

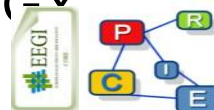
ENERGY

NEW SCENARIOS AND NEW COMPETITIVE ADVANTAGES OBTAINED WITH ANALYTICS BIG DATA SERVICES AND TECHNOLOGY

SAP FORUM Milano, October 2015



indra



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01 The vision

02 Smart Grid Functions

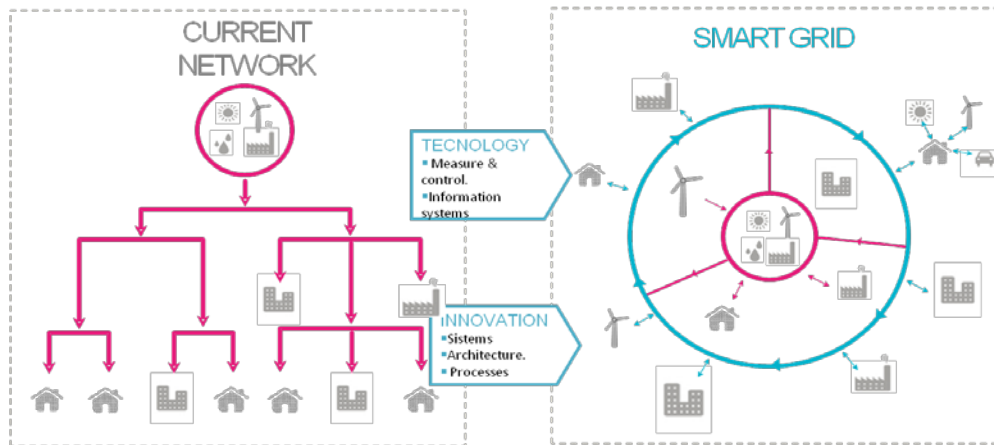
04 New Grid Services : PRICE GDE

05 BIG DATA SERVICES EVOLUTION: Metering Analytic platform+

THE VISION IN ENERGY

Electrical **supply's sustainability, competitiveness** and **security** challenges lead to a profound transformation of power management.

This transformation requires the integrated management of all network resources: generation, demand, storage and network devices.



SMART GRID FUNCTIONS

PRICE

01 Demand Aware Services

Development of a new market of energy services to engage the new profile of customers 'prosumer' into a more dynamic and efficient energy system

02 Grid Automation

Improve network monitoring and control increasing performance & reliability

03 Interoperability

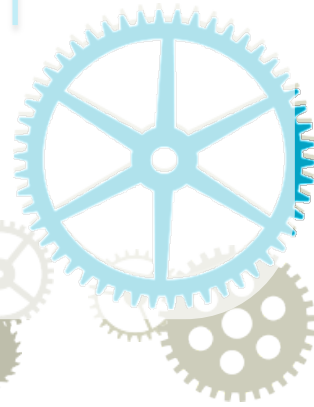
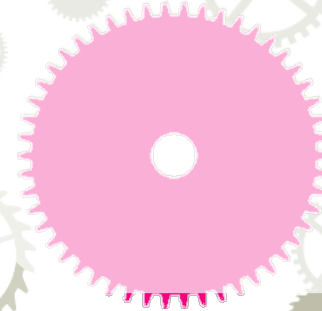
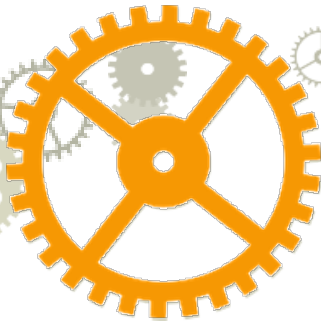
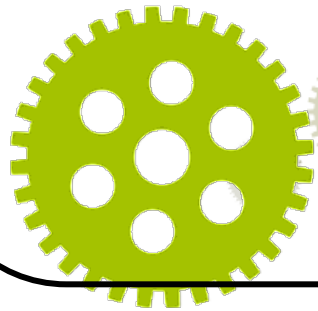
Provide capabilities to integrate network and customers functions and information increasing performance

04 Asset Management

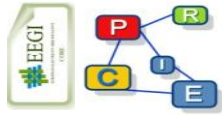
Provide capabilities to integrate network and customers functions an information increasing performance .

05 Security

Prevent, and respond to cyber and physical threats



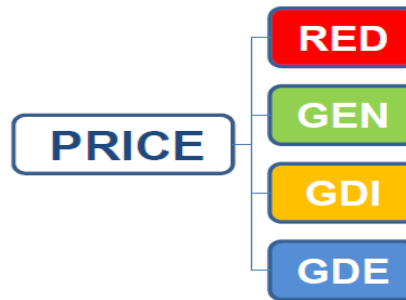
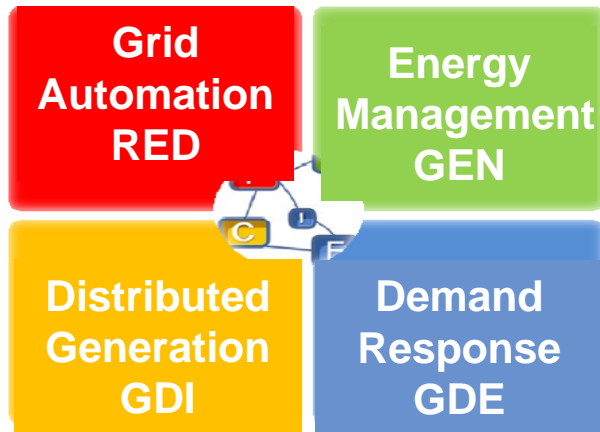
NEW ENERGY SERVICES



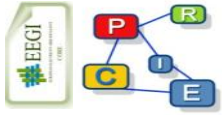
PRICE:Join Project for Smart Grids in the Henares Corridor

Demonstration project for the implementation of Smart Grids technology in more than 200.000 customers, including Distribution Automation, Smart Meter, Distributed Generation and Demand Management.

2012-2015



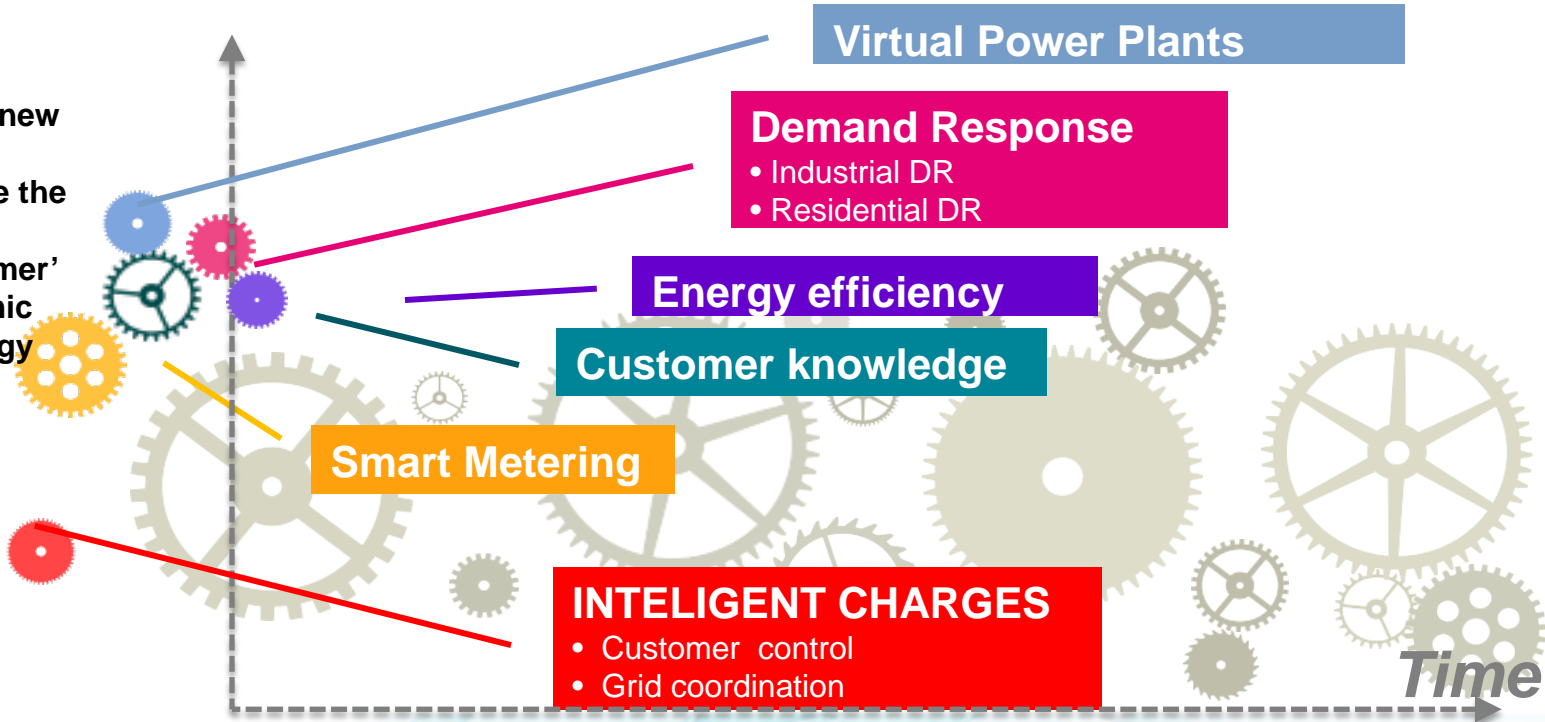
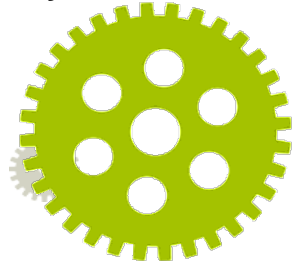
NEW ENERGY SERVICES



GDE Demand Response

01 New Energy Services

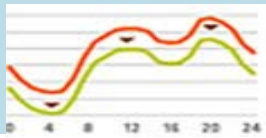
Development of a new market of energy services to engage the new profile of customers 'prosumer' into a more dynamic and efficient energy system



NEW ENERGY SERVICES

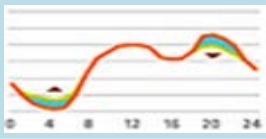


GDE Demand Response : The Need



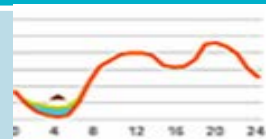
Demand reduction

- Efficiency improvement
- Distributed generation



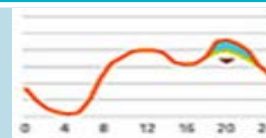
Demand Shifting

- Time of use TOU.
- Demand controls to minimize cost.



Valley filling

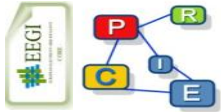
- Pumping stations
- Storage



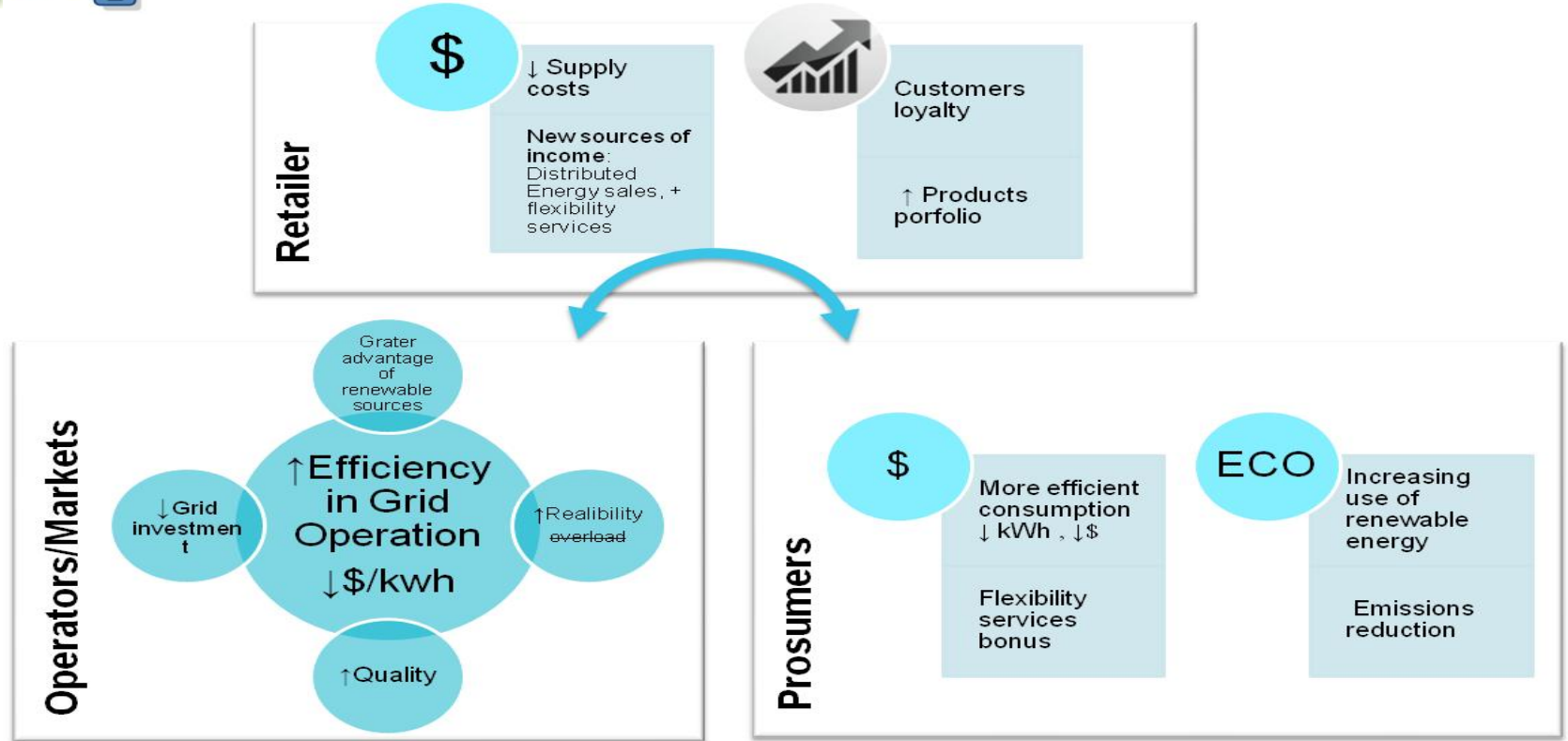
Peak reduction

- Interrumpibility service
- Automatic charge control

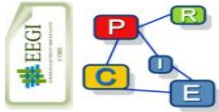
NEW ENERGY SERVICES



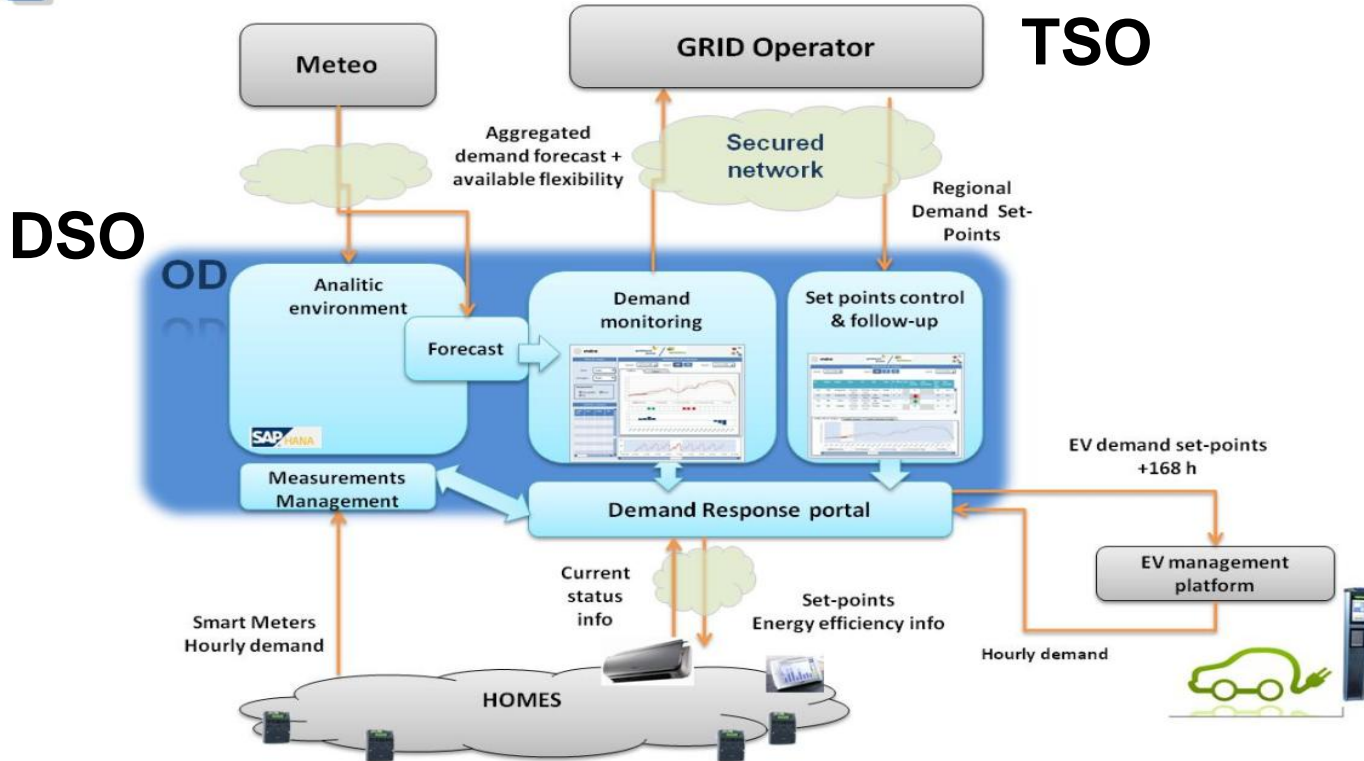
GDE Demand Response : Benefits



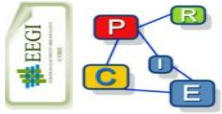
NEW ENERGY SERVICES



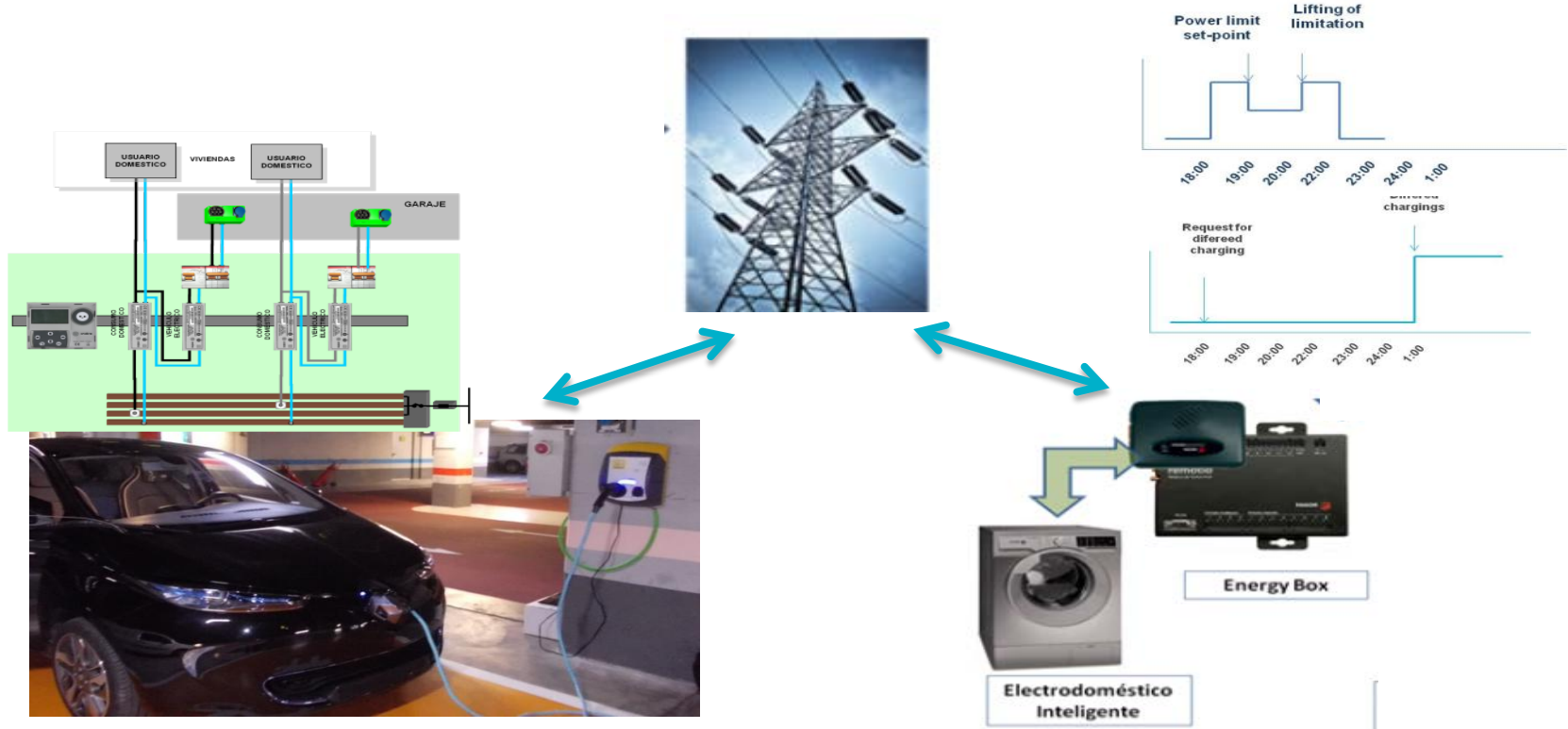
GDE Demand Response : Architecture



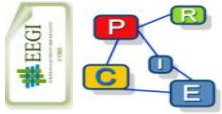
NEW ENERGY SERVICES



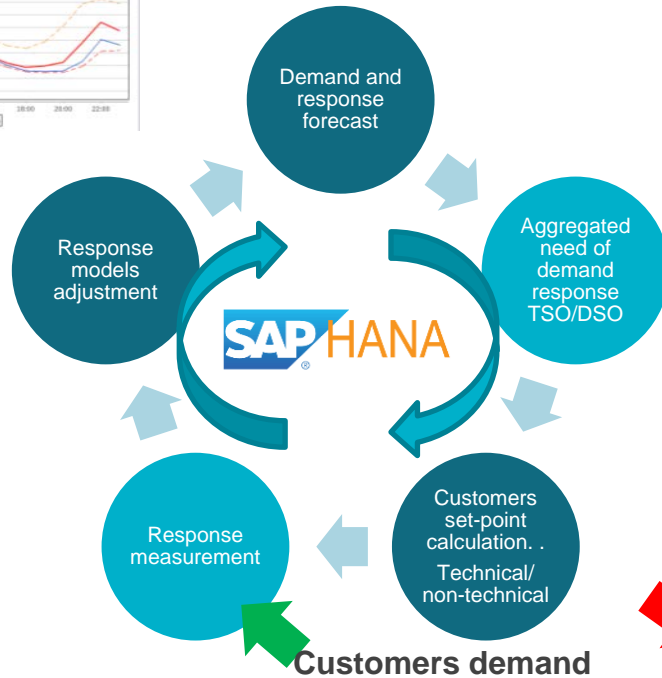
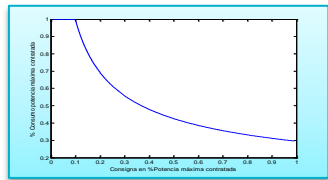
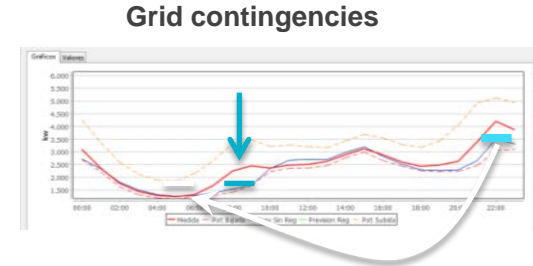
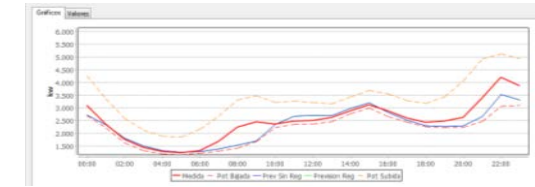
GDE Demand Response : Intelligent Charges



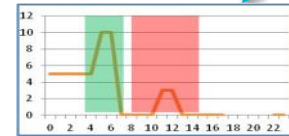
NEW ENERGY SERVICES



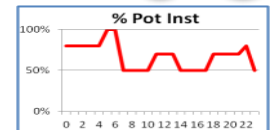
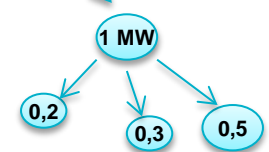
GDE Demand Response : How it works



Non-Technical set-points

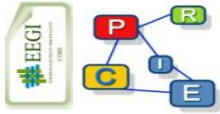


Technical set-points

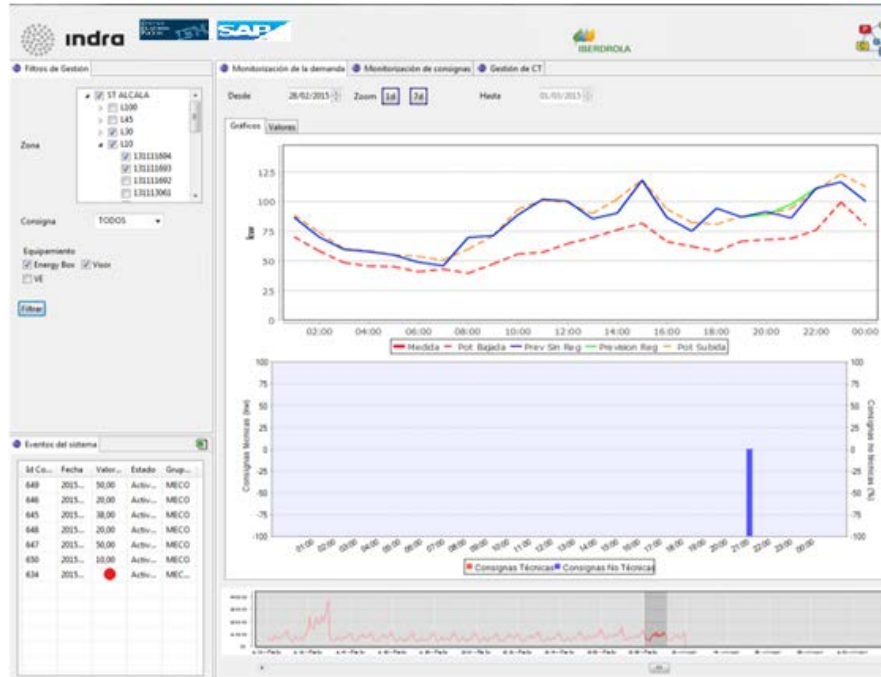


Demand Set-points

NEW ENERGY SERVICES

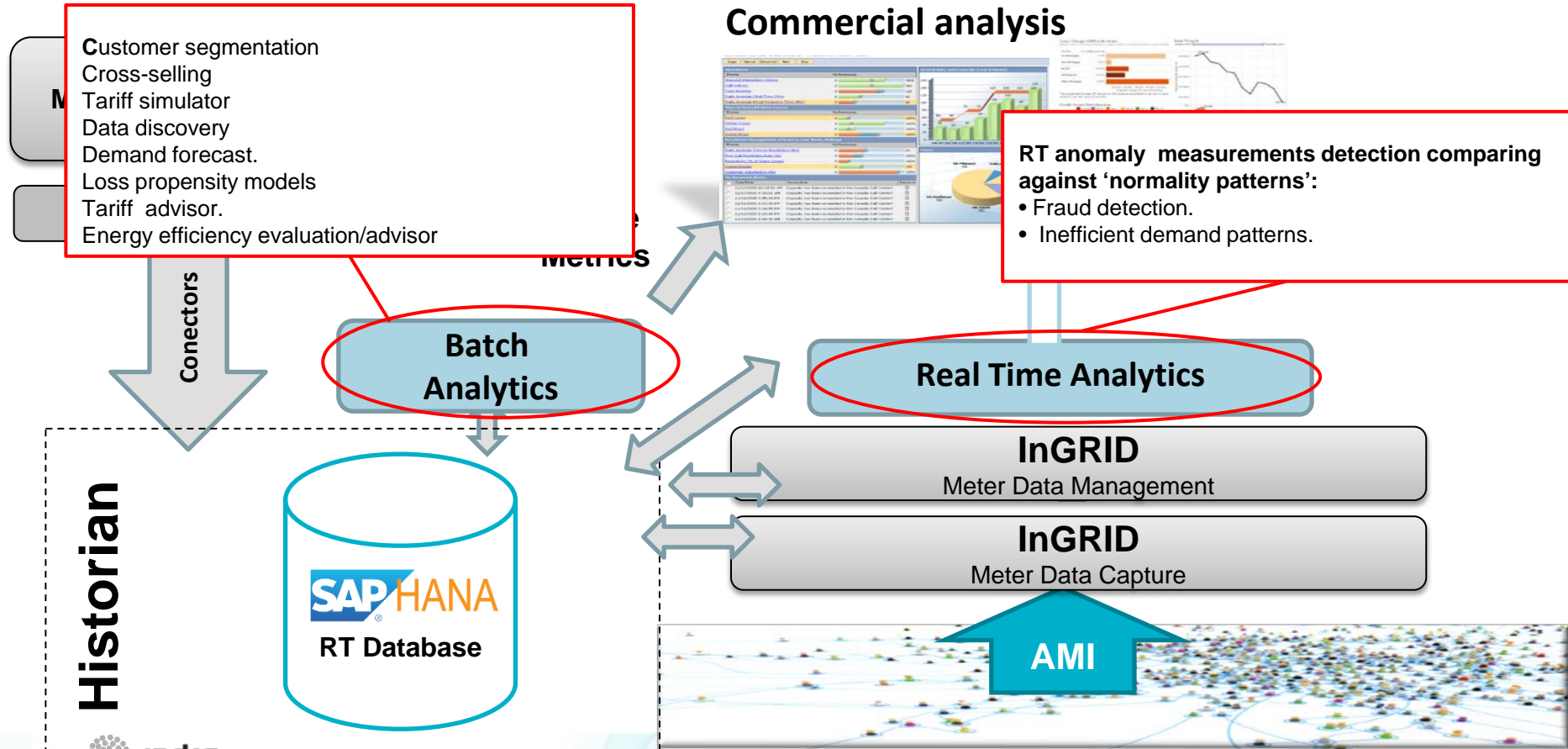


GDE Demand Response : Tools



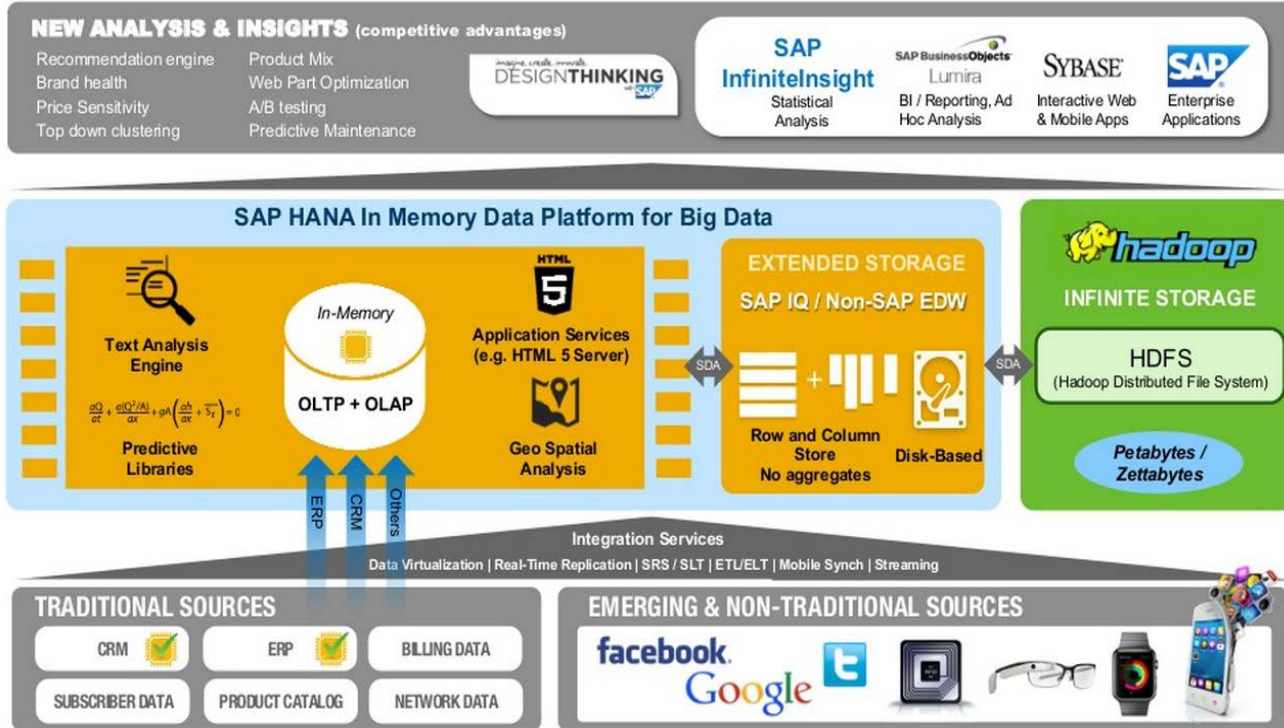
Demand & response : Monitoring & Forecast

BIG DATA SERVICES EVOLUTION: Metering Analytic platform



SAP BIG DATA SOLUTION

Deployment Choice: On Premise, Cloud or Hybrid





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Thank you

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