



# Smart Energy Region

Emmen • Haren



**A collaboration  
between the cities  
Emmen (Netherlands)  
and Haren (Germany)**

Brussels, 25.4.2016



# Smart Energy Region Emmen Haren







## **Objective SEREH**

**A Regional, decentralised and mostly communal cross-border energy system in Emmen-Haren:**

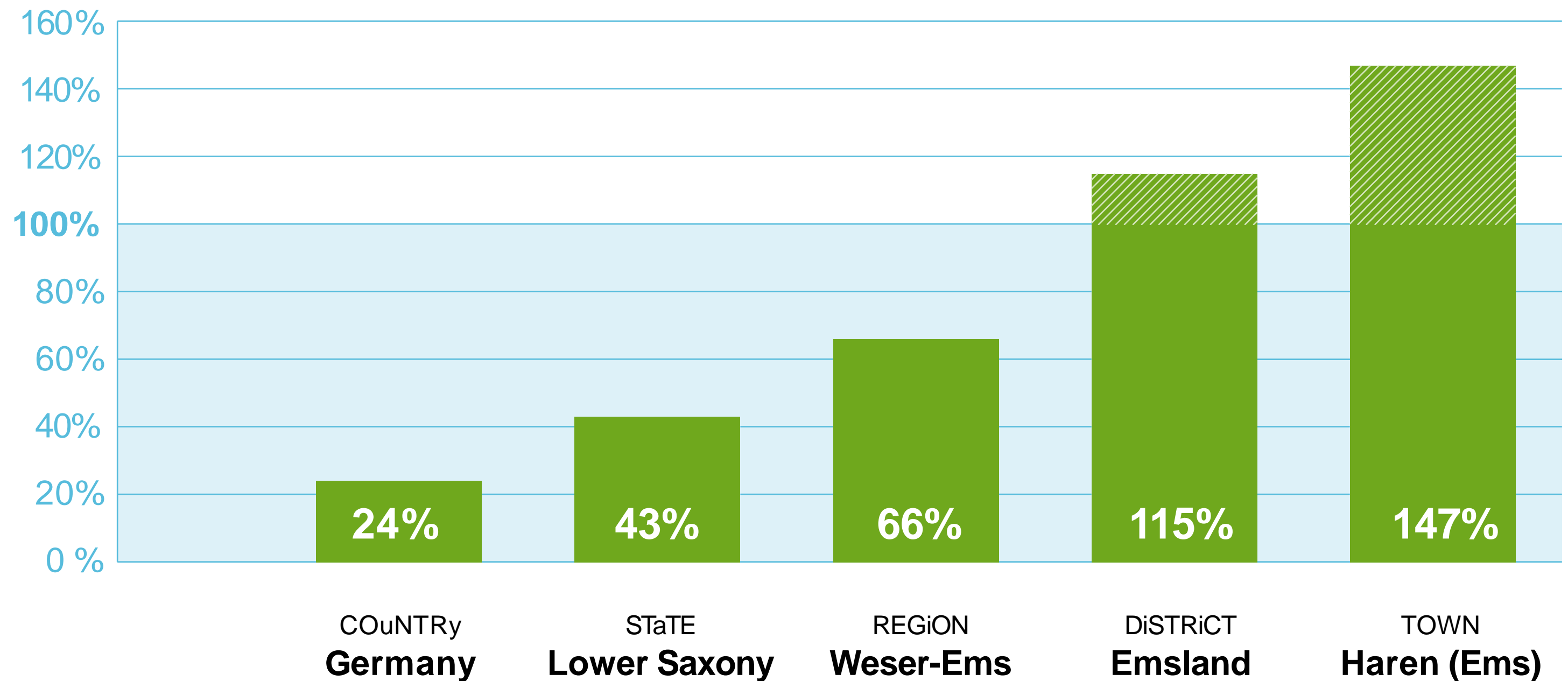
**Connecting supply and demand locally to keep benefits of RE in the region**



## Keywords for SEREH

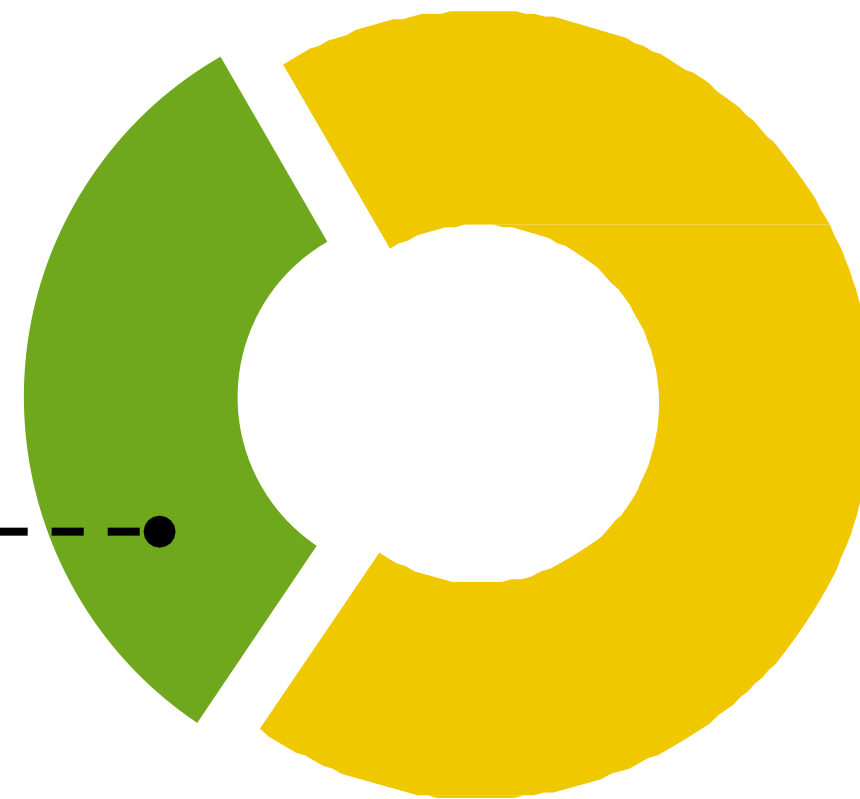
- self sufficiency,
- community benefits of renewables,
- connecting local supply and demand,
- smart grid,
- new businesses.

## Renewable Energy – comparables



## Renewable Energy in Haren (Ems) Current situation

Power Excess in Haren  
**≈ 79.000 MWh**  
per year



Renewable Power Production Haren	246.973 MWh
Power Consumption Haren	167.957 MWh
<b>Excess</b>	<b>79.016 MWh</b>

## Energy facts Emmen



### Electricity

Households  $\approx$  130.000 MWh/y  
 $\approx$  30 million EuR

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industry  $\approx$  340.000 MWh/y

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### Gas

Households  $\approx$  70 million m<sup>3</sup> (710 GWh)  
 $\approx$  45 million EuR

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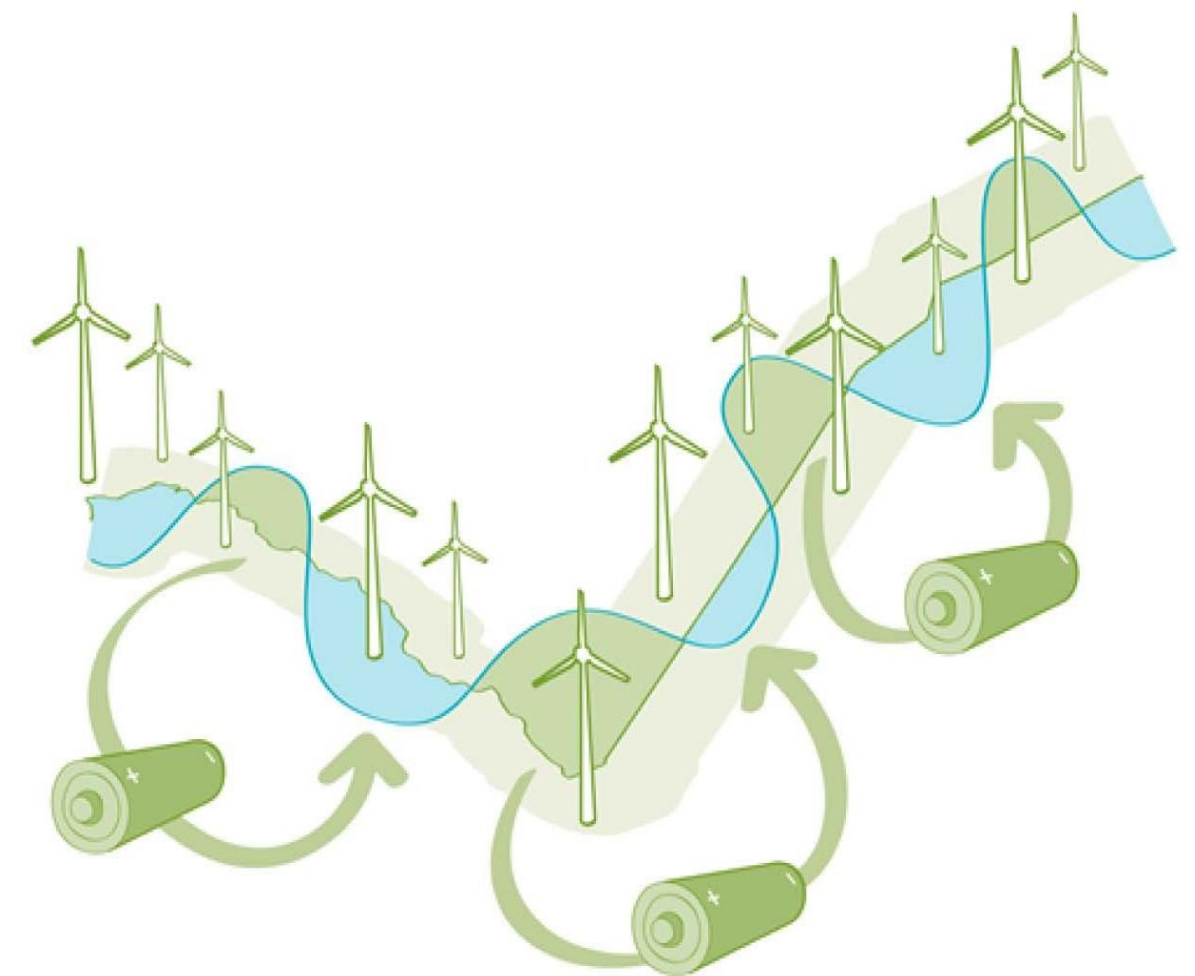
industry  $\approx$  130 million m<sup>3</sup> (1,3 TWh)  
50 % used by green houses

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available renewables for the time being: **3%(solar)**

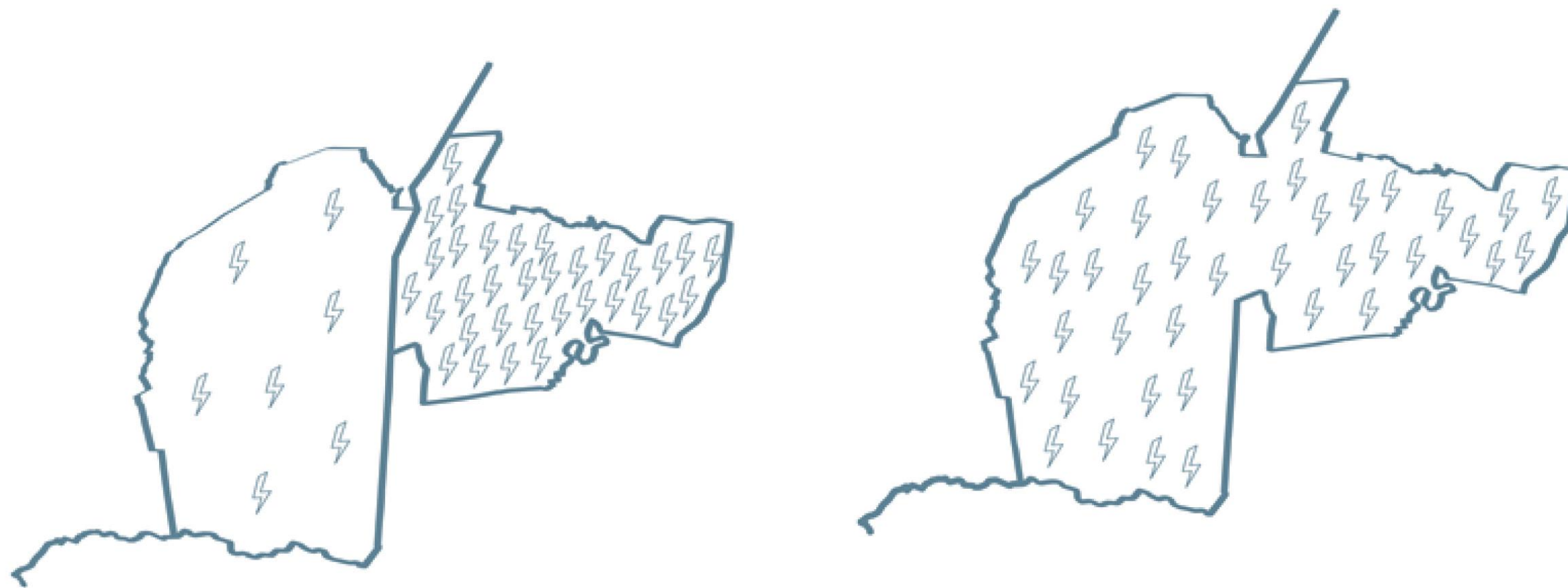
## Cross Border Innovative Windfarm

- ✓ Avoiding imbalance on the grid
- ✓ Communal benefits of RE
- ✓ Accommodate efficient use of civic energy
- ✓ Regional 'Energy Union' living lab. Experimenting with regional market regulation





## Our idea of a Smart Energy Region



147% electricity  share?

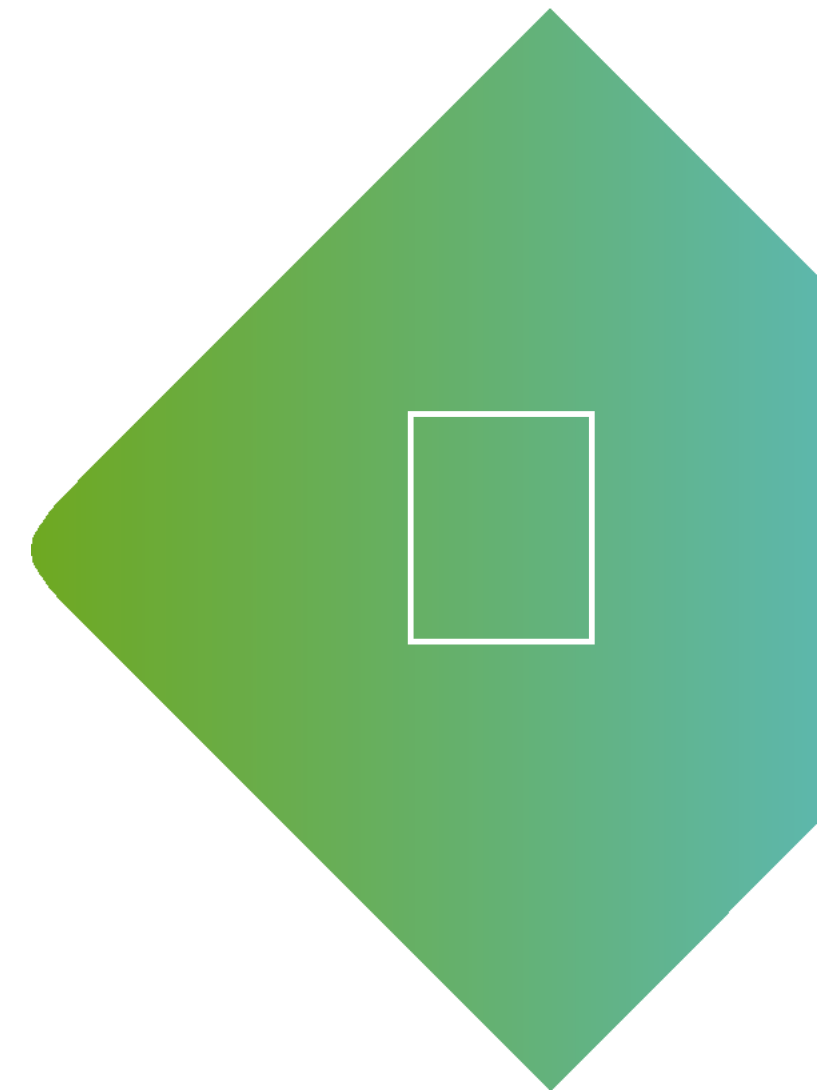
## How to achieve that?

- Storage en smart distribution program
  - Power to gas?
  - Power to heat?
  - Demand Side Respons?



## How to achieve that?

- Interconnecting Medium Voltage Grids (DSO level) in Emmen en Haren
- Research & Innovation program involving DSO and TSO cooperation







## How to achieve that?

- Regional merit order
- Regional energy market (at nearly real time prices)
- Leveling differences in subsidising and taxing of RE

## What do we need?

- ✓ Living lab conditions
- ✓ Pressure on our national governments
- ✓ European funding (H2020)
- ✓ Pressure on DSO's and TSO's to cooperate



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Thank you  
for your  
attention