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# Razem dla Biogazu

# BIOGAS DEVELOPMENT IN POLAND

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Sylwia Koch-Kopyszko



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# UPEBI – WHO WE ARE

- ❑ **The Union of Producers and Employers of Biogas Industry (UPEBI)** - association of 50 members (companies) established in 2012 in order to integrate the biogas industry in Poland and act together for the benefit of the biogas sector in our country.
- ❑ Our motto **TOGETHER FOR BIOGAS** because every day we fight for better conditions of functioning of the biogas industry and do our best to ensure that legislation and other regulations are favorable for our industry.
- ❑ **We promote the biogas industry and conduct trainings** to increase public knowledge about the possibilities of biogas production and benefits connected with its use as a renewable energy source.
- ❑ Member of [European Biogas Association EBA](#)
- ❑ Partner in [REGATRACE project](#)



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# DEVELOPMENT OF BIOGAS MARKET IN PL

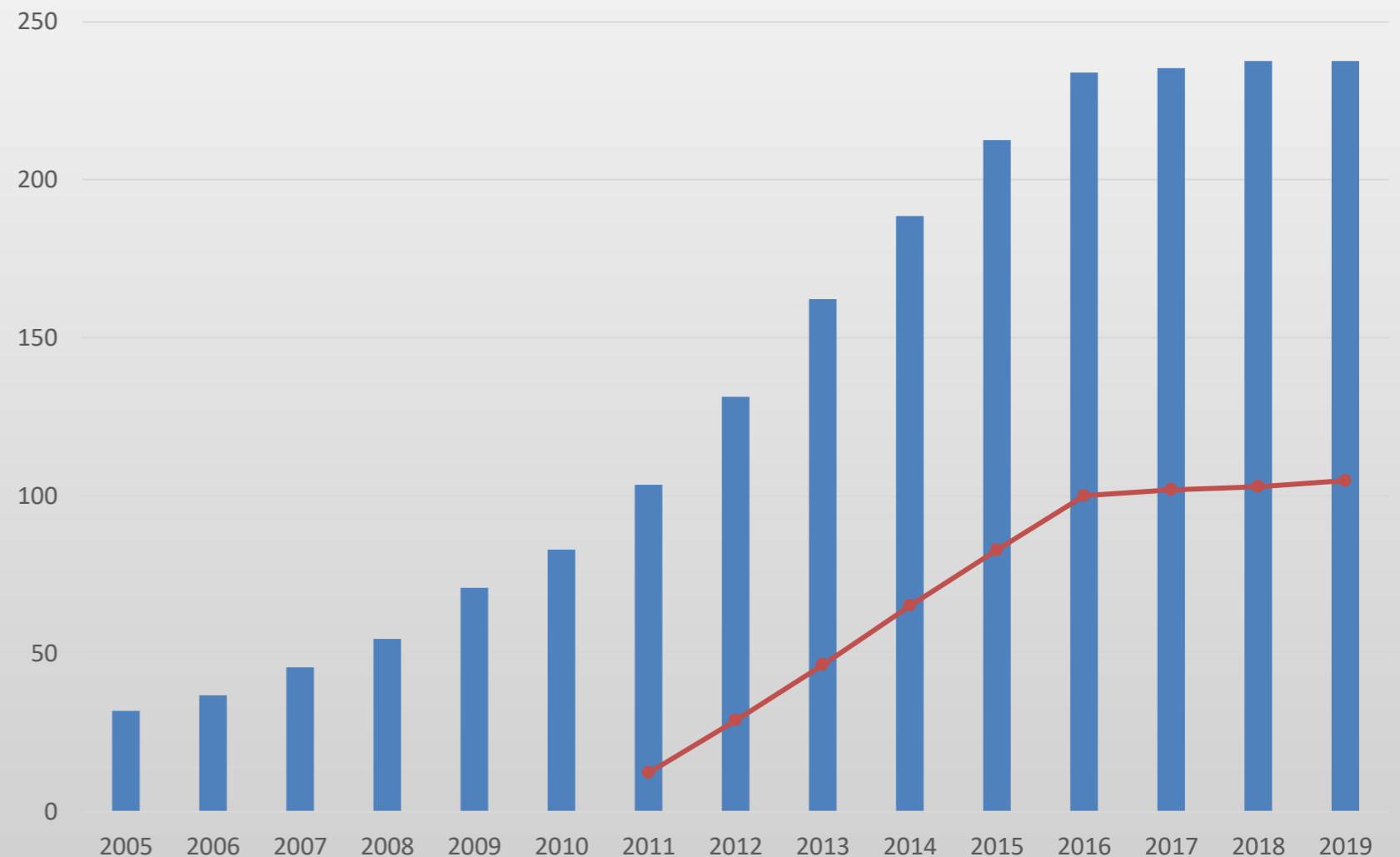
Total no. of biogas plants:  
**303** with installed capacity  
of **238 MW**

**WWTP: 109** with installed  
capacity of **67 MW**

**AGRI: 98** with installed  
capacity of **103 MW**

**Landfill: 97** with total el.  
capacity of **68 MW**

**Other: 3** with capacity  
**2 MW**



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source: URE (Polish Energy Regulatory Office,) December, 2019

# BIOGAS POTENTIAL IN POLAND

## 1. Landfill

- about 700 landfills have no RES installations → approx. **421 million m<sup>3</sup>** methane released into the atmosphere every year
- production potential: approx. **90 MW**

## 2. Sewage

- theoretical maximum potential of Polish sewage sludge:
  - approx. **526,5 million m<sup>3</sup>** biogas/year
  - approx. **150 MW**

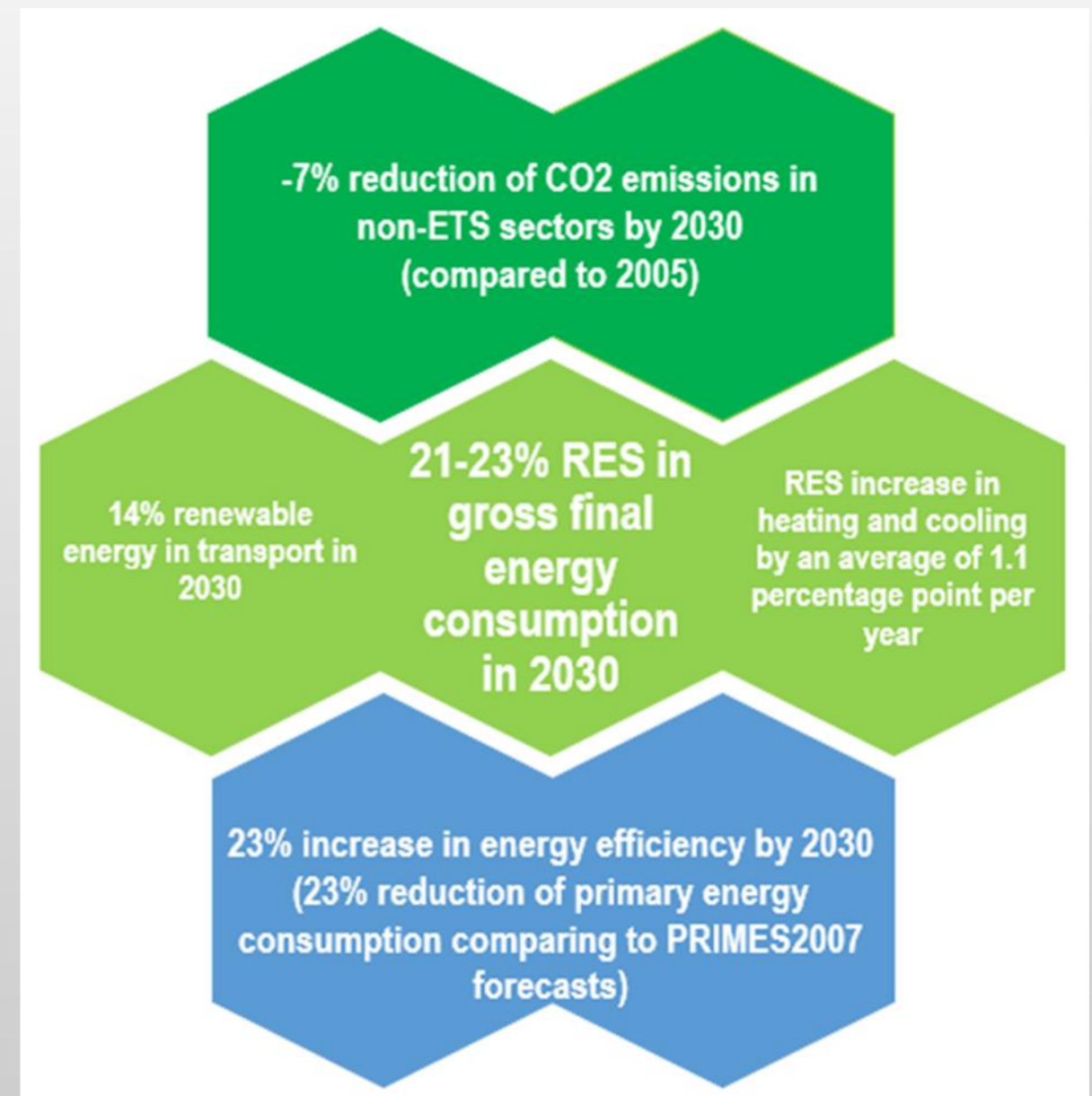
## 3. Agriculture

- theoretical potential of raw materials: **8 billion m<sup>3</sup>** biogas
- real potential of by-products of agriculture and agri-food industry: **1,7 billion m<sup>3</sup>** biogas/year
- potential of municipal waste: **1,5 billion m<sup>3</sup>** biogas/year

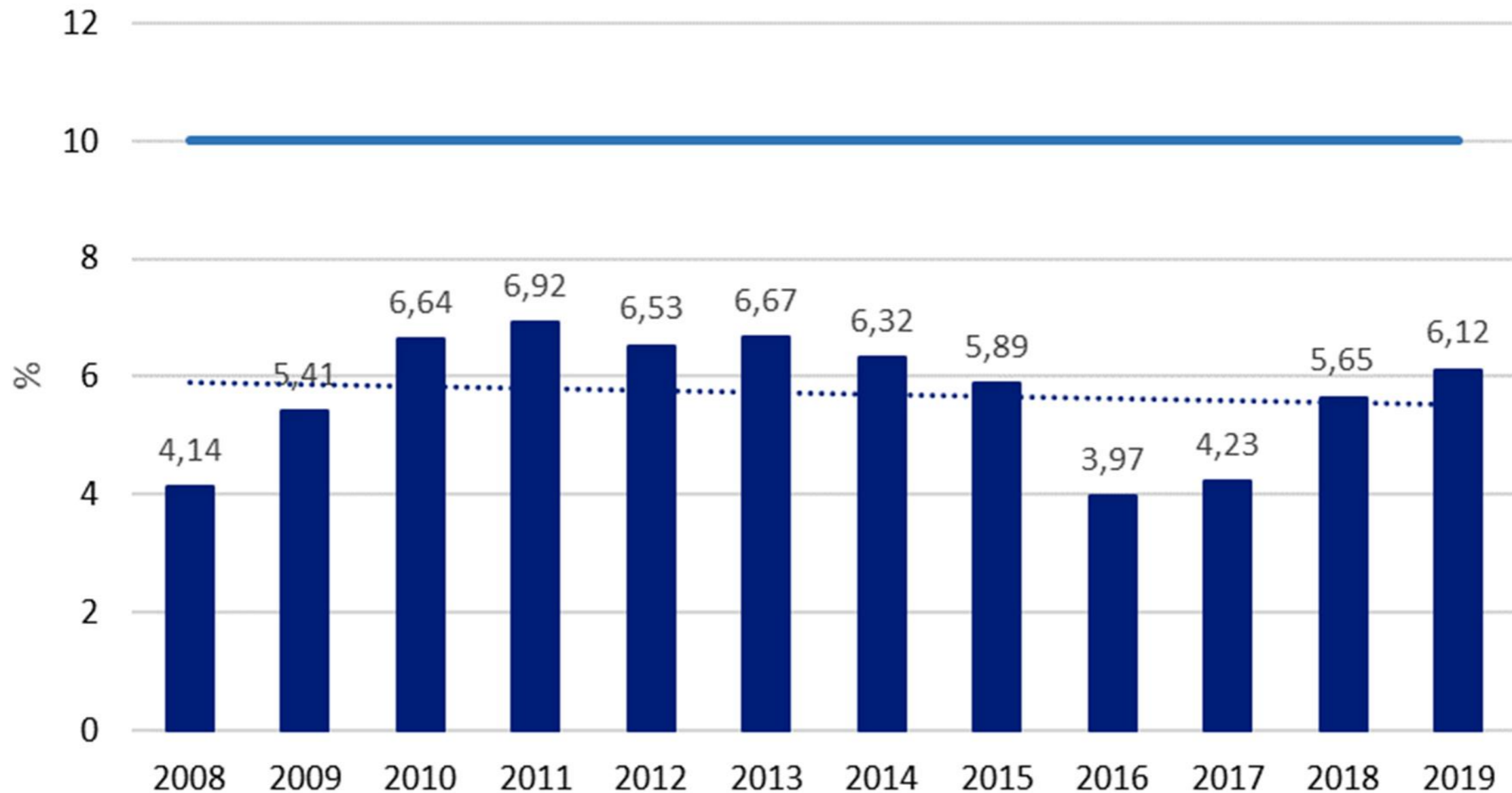
# NATIONAL ENERGY & CLIMATE PLAN – 2021-2030

Poland's climate and energy targets till 2030 (NECP PL)

According to the approved **Polish Energy Policy PEP 2040**, 10% of gaseous fuels transported via gas grids should be renewable and low-emission ones in 2030.



# SHARE OF RES IN TRANSPORT

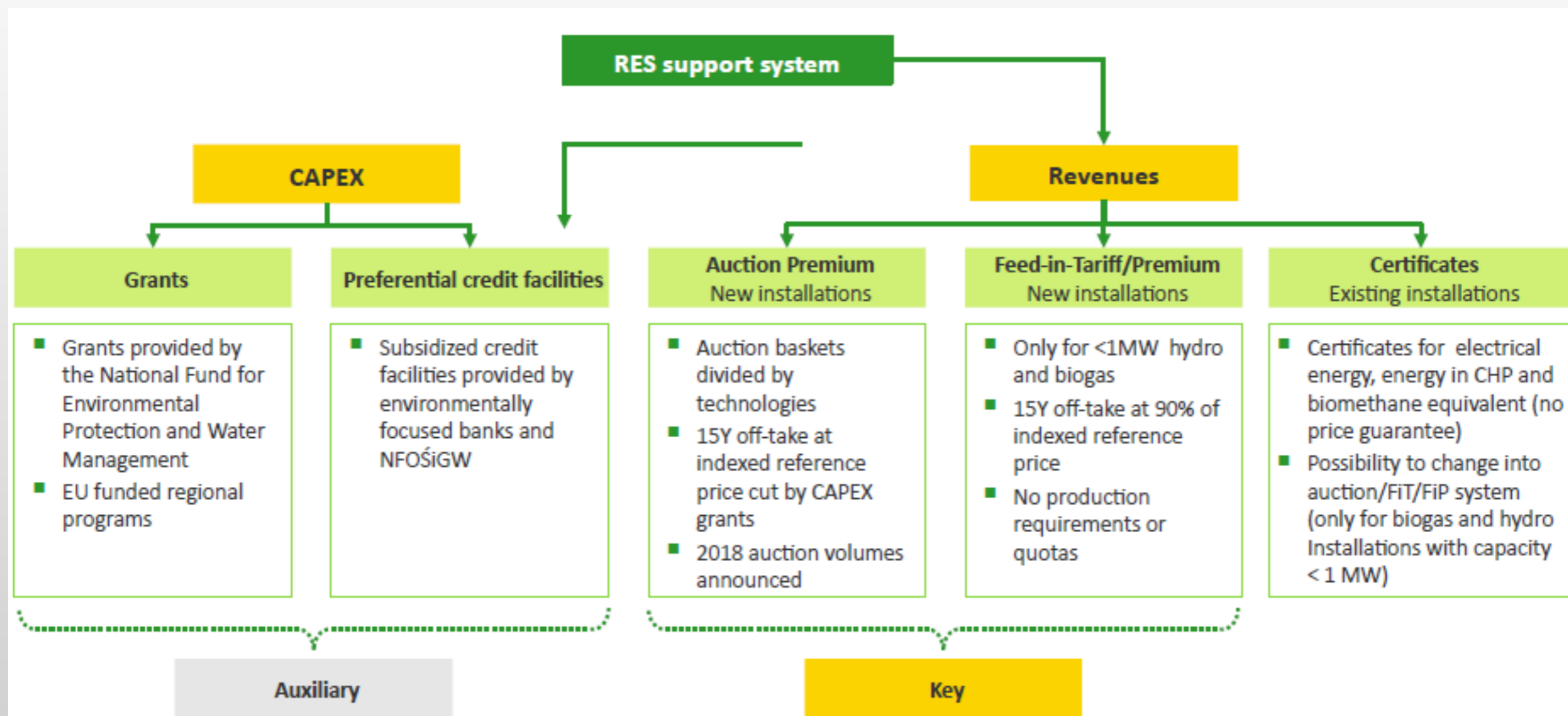


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Source: Energy from RES in 2019. Statistics Poland, 2020, [www.gov.pl](http://www.gov.pl)



# SUMMARY OF RES SUPPORT SYSTEM IN POLAND





# KEY DIFFERENCES BETWEEN RES SUPPORT SYSTEMS

	<b>Auction premium operating system</b>	<b>FiT/FiP proposed new system</b>	<b>Certificates legacy support system</b>
<b>Applicability</b>	<ul style="list-style-type: none"> <li>All new RES including existing RES which can be joined to the auction system</li> </ul>	<ul style="list-style-type: none"> <li>Only for &lt;1 MW hydro &amp; biogas installations</li> </ul>	<ul style="list-style-type: none"> <li>All RES with COD before June 2016</li> </ul>
<b>Prices</b>	<ul style="list-style-type: none"> <li>Auctions with separate technology baskets and indexed reference prices – biogas has highest support level</li> </ul>	<ul style="list-style-type: none"> <li>90% of indexed reference price for a given technology</li> </ul>	<ul style="list-style-type: none"> <li>Black energy – wholesale price</li> <li>Certificates of origin (blue for biogas)</li> <li><u>Full price risk – black energy and certificates</u></li> </ul>
<b>Offtake guarantee</b>	<ul style="list-style-type: none"> <li>Energy is sold on free market, negative difference between actual price and auction price settled by ZR S.A.*</li> </ul>	<ul style="list-style-type: none"> <li>&lt;0.5 MW guaranteed and settled by obliged seller</li> <li>0.5-1 MW settled by ZR S.A.</li> </ul>	<ul style="list-style-type: none"> <li>Official seller is obliged to purchase all electrical energy injected to the grid</li> </ul>
<b>Support period</b>	<ul style="list-style-type: none"> <li>15 years (not longer than 2035)</li> </ul>	<ul style="list-style-type: none"> <li>15 years (not longer than 2035)</li> </ul>	<ul style="list-style-type: none"> <li>15 years (not longer than 2035)</li> </ul>
<b>Restrictions &amp; penalties</b>	<ul style="list-style-type: none"> <li>Formal requirements to participate in auctions</li> <li>Penalties for not meeting declared vol.</li> </ul>	<ul style="list-style-type: none"> <li>Formal requirements to participate in system</li> <li>No penalties</li> </ul>	<ul style="list-style-type: none"> <li>Formal licensing process</li> <li>License is issued to an entity rather than to renewable energy source</li> </ul>

\*Zarządca Rozliczeń S.A. – public operator of RES settlements

**Operating auction system provides stability (guaranteed offtake and indexed price for 15Y) as well as limits competition while FiT/FiP sets the minimum floor price for <1 MW biogas**

# AUCTION SYSTEM AND TECHNOLOGY BASKETS

Technology baskets	
Basket 1	<ul style="list-style-type: none"> <li>■ Landfill biogas</li> <li>■ Sewage treatment plant biogas</li> <li>■ Other biogas</li> <li>■ Dedicated plant / high efficiency plant for biomass or hybrid</li> <li>■ Dedicated multi-fuel plant</li> </ul>
Basket 2	<ul style="list-style-type: none"> <li>■ Hydroenergy</li> <li>■ Geothermal</li> <li>■ Wind (on sea)</li> </ul>
Basket 3	<ul style="list-style-type: none"> <li>■ Agri biogas</li> </ul>
Basket 4	<ul style="list-style-type: none"> <li>■ Wind (on land)</li> <li>■ Solar</li> </ul>
Basket 5	<ul style="list-style-type: none"> <li>■ Hybrid</li> </ul>

Auction system
<ul style="list-style-type: none"> <li>■ Auction prequalification requirements – ready to build projects with grid connection and building permit</li> <li>■ Only 80% of total volume of bidding offers may be granted support, however, unused volumes from auctions dedicated to certain technology cannot be assigned to auctions of different technology but instead second auction should be carried out in that year</li> <li>■ More favorable approach to maximum state aid levels – operational aid received is not included</li> <li>■ Under auctioning system, for &gt;0.5 MW installations, energy may only be sold at Polish Power Exchange or Balancing Market</li> <li>■ Penalty for not meeting declared production level (below 85%) in 3 year period is not imposed in case of event of force majeure or major installation failure or breakdown</li> <li>■ Biogas installations should be built within 36 months as of winning the auction and in case interconnection agreements deadlines are shorter than that date, they should be adjusted to enable project implementation</li> <li>■ <b>2018 auction volumes for biogas installations &lt;1 MW has been set for 11 700 000 MWh (in a 15 year period) which translates to approx. 95-97.5 MW</b></li> </ul>



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# DRIVERS FOR BIOMETHANE DEVELOPMENT

- ❑ **Problem with decarbonisation of transport**
- ❑ **Difficulties with fulfilment of EU requirements concerning share of RES in transport in RED (10% in 2020) and RED II (advanced biofuels)**
- ❑ Uncertain support system for "green energy" - the use of biomethane in transport or injection to grid may be an interesting alternative for biogas plants
- ❑ Changes in waste management - a chance to obtain energy raw material (circular economy)
- ❑ **Agro food sector, especially poultry industry (lot of difficult but promising substrates) are interested in usage of green gas (both from grid and direct in transport) – reduction of GHG emissions from their production**
- ❑ Energy and fuel sector are planning investment in g-mobility and e-mobility

# WHY THERE ARE NO BIOMETHANE PLANTS IN POLAND?

- Barriers (examples):
  - ✓ Promotion of only CHP for biogas
  - ✓ Lack of support system
  - ✓ Problems with gas grid connection
  - ✓ Lack of education

## What is needed?

- Transparent and reliable legislation
- Support and incentive scheme
- Close co-operation with gas network operators
- Promotion and raising awareness among decision-makers and potential investors
- Education on all levels

# COALITION FOR BIOMETHANE

- ❑ established in 2019 by UPEBI and KIB (Polish Chamber of Biofuels)
- ❑ aimed at practical launch of biomethane production in Poland
- ❑ to diagnose the formal and practical barriers
- ❑ to develop favorable legislative and assistance solutions



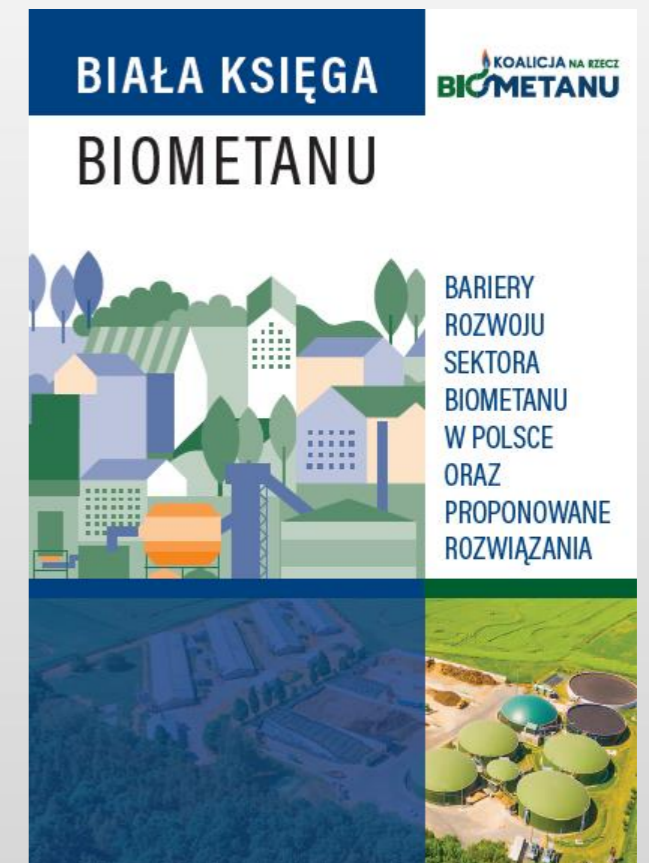
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# WHITE PAPER ON BIOMETHANE

The White Paper on Biomethane is a bottom-up initiative of the biogas and biofuels industry, the aim of which is to develop a strategic document that will be a road map to action for the administration and potential investors in the "biomethan plant".

Available in Polish on [UBEBI website](https://www.ubebi.org.pl/)





# BIOMETHANE – PLANNED CHANGES IN LEGISLATION

## Areas of changes in the Energy Law (chosen):

- Change in the definition of gaseous fuel
- Quality parameters for biomethane - change of system regulation
- Distribution tariffs - enabling inclusion in justified costs of the functioning of the gas system operator (and inclusion in the tariff) - costs of operation and functioning of the installation, financed by a biomethane producer as part of the connection fee,
- Process of issuing connection conditions

## Areas of changes in the RES Act (chosen):

- Introduction of a definition of biomethane
- Exclusion of the definition of 'agricultural biogas' from the definition of 'biogas'
- Introduction of a feed-in premium FIP system for the injection of biomethane into the network.
- Definition of the rules of conducting business activity in the scope of biomethane production:
  - for biomethane produced from agricultural biogas, an appropriate registration authority will be KOWR (The National Agricultural Support Centre),
  - for biogas produced for biomethane production and for biomethane produced from biogas - the registration authority will be URE (The Energy Regulatory Office)



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# MINISTRY OF CLIMATE WG

- ❑ In October 2020 at the Polish Ministry of Climate and Environment the "**Letter of Intent to establish a partnership for the development of the biogas and biomethane sector and the conclusion of a sectoral agreement**" was signed by UPEBI President Sylwia Koch-Kopyszko.
- ❑ Its signatories (among others PGNiG, ORLEN, PSG and GAZ-SYSTEM) declared the readiness to undertake joint actions in order to conclude and implement the "**Agreement on cooperation for the development of the biogas and biomethane sector**".
- ❑ Seven working groups was established by the Ministry for preparation of input for a long-term strategy of biomethane development:
  1. local distribution networks for biogas,
  2. bioLNG and bioCNG and injection of biomethane into the national gas distribution network,
  3. supply chain and local content,
  4. bio-waste and use of digestates as fertilizers,
  5. identification of barriers to the development of the biogas and biomethane market and proposals for their removal,
  6. support and promotion mechanisms, including personnel development and education system
  7. emissions trading system.
- ❑ The UPEBI representatives actively participated in all working groups established by the Polish Ministry of Climate and Environment, one of them (6th) was co-ordinated by UPEBI.



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# AND WHAT FURTHER?

- Sector is working on the vision resulting from UPEBI activities within REGATRACE project and planning 2<sup>nd</sup> workshop on 24th June
- As concerning Ministry of Climate working groups, the process is longer than we thought: the results (national biomethane co-operation agreement/program) will be ready maybe in July not earlier
- Till now nothing has changed within legal regulations – sector is preparing biomethane projects and waiting for introduction of already discussed changes in RES Act and Energy Act.



# REGATRACE PROJECT



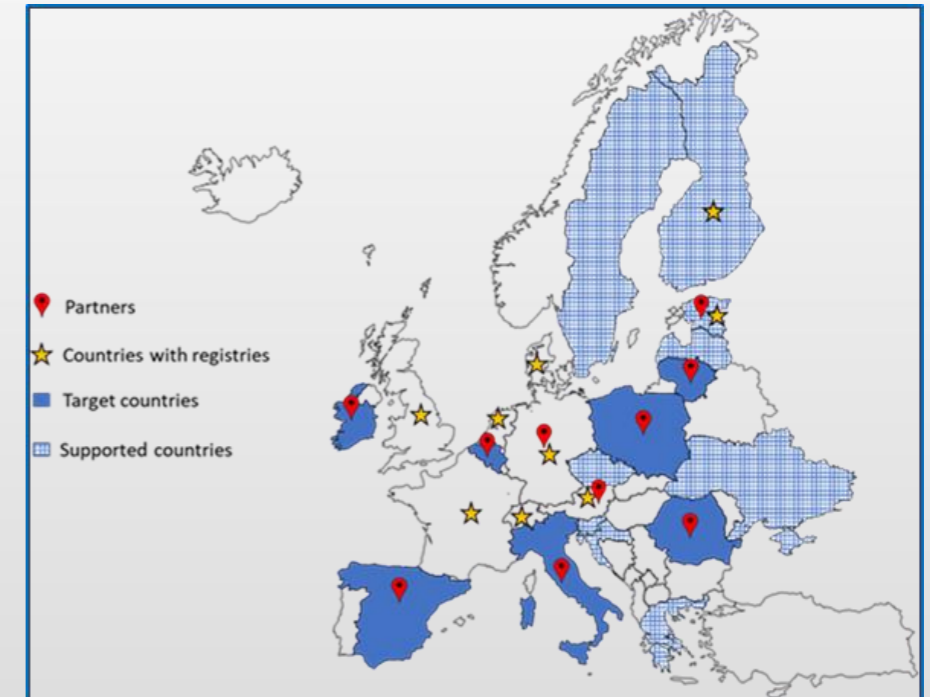
- **REGATRACE: REnewable GAs TRAdE Centre in Europe (HORIZON 2020);**

- **42 months (June 2019- November 2022);**

- **15 partners in 10 countries:** ISINNOVA, CIB (IT), EBA, AIB, ERGaR, Fluxys (BE), RFGI (IE), DENA, DBFZ (DE), AGCS (AT), Elering (EE), **UPEBI (PL)**, ARBIO (RO), NEDGIA (ES), Amber (LT)

- **Activities:**

- ✓ European biomethane/renewable gases GoO system
- ✓ Set-up of national GoO issuing bodies
- ✓ Integration of GoO from different renewable gas technologies with electric and hydrogen GoO systems
- ✓ Integrated assessment and sustainable feedstock mobilisation strategies and technology synergies
- ✓ Support for biomethane market uptake
- ✓ Transferability of results beyond the project countries
- ✓ Dissemination & Communication.



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[www.regatrace.eu](http://www.regatrace.eu)

# THANK YOU

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