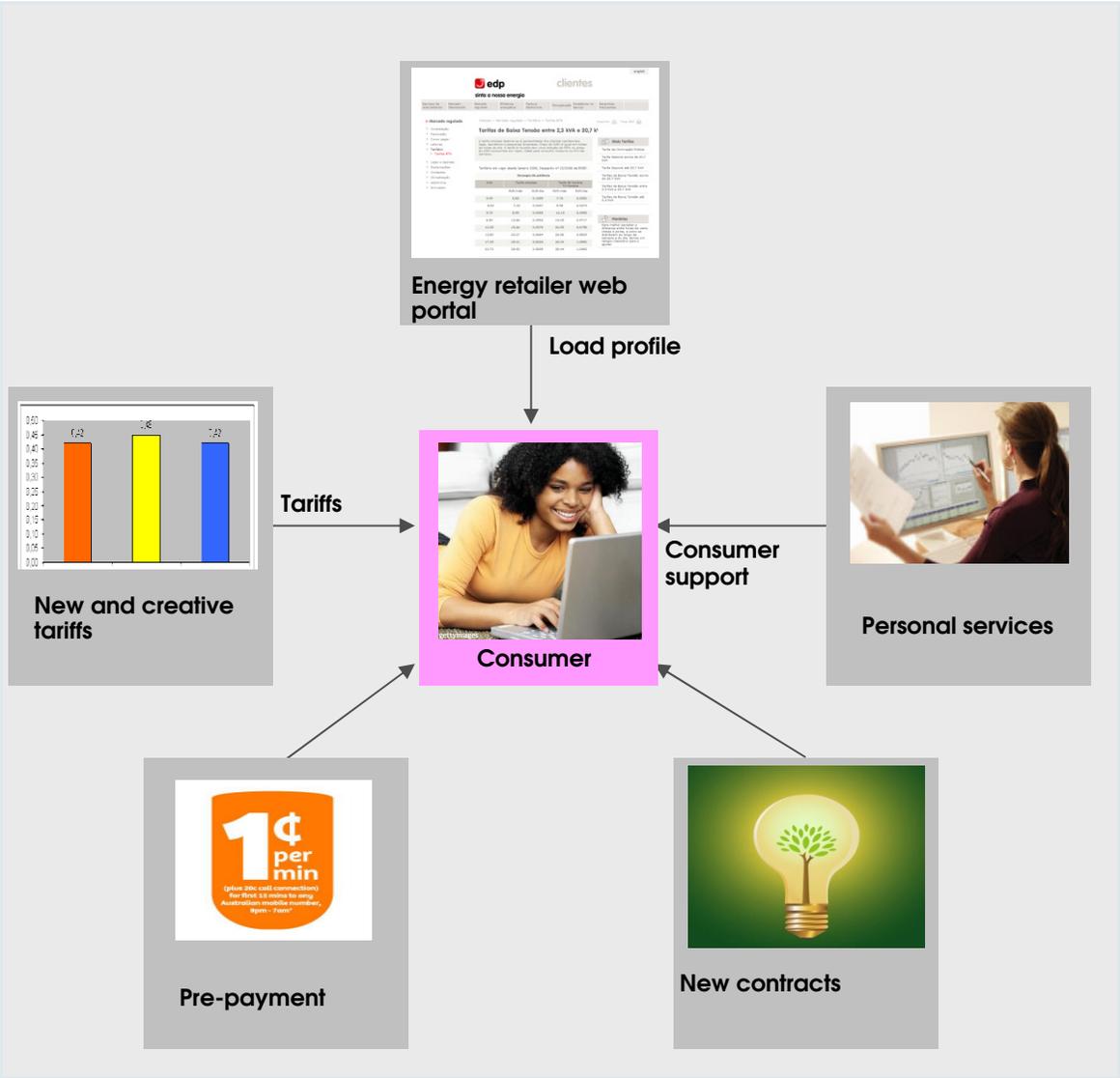
Energy management strategies

Smart buildings change their control strategies in function of energy prices

Demand Side Management – after a command from DSO

Domotic integration – the electrical appliances could turn off automatically in function of external variables

Energy retail services

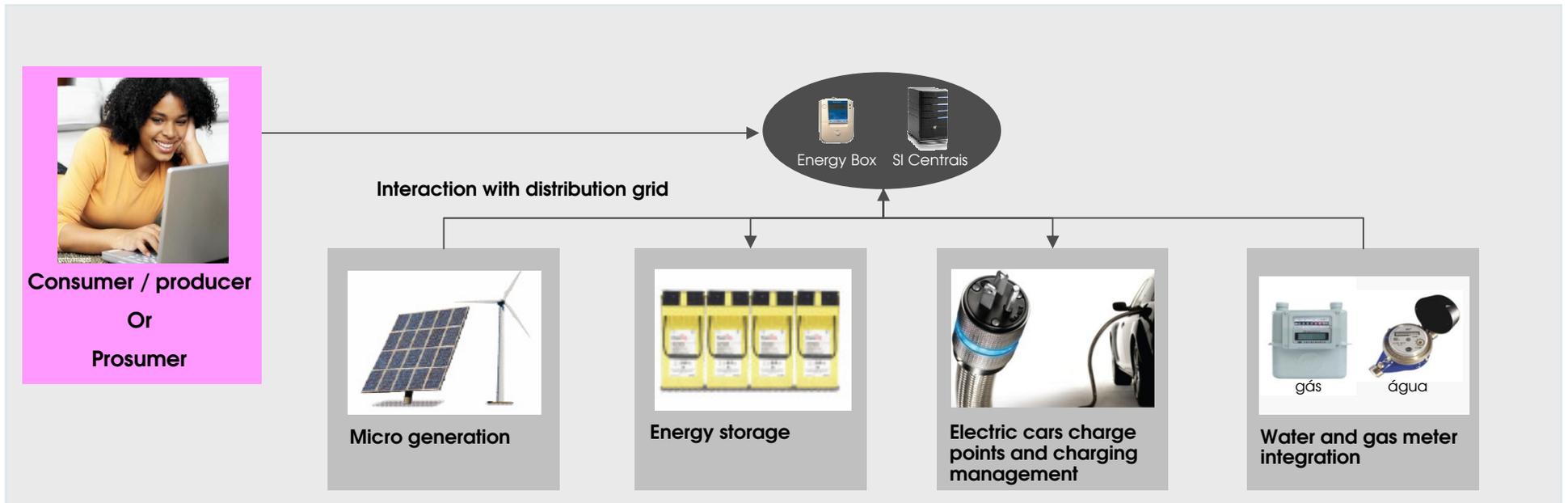


Energy retailer web portal with consume information, load profiles, benchmarking, alarms

New tariffs and prices adapted to customer profile

New contacts for special needs and requests (ex: green tariffs)

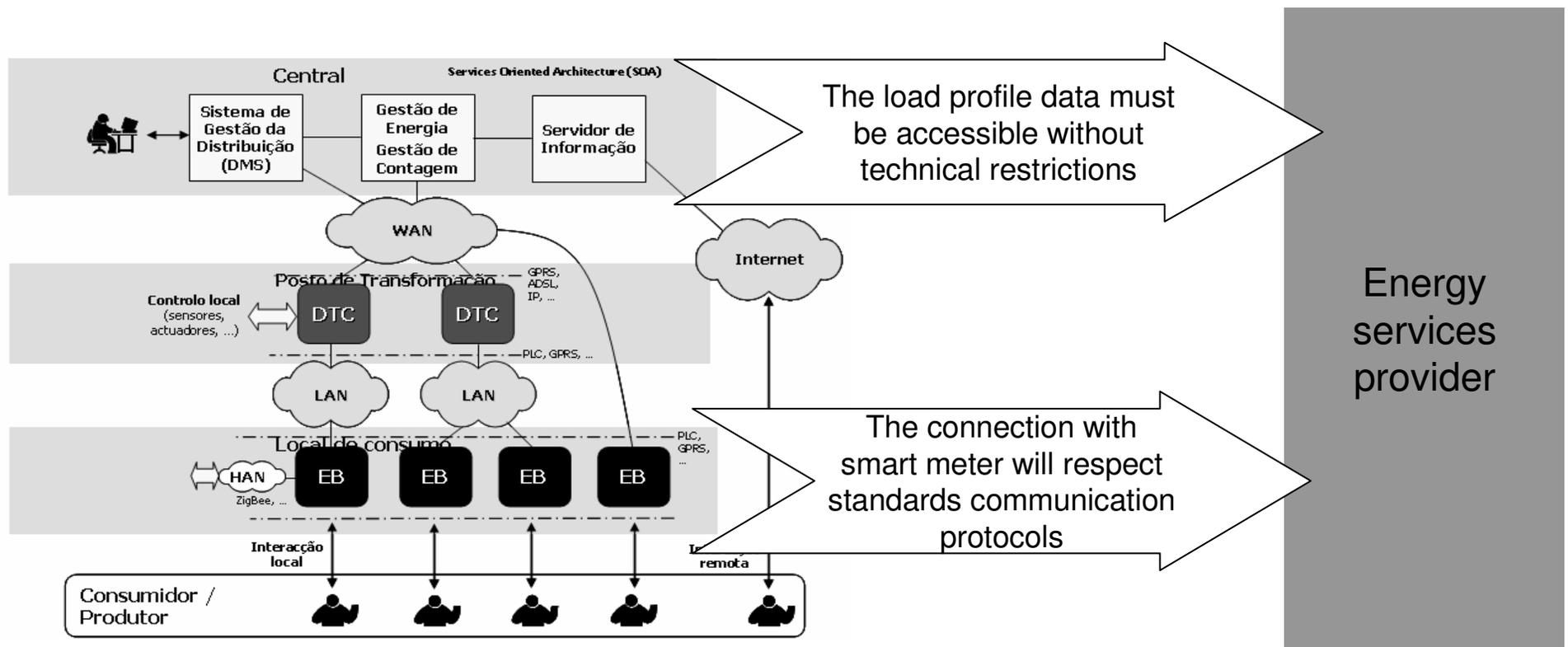
New services



- With the dissemination of micro generation and the new electric cars will be possible to have large storage capabilities that could be use to optimize energy costs or the efficiency of the grid
- A building could have an electrical grid that could be isolated or grid connected in function of renewable potential or energy costs
- The water, gas and heat data could be integrated with electricity and the customer could manage all utilities

Energy Services – an opportunity for an economical development

- Consumer information in near real time will allow new companies to identify new opportunities and start new business. However there are some previous conditions:



Energy Services – an opportunity for an economical development

How could we finance the development of this new services?

We strongly believe that energy services will create value enough to finance the development of these services

What could be the impact of Energy services in the electrical sector?

The energy services, integrated in the offer of energy retailers or sold by independent companies, is an indispensable tool to help consumers to change their behaviours and to optimize the efficiency of the electric system

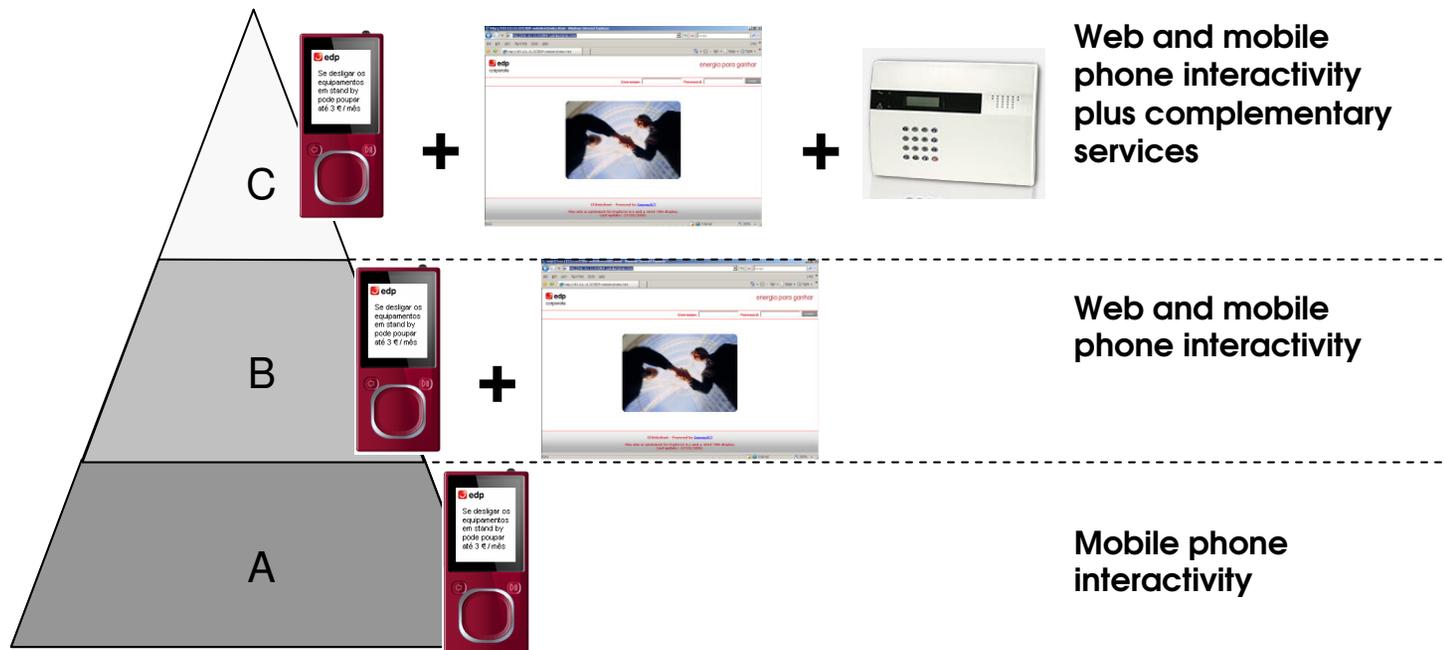
What could be the impact of Energy services in national economy?

If we could guarantee open standards and open protocols, the entry of new energy services companies will be easy. These is a domain where we could have start up companies with new concepts and ideas.

Critical point: These thesis must be demonstrated. The InovServices must integrate the InovGRID pilot project to demonstrate in the field the potential of savings and other benefitts. The finance of InovServices pilot project must be found in the near future

InovServices – Integration in InovGRID pilot project

Modular services for different customer profiles



“That’s the real green revolution”

in Thomas Friedman – “Hot, Flat and Crowded,...”, *The Energy Internet*

Energy services associated to smart grids will provide the tools that consumers need to have real economies.

Towards a Low Carbon Economy

and fulfilled the European target 20/20/20

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