



GBA

Czech Biogas Association

Biogas in the Czech Republic *Current Status and Best Practise Examples*

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Czech Biogas Association

Na Zlate stoce 1619

CZ-37005 Budweis



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Biogas Production Background

- Biogas relates to any AD process
 - *agricultural, WWTP, landfill*
- Since 1950's AD processes at WWTP
 - *more than 100 WWTP with AD today*
 - *any city with more than 25000 inhabitants*
- CHP installed at about 60 places, 17 MW_{el}
- No growth potential, process optimization

New Era of Biogas Production

- Renewable Energy Act 180/2005
 - *the key support scheme for all the renewables*
 - *granted grid access (up to the grid capacity)*
 - *granted purchase of the electricity produced*
 - *feed-in tariffs, green bonuses (producer's choice)*
 - *AF1 and AF2 categories for biogas production*
 - *only electricity production supported*

Energy Regulatory Office

- Energy grid monopoles regulator
- Responsible for feed-in tariffs and green bonuses annual updates
 - *defines the indicative project parameters*
 - *support calculated to pay-back in 15 years*
 - *actual economic conditions are considered*
 - *rationale heat utilization is expected*

Feed-in Tariffs and Green Bonuses

- Feed-in tariffs
 - *standard support scheme (paid by grid operator)*
- Green bonuses
 - *intended to bring producers to the el. market*
 - *producers sell for the common market price*
 - *additional green bonus paid by the grid operator*
 - *motivation: in sum more than feed-in tariff*
 - *big savings when producer is consumer* too*

Public Support for Biogas

- European structural funds
 - *different resources: Ministry of Agriculture, Ministry of Industry and Trade, Ministry of Environment*
- Investment subsidies
 - *generally up to 30% of the investment*
 - *majority of the projects were successful*

About the Market – CzBA Survey

- Analysis of 50 planned projects
 - *Input: manures, and standard agro crops (maize and grass silage)*
 - *substrates input 15000-20000 metric tones*
 - *two stage mesophilic fermentation*
 - *biogas utilized exclusively in CHPs*
 - *standard installed power of 500's kW*
 - *heat utilisation varies, generally low*

Current Market Players

- Well established companies in most cases
- Time-approved technologies
- Mostly German companies
 - *German market is very close and well developed*
 - *daughter companies or authorised partners*
 - *also directly (sales offices only)*

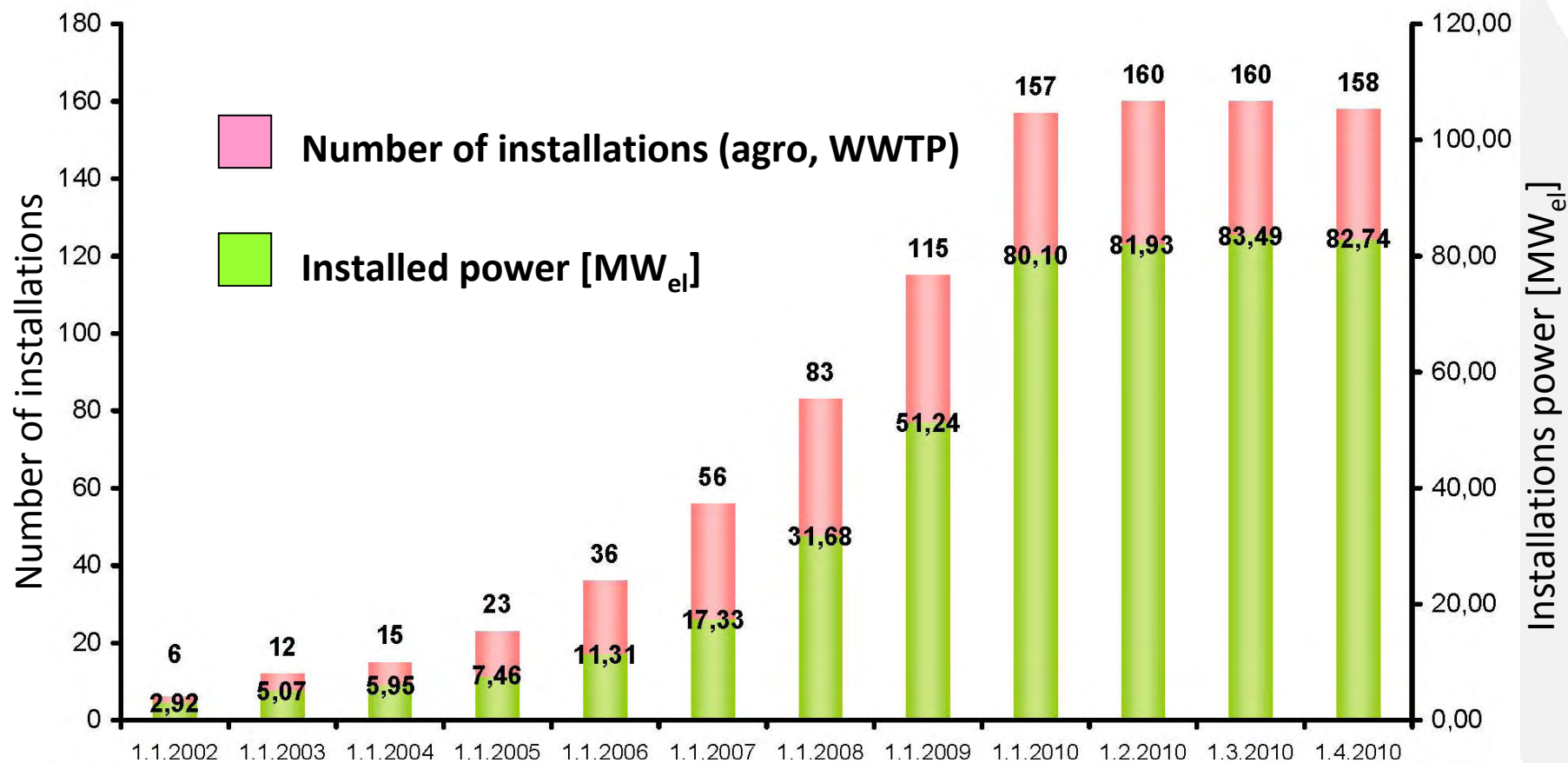
Current Market Development

- Small country, lot of suppliers
 - *pushing up standards*
 - *services, guarantees, quality of supply, customer care*
- Basically only agricultural biogas plants
 - *based in support schemes*
 - *biowaste related projects are exemptions*
- Only small credit crunch impact



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- number of plants and installed power



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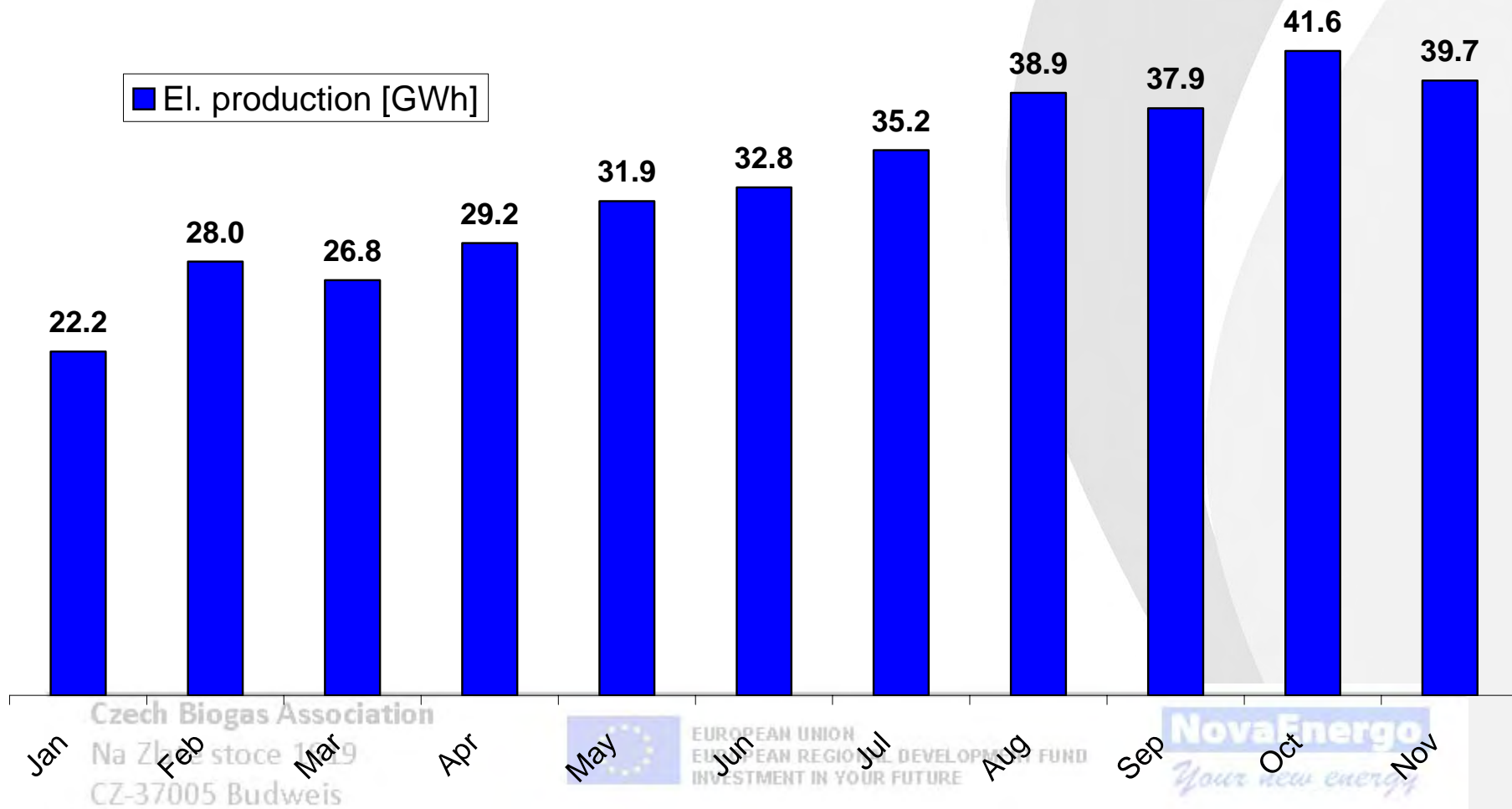


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Current Development

–el. production in 2009



CzBA – National Technology Platform

- New professional body for the new business
- National technology platform on biogas
 - *coordination of biogas research agenda*
 - *preparation of methodology and regulations*
 - *providing expert services including education*
 - *national information centre on biogas*
 - *participation in the international strategic projects (IEE-GasHighWay, IEE-BiogasIN)*

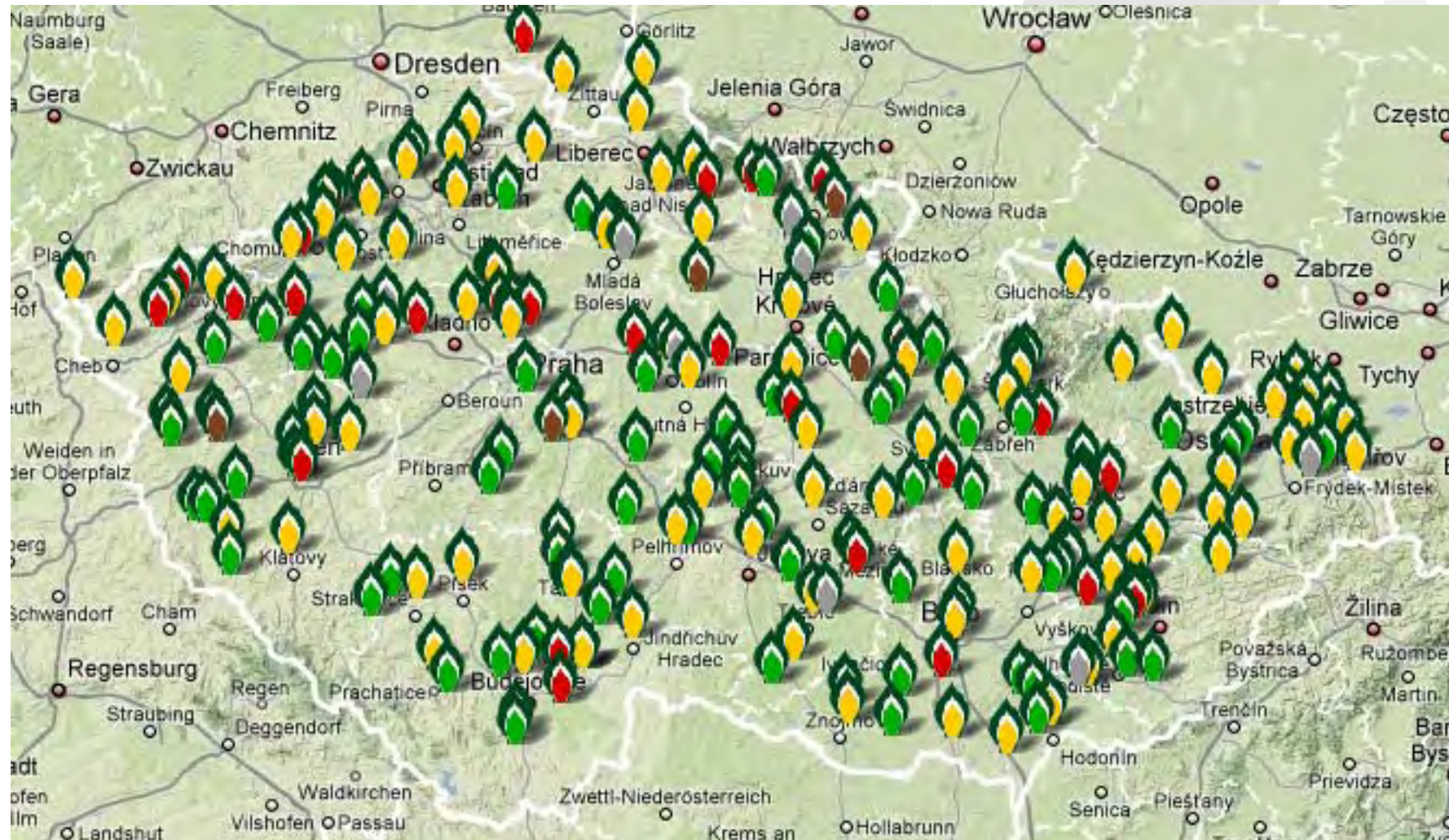


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CzBA Information centre

– map of AD plants



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Experienced Market Difficulties

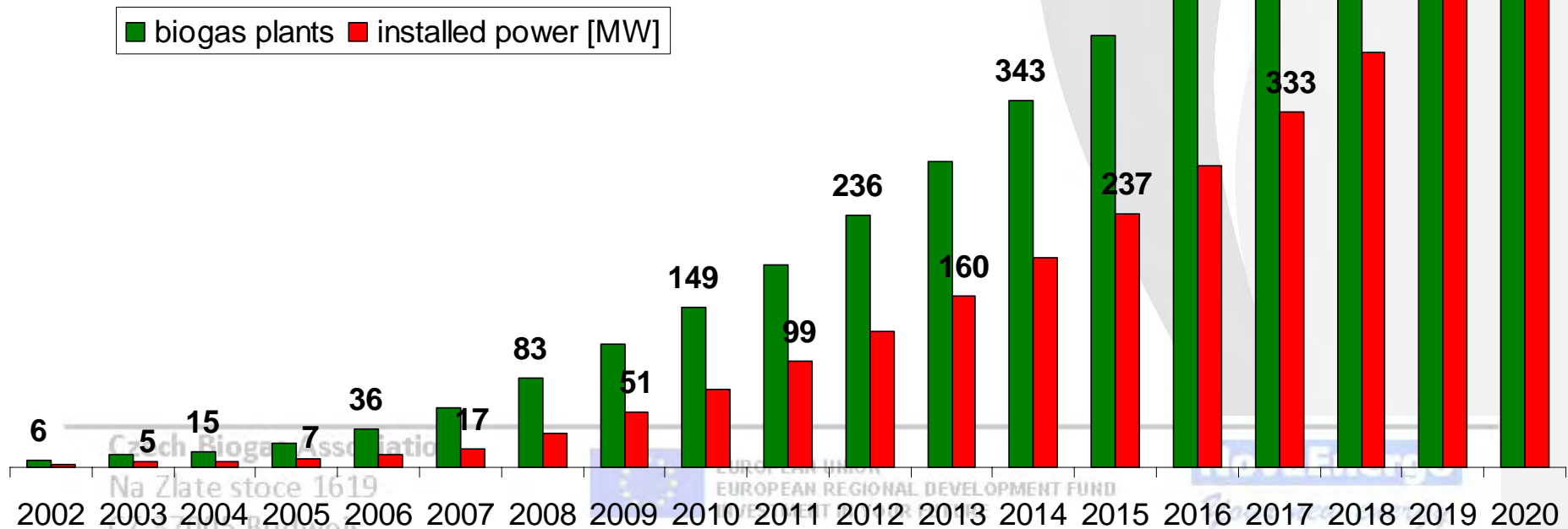
- Grid capacity
 - *existing electricity grid was never designed to accommodate distributed production*
- Feed-in tariffs and green bonuses
 - *sufficient for agricultural biogas plants*
 - *biowaste utilization discriminated*
- Farmers are conservative decision makers

Biogas in the CZ– the 2020 Scenario

- Continuous progress in agro biogas
 - *based on current support schemes*
 - *total installed capacity above 500 MW possible*
 - *that would count about 800 agricultural biogas plants*
 - *total production of about 2 billions of cubic metres of biogas*
- Untapping biomethane potential
 - *estimated 20% of all the agro-biogas plants*
 - *big potential for large scale projects, and locations with too crowded el. grid*

Biogas in the CZ

– the 2020 scenario





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**Thank you all for your kind
attention**



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Project BIOGAS Třeboň

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BIOPLYN Třeboň spol. s r.o.



... heat utilization from BGP varies, generally is low ...

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	Unit	2010	2020
Inst. thermal power	<i>MWth</i>	90	500
Heat production	<i>TJ/year</i>	2 592	14 400
BGP consumption	<i>TJ/year</i>	518	2 880
Available heat	<i>TJ/year</i>	2 074	11 520
Natural gas equivalent	<i>mil. m³/year</i>	58	320
Price	<i>mil. CZK/year</i>	576	3 200
	<i>mil. EUR/year</i>	23	125

Project „BIOGAS Třeboň“ objectives

2

- Maximize the use of heat energy
- Utilization of grass from floodplains (400 ha)
- Local utilization of biomass from arable land
- Local utilization of produced energy (electricity and heat)
- Increase the share of renewables in the region

Building 1:

BGP

*agricultural grounds
(Pig´s farm, Old BGA, WWTP)*



Building 2:

„BIO“gas pipeline

(4,4 km)



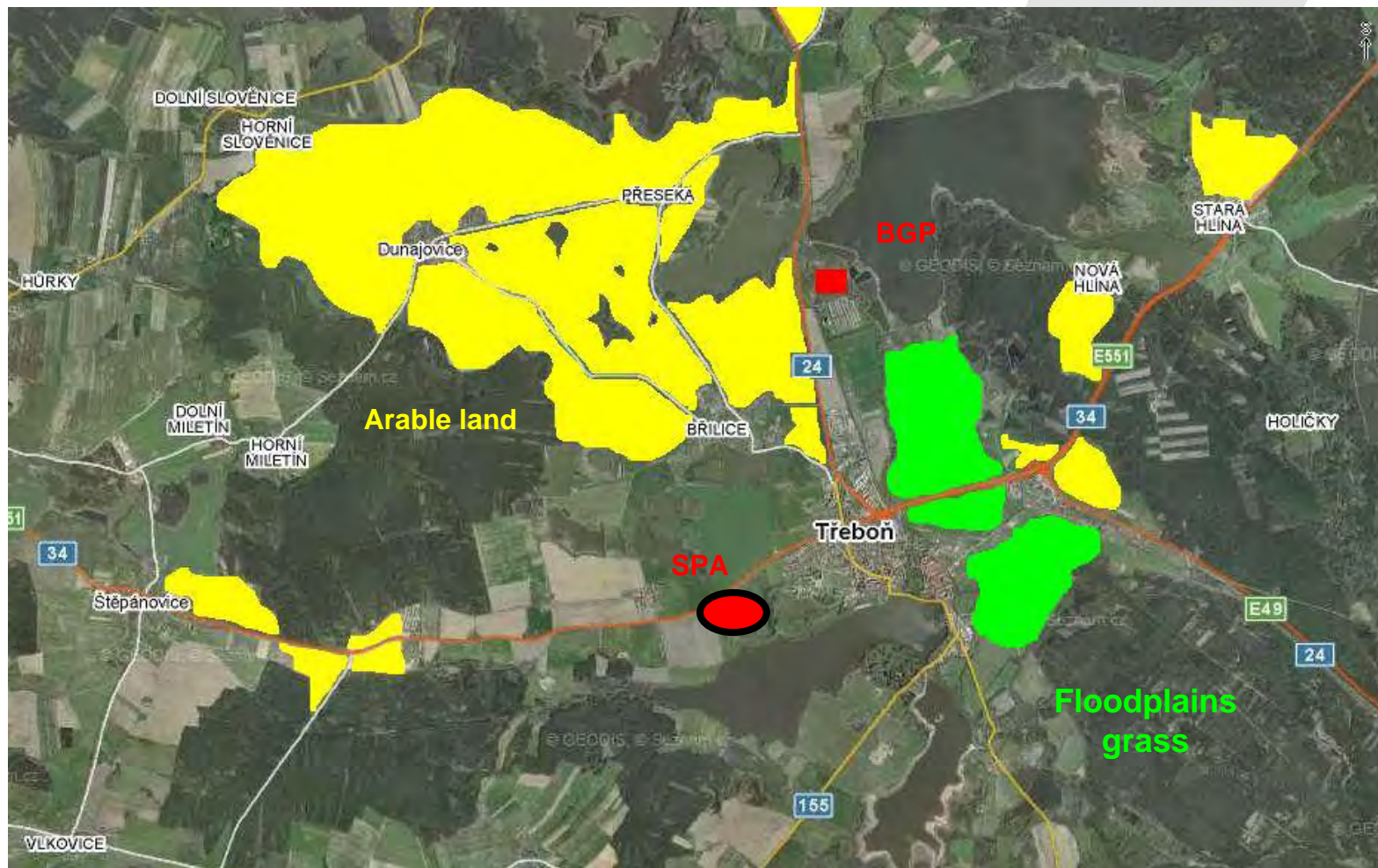
Building 3:

„BIO“heating plant

Spa Aurora grounds



Bioplyn Třeboň - Project location

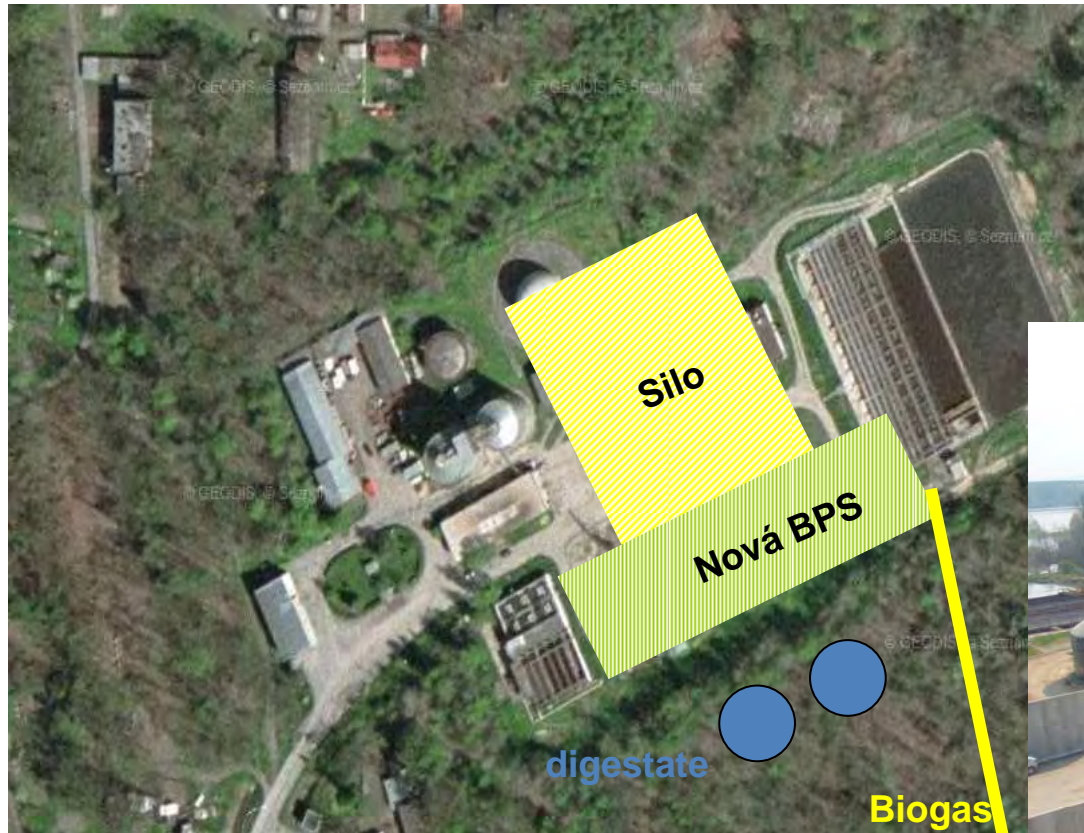


Building 1: BGP

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Biogas production: 12 000 m³/day

Cogeneration unit: 175 kW el + 223 kWth



Building 2 : Biogas pipeline

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Length: 4,4 km

Diameter: 160 mm

Delta P: 40 / 20 kPa

Q: 420 Nm³ BP/h

18 pcs of drainers



Building 3: „Bio“ heating plant

7

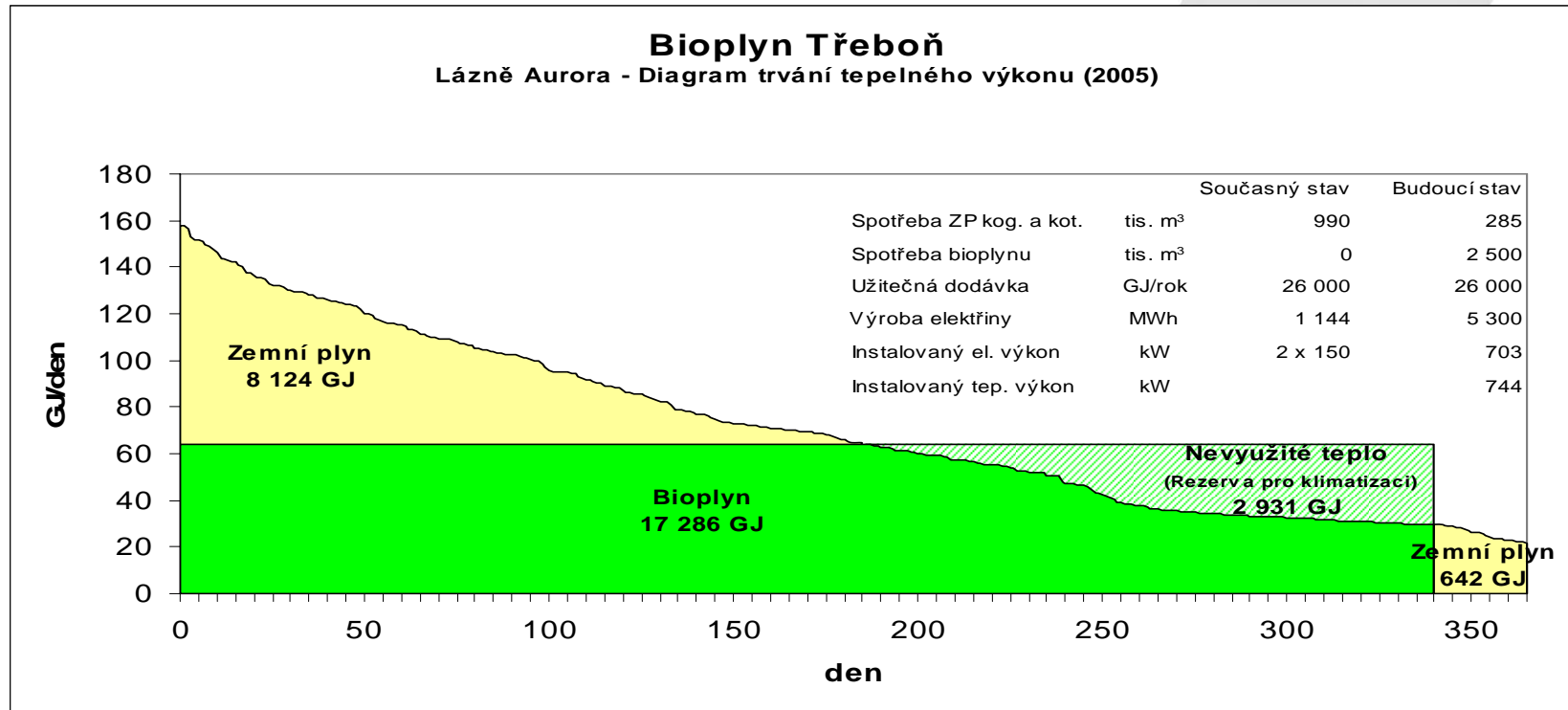
New building, noise 36 dB

Cogeneration Jenbacher

$844 \text{ kW}_{\text{el}} + 843 \text{ kW}_{\text{th}}$

Heat accumulation 2 x 100 m³





SPA saving 500 000 m³ of natural gas

Connection of

„OLD“ and „NEW“ biogas plants fermentors

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Thank You for Your attention

Mira Kajan