Forschungszentrum für Umweltpolitik

Freie Universität Berlin

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100% Renewable Energy Regions in Germany

The case of the District of Ahrweiler

Presentation at the 20th REFORM Group Meeting 2015: *On the Way to COP 21 in Paris - Climate Protection Policy, Carbon Markets and Sustainability*

Salzburg, 02-09-2015

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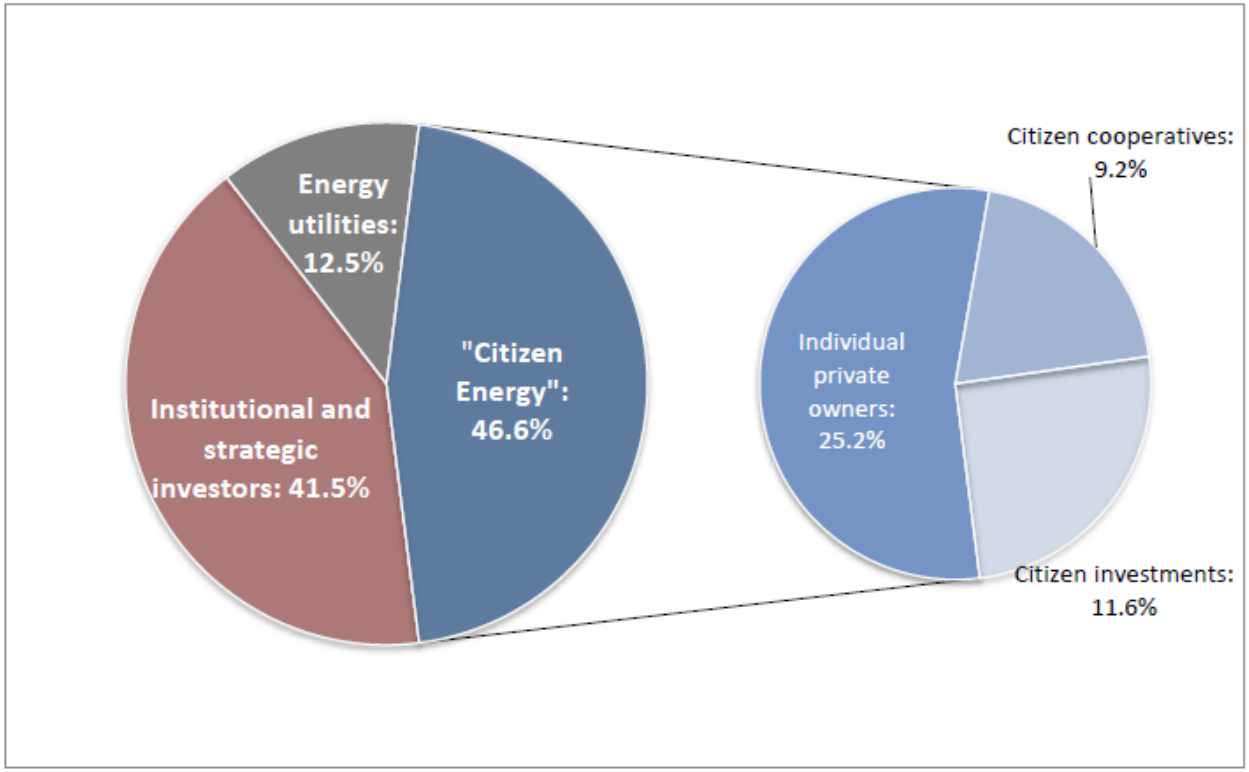
Decentralized Renewable Energy Development in Germany

- Strong bottom-up push for renewable energy (RE) deployment
- Decentralized experimentation with RE governance as key driving force in the *Energiewende*
- Expansion of RE has been largely fostered by decentralized actors in “citizen energy” projects at the local level

Ownership Structure of Newly Installed RE capacity in Germany (2012)



Own illustration based on: Trendresearch, Leuphana Universität Lüneburg (2013)

Local Governments have Advocated Decentralized RE Deployment

- In particular municipalities and districts in rural areas have actively supported local RE initiatives
- Motivations: climate protection, increased local tax revenues, local added value & boosting local employment
- Diverse policy measures
- Ambitious target setting and networking

www.kommunal-erneuerbar.de

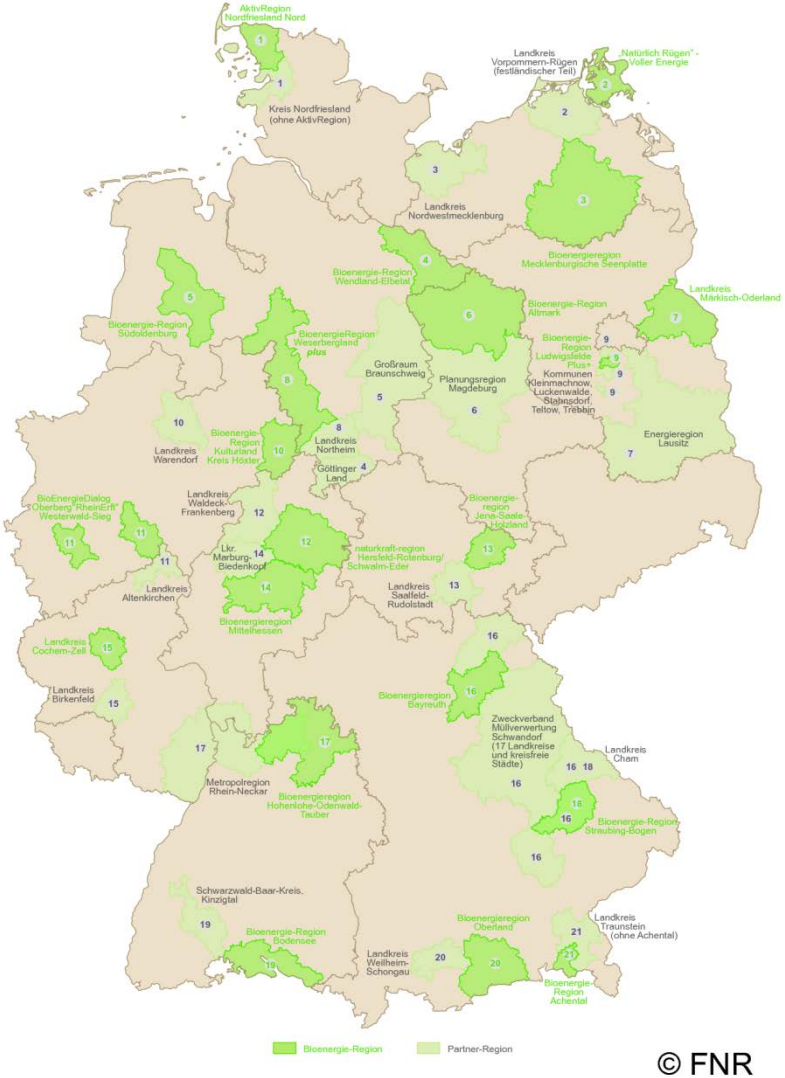
‘Bioenergy Villages’ Initiative

- 119 advanced Bioenergy Villages (green)
- 53 Bioenergy Villages ‘on the way’ (blue)
- Target: Provide majority of local electricity and heat supply via biomass energy

http://www.wege-zum-bioenergiedorf.de/bioenergiedoerfer/

‘Bioenergy Regions’ Program

- 21 advanced Bioenergy Regions (green)
- 28 ‘Partner Regions’ (light green)
- Target: Promotion of local and intercommunal (regional) bio-energy networks



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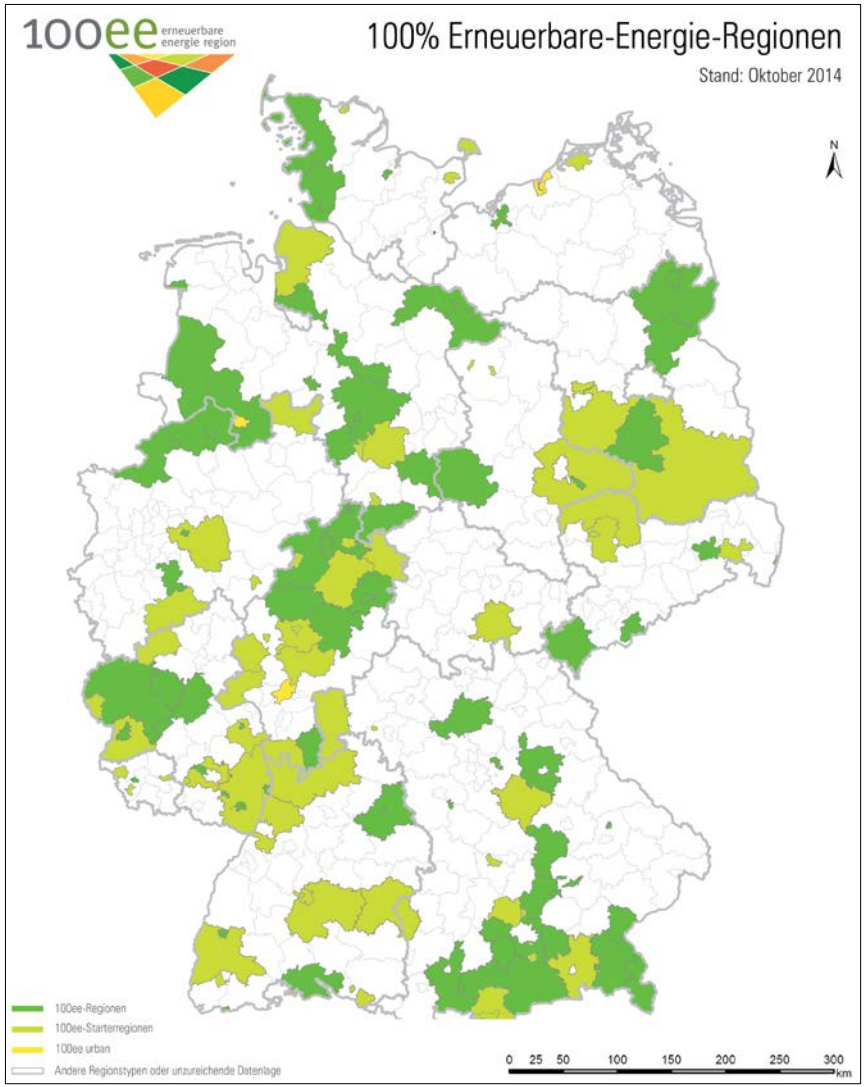

http://www.100-ee.de/

- 100% RE Regions movement in Germany
  - 87 advanced 100% RE Regions (dark green)
  - 59 'Starter Regions' (light green)
  - 3 urban 100% RE regions (yellow)
  - 149 regions are home to 25 million inhabitants (about 31% of Germany's total population) and cover an area of about 130,000 km^2 (about 36% of Germany's total land mass)
  - Target: 100% RE electricity supply (on an annual basis)

Project Enahrgie - Sustainable Land Use And Energy Supply At The Municipal Level (2015-2019)

- Task: Develop energy concept for the 100% RE Region of Ahrweiler which is transferable to other regions
- Inter- and transdisciplinary project team: eight research institutes, plus local stakeholders

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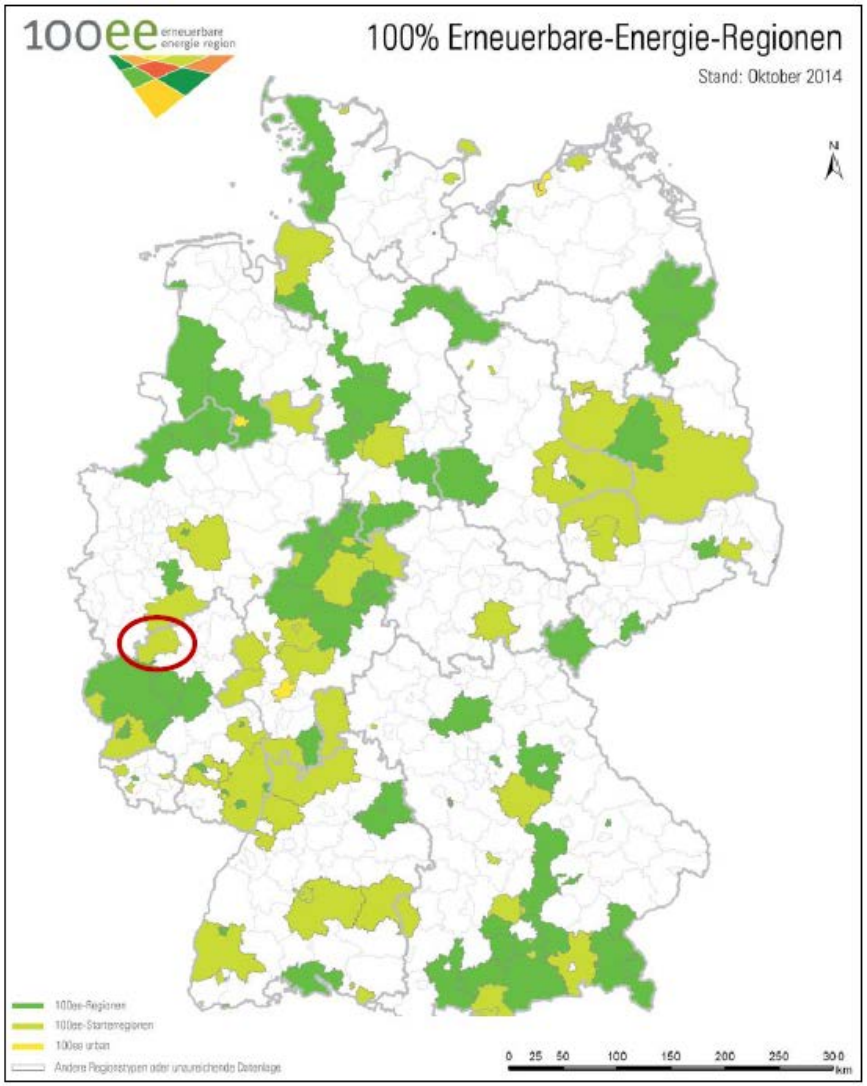


- 100% RE 'Starter Region' Landkreis (district) Ahrweiler
  - Size: 787 km^2
  - Inhabitants: 126,000 (2013)
  - 74 municipalities
  - Official target: 100% RE electricity (on an annual basis) by 2030
  - Status quo: about 10% RE electricity; mainly wind (50%) and solar (44%), plus some biomass power (5%)
  - No specific targets for heating and transport

http://www.100-ee.de/

PROJECT ENAHRGIE - SUSTAINABLE LAND USE AND ENERGY SUPPLY AT THE MUNICIPAL LEVEL (2015-2019)

- Governance Challenges (I)
  - Local conflicts
    - Land-use conflicts
    - Unequal distribution of costs and benefits
    - Lack of coordination between policy levels, e.g. on expansion targets and priority areas for RE
  - Ahrweiler selected as ‘deficient’ case with high potential for local conflicts

source: EA European Academy GmbH

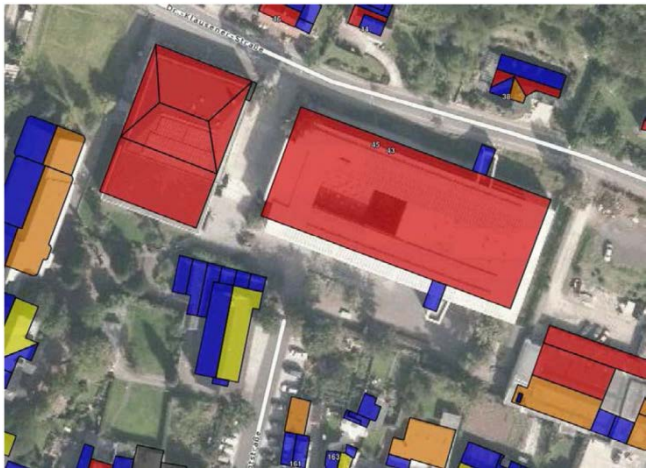
PROJECT ENAHRGIE - SUSTAINABLE LAND USE AND ENERGY SUPPLY AT THE MUNICIPAL LEVEL (2015-2019)

- Governance Challenges (II)
  - Reform of support scheme EEG
    - Introduction of volume-based auction system by 2017
    - Debate about potential discrimination of smaller actors' initiatives, such as citizen energy projects and cooperatives
  - Ongoing energy market reform: increasing focus on flexible demand and supply management
    - 100% RE Regions need to extend their focus beyond the mere installation of additional local RE capacity and (re)consider their role in the overall energy system

source: EA European Academy GmbH

Project Enahrgie - Sustainable Land Use And Energy Supply At The Municipal Level (2015-2019)

- Horizontal and vertical integration of decentralized RE deployment as the way forward
  - Participatory approach key to addressing local conflicts
  - Focus on system integration of decentralized RE deployment
  - Experimentation with flexible options, such as load and demand management, power-to-heat, power-to-gas, storage, smart grids and smart meters
  - Strengthening networking/lobbying with governmental institutions at national and subnational policy levels



Source: Kreis Ahrweiler (2014)

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Many Thanks for Listening!

Questions? Feedback?
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