

# DSO Grid digitization

Daan Schut – CTO Alliander



**cigre**

For power system expertise

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# The Dutch energy system of 2030

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Digital energy market  
*Optimalizations and data*

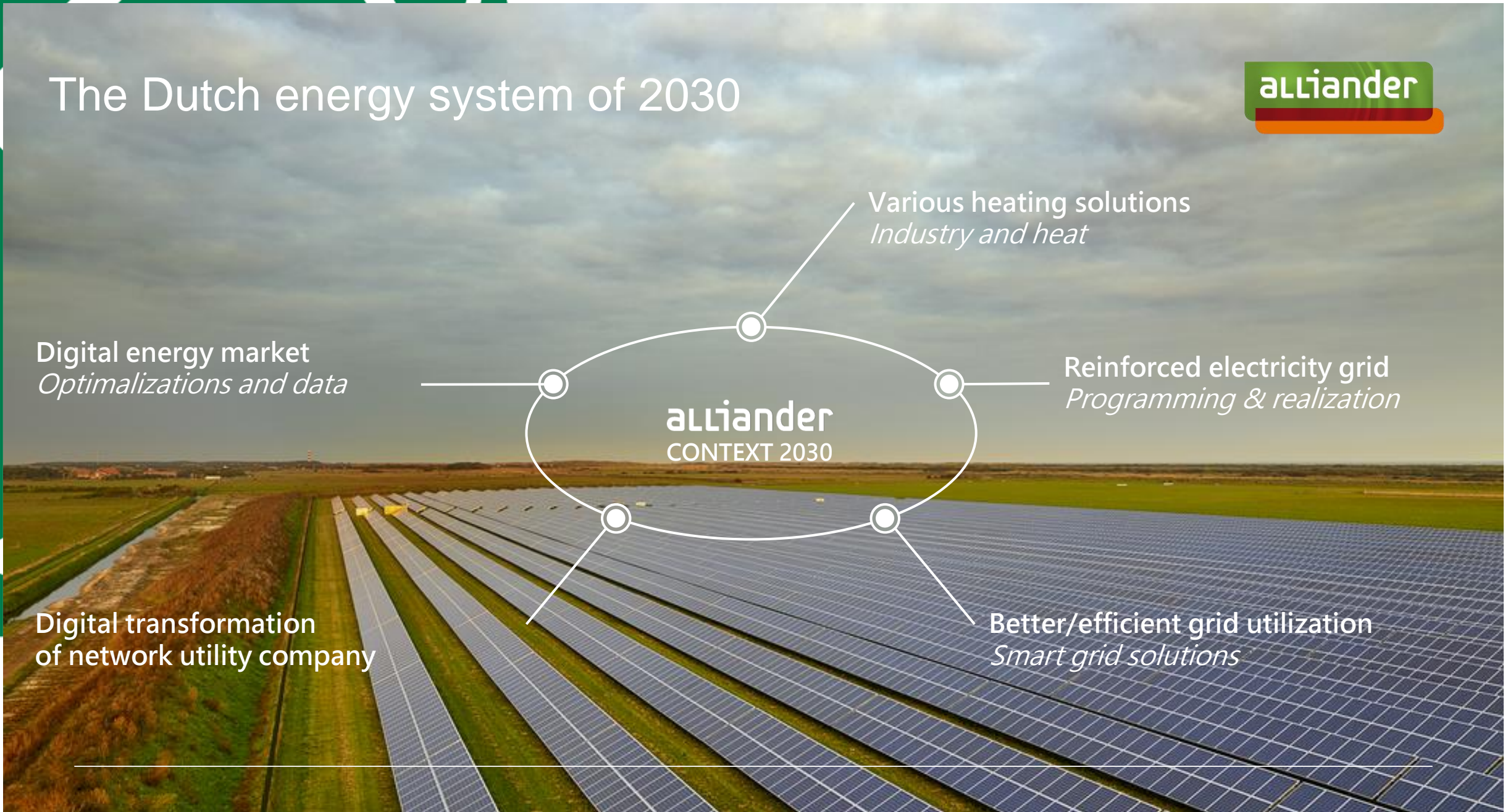
Various heating solutions  
*Industry and heat*

Reinforced electricity grid  
*Programming & realization*

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CONTEXT 2030

Digital transformation  
of network utility company

Better/efficient grid utilization  
*Smart grid solutions*



## The Dutch energy system faces challenges

### Even stronger climate goals

*Fit for 55, phase-out of natural gas*

### Increasing growth solar-PV

*2-4x growth until 2030 (now: 4.4 GW)*

### Growth in sustainable housing development

*1.000.000 new homes*

### Electric mobility

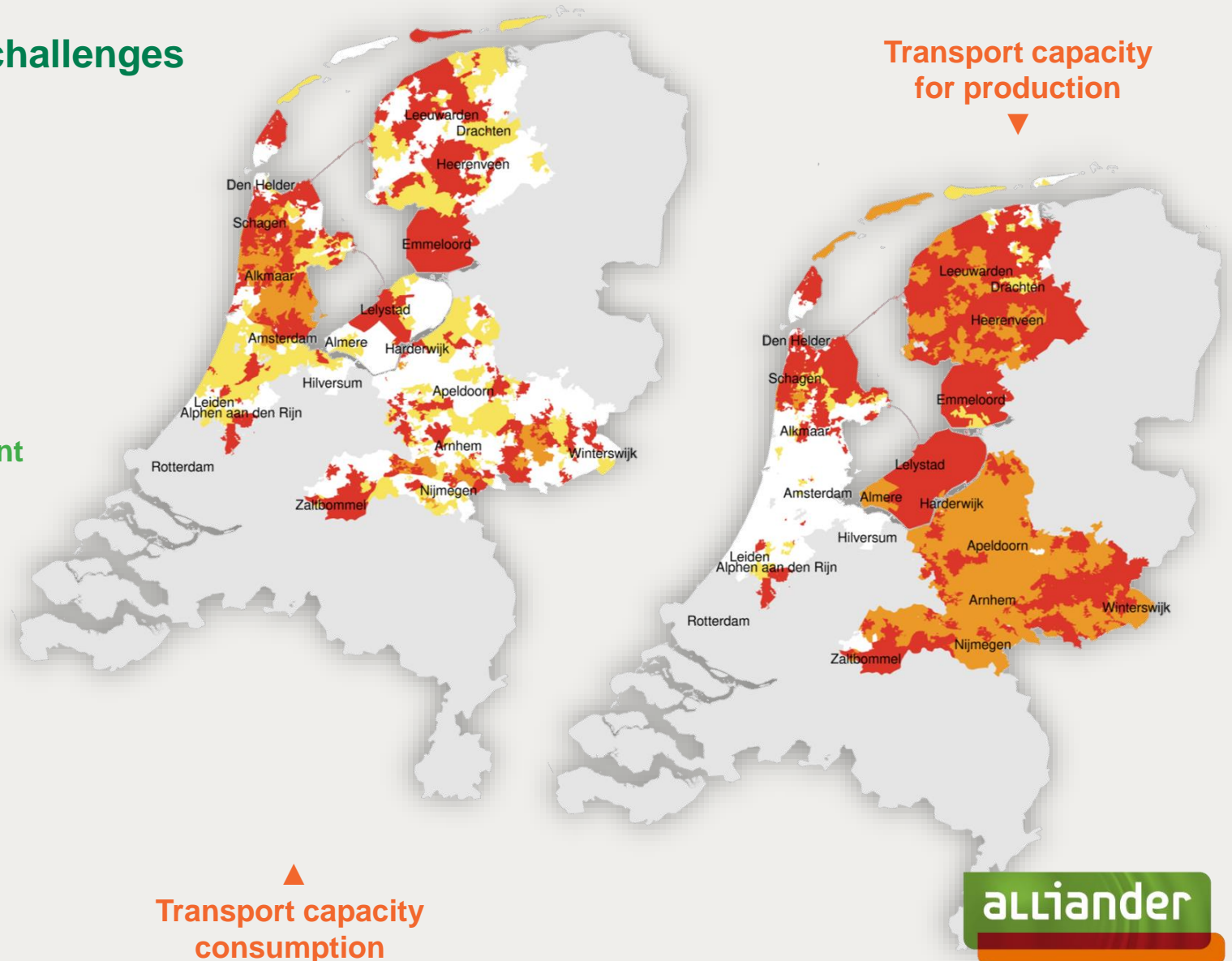
*1.6 million electric cars, +600MW*

### Datacenters

*Until 2030: +2000MW*

### Industry becoming more sustainable

*+400MW due to e-boilers*



DSO Grid digitization is a crucial enabler in the transition phase of the energy system.

**Increasing operational output**

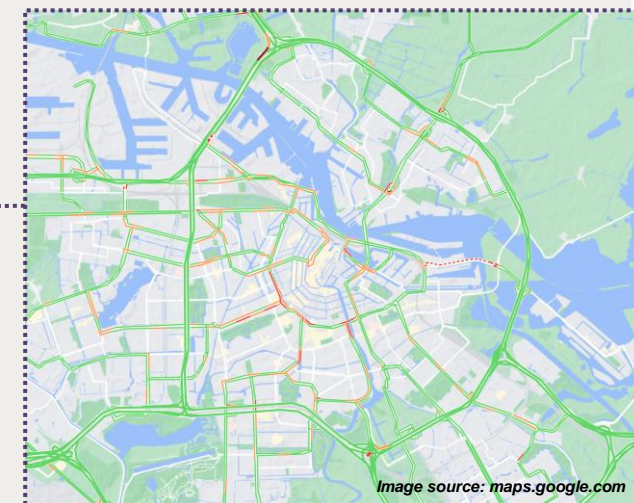
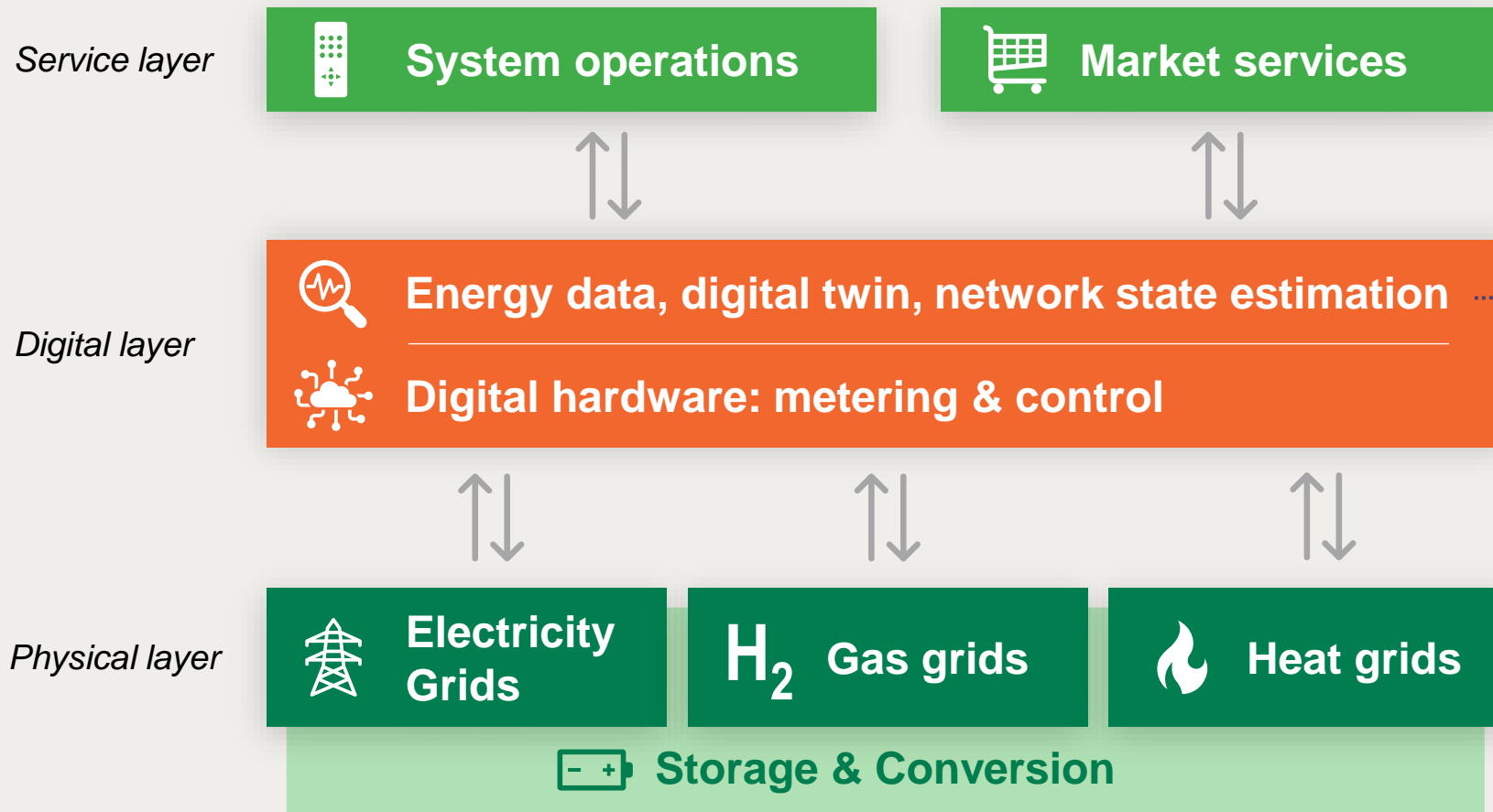
**Preventing unnecessary work through programming with stakeholders**

**Better utilizing the grid by digital smart solutions**

***DSO Grid digitization is a crucial enabler***

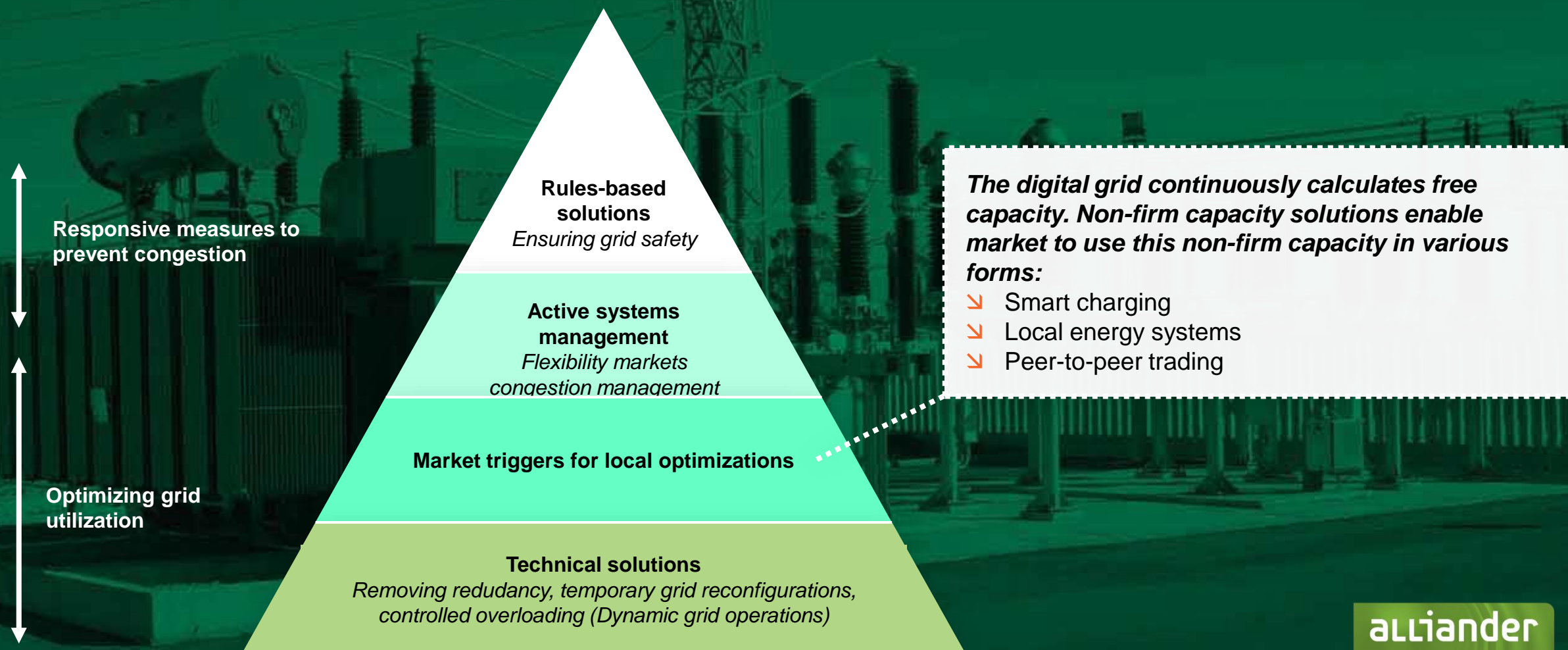


The future energy system consists of three layers. They are all needed for a reliable, affordable, and accessible sustainable energy system.



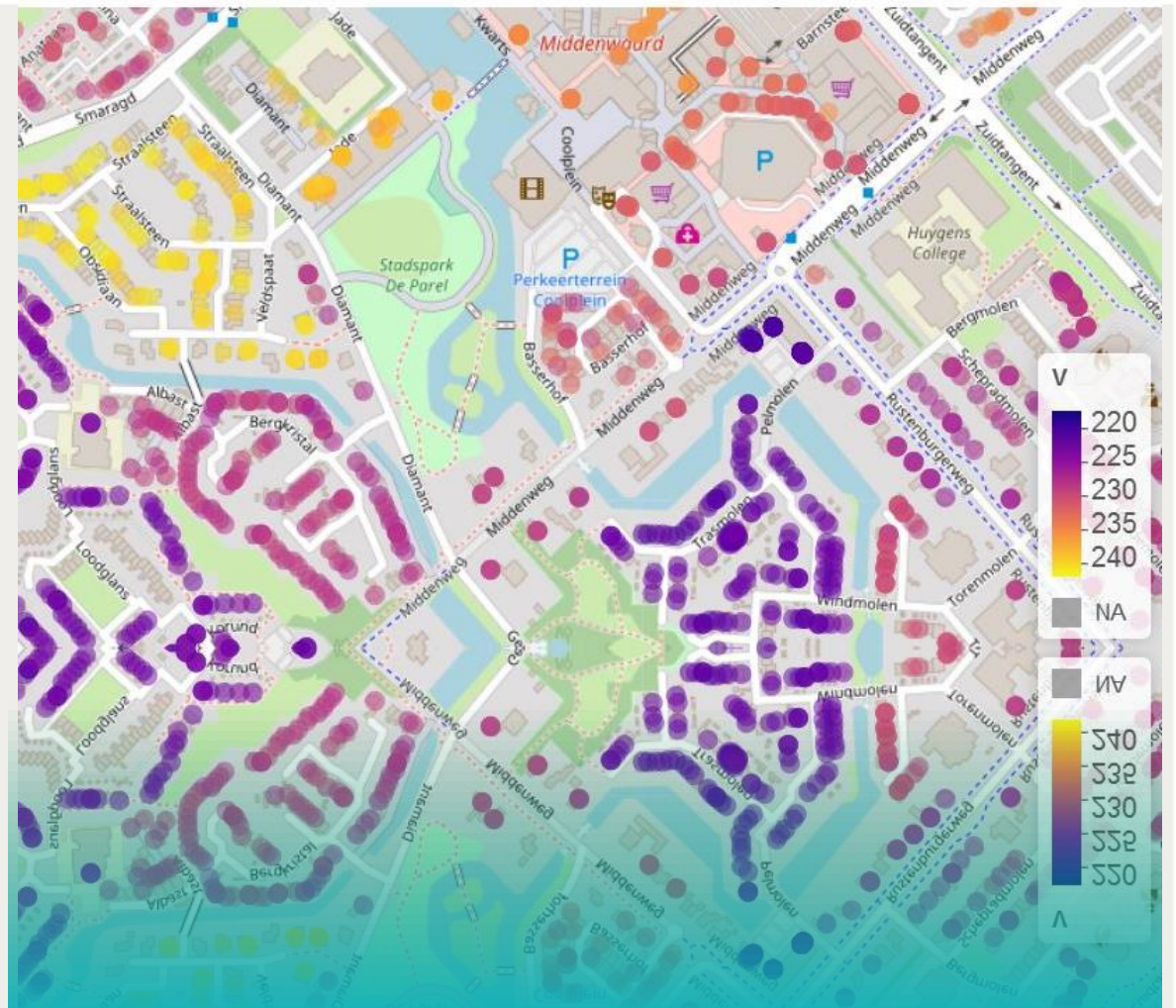
# Digital smart grid solutions enable layered market optimizations

To balance supply and demand of energy, there will be layered value optimization opportunities for customers: self-optimization, local/regional optimization and (intern)national optimization.

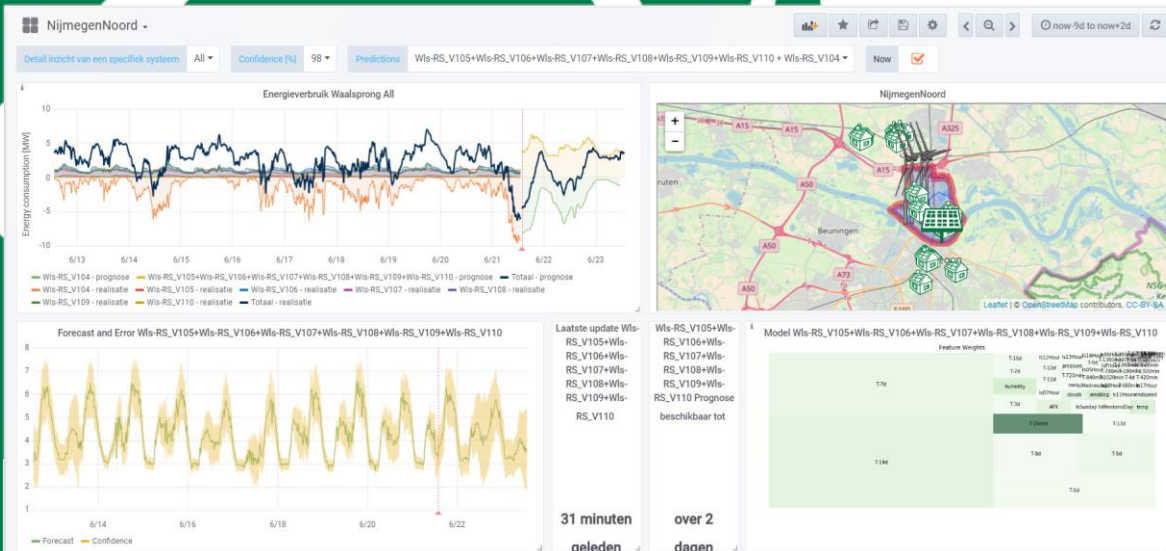




## CLIC Local energy system: Digital twin and virtual group connection

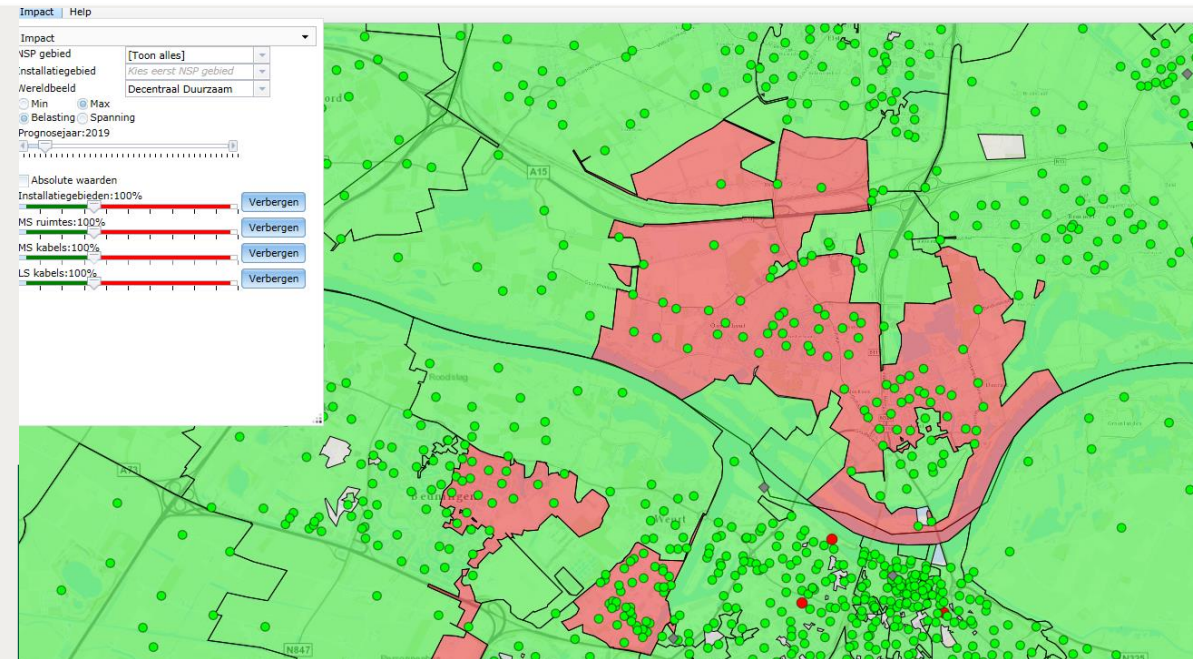


## Smart meter: voltage measurements for power quality improvements



# GOPACS

**GOPACS: congestion management platform**  
3 flex markets operational. Lot more coming.



**ANDES: Every 15 min, future demand scenario's**  
and grid impact can be modelled for 50 years

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