

Landwirtschaftliche Rentenbank

Perspectives of Biogas and Biomethane

April, 2020



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1. Landwirtschaftliche Rentenbank

2. Perspectives of Biogas

3. Rental Prices for land

4. Promotional Lending

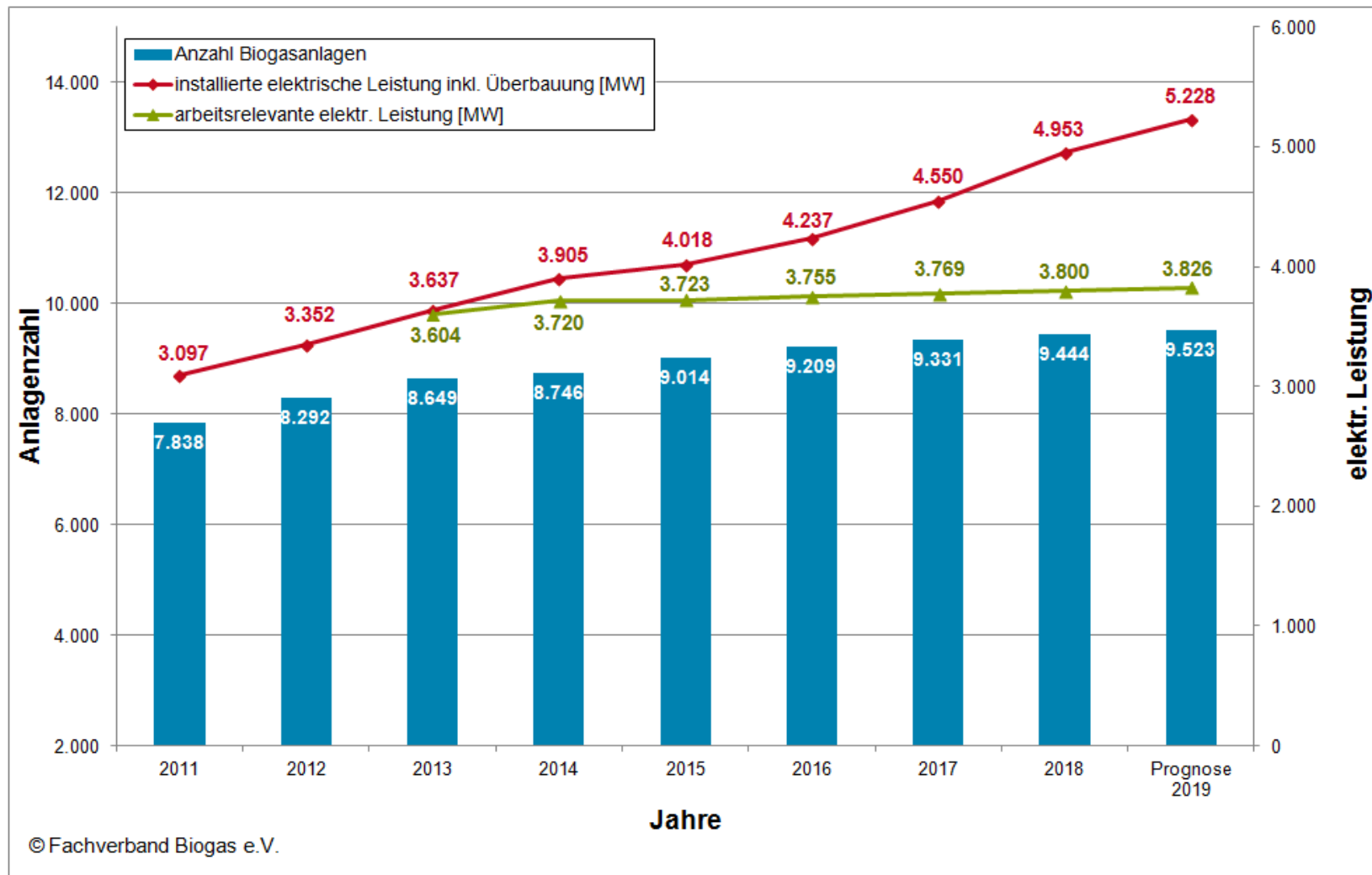


- Corporate organization: Public law institution
- Established: May 11, 1949
- Located: Frankfurt am Main
- **Corporate objectives: Promotion of the agricultural sector and rural areas**
- Refinancing institution
- Total assets 2019: EUR 90.9 billion
- Employees: 302
- Promotional Lending 2019: EUR 10.6 billion





Development of the number of biogas plants and the total installed electric output in megawatt in Germany



Flexible, storable and environmentally beneficial

- With an amount of about 59% biomass is the most important renewable energy source
- About 9,500 biogas plants in Germany with a total installed electric output of more than 3,800 megawatt
- Power generation from biogas plants is controllable and can be demand-oriented (in contrast to photovoltaic and wind power)
- High discrepancies in profits and losses of biogas plants
- Great variability in the utilized substrates
 - Excrements
 - Energy Crops
 - Agricultural by-products
 - Vegetable waste
 - Residential and industrial waste





Agricultural background



Waste and waste water treatments



Outside investors

- Photovoltaics: ~ 5 ct/kWh
 - Decentral
- Onshore wind energy: ~ 5,5 ct/kWh
 - Favoured regions
 - Central
- Offshore wind energy: ~ 8,5 ct/kWh
 - Central
- Biogas: 10-15 ct/kWh
 - Decentral
 - **Benefit of flexible power production**, heat use and storage or production of biomethane
 - Manure and waste treatment facilities

*1: Stromgestehungskosten Erneuerbare Energien, Fraunhofer ISE, March 2018

- New biogas plants in Germany either biomethane production or use of manure
- For existing installations there are chances by investing in
 - CHP units and gas tanks and therefore the transition to **a flexible electricity generation** (premium payment for flexibility, additional revenues from EPEX Spot SE)
 - **Microgas networks** (additional premium payment for direct sales)
 - **Biomethane production**

CHP = Combined Heat and Power
EPEX Spot SE = European Power Exchange



Still rising

Pachtpreisentwicklung landwirtschaftlicher Flächen in Deutschland

- in Euro je Hektar -

	Ackerland	Dauergrünland	Insgesamt
1991	149	129	141
1995	160	118	147
1999	173	119	158
2003	193	121	174
2007	205	123	183
2010	230	130	204
2013	277	153	243
2016	328	175	288

Quelle: Statistisches Bundesamt

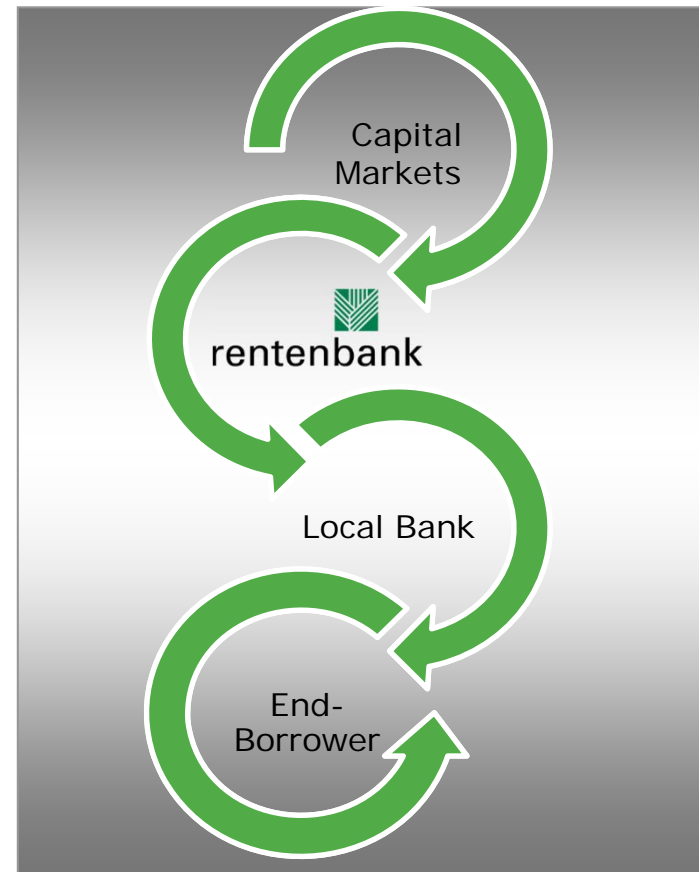
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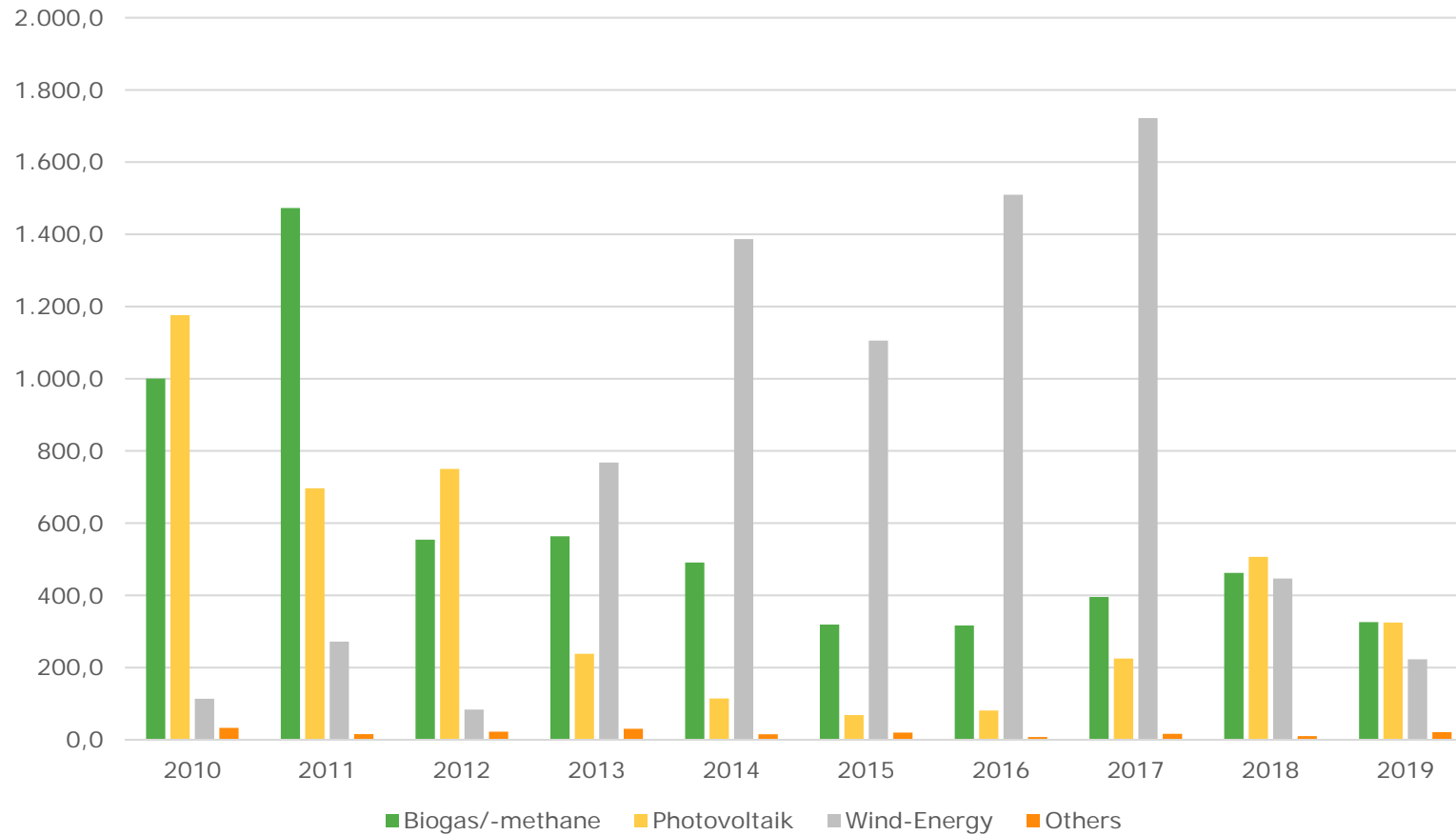
Special Promotional Loans: Local banks take credit risk of borrower, Rentenbank provides liquidity with low interest

- Rentenbank raises funds in capital markets
- Local banks grant loans to the end-borrower. They assess and bear the credit risk for an adequate margin. These loans are refinanced by Rentenbank and local banks assign credit claim against the end-borrower to us. Hence, local banks do not bear any liquidity risk. Rentenbank holds collateralized claims against local banks and does not bear any end-borrower default risk.

➔ Rentenbank provides long-term credit for agriculture and rural areas. The lending process ensures that the end borrower gets the promotional benefit



Renewable Energies (in Mio. EUR)



Landwirtschaftliche Rentenbank

Promotional Loans for Investments and Commodities

- Long-term loans, usually 15-20 years
- Fixed interest rates up to 10 years
- Favorable interest rates: TOP interest rates for investments in biogas plants
- Lean and simple granting (same-day processing of loan applications)
- Risk-adjusted interest system



Thank you for your attention!

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- Biogas projects are characterised by high specific costs
- High portion of costs are feedstock and labour costs → decide on success or failure
- In contrast to photovoltaic and wind energy there is a professional expert needed for the operation and maintenance of the plant
- Different requirements respective to the abundance of resources and technical facilities necessitate **special knowledge** regarding the valuation of financing options



