

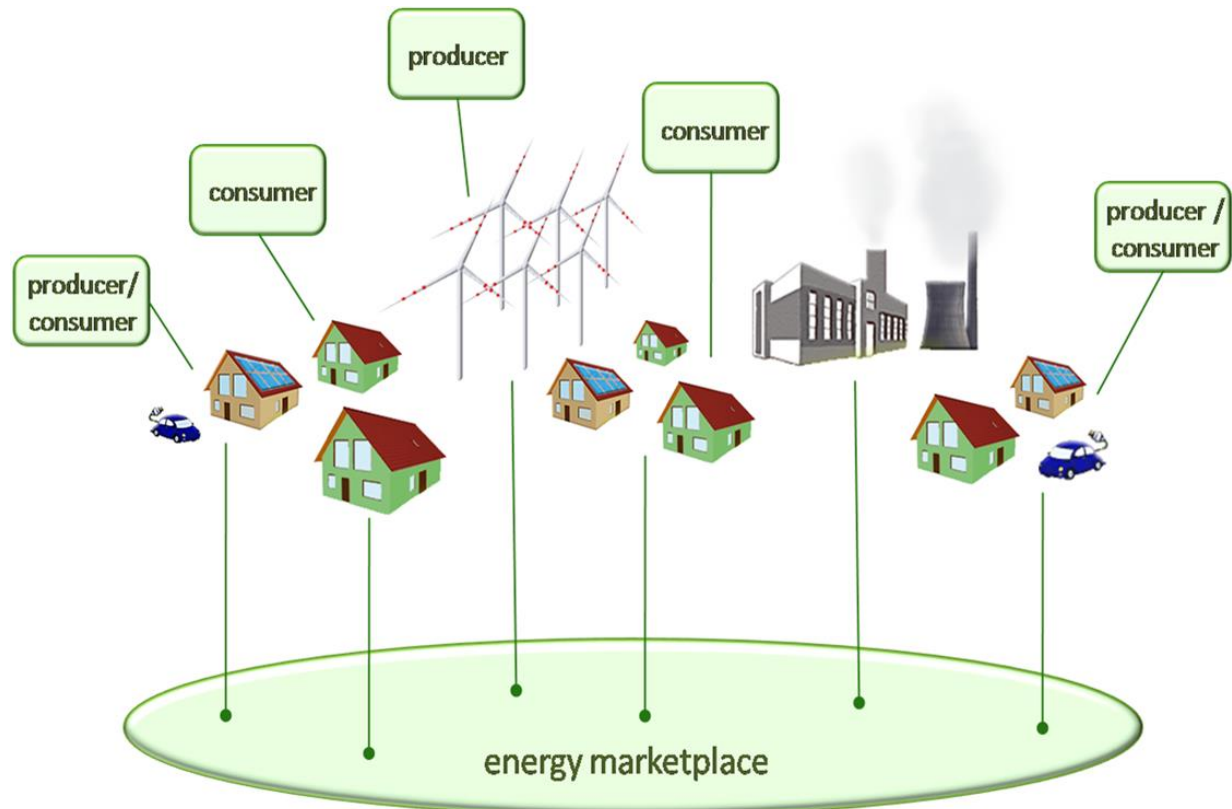
Virtual Power Plant

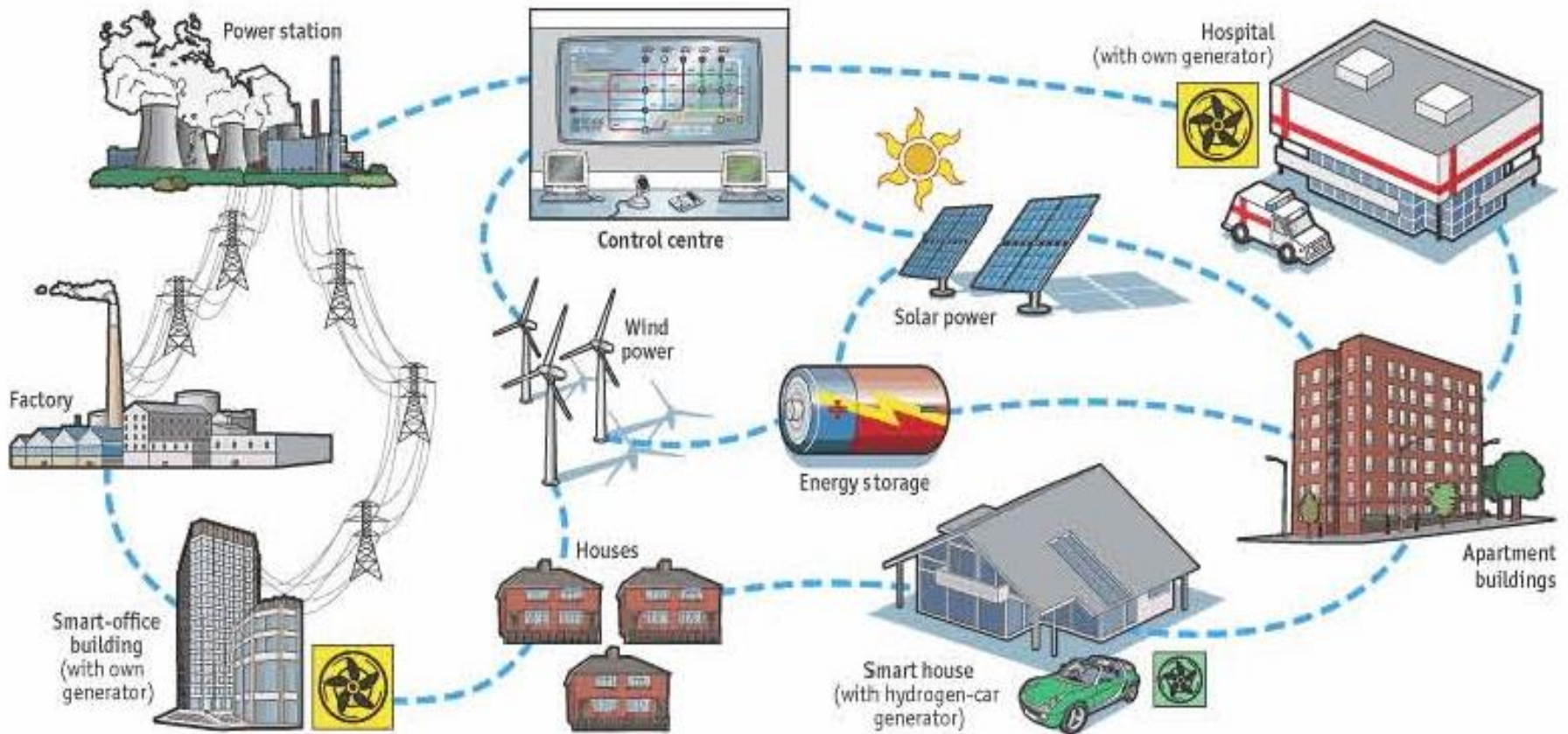


Direito da Energia
2 de dezembro de 2015

VPP = Central elétrica virtual
ou
Central de geração elétrica virtual

Conceito(s)





Sources: *The Economist*; ABB

Caraterísticas – chave:

- Várias fontes produtoras de energia
- Utilização das TIC
- Proximidade ao consumidor final
- Eficiência e racionalidade



Over **1000 days**
in operation



100% availability
around the clock



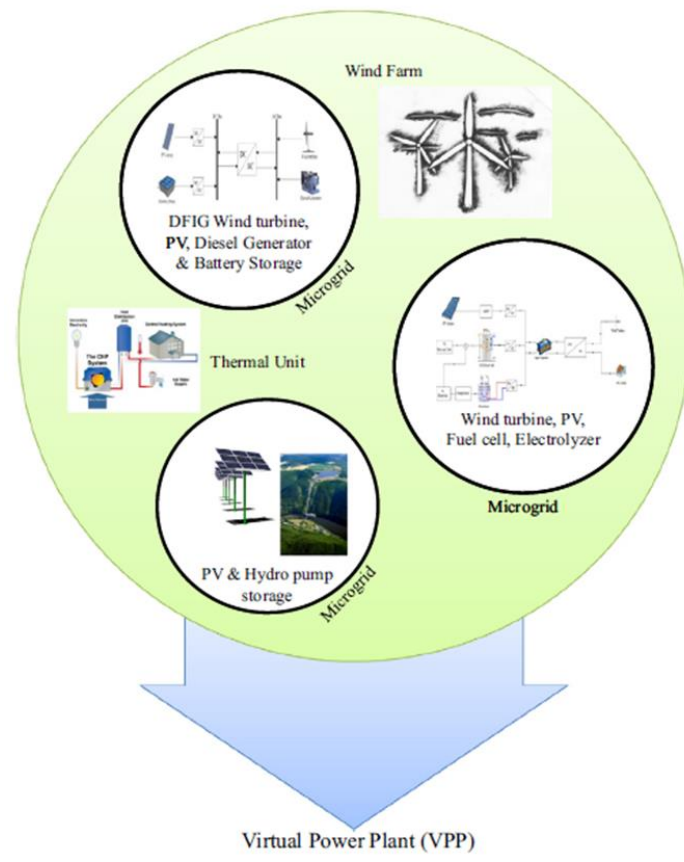
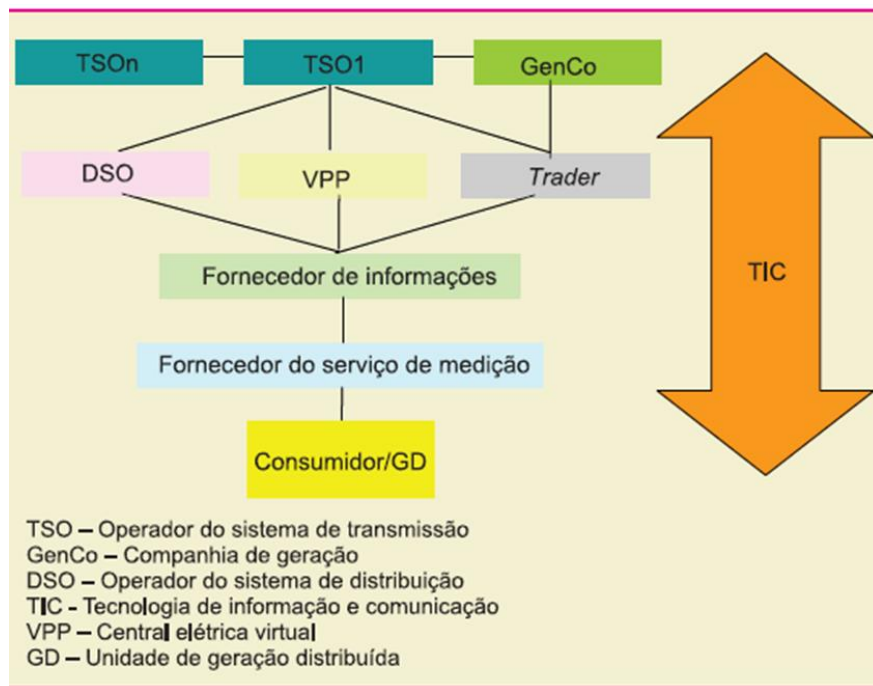
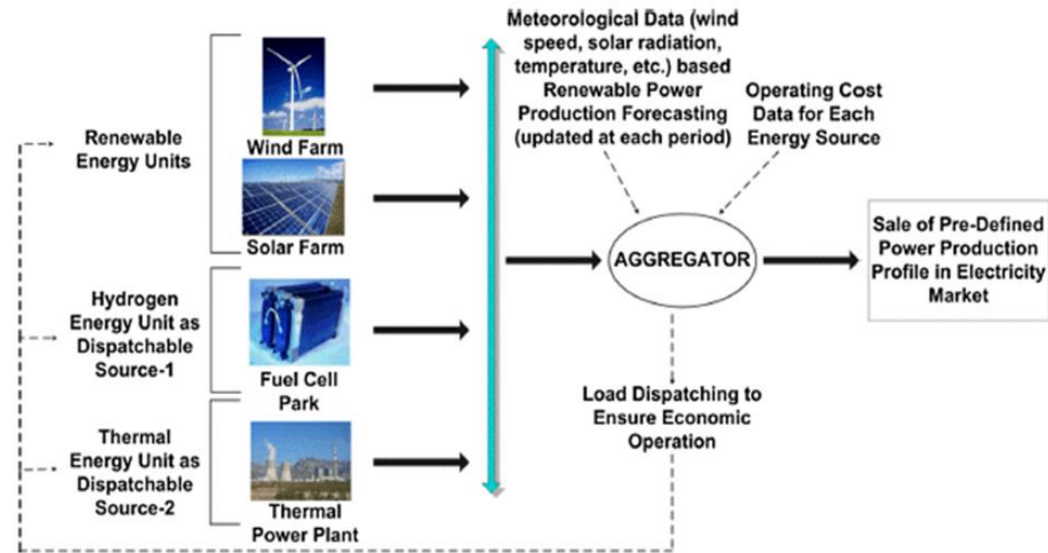
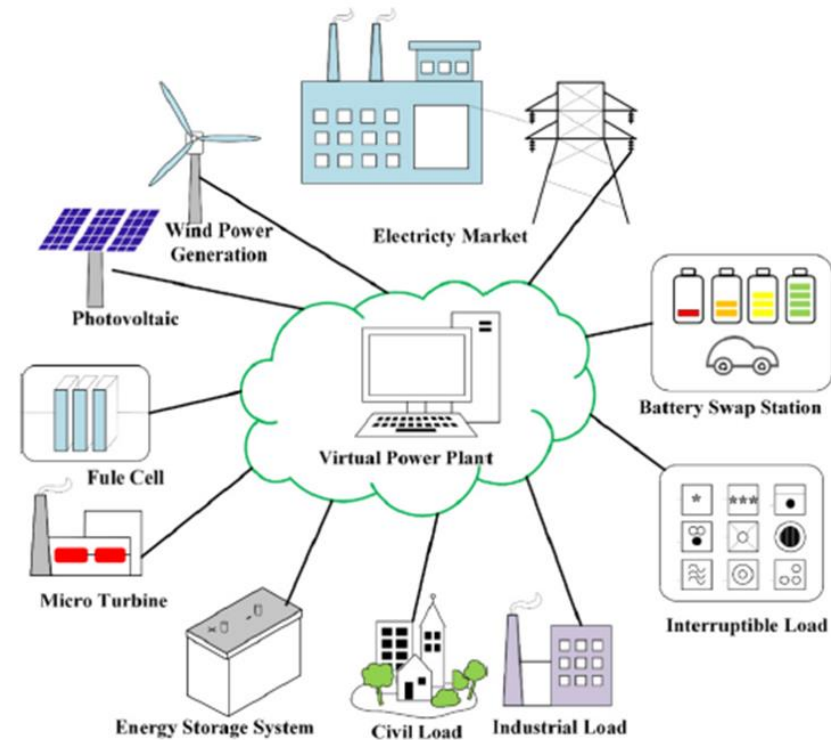
0% interruption
or system failure



Top speed and
flexibility in
balancing energy



Innovative
commercial
solutions



THE VIRTUAL POWER PLANT APPLIES THE FINANCIAL TRADING MODEL TO GREEN ELECTRICITY BY DEFINING BUY/SELL OPPORTUNITIES AND IMPROVES PROFITABILITY

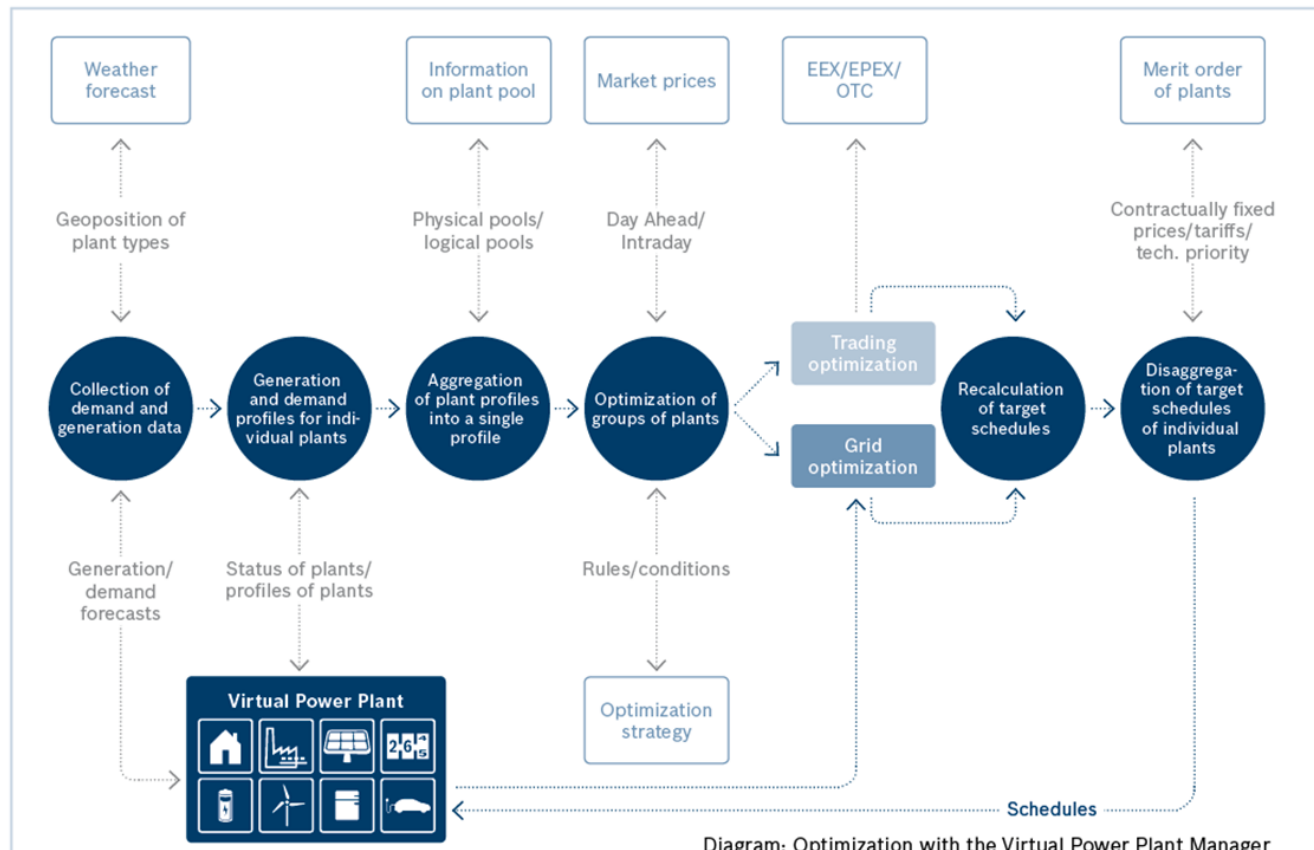
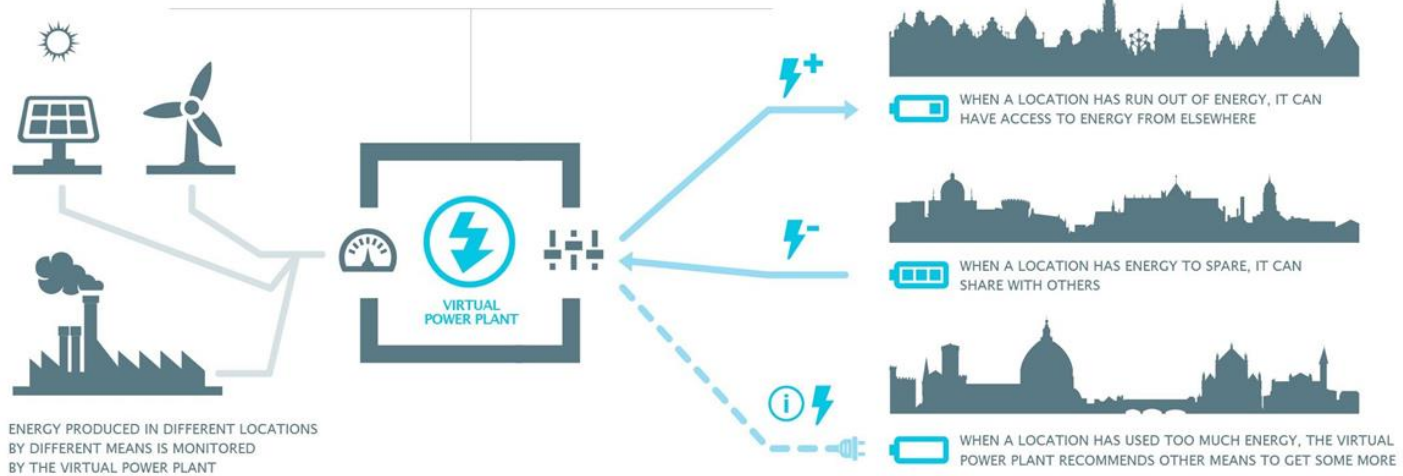


Diagram: Optimization with the Virtual Power Plant Manager

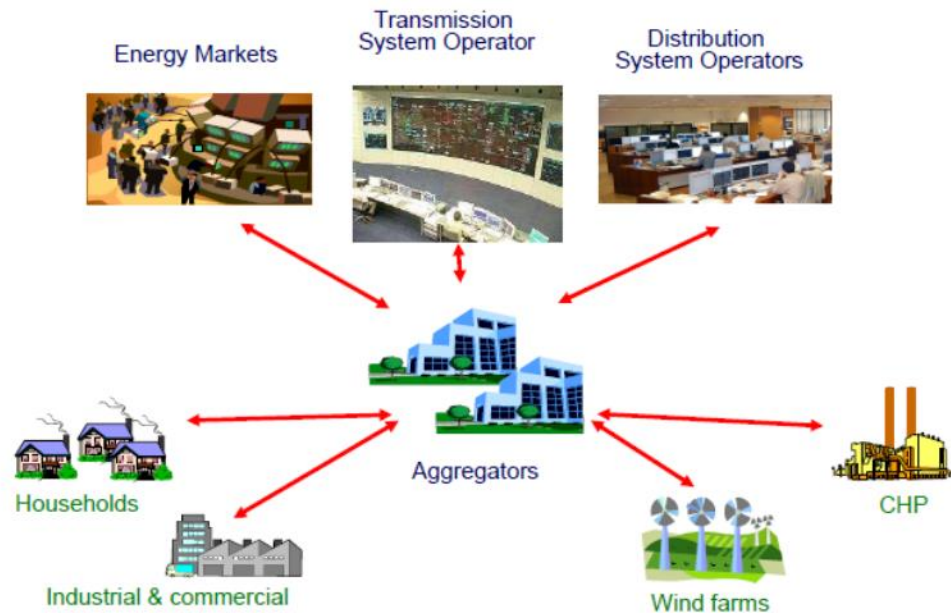
Legislação, Regulação, Regulamentação

- Sem qualquer registo

FENIX – Flexible Electricity Networks to Integrate the eXpected “energy revolution”

FENIX partners Fenix players

- 2 TSO
- 3 DSO
- 4 Manufacturers
- 3 ICT specialists
- 7 R&D centers & Universities
- 1 Business consultant

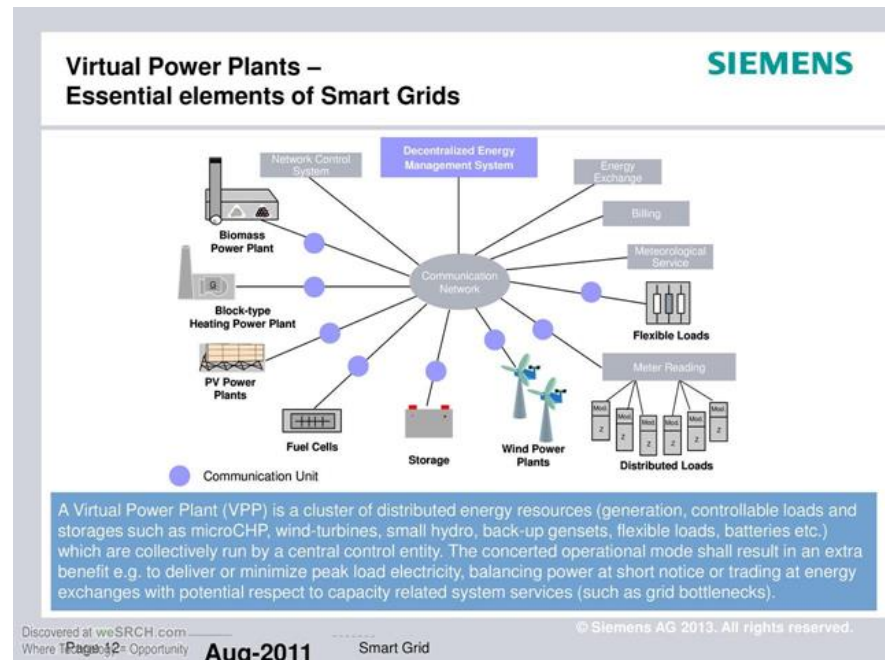


Exemplos

✓ *Stadtwerke München – SWM*
(Siemens)

✓ *Next Kraftwerke*

✓ *VPP Intelligent Energy*

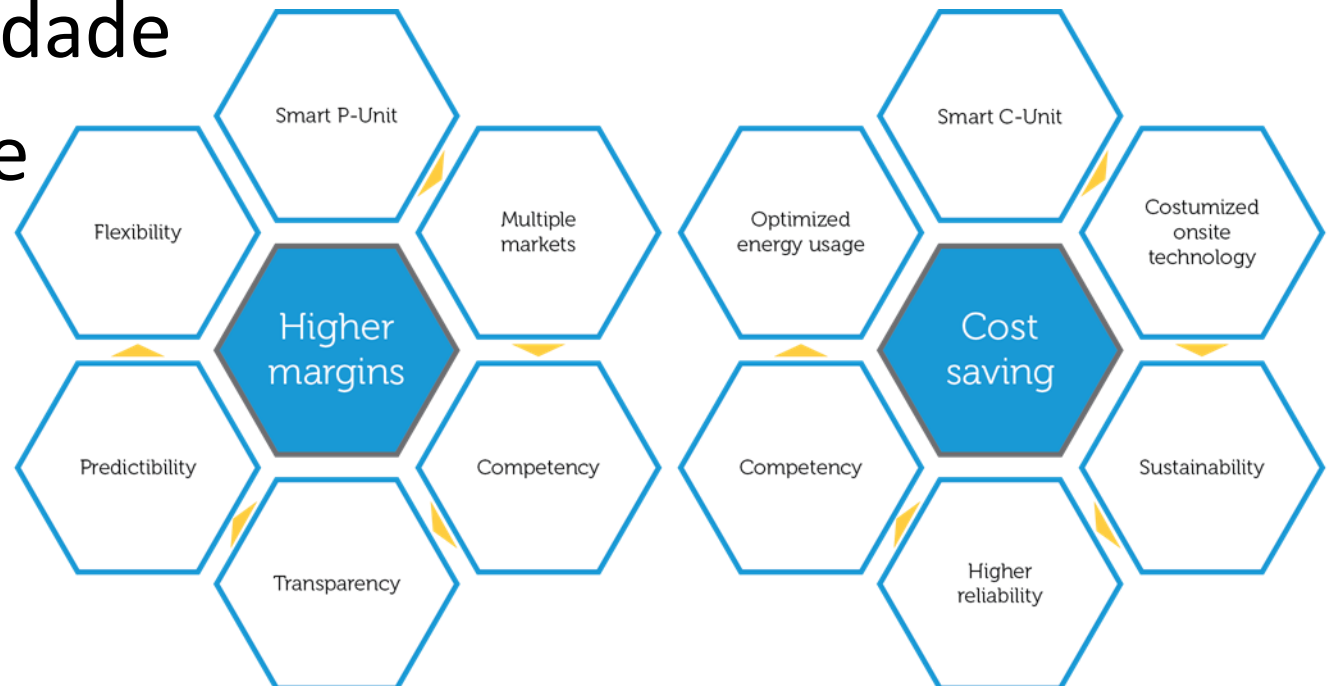
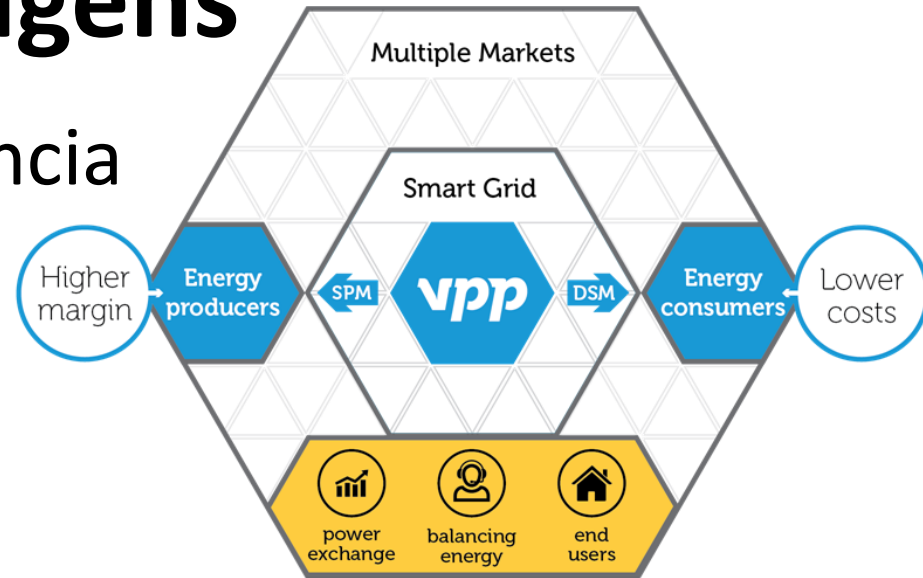


Em Portugal

- ISA Energy
- Nova experiência (por arrancar)

Vantagens

- Diminuição da Dependência Energética
- Produção “Mais Verde”
- Autonomia
- Sustentabilidade
- Proximidade



Desvantagens

- Elevados Investimentos
- Dificuldade em obter retorno
- *Risk-aversion of DER Owners* (incerteza)

Desafios Futuros

- “Educar”
- Mais apoios estaduais
- Mais ligações energéticas entre os Estados
Membros
- Criar legislação - Regular



Virtual Power Plant



Direito da Energia

FDUC

2 de dezembro de 2015

Marta Raquel Cabral Duarte