Introduction

District of Rhein-Hunsrück

- 102,000 inhabitants thereof 8,088 foreigners (12 from Japan)
- Area: 991 km²
- 137 local congregations (75% with less than 500 inhabitants)

Architect Frank-Michael Uhle
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Session 2-B, Expansion of wind power and biomass, Climate protection manager Frank-Michael Uhle, September 07th, 2017, Nagano
Rural structured district

45% forest area
42% agriculture
(110 agricultural enterprises with more than 100 ha, another 708 agricultural enterprises with less than 100 ha)
Middle Rhine Valley

2 Million overnight-stays per year
viticulture
Historical Heritage
UNESCO World Heritage
The share of renewable electricity in the district probably will be at 298 % by the end of 2017

Total power consumption 468 Mio. kWh in 2014

- **1,398 Billion kWh**
  - To the grid, approved and in construction in 2016
  - 16 turbines
  - 117 MW capacity

- **252 turbines**
  - 631 MW capacity

- **4,182 plants**
  - 86 MW capacity

- **18 plants**
  - 6.2 MW capacity

- **Wind energy**
  - State by the end of 2015
  - 249.62 %
  - Ø Federation 11.0 %

- **Photovoltaic**
  - 16,73 %
  - Ø Federation 6.0 %

- **Bio mass**
  - 7.09 %
  - Ø Federation 7.8 %

**Share of renewable energies: 298 %**

**Ø Federation 32 %**

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Session 2-B, Expansion of wind power and biomass, Climate protection manager Frank-Michael Uhle, September 07th, 2017, Nagano
14 bio mass local heat networks in operation
Example: Material Flow Management

Public building complexes are merged to district heating networks and heated with **tree and shrub cuttings** (120 collecting points, central treatment place)

The first step: Fuel preparation in the central processing place

Fuel: approx. 50% of the total material

High quality compost: approx. 50% of the total material

The second step: Thermal processing in the central heating station with burning capacity of 500 to 850 kW

Three biomass-heating networks in school centers:

22 school buildings, 8 sports halls, 1 town hall
2 indoor and 1 outdoor swimmingpools,
1 library, 1 old people’s home

→ Annual savings
680,000 Liters
Fuel oil equivalent

Startscreen

Fuel storage facility

Central heating station

Session 2-B, Expansion of wind power and biomass, Climate protection manager Frank-Michael Uhle, September 07th, 2017, Nagano
Regional value creation and Public service
Recognition of interfaces and use!

Step by step we convert 290 Million Euro annual energy import costs into regional jobs and value creation by way of energy efficiency and renewable energies!

Regional value creation (earnings)

- Rental income and taxes for the local communities
- Feed-in remuneration for local operators (private PV-plants and cooperatives)
- Orders for the domestic craft and construction companies
- New Jobs through maintenance orders
- Development opportunities for local agriculturists and forest owners

Total investment sum of all renewable energy plants

Sum in 2015

1.35 Billion €

Thereof regional investment sum

Approx. 102 Million €

Annual regional value creation

approx. 43.5 Million €

Renewable energies/energy efficiency

Demographic change/Public service
It is demonstrated by the province: With a lot of pragmatism and an inner conviction around 300% of green energy are already produced in the district of Rhein-Hunsrück in 2015. Here the energy revolution is working as a giant program for the promotion of the economy.
- By Ralf Köpke

Quelle: E&M annual magazin of 2012
Public services via renewable energies at the example of the local congregation Mastershausen

Private Wind- and Solar parks on communal owned areas

14 Wind turbines (step by step since 2007)

Therefore the community gets a rent as well as a percentage earnings share, which depends on the wind income

Rental incomes from the wind energy for the local congregation: approx. 300,000 € per annum, contract period 20 years

Photovoltaic systems on terrain with 2 MW capacity commissioning in December 2010

The plant will become property of the local congregation after 25 years

Rental incomes for the local congregation: 630,000 € uniquely payment in October 2010
Public services via renewable energies at the example of the local congregation Mastershausen

The local congregation is using its rental income from the Wind and Solar park for:

• Expansion of local streets 570,000 €
• Vitalization program for old buildings in the village center 50,000 € per year
• Support for local clubs annual 15,000 € for 10 clubs in total
• Reconstruction of the old school into a retirement home with a meeting room 1,500,000 €
• New construction of a training room for the music club 50,000 €
• New construction of a youth hall 60,000 €
• New construction of a library 17,000 €
• New construction of a Kindergarten, own contribution 160,000 €
  • Renewal of the playground 40,000 €
• Creation of a natural recreation area 151,000 €
• New construction of a premium hiking trail 30,000 €
• DSL-connection, own contribution 101,000 €
• New construction of a viewing tower 37,000 €
• Support for the neighbor communities
  …and much more…
**The road to success: LHN in the villages**

Combined LHN: Villages Külz and Neuerkirch 2015
Mayor (retired) Aloys Schneider and Volker Wichter

**Target:**
Climate Protection - Volunteering Villages for Energy Saving, completely renewable heat- und power supply (by wind power/Storage- and/or PV/Storage-Combination)

**Builder-owner:**
Energieversorgung der Region Simmern (ERS) at in-house operation VG-Werke Simmern

Approx. 142 buildings in 2 villages
80% ratio (total 757 citizens)

Planned:
2 wood chip-boilers, 1.420 m² solar thermal field

Start of construction: Spring 2015, Operational: Summer 2016


The largest solarthermal supported LHN in Rhineland-Palatinate has been built!
Collective, solar thermal supported local heat network: Local congregations Külz and Neuerkirch 2015

Source: ibs Energie, Stromberg
District heating systems with wood chips
Local heat supply systems in communities

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Collective, solar thermal supported local heat network: Local congregations Külz and Neuerkirch 2015

source: Energieagentur Rheinland-Pfalz/Sonja Schwarz
The local congregations are supporting the changeover to renewable heat supply through grants of 4.000 € per household gained from the rental income for the turbines.

The climate protection targets of the federation for 2050 in the heating section are already reached today!

93 out of 105 houses are already completely heated by renewable energies. Only 5 houses are heated solely by fossil fuels (including a badger cogeneration plant)

(284 inhabitants in the village in total)
Volker Wichter, Mayor of Neuerkirch

The two local congregations of Külz and Neuerkirch have jointly implemented the largest district-heating network in Rhineland-Palatinate.

This represents the current high point of the rapid expansion of the citizens' heat in our district (the 15th network is under construction).

In addition, the local congregations offer their citizens numerous offers in the sense of the provision of life in order to make the places fit for the future.

"The income from wind farms has helped us realize our sustainable village development concepts for our citizens!"

Volker Wichter, Mayor of Neuerkirch

Bio mass Workshop, Contribution by the Climate Protection Manager Frank-Michael Uhle, September 6th 2017 in Kofu
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„The income from wind farms has helped us realize our sustainable village development concepts for our citizens!!“

Volker Wichter, Mayor of Neuerkirch
Public services via renewable energies at the example of the local congregation Mörsdorf

Therefore the community is getting a rental income as well as a percentage earnings share depending on the wind income

Rental income from the wind energy for the local congregation:
approx. 205,000 € in 2016, plus 1,850 € from the solidarity pact of the former municipality of Treis-Karden

Private Wind parks Mörsdorf North and South, partially communal owned areas:

11 wind turbines with a capacity of 2.4 MW since 2015

(Wind electricity in Mörsdorf)

(Windstrom in Mörsdorf)

Eleven Anlagen...
...erzeugen jährlich durchschnittlich 74 Millionen Kilowattstunden Strom
...decken den Bedarf von 62.000 Menschen in ihren Häusern und Wohnungen
...reduzieren den Kohlendioxid-Ausstoß um jährlich 56.000 Tonnen

(Eleven turbines...
...produce an annual average of 74 Million kWh electricity
...satisfy the needs of 62,000 people in their houses and apartments
...reduce the emission of carbon dioxide up to 56,000 tons per year)

Source: Abo-Wind, exhibition in the coffee shop of the museum Mörsdorf
Public services via renewable energies at the example of the local congregation Mörsdorf

„Without the income from our wind turbines and the support of the operator Abo-Wind the bridge would have stayed a dream“

Marcus Kirchhoff, Mayor of Mörsdorf on the occasion of the opening at the 3rd of October 2015

360m lang
100m über Grund
(360 m long
100 m above the ground)

The three „Bridge dreamers“ Marcus Kirchhoff, Hans-Peter Platten and Ingo Börsch

People used to take trips to London, Pisa or Venice, but now they are also coming to Mörsdorf!

The bridge is kind of the Golden Gate Bridge of the Hunsrück

Kurzurlaube sind sexy, sagen die Tourismusexperten, die sich am Mittwoch in Bingen getroffen haben. Mal... 

Source: www.geierlay.de

Source: Rhein-Hunsrück-Newsletter from the 27th of November 2015
Public services via renewable energies at the example of the local congregation Mörsdorf

„Without the income from our wind turbines and the support of the operator Abo-Wind the bridge would have stayed a dream“

Marcus Kirchhoff, Mayor of Mörsdorf on the occasion of the opening at the 3rd of October 2015

Source: Rhein-Hunsrück-Newsletter, from the 4th of November 2015

The „Geierlay“ is the number 85 of the most favorite destinations of foreign tourists – four places ahead of the „Hofbräuhaus“ of Munich

Source: German central for tourism (DZT), Survey among 40,000 participants

The people of Kastellaun are counting more tourists

In the first half of 2015 more guests were coming

District administration of the district of Rhein-Hunsrück

The three „Bridge dreamers“ Marcus Kirchhoff, Hans-Peter Platten und Ingo Börsch
The former place of „Summer freshness“ had been revived.

Source: Rhein-Hunsrück-Newsletter, from the 4th of November 2015

170,000 visitors per year were expected.

Already 340,000 visitors had been on the bridge in the first year.

Source: www.geierlay.de

(Click here for further information)
Public services via renewable energies
The value creation is helping the communities to deleverage

60 out of 137 communities are gaining rental incomes from the wind energy

Rhein-Hunsrück has got the exceedingly fewest

**Statistic:** The budget situation in the district, its municipalities and communities is the most solid nationwide

Debts of overall community budget in 2015 (Selection)

<table>
<thead>
<tr>
<th>Sum (in Mio. Euro)</th>
<th>Change</th>
<th>Per captia</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Rhein-Hunsrück</td>
<td>60,7</td>
<td>+ 3.4 %</td>
</tr>
<tr>
<td>District of Cochem-Zell</td>
<td>117,9</td>
<td>- 3.7 %</td>
</tr>
<tr>
<td>District of Bernkastel-Wittlich</td>
<td>273,3</td>
<td>+ 2.9 %</td>
</tr>
<tr>
<td>District of Rhein-Lahn</td>
<td>228,8</td>
<td>- 5.7 %</td>
</tr>
<tr>
<td>District of Mayen-Koblenz</td>
<td>477,7</td>
<td>- 2.9 %</td>
</tr>
<tr>
<td>District of Birkenfeld</td>
<td>323,6</td>
<td>+ 5.9 %</td>
</tr>
<tr>
<td>District of Bad Kreuznach</td>
<td>357,6</td>
<td>- 3.0 %</td>
</tr>
<tr>
<td>City of Koblenz</td>
<td>412,6</td>
<td>- 4.7 %</td>
</tr>
<tr>
<td>District of Mainz-Bingen</td>
<td>185,5</td>
<td>- 8.6 %</td>
</tr>
<tr>
<td>Rhineland-Palatinate</td>
<td>12 596,3</td>
<td>+ 0.9 %</td>
</tr>
</tbody>
</table>

Information: Statistical State agency

Source: Rhein-Hunsrück-Newsletter, from the 22nd of August 2016

In the 19th century people emigrated to America, because the Hunsrück could not feed them any more.