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

Smart Energy Region Emmen Haren

- **Country**: Germany - 24%
- **State**: Lower Saxony - 43%
- **Region**: Weser-Ems - 66%
- **District**: Emsland - 115%
- **Town**: Haren (Ems) - 147%
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
- Excess: 79,016 MWh
## Energy facts Emmen

<table>
<thead>
<tr>
<th>Energy Type</th>
<th>Households</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electricity</strong></td>
<td>≈ 130,000 MWh/y</td>
<td>≈ 340,000 MWh/y</td>
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<tr>
<td></td>
<td>≈ 30 million EuR</td>
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</table>

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<tr>
<th>Energy Type</th>
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<tr>
<td><strong>Gas</strong></td>
<td>≈ 70 million m³ (710 GWh)</td>
<td>≈ 130 million m³ (1,3 TWh)</td>
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<tr>
<td></td>
<td>≈ 45 million EuR</td>
<td>50 % used by green houses</td>
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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
Dit bleek de makkelijkste oplossing...
Thank you for your attention