

# Climate Community of Saerbeck

From Local Renewable Energy toward SDGs

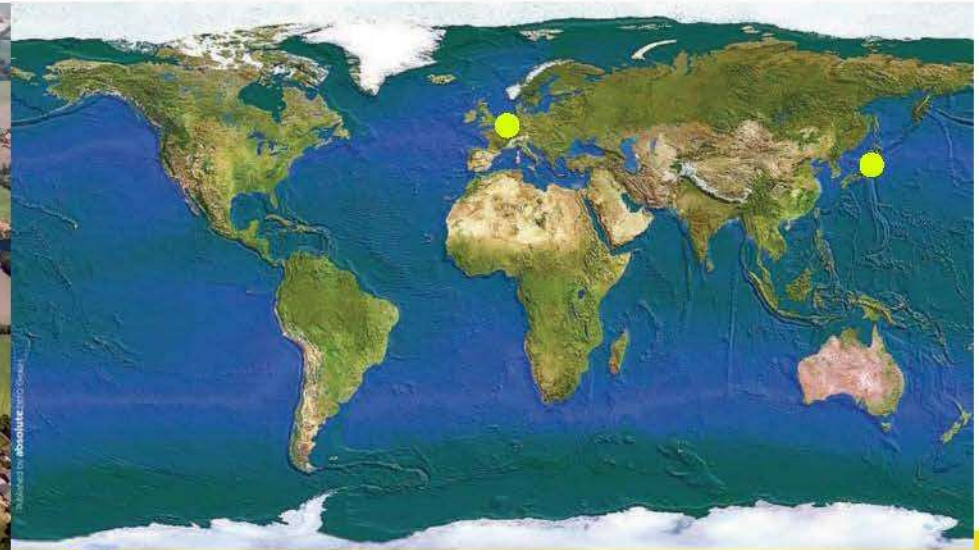
Kawasaki November 13, 2019





# Saerbeck

- small village in rural environment
- 7.200 inhabitants
- increasing population till 2030
- very good infrastructure (schools, education, active community living)
- 2.400 jobs in local industries



**SAERTEX**  
Reinforcing Non-Crimp

COMPANY | PRODUCT & TECHNOLOGY | NEWS | CONTACT

achieved through reduced weight at full strength  
**Efficiency**

**A380 AIRBUS**

NEWS	PRODUCTS	TECHNOLOGY	THE SAERTEX GROUP
<ul style="list-style-type: none"> <li>SAERTEX: current news</li> <li>Trade Fair dates</li> </ul>	<ul style="list-style-type: none"> <li>Non Crimp Fabrics - NCF</li> <li>SAERTEX multiKom</li> </ul>	<ul style="list-style-type: none"> <li>Production</li> <li>Material calculator</li> </ul>	<ul style="list-style-type: none"> <li>Our Locations</li> <li>Partners</li> </ul>

**EnviTec Biogas**

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7 AFFORDABLE AND  
CLEAN ENERGY



11 SUSTAINABLE CITIES  
AND COMMUNITIES



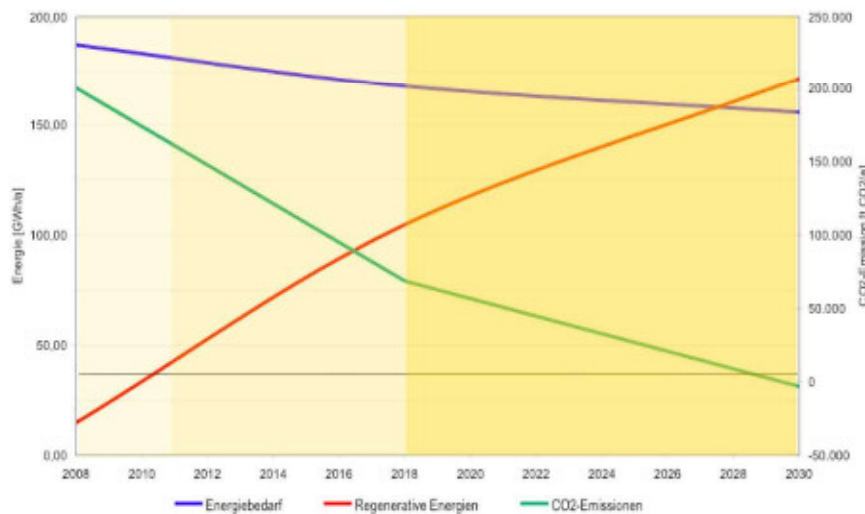
13 CLIMATE  
ACTION



## Climate Community of Saerbeck

- 10 years of work on local sustainability
- 2009: Integrated Concept for Climate Protection and Climate Adaptation
- 150 different projects from pv arrays to waste management to renewable energies
- target: to reduce the CO<sub>2</sub>- emissions to a zero level the latest in 2030
- **embedding the people of Saerbek (=7.200) since the beginning:**
  - by raising awareness (= education)
  - by doing own projects (e.g. PV)
  - by earning money (e.g. Bioenergyparc)

Energiebedarf, Anteil regenerativer Energien und CO<sub>2</sub>-Emissionen 2008 - 2030



3 charts:

energy demand (blue)

renewable energies (red)

CO<sub>2</sub>-emissions (green)



7 AFFORDABLE AND  
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8 DECENT WORK AND  
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## Bioenergyparc

- civil reuse of a former military area
- 900.000 square meters
- purchased by the City of Saerbeck
- mix of renewable energies:
  - wind
  - sun
  - biomass
- 33 MW of renewable power
- 50 Mio € of investments  
- ALL WITH LOCAL MONEY
- 80 new jobs





## ■ Bringing in People:

### The Role of Local Investments



- total invest of more than 70 Mio. € in the bioenergy parc
- 50 Mio. € are coming from locals
- **the returns will be reinvested in local projects (social, educational, climate)**
- e.g. the cooperation „Energy for Saerbeck“
  - one of the most powerful investors in the bioenergy pac
  - 400 inhabitants with a total investment of 15 Mio \$ in the bioenergy parc (pv, wind)
  - rate of return 3.5 – 5.5%



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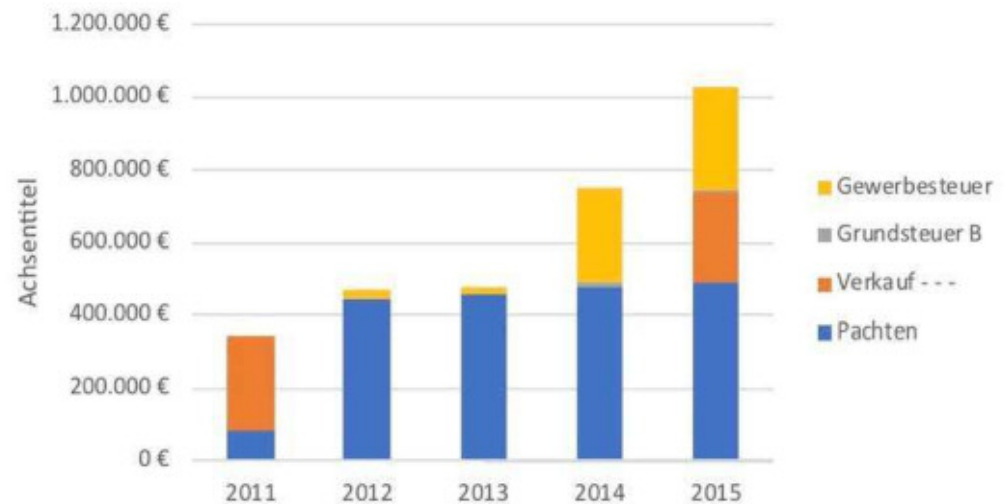
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## ■ Bringing in the City 1: The Role of Investments by the City

- income by the own wind turbine, rent and leasing revenues, taxes:  
= 6 - 8% of the yearly budget of the city of Saerbeck (without secondary effects)

### Einnahmen Bioenergiepark absolut 2011-2015



Development of Rental and Leasing Income 2010 - 2015





## Bringing in Farmers: Energy from Bio-Waste and Liquid Manure

1 biogas plant in 2011 (SaerGAS, 1 MW<sub>el</sub>)

**owned by local farmers**

1 composting plant:

digestion of all biological waste of the Kreis (= County)  
Steinfurt, 45.000 tons /year

**producing**

**a. renewable electric power and heat**

**b. fertilizer soil (12.000 tons/year)**



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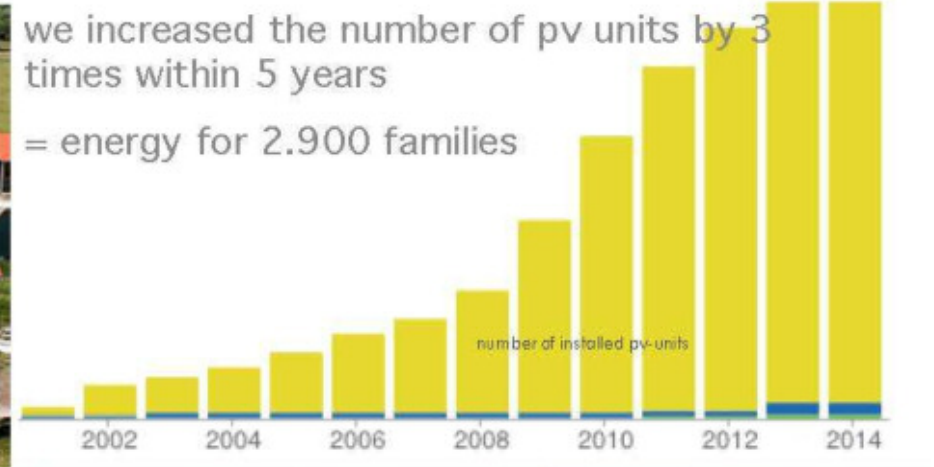


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## ■ Bringing in People 2: PV Arrays

- 2018: nearly 500 PV units of about 12,0  $Mw_{peak}$  are installed  
(only in the village on the roofs of privat buildings, farm houses and schools)





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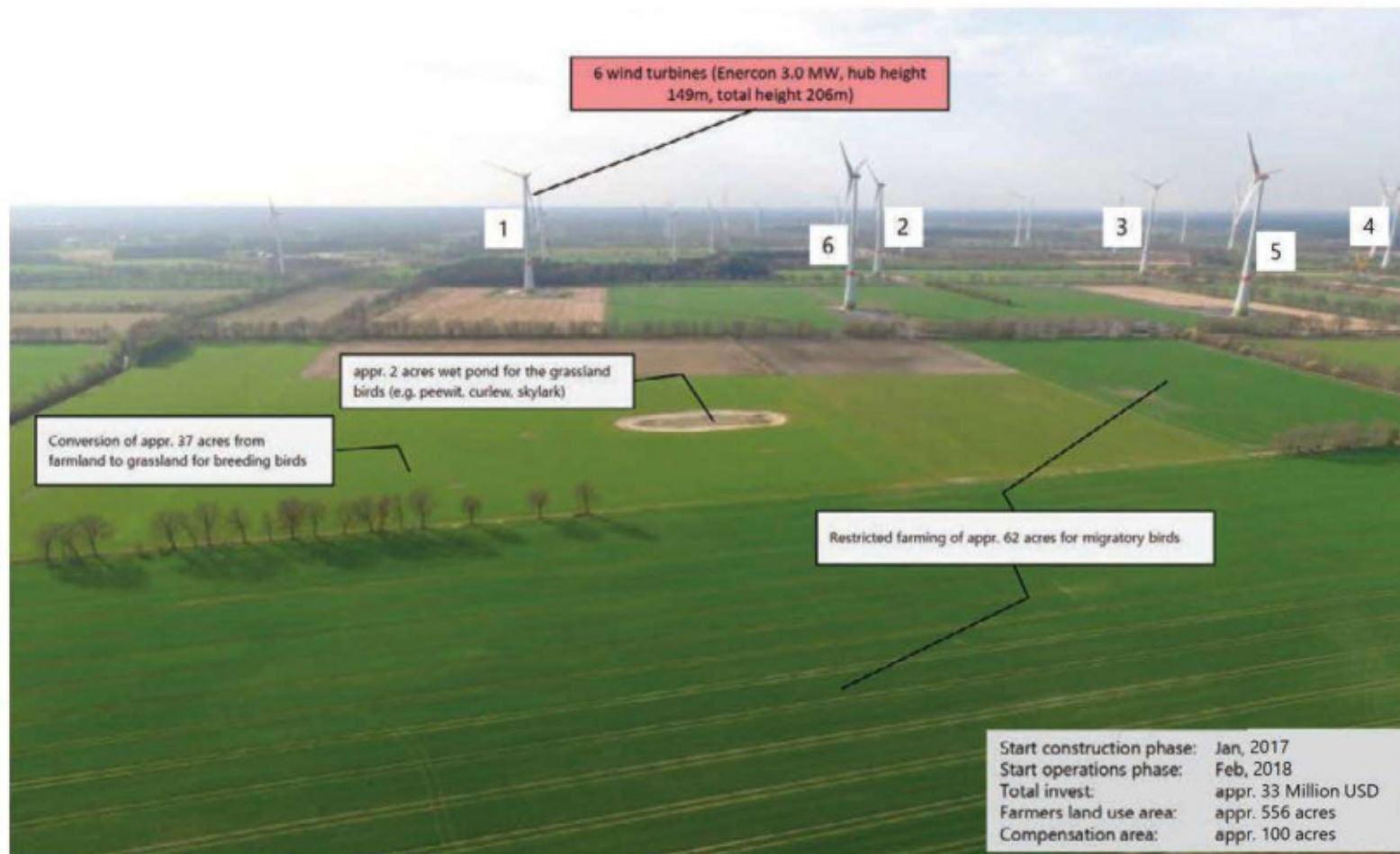


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## ■ Bringing in People 3: Windparc Sinningen

- + 6 new windturbines 2018 = 18 MW
- farmer owned



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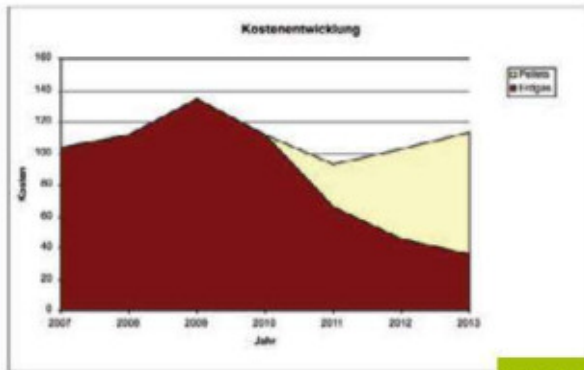
9 INDUSTRY, INNOVATION  
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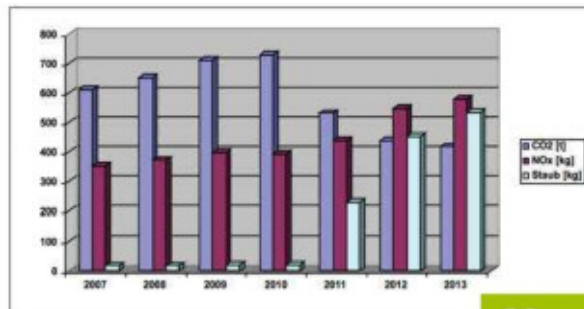
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energy costs:  
-16 %



CO<sub>2</sub>-emissions:  
- 42 %

## Bringing in the City 2: District Heating System

- central heating fed with wood (pellets) in 2010
- substitution of the former gas maintenance
- supply of 2 schools, several sport facilities, a kindergarden
- 2020: all street lights with LED

### We save

- energy (from 1.650 to 850 kW)
- money (50.000 €)
- CO<sub>2</sub> (420 tons/y)







## ■ Facing Climate Change



all spruce trees (needle tree)  
died in 2019 (bark beetle)

drought is the biggest  
challenge:

nature

drinking water (quantity and  
quality)

agriculture

40-50% less harvest in 2019



6 CLEAN WATER  
AND SANITATION



11 SUSTAINABLE CITIES  
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ACTION



15 LIFE  
ON LAND



## ■ Preserving Nature and Biodiversity



30% of the Bioenergiyparc Area is Nature Protection Area







## ■ Climate Adaptation



Space for New Nature in the Bioenergyparc





## ■ Climate Adaptation



New Trees (oaks) for the Bioenergyparc





## ■ Cooperation with Universities

- research projects (e.g. Storage)
- internships for students
- international workshops
- history and education projects





It's all about People!!  
It's all about Learning!!  
Education for Climate Protection



Making renewable energies transparent  
from Kindergardens and Schools to  
Adult Education:

Explaining how it works!  
Everybody is able to do it!







## Special Climate Education Classes



- 6 teachers
- learning stations for renewable energies
- practical work and investigating
- roundabout 90 classes/year = more than 3.000 students
- improving our work by research projects







# Energy Summercamp 2020: USA – Japan – Germany

## 2020 INTERNATIONAL ENERGY CAMP

in Saerbeck, Germany

July 25 to August 8



The Morris Model is looking for 10 enthusiastic high school students to join 10 students from Fukushima, Japan and 10 from Saerbeck, Germany at the first ever International Energy Summer Camp.

For two weeks, students from 3 cultures will live, learn, and work together on projects focusing on climate protection and sustainability. All instruction will be in

**\*\*\* Apply by Dec. 1<sup>st</sup> \*\*\***

Fill out the application at:  
<https://z.umn.edu/energycamp> or QR code above.

We will select the 10 participants based on your application essay. Most costs will be covered by a German grant—this will cost you no more than \$300!!

Contact: Eric Buchanan with questions: 589-1711



Morris Model

The City of Morris is one of five communities across the state that is participating in the Climate Smart Municipalities (CSM) program through the University of Minnesota. The CSM program pairs Minnesota communities with communities in North Rhine Westphalia, Germany. Morris is partnered with Saerbeck, Germany. Saerbeck, a small, rural community like Morris, is a leader in renewable energy and energy efficiency and was the first winner of the prestigious European Energy Prize. The City of Morris, the University, county, hospital, the public school system, and area businesses are all involved in what has been labeled, the Morris Model. The Morris Model team aspires to learn from and follow Saerbeck's lead in the areas of climate protection and sustainability.

Saerbeck is offering an amazing opportunity for ten students and two adult chaperones from our community to participate in an international energy camp during the summer of 2020.

## 2020 INTERNATIONAL ENERGY CAMP

### Details

Where: Saerbeck, Germany



When: Fly to Germany on Saturday, July 25, 2020 (flight times TBA)  
Energy Camp starts Monday, July 27  
Energy Camp ends Friday, August 7  
Fly back to Minneapolis on Saturday, August 8, 2020

#### Accommodations:

All students and chaperones will stay together in a youth hostel in a town about 5 miles outside Saerbeck ([www.tecklenburg-jugendherberge.de](http://www.tecklenburg-jugendherberge.de)). There will be an onsite supervisor available 24/7 during the camp. All transportation in Germany will be provided.

#### Costs:

A German grant will cover most participant costs. Participants will only need to cover about \$300 for the entire trip. Participants will also need to get a passport which costs \$145 and can take up to 2 months.

#### Program:

Students will exchange cultural information and go on excursions to interesting places and cities in the region (e.g. Klimahaus Bremerhaven, City of Münster). Students will participate in workshops like building a solar PV/charging station over a parking lot and produce media about their projects including video and theater. The overarching aim is mutual learning and joint action for climate protection and sustainability with international collaboration. This will be an immersive, once in a lifetime experience. Applicants will be chosen based on their answers to the application questions and notified by January 1st, 2020.







# National and International Know-How-Transfer





more than 100.000 visitors = tourisme

4

QUALITY  
EDUCATION



5

GENDER  
EQUALITY



17

PARTNERSHIPS  
FOR THE GOALS





## National and international Networks



Gv. Uchibori - Mayor Roos - Mayor Kato

## National and international Networks



Mayor Roos

City Manager Blaine Hill



# National and international Networks

16 PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS



17 PARTNERSHIPS  
FOR THE GOALS



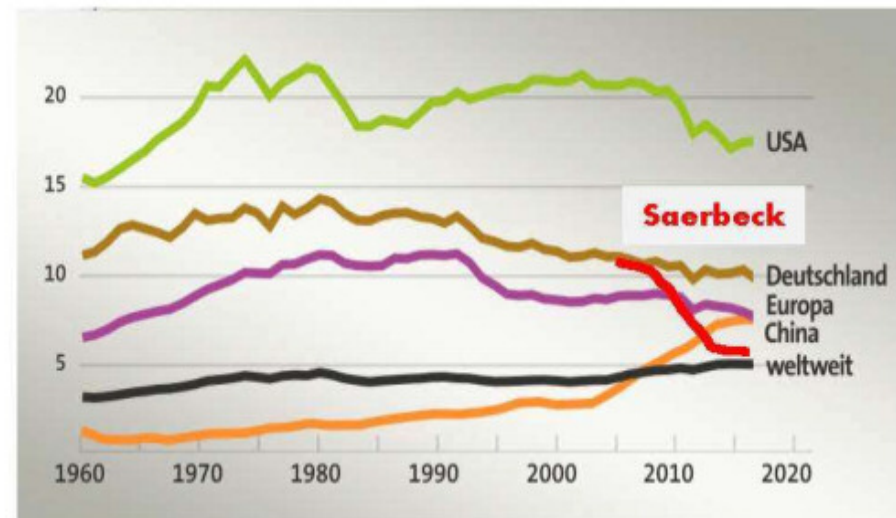
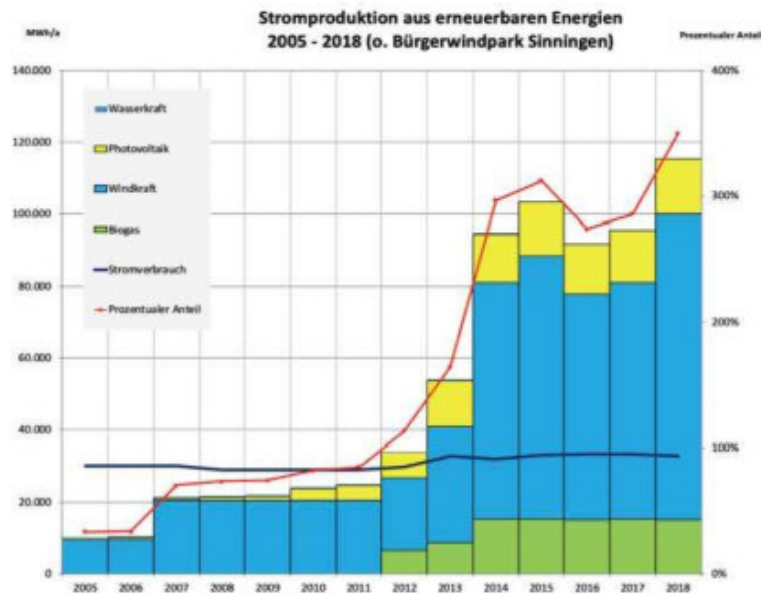
Mayors of Al Ayoun - Deir Alla - Busaira





## ..... Ten Years After

- we reached our aim of self-producing our energy on base of renewable energies already in 2013 and not in 2030
- the production of renewable energies in the biornenergyparc will reach nearly the double of the local need (210%)
- we reduced the level of GHG-emission from 9,6 to per inhabitant (2010) to 5,5 to/inhabitant (2014)





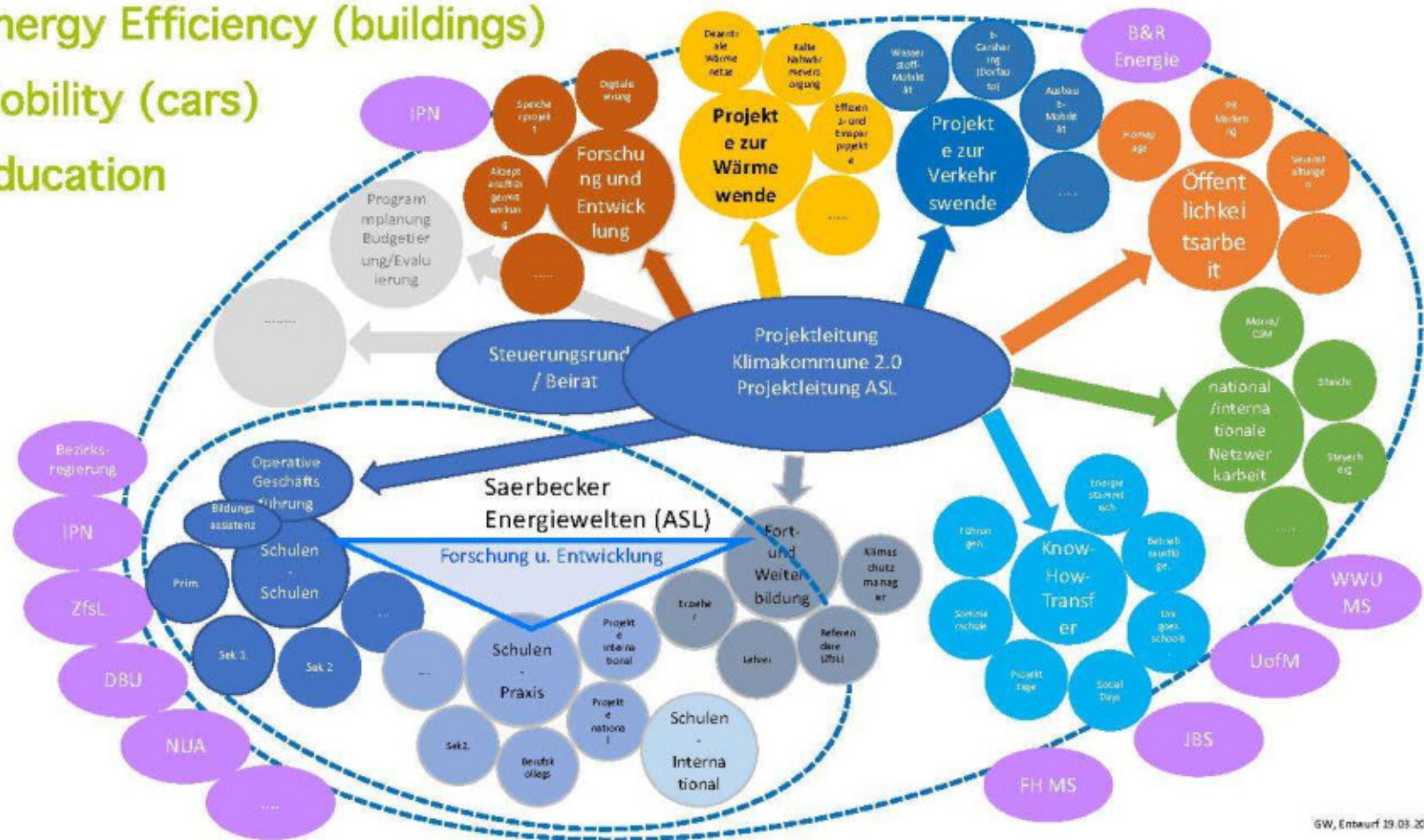
# What still needs to be done: Klimakommune 2.0

3 main tasks till 2030:

Energy Efficiency (buildings)

Mobility (cars)

Education



GW, Entwurf 19.03.2018







Thank You Very Much  
For Your Attention!