



REPORT

LIVESTOCK FARMS IN POLAND

Prepared by:

Oil and Gas Institute – National Research Institute Poland



June 2014

This publication was developed under Assistance Agreement No. XA-83537901-0 awarded by the U.S. Environmental Protection Agency. It has not been formally reviewed by EPA. The views expressed in this document are solely those of Instytut Nafty i Gazu – Państwowy Instytut Badawczy (Oil and Gas Institute – National Research Institute) and EPA does not endorse any products or commercial services mentioned in this publication.

List of contents

1	Summary	4
2	Introduction.....	4
3	Livestock Farms in Poland	5
	3.1 Swine	6
	3.2 Cattle.....	9
	3.3 Sheep.....	12
	3.4 Goats.....	15
4	Biogas (Capacity) Estimation.....	18
	4.1 Methodology Used.....	18
	4.2 Animals and Farms Data Source	18
	4.3 Methane Generation Modeling.....	18
	4.4 Capacity Estimation	22
5	Conclusions.....	23
6	Resources	26
7	Appendixes	26

1 SUMMARY

The report was prepared to assess the potential of energy possible to recover from livestock farms manure in Poland. Data source information was obtained from the Agency for Restructuring and Modernisation of Agriculture. The data have been prepared on the basis of submissions made by holders of livestock animals in the County Offices of the Agency for Restructuring and Modernization of Agriculture, as of 2 April 2013 [1]. The IPCC Emissions from Manure Management model¹ was used for the methane calculations [2]. The model was modified in a way allows to calculate the amount of methane possible to acquire during the process of anaerobic decomposition of manure in anaerobic digester at biogas plants. A very high degree of dispersion of livestock farms in Poland, resulting in a small number of farms, which could provide a potential source of biogas at a level allowing to start the agriculture biogas plant project. The results of calculations are presented in tables and figures. Data on livestock farms whose potential of electricity generation is higher than the 0.1 MWe is shown in the table which is the Appendix A1 to the report and placed in database (Excel file) being one of the outputs for the grant: "Agricultural Waste Sector in Poland: Assessment of the opportunities for methane recovery wastes from livestock farms."

2 INTRODUCTION

Determination of the amount of biogas potential possible to recover from livestock farms manure requires information on the number of farms and the number of animals in each farm. On this basis it is possible to estimate the quantity of manure followed by the amount of biogas. Information concerning the number of farms and animals were obtained from the Agency for Restructuring and Modernization of Agriculture, which keeps a register of farms engaged in livestock production. The registry contains data from more than 709 000 farms taking into account the numbers of: cattle, swine, sheep and goats.

For more accurately depict the distribution of the number of animals in Poland, country was divided with regard to provinces and counties which were assigned for appropriate numbers.

The numbering of individual counties are provided in Appendix A2 (Table) and Appendix A3 (Figure).

¹ 2006 IPCC Guidelines for National Greenhouse Gas Inventories updated on 1st January 2013.

3 LIVESTOCK FARMS IN POLAND

In Poland, almost half of the agricultural area is intended for animal feed. Feed is spent in Poland, more than 50% of the production of potatoes, and more than 60% of cereal production. Increasingly important role in animal nutrition also play an industrial feed. Significant impact on the distribution and size of crop production also has the wealth of the livestock farm in the labor force, as farm animals, especially cows requires a considerable amount of work. In economically developed countries, animal husbandry production value exceeds the value of crop production. The intensity of livestock production in the postwar years in Poland proceeded unevenly. At various times, followed by a rise in production, cutting, and even its inhibition. These fluctuations were mainly due to the scarcity of feed, their high costs and overproduction of livestock in certain periods. The group of livestock which developed in Poland, to the greatest extent include: swine and cattle. Table 1 (Appendix A4) shows the number of different groups of animals (swine, cattle, sheep and goats) in the provinces on Polish territory.

Table 1. Livestock (animals) in the Polish Provinces.

Province Name	Province No.	Swine [head]	Swine [%]	Cattle [head]	Cattle [%]	Sheep [head]	Sheep [%]	Goats [head]	Goats [%]
pomorskie	1	1 091 997	6.53	208 526	3.35	13 779	5.50	1 543	4.12
zachodniopomorskie	2	1 202 438	7.19	107 891	1.74	7 586	3.03	2 002	5.35
warmińsko-mazurskie	3	1 054 162	6.31	483 346	7.77	12 773	5.10	1 999	5.34
kujawsko-pomorskie	4	1 481 427	8.86	493 217	7.93	12 332	4.93	2 370	6.33
wielkopolskie	5	4 237 119	25.34	907 155	14.59	22 310	8.91	7 610	20.33
podlaskie	6	505 888	3.03	948 655	15.26	19 234	7.68	961	2.57
mazowieckie	7	2 442 190	14.61	1 199 603	19.29	8 078	3.23	2 497	6.67
lubuskie	8	262 017	1.57	80 940	1.30	4 861	1.94	1 057	2.82
łódzkie	9	1 382 158	8.27	483 971	7.78	15 682	6.26	1 873	5.00
dolnośląskie	10	285 909	1.71	113 790	1.83	12 171	4.86	3 541	9.46
lubelskie	11	883 653	5.29	402 534	6.47	14 860	5.94	2 611	6.98
świętokrzyskie	12	410 942	2.46	196 977	3.17	4 328	1.73	2 031	5.43
opolskie	13	537 317	3.21	124 672	2.01	2 416	0.97	909	2.43
śląskie	14	412 713	2.47	134 209	2.16	10 576	4.22	2 058	5.50
małopolskie	15	268 112	1.60	217 654	3.50	75 238	30.05	2 026	5.41
podkarpackie	16	260 437	1.56	114 136	1.84	14 136	5.65	2 338	6.25
Total		16 718 479	100.00	6 217 276	100.00	250 360	100.00	37 426	100.00

Source: Own study based on data from the Agency for Restructuring and Modernization of Agriculture.

3.1 SWINE

Swine like cattle breeding is the main direction in Poland. It is carried out throughout the country, but the highest concentration observed in the province of wielkopolskie and mazowieckie, where grown much rye, and potatoes, which are the basic feed for swine. The breeding in wielkopolskie is based also on the use of industrial feed. The number of swine in Poland amounts to 16.7 million head.

There is considerable variation in territorial breeding of swine. Shown in Figure 1 (Appendix A6) and Figure 2 (Appendix A7) particularized territorial differentiation of population refers to 2013, but it is characteristic of the last decade. Occupies a dominant position in the wielkopolskie province. Its share in 2013 amounted to 25.34% (Table 1). The next four province are mazowieckie, kujawsko-pomorskie, lodzkie and zachodnio-pomorskie. The total share of the five provinces in 2013 was over 64%. The smallest part of the swine population occurred in the province of podkarpackie (1.56%), lubuskie (1.57%), malopolskie (1.60%) and dolnoslaskie (1.71%). Detailed information about the number of swine in the various provinces is presented in Appendix A4 and on figure in Appendix A6. Detailed information about the number of swine in the various counties is presented in Appendix A5 and on figure in Appendix A7.

Livestock Farms in Poland

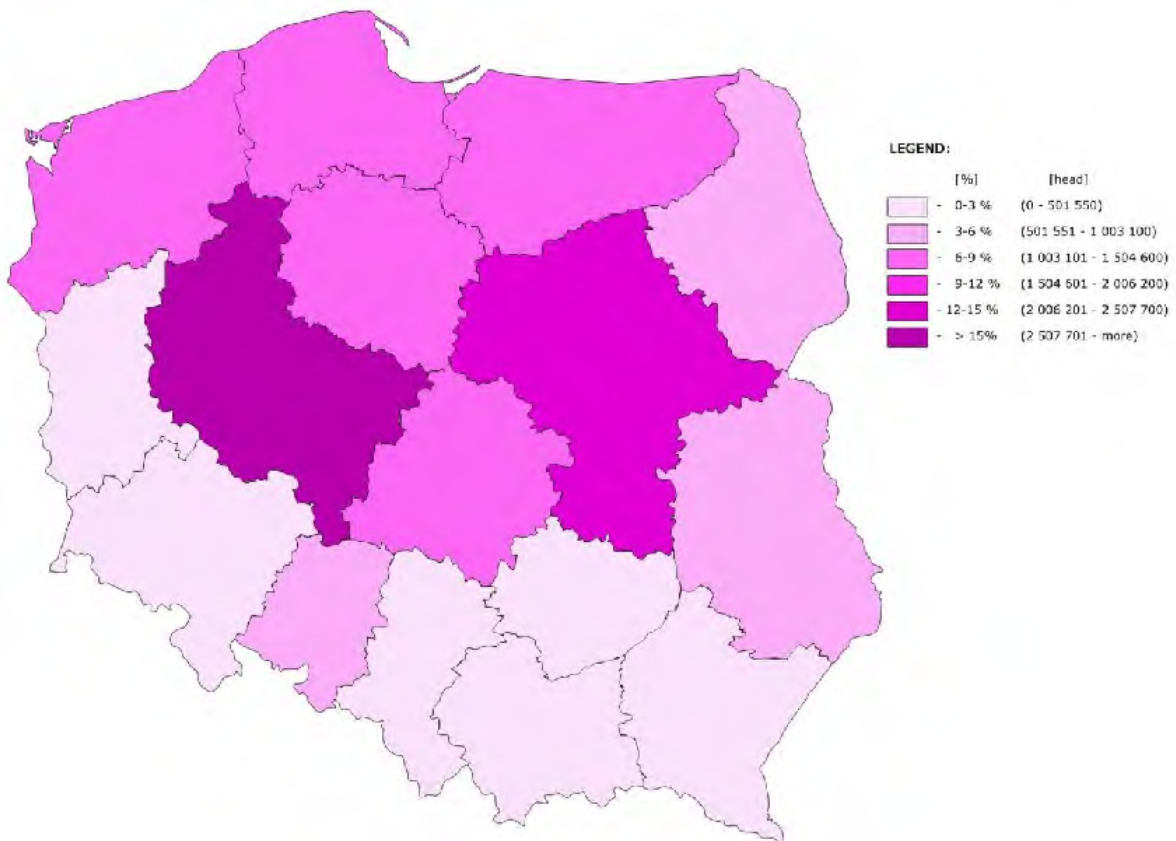


Figure 1. Swine population in Polish provinces (Appendix A6).

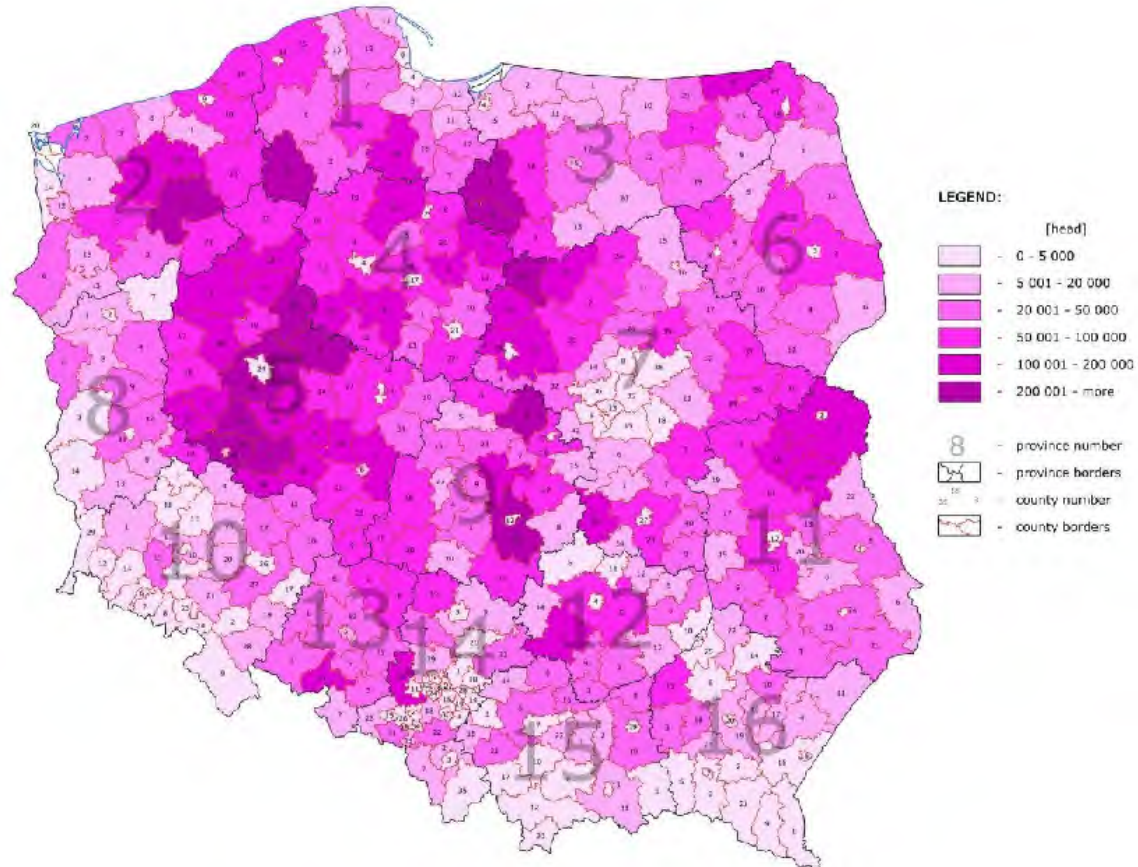


Figure 2. Swine population in Polish counties (Appendix A7).

Raising swine is run mainly on individual farms. In 2013, resulted in over 278 000 livestock farms. The degree of concentration of swine breeding in Poland is very low. The average number of swine on the farm in 2013 was 60.7 head. Detailed description takes into account the distribution of the number of swine on the farm are shown in Table 2.

Table 2. Number of swine in farms in Poland.

Swine in farm [head/farm]	Amount of farms	
	[farms]	[%]
0 - 10	142 909	51.35
11 - 20	51 060	18.35
21 - 50	46 499	16.71
51 - 100	18 595	6.68
101 - 500	15 469	5.56
501 - 1000	1 928	0.69
1001 - 5000	1 543	0.55
5001 - more	324	0.12
Total	278 327	100.00

Source: Own study based on data from the Agency for Restructuring and Modernization of Agriculture.

It should be noted that large farms where is more than 500 swine represent only 1.36%.

3.2 CATTLE

Raising cattle is carried out throughout the country. Cattle population is 6.2 million heads. The largest is in mazowieckie, podlaskie and wielkopolskie provinces. The reason for the high cattle population in these provinces is created in these areas specialization of agricultural production focused on the production of meat and milk.

In addition, in the north-eastern part of our country's prevailing favorable environmental conditions for conducting a larger culture. The highest number of cattle in Poland was recorded in the mid-seventies of the twentieth century, and from this period decreased steadily. In the period 1989-2000 the cattle population decreased by half. The main causes of limitations breeding was the elimination of state-owned farms and conducted by not breeding, rearing and lack of profitability at farm level.

There is considerable variation in territorial breeding of cattle. Shown in Figure 3 (Appendix A8) and Figure 4 (Appendix A9) particularized territorial differentiation of population refers to 2013. Occupies a dominant position in the mazowieckie province. Its share in 2013 amounted to 19.29% (Table 1). The next two provinces are podlaskie and wielkopolskie. The total share of the three provinces in 2013 was over 49%. The smallest part of the cattle population occurred in the province of lubuskie (1.30%), zachodniopomorskie (1.74%), dolnoslaskie (1.83%), and podkarpackie (1.84%). Detailed information about the number of cattle in the various provinces is presented in Appendix A4 and on figure in Appendix A8. Detailed information about the number of cattle in the various counties is presented in Appendix A5 and on figure in Appendix A9.

Livestock Farms in Poland

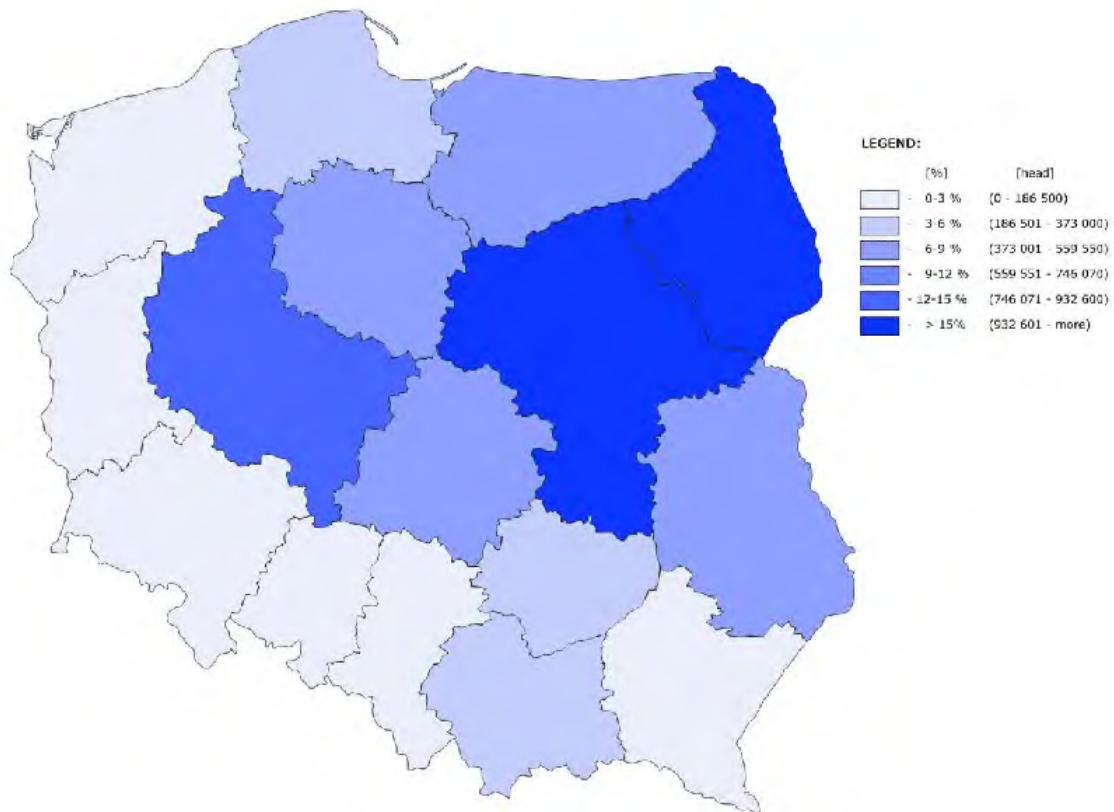


Figure 3. Cattle population in Polish provinces (Appendix A8).

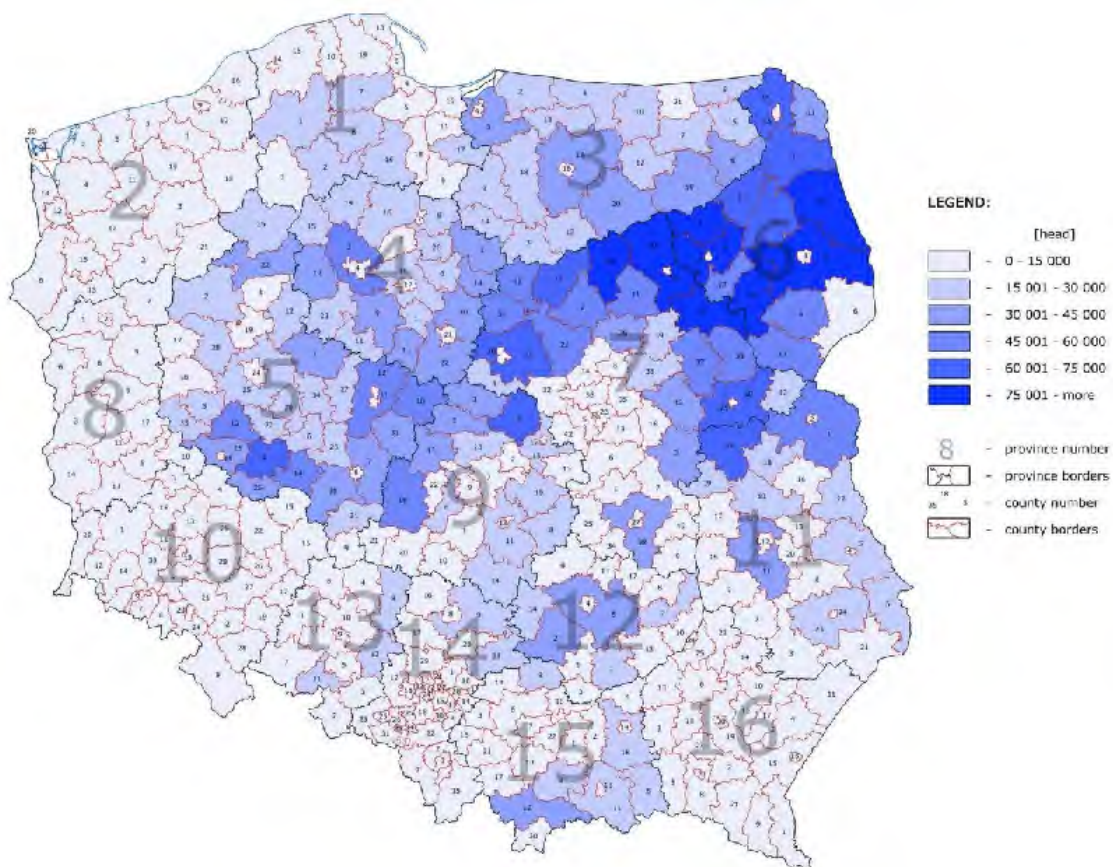


Figure 4. Cattle population in Polish counties (Appendix A9).

Raising cattle is run mainly on individual farms. In 2013, resulted in over 570 000 livestock farms. The degree of concentration of cattle breeding in Poland is very low. The average number of cattle on the farm in 2013 was 10.9 head. Detailed description takes into account the distribution of the number of cattle on the farm are shown in Table 3.

Table 3. Number of cattle in farms in Poland.

Cattle in farm [head/farm]	Amount of farms	
	[farms]	[%]
0 - 5	350 420	61.44
6 - 10	73 724	12.93
11 - 20	63 065	11.06
21 - 50	62 112	10.89
51 - 100	16 665	2.92
101 - 500	4 107	0.72
501 - more	253	0.04
Total	570 346	100.00

Source: Own study based on data from the Agency for Restructuring and Modernization of Agriculture.

It should be noted that large farms where is more than 50 of cattle represent only 3.68%.

3.3 SHEEP

Sheep are grown mainly in order to obtain wool and leather. Milk and meat is only a supplement production resulting from breeding. The direction of the dairy and meat farming are more important only in mountainous areas. Sheep meat production does not enjoy the popularity in Poland. It is worth noting that in 1990 the number of sheep was in Poland 5 million in 2013 decreased to 250 000 heads. Sheep farming is concentrated in the malopolskie, wielkopolskie, podlaskie and lodzkie. The reason for this arrangement is the presence of poor pastures, which are suitable only for grazing animals.

Shown in Figure 5 (Appendix A10) and Figure 6 (Appendix A11) particularized territorial differentiation of population refers to 2013. Occupies a dominant position in the malopolskie province. Its share in 2013 amounted to 30.05% (Table 1). The next three provinces are wielkopolskie, podlaskie and lodzkie. The total share of the three provinces in 2013 was close to 53%. The smallest part of the sheep population occurred in the province of opolskie (0.97%), swietokrzyskie (1.73%) and lubuskie (1.94%). Detailed information about the number of sheep in the various provinces is presented in Appendix A4 and on figure in Appendix A10. Detailed information about the number of sheep in the various counties is presented in Appendix A5 and on figure in Appendix A11.

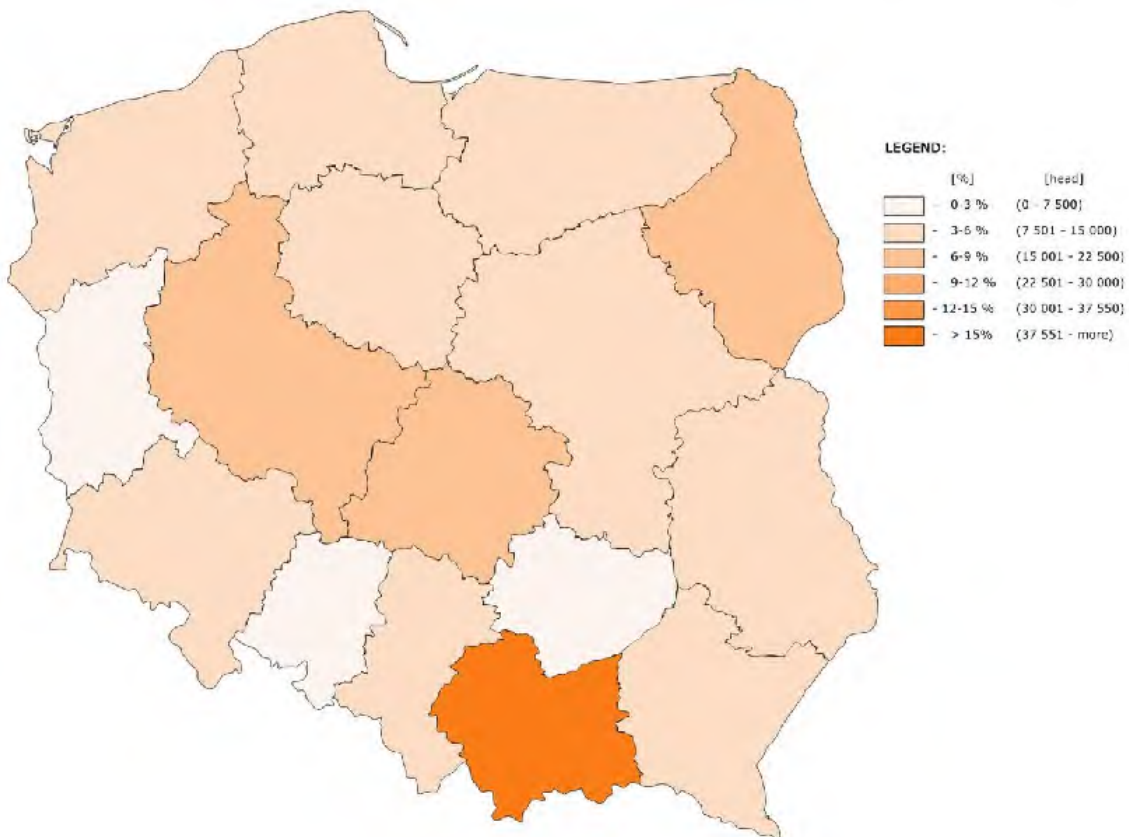


Figure 5. Sheep population in Polish provinces (Appendix A10).

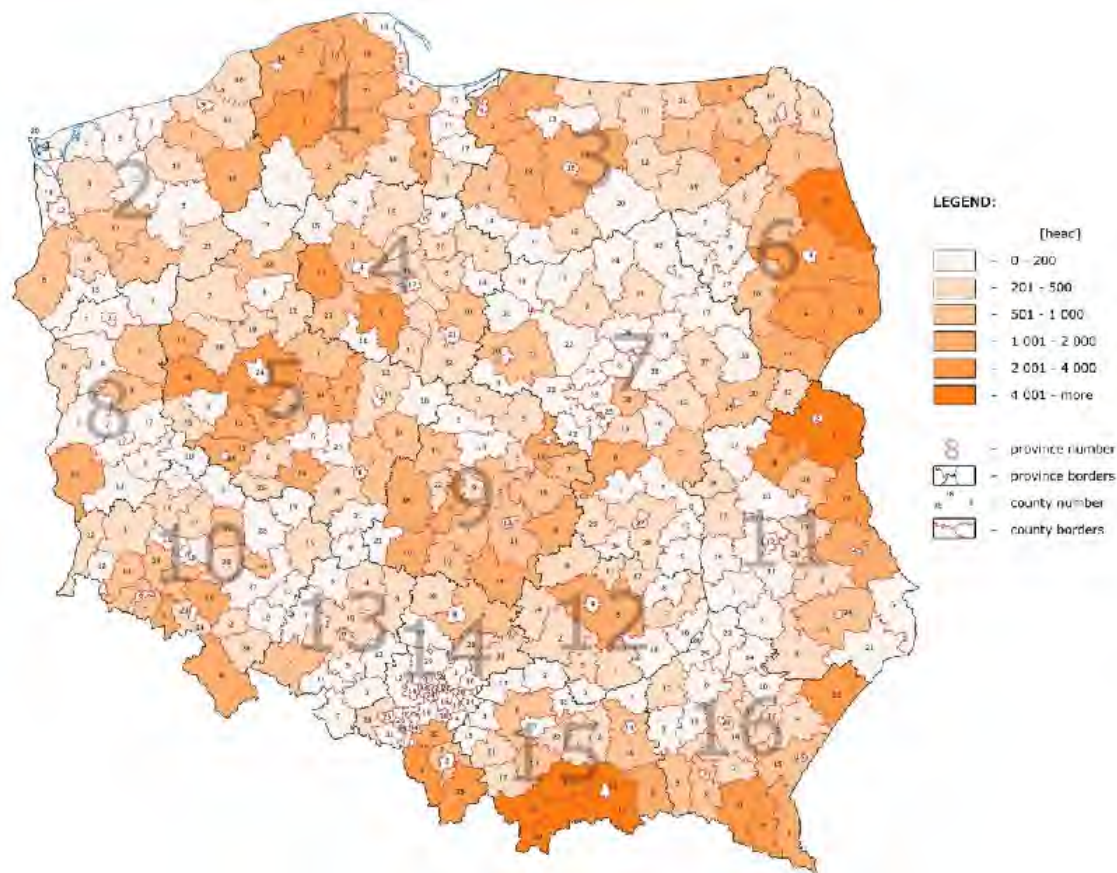


Figure 6. Sheep population in Polish counties (Appendix A11).

In 2013, resulted in over 8 124 livestock farms raising sheep. The degree of concentration of sheep breeding in Poland is low. The average number of sheep on the farm in 2013 was 30.8 head. Detailed description takes into account the distribution of the number of sheep on the farm are shown in Table 4.

Table 4. Number of sheep in farms in Poland.

Sheep in farm [head/farm]	Amount of farms	
	[farms]	[%]
0 - 5	3108	38.26
6 - 10	1138	14.01
11 - 20	1339	16.48
21 - 50	1284	15.81
51 - 100	674	8.30
101 - more	581	7.15
Total	8124	100.00

Source: Own study based on data from the Agency for Restructuring and Modernization of Agriculture.

It should be noted that large farms where is more than 100 sheep represent only 7.15%.

3.4 GOATS

Currently in Poland goats are a very small group of breeding. Their population is about 37 000 heads. They are grown primarily for meat and milk, as well as for recreational purposes. Most goats are reared in wielkopolskie and dolnoslaskie.

Shown in Figure 7 (Appendix A12) and Figure 8 (Appendix A13) particularized territorial differentiation of population refers to 2013. Occupies a dominant position in the wielkopolskie province. Its share in 2013 amounted to 20.33% (Table 1). The smallest part of the goat's population occurred in the province of opolskie (2.43%), podlaskie (2.57%) and lubuskie (2.82%). Detailed information about the number of goats in the various provinces is presented in Appendix A4 and on figure in Appendix A12. Detailed information about the number of goats in the various counties is presented in Appendix A5 and on figure in Appendix A13.

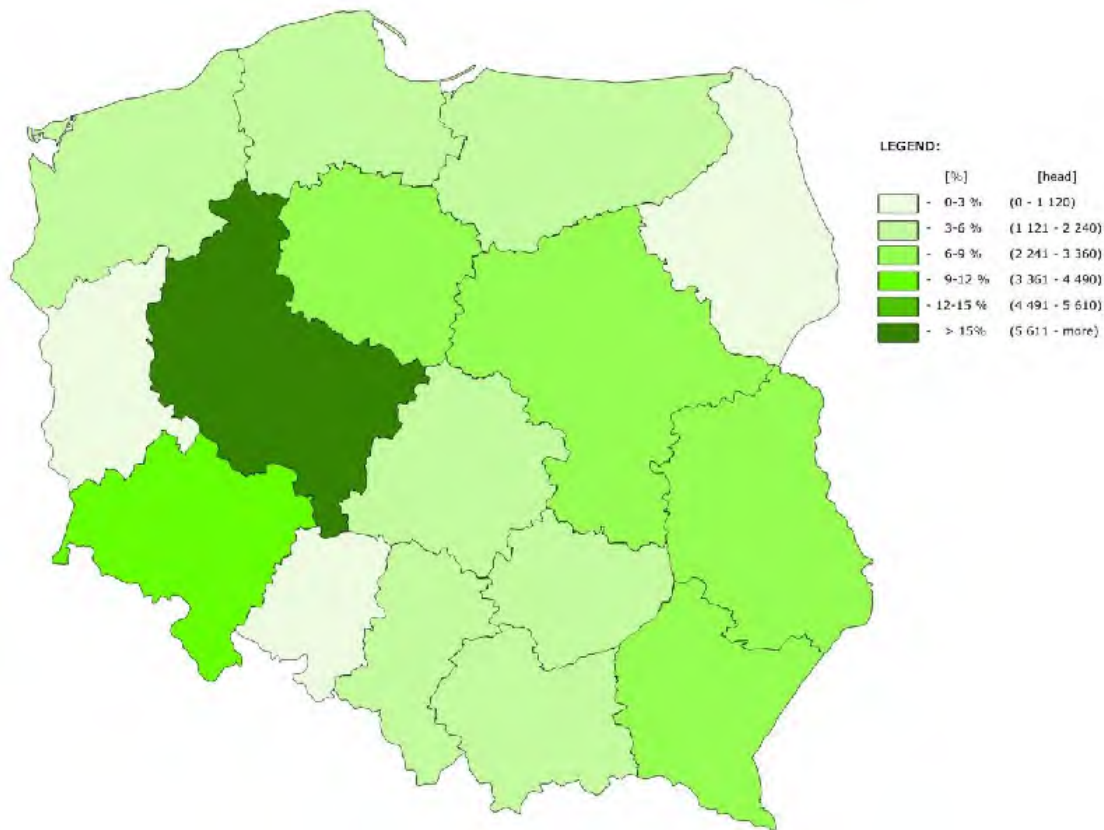


Figure 7. Goat's population in Polish provinces (Appendix A12).

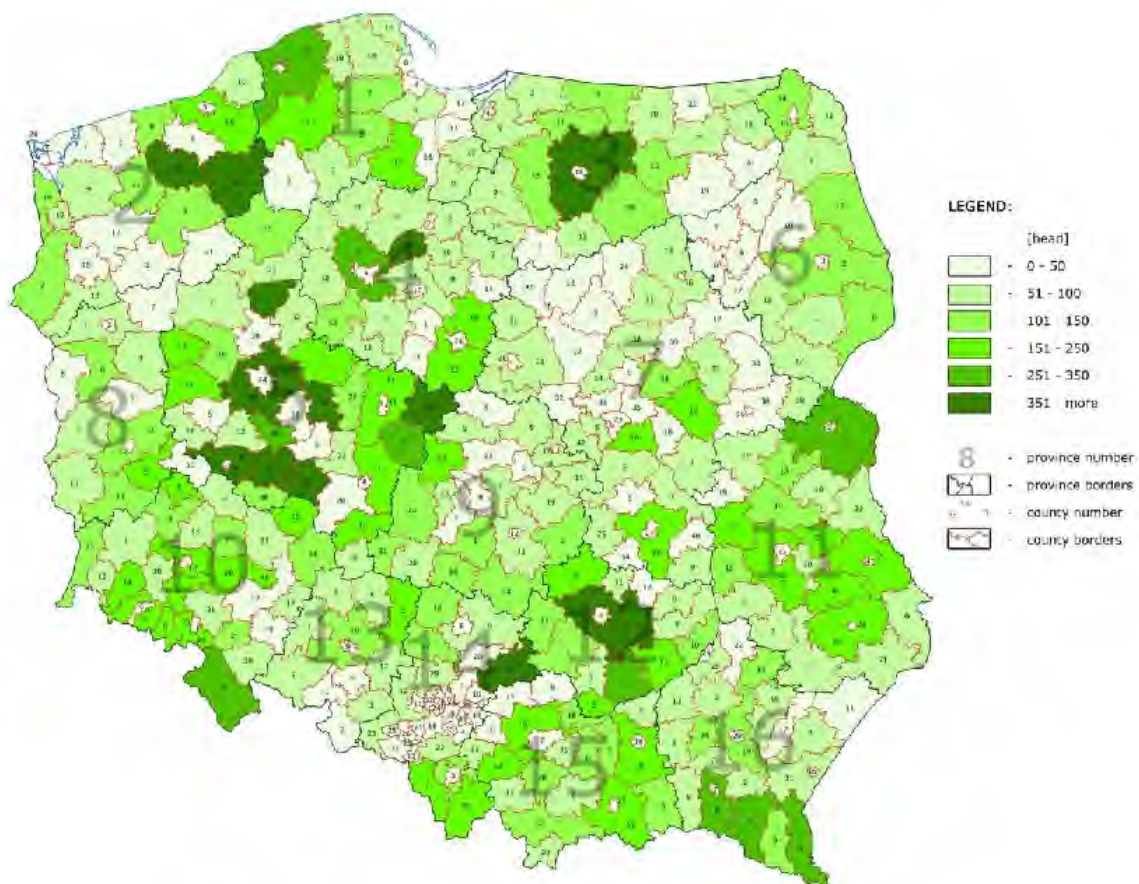


Figure 8. Goat's population in Polish counties (Appendix A13).

In 2013, resulted in over 9 096 livestock farms raising goats. The degree of concentration of goats breeding in Poland is low. The average number of goats on the farm in 2013 was 4.11 head. Detailed description takes into account the distribution of the number of goats on the farm are shown in Table 5.

Table 5. Number of goats in farms in Poland.

Goats in farm [head/farm]	Amount of farms	
	[farms]	[%]
0 - 5	8 030	88.28
6 - 10	648	7.12
11 - 20	242	2.66
21 - 50	108	1.19
51 - 100	35	0.38
101 - more	33	0.36
Total	9 096	100.00

Source: Own study based on data from the Agency for Restructuring and Modernization of Agriculture.

It should be noted that large farms where is more than 100 goats represent only 0.36%.

4 BIOGAS (CAPACITY) ESTIMATION

Estimating the amount of methane was carried out using the IPCC model. The amount of methane was converted to potential capacity and presented in the MW with the assumption of efficiency of 38%.

4.1 METHODOLOGY USED

While working on a project that was established to obtain the information directly from the owners of the farm is practically impossible due to the very high fragmentation of animal production in Poland. Therefore, it was decided to obtain information from the records kept by Agencies depends on the Ministry of Agriculture. The information gathered in the registers contains data on the number of farms and the number of animals on farms. This is a sufficient amount of data required to estimate the amount of methane that potentially can be produced from animal manure. It has been decided to use a modified model of the IPCC - TRIER 2 calculations were carried out in two variants. Theoretical and practical. Theoretical calculation of the amount of biogas is assumed produced by all animals present in the Polish farms regardless of the size of the farm. Practical variant consisted of modeling of biogas possible to obtain from a particular farm and then list only those holding the potential capacity is greater than the 0.1 MWe.

4.2 ANIMALS AND FARMS DATA SOURCE

Data source information was obtained from the Agency for Restructuring and Modernisation of Agriculture. The data have been prepared on the basis of submissions made by holders of livestock animals in the County Offices of the Agency for Restructuring and Modernization of Agriculture, as of 2 April 2013 [1].

4.3 METHANE GENERATION MODELING

Estimating the amount of energy that can be extracted from animal manure from livestock farms is difficult due to the large number of adjustable parameters, which include:

- The method of manure management,
- Type of food and method of breeding,
- Farm location,
- Weather conditions (temperature, humidity),
- Others.

In order to determine the amount of methane, and hence the amount of energy possible to obtain from individual livestock farms model developed by the IPCC has been used. Model has been modified in order to adapt it to calculate the amount of methane obtained in the process of anaerobic digestion of organic matter in animal manure in enclosed digesters which are an essential element of agricultural biogas plants. It was decided to use the equation TRIER 2, which, after modifying has following form (eq.1.):

$$MG_{(T)} = VS_{(T)} \cdot 365 \cdot B_{o(T)} \cdot MCF \cdot MS \quad \text{eq. 1}$$

where:

$MG_{(T)}$ – methane generation of one animal (head) from livestock category T [m^3/year].

$VS_{(T)}$ – daily volatile solid excreted of one animal for livestock category T [$\text{kg}_{\text{dry matter}}/\text{day}$].

365 – basis for calculating annual VS production [days/year].

$B_{o(T)}$ – maximum methane producing capacity for manure produced by livestock category T [$m^3\text{CH}_4/\text{kg}$ of VS excreted].

MCF – methane conversion factor for anaerobic digester.

For calculation it has been assumed that the MCF is 90% (0.9).

Argumentation:

According to the table 10.17 contained in the "2006 IPCC guidelines ..." (page 10.47) MCF value for anaerobic digester can be in the range 0 - 100%. Calculations should be performed using the Formula 1 presented in the bottom of table 10.17. For this report purpose it has been assumed that according this

Formula 1:

$$MCF = CH_{4\text{prod}} - CH_{4\text{emitted}}$$

The amount of methane emitted to the atmosphere as shown in Table 10A-4 located in the "Guideline IPCC 2006 ..." is 10%.

then,

$$MCF = CH_{4\text{prod}} - CH_{4\text{emitted}} = 100\% - 10\% = 90\% (0.9)$$

MS – fraction of livestock category T's manure handled in anaerobic digester.

For calculation it has been assumed that the MS is 100% (1.0).

Argumentation:

Calculations are performed in order to determine the methane generation of animal manure in the biogas plant. Hence the assumptions that MS is 100%, i.e. all animal waste are subjected to a fermentation process in the biogas plant anaerobic digester.

Parameters of animals for particular categories of Livestock (cattle, swine, sheep, and goats) have been developed on the basis of:

- Table 10A-4 "2006 IPCC Guideline ..." for Dairy Cows under the assumption that they represent 42% of total number of cattle in Poland².
- Table 10A-5 "2006 IPCC Guideline ..." for Other Cattle under the assumption that they represent 58% of total number of cattle in Poland².
- Table 10A-7 "2006 IPCC Guideline ..." for Market Swine under the assumption that they represent 90% of total number of swine in Poland².
- Table 10A-8 "2006 IPCC Guideline ..." for Breeding Swine under the assumption that they represent 10% of total number of swine in Poland².
- Table 10A-9 "2006 IPCC Guideline ..." for sheep and goats.

The parameters are listed in Table 6. Last row of the table contains the average amount of methane produced in Poland from one animal manure a year.

Table 6. Methane generation modeling parameters.

Parameter	Dairy Cow	Other Cattle	Market Swine	Breeding Swine	Sheep	Goats
VS	4.5	2.7	0.3	0.5	0.32	0.35
B ₀	0.24	0.17	0.45	0.45	0.13	0.13
MCF	0.9	0.9	0.9	0.9	0.9	0.9
MS	1.0	1.0	1.0	1.0	1.0	1.0
Methane generation MG [m ³ /year]	355	151	44	74	14	15
Methane generation for Poland MG [m ³ /year]	236 ³		47 ⁴		14	15

Source: own study based on [2].

² The proportions are based on data from the Central Statistical Office. www.stat.gov.pl [3].

³ Dairy Cows: 42%, Other Cattle: 58%.

⁴ Market Swine: 90%, Breeding Swine: 10%.

The total amount of methane generated from livestock farm was calculated from the equation eq.2 and eq. 3.

$$MG = [MG_{(Swine)} \cdot SW] + [MG_{(Cattle)} \cdot CT] + [MG_{(Sheep)} \cdot SP] + [MG_{(Goats)} \cdot GT] \quad \text{eq.2.}$$

$$MG_h = \frac{MG}{8760} \quad \text{eq.3}$$

where:

- MG** - amount of methane generated from farm [m³/year].
- MG_(Swine)** - methane generation of one swine [m³/year] (Table 6).
- SW** - number of swine in the farm [head].
- MG_(Cattle)** - methane generation of one cattle [m³/year] (Table 6).
- CT** - number of cattle in the farm [head].
- MG_(Sheep)** - methane generation of one sheep [m³/year] (Table 6).
- SP** - number of sheep in the farm [head].
- MG_(Goats)** - methane generation of one goat [m³/year] (Table 6).
- GT** - number of goats in the farm [head].
- MG_h** - amount of methane generated from farm [m³/h].
- 8760** - number of hours during year [h/year].

The above equations (eq. 2 and eq. 3) can be directly applied to calculations for counties and provinces.

4.4 CAPACITY ESTIMATION

Estimating the amount of methane generated from livestock farms manure are made into two variants. The first option assumed estimate of the total amount of methane generated from manure from animals in the county assuming that all county manure are collected and routed to the biogas plant. The second option involves the execution of the calculation for each of the 709 000 livestock farms and then summing the livestock farms only those whose potential production of electricity is greater than 0.1 MWe.

Capacity estimation in a livestock farm performed using equation eq.4.

$$C_{(T)} = MG_h \cdot CV \cdot HS$$

where:

- $C_{(T)}$** - capacity in total [MW]
- MG_h** - amount of methane generated from farm [m³/h].
- CV** - calorific value of methane: 35,978 [MJ/m³]
- HS** - hours to second converter: 1/3600 [h/s]

Estimation of electrical capacity has been calculated according to equation eq. 5.

$$C_{(E)} = C_{(T)} \cdot 0.38$$

where:

- $C_{(E)}$** - electrical capacity [MWe]
- $C_{(T)}$** - capacity in total [MW]
- 0.38** - electrical efficiency of reciprocating engine.

5 CONCLUSIONS

A very high degree of dispersion of livestock farms in Poland, resulting in a small number of farms, which could provide a potential source of biogas at a level allowing to start the agricultural biogas plant project. Quoted in this report, the calculation method of the IPCC TRIER 2 is before all things, a general estimate of the amount of methane generated by the animals in individual farms. Despite this, its use to depict the situation on the Polish market seems to be justified.

Noteworthy comparing the amount of methane calculated theoretically for the provinces (Appendix A14, Appendix A15) and amount of methane calculations taking into account only the amount of the farms in which it is possible to launch a project of biogas plants with a capacity greater than 0.1 MW (Appendix A18, Appendix A19). Comparing the results of the calculations should be noted that the largest differences occur in the province podlaskie and malopolskie where the difference is more than 98%, which means that the farm in which it is possible to run a biogas plant represents only 2% of total theoretical energy potential.

Most preferably looks zachodnio-pomorskie province where the difference is about 42%, which means that the farm providing the ability to run biogas plants represent 58% of total theoretical energy potential. Also preferably presents the pomorskie province for which the difference is 72%, which means that the farm providing the ability to run biogas plants represent about 28% of total theoretical energy potential. Other province more or less fall within the average for the whole country which is about 89%, which is very little. Detailed summary is presented in Table 7.

Table 7. Comparison of the energy potential theoretically calculated for provinces and energy potential considering only the farm with a capacity of more than 0.1 MWe.

Province Name	Province No.	Theoretical Potential Electrical Capacity [MWe] $\eta = 38\%$	Total Electrical Capacity for Livestock Farms with Capacity Over 0.1 MWe [MWe] $\eta = 38\%$	Difference [%]
pomorskie	1	43.872	11.898	-72.880
zachodniopomorskie	2	35.785	20.613	-42.398
warmińsko-mazurskie	3	71.271	9.816	-86.227
kujawsko-pomorskie	4	81.047	3.438	-95.758
wielkopolskie	5	180.108	19.998	-88.897
podlaskie	6	107.767	1.662	-98.458
mazowieckie	7	173.159	23.777	-86.269
lubuskie	8	13.709	3.764	-72.544
łódzkie	9	78.080	4.677	-94.010
dolnośląskie	10	17.627	2.660	-84.910
lubelskie	11	59.504	2.876	-95.167
świętokrzyskie	12	28.665	1.179	-95.887
opolskie	13	23.825	2.621	-88.999
śląskie	14	22.303	3.767	-83.110
małopolskie	15	28.276	0.464	-98.359
podkarpackie	16	17.144	0.545	-96.821
Total		982.141	113.754	-88.418

Accurate theoretical calculations of energy in the counties are located in Appendix A16 and Appendix A17.

The exact calculation of the energy in the counties for farms with a potential greater than 0.1 MWe are located in Appendix A20 and Appendix A21.

The above analysis is also confirmed in the distribution of existing biogas plants in Poland. Summary of existing biogas plants in Poland is in the report: "The Agriculture Biogas Plants in Poland" which was developed in the framework of the project "Agricultural Waste Sector in Poland: Assessment of the opportunities for methane recovery wastes from livestock farms."

Figure 9 (Appendix A22) shows the locations of existing biogas plants on the energy map in the counties for farms with a potential greater than 0.1 MWe (Appendix A21).

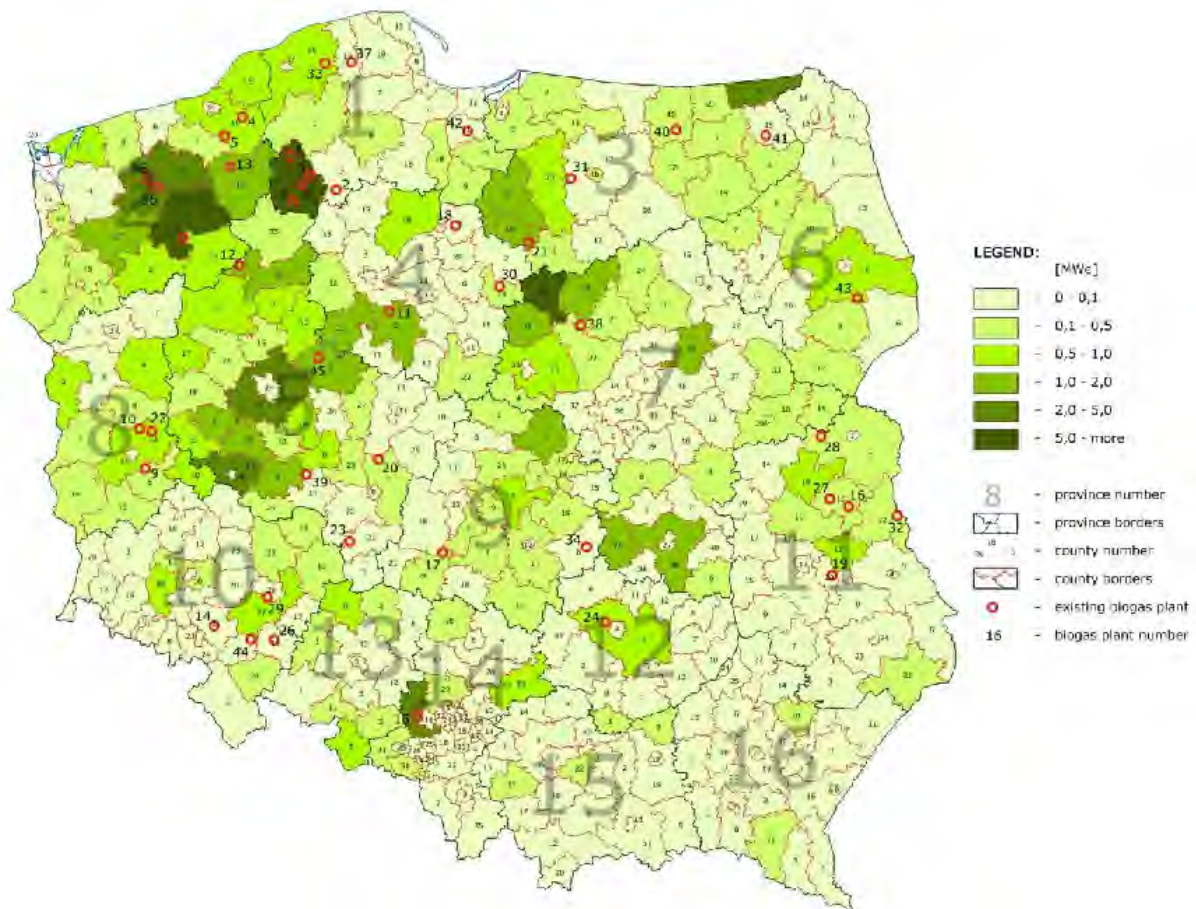


Figure 9. Locations of existing biogas plants on the energy map in the counties for farms with a potential greater than 0.1 MWe (Appendix A22).

6 RESOURCES

- [1] www.arimr.gov.pl
- [2] 2006 IPCC Guidelines for National Greenhouse Gas Inventories updated on 1st January 2013.
- [3] www.stat.gov.pl

7 APPENDIXES

- Appendix A1: Livestock Farms in Poland with Potential Capacity Over 0.1 MWe – Table.
- Appendix A2: Provinces and Counties numbers – Table.
- Appendix A3: Provinces and Counties numbers – Map.
- Appendix A4: Livestock (animals) in the Polish Provinces – Table.
- Appendix A5: Livestock (animals) in the Polish Counties – Table.
- Appendix A6: Swine population in the Polish Provinces – Map.
- Appendix A7: Swine population in the Polish Counties – Map.
- Appendix A8: Cattle population in the Polish Provinces – Map.
- Appendix A9: Cattle population in the Polish Counties – Map.
- Appendix A10: Sheep population in the Polish Provinces – Map.
- Appendix A11: Sheep population in the Polish Counties – Map.
- Appendix A12: Goats population in the Polish Provinces – Map.
- Appendix A13: Goats population in the Polish Counties – Map.
- Appendix A14: Theoretical amount of biogas in Polish Provinces – Table.
- Appendix A15: Theoretical amount of biogas in Polish Provinces – Map.
- Appendix A16: Theoretical amount of biogas in Polish Counties – Table.
- Appendix A17: Theoretical amount of biogas in Polish Counties – Map.
- Appendix A18: Total Energy Capacity in Polish Provinces for Livestock Farms with Capacity Over 0.1 MWe – Table.
- Appendix A19: Total Energy Capacity in Polish Provinces for Livestock Farms with Capacity Over 0.1 MWe – Map.
- Appendix A20: Total Energy Capacity in Polish Counties for Livestock Farms with Capacity Over 0.1 MWe – Table.
- Appendix A21: Total Energy Capacity in Polish Counties for Livestock Farms with Capacity Over 0.1 MWe – Map.
- Appendix A22: Correlation Between Total Energy Capacity in Polish Counties for Livestock Farms with Capacity Over 0.1 MWe and existing biogas plants – Map.

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
pomorskie	czluchowski	Koczala	518287		183 964			8 702 233	993	9.930	3.773
zachodniopomorskie	drawski	Czaplinek	701877		134 207			6 348 528	725	7.244	2.753
zachodniopomorskie	drawski	Wierzchowo	702227		129 395			6 120 901	699	6.985	2.654
warminsko-mazurskie	goldapski	Banie Mazurskie	611709		127 897			6 050 040	691	6.904	2.623
slaskie	gliwicki	Rudziniec	540942		98 145			4 642 651	530	5.298	2.013
mazowieckie	zurominski	Kuczbork-Osada	398136		96 537			4 566 586	521	5.211	1.980
mazowieckie	zurominski	Kuczbork-Osada	398228		88 096			4 167 293	476	4.755	1.807
zachodniopomorskie	drawski	Kalisz Pomorski	702079		87 356			4 132 288	472	4.715	1.792
pomorskie	czluchowski	Koczala	518288		76 858			3 635 691	415	4.149	1.577
pomorskie	czluchowski	Przechlewo	518346		72 327			3 421 356	391	3.904	1.484
zachodniopomorskie	lobeski	Lobez	705765		63 379			2 998 080	342	3.421	1.300
mazowieckie	mlawski	Strzegowo	317041		62 545			2 958 629	338	3.376	1.283
zachodniopomorskie	swidwinski	Rabino	709304		58 023			2 744 720	313	3.132	1.190
mazowieckie	wyszkowski	Wyszkow	393937		56 919			2 692 496	307	3.072	1.168
zachodniopomorskie	lobeski	Radowo Male	705816		55 022			2 602 761	297	2.970	1.129
pomorskie	czluchowski	Debrzno	518142		51 998			2 459 713	281	2.807	1.067
mazowieckie	zurominski	Lutocin	399525		50 770			2 401 624	274	2.741	1.041
pomorskie	czluchowski	Przechlewo	518347		41 827			1 978 584	226	2.258	0.858
kujawsko-pomorskie	inowroclawski	Dabrowa Biskupia	26388		39 604			1 873 428	214	2.138	0.812
zachodniopomorskie	drawski	Wierzchowo	702228		36 534			1 728 204	197	1.972	0.749
mazowieckie	zurominski	Biezun	397401	40	34 201			1 627 303	186	1.857	0.706
lubelskie	leczynski	Ludwin	100693		34 181			1 616 898	185	1.845	0.701
lodzkie	lowicki	Kocierzew Poludniowy	158127		33 430			1 581 373	181	1.805	0.686
opolskie	namyslowski	Domaszowice	405981		31 501			1 490 123	170	1.700	0.646
slaskie	zawiercianski	Wlodowice	552364		30 390			1 437 569	164	1.640	0.623
wielkopolskie	wolsztynski	Wolsztyn	698098		30 059			1 421 911	162	1.623	0.617
mazowieckie	zurominski	Kuczbork-Osada	398155		30 052			1 421 580	162	1.622	0.616
lubelskie	radzynski	Radzyn Podlaski	118088		29 350			1 388 372	158	1.584	0.602
dolnoslaskie	wroclawski	Dlugoleka	12657		28 474			1 346 934	154	1.537	0.584
wielkopolskie	miedzzychodzki	Kwilcz	665671		28 059			1 327 303	152	1.515	0.576
mazowieckie	sierpecki	Sierpc	373344		27 863			1 318 031	150	1.504	0.572

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
mazowieckie	zurominski	Kuczbork-Osada	398210		27 644			1 307 672	149	1.492	0.567
zachodniopomorskie	szczecinecki	Grzmiaca	708821		26 890			1 272 005	145	1.451	0.552
zachodniopomorskie	szczecinecki	Barwice	708613		26 410			1 249 299	143	1.426	0.542
wielkopolskie	grodziski	Wielichowo	637819	24	25 177			1 196 648	137	1.366	0.519
wielkopolskie	gostynski	Borek Wielkopolski	633672		24 294			1 149 203	131	1.311	0.498
wielkopolskie	poznancki	Buk	679643	22	24 029			1 141 870	130	1.303	0.495
wielkopolskie	leszczynski	Osieczna	664090		23 933			1 132 127	129	1.292	0.491
dolnoslaskie	zlotoryjski	Pielgrzymka	14291		23 048			1 090 263	124	1.244	0.473
mazowieckie	przysuski	Przysucha	353815		22 949			1 085 579	124	1.239	0.471
warmińsko-mazurskie	nowomiejski	Grodziczno	619097		22 722			1 074 841	123	1.227	0.466
lubuskie	slubicki	Cybinka	138505		22 412			1 060 177	121	1.210	0.460
mazowieckie	Siedlce	Siedlce	365053		21 975			1 039 505	119	1.186	0.451
zachodniopomorskie	swidwinski	Swidwin	709504		21 924			1 037 093	118	1.183	0.450
wielkopolskie	sredzki	Sroda Wielkopolska	689041		21 853			1 033 734	118	1.180	0.448
kujawsko-pomorskie	zninski	Janowiec Wielkopolski	54617		21 592			1 021 388	117	1.166	0.443
zachodniopomorskie	slawieski	Malechowo	707389		21 561			1 019 922	116	1.164	0.442
mazowieckie	sierpecki	Rosciszewo	372644	2	20 872			987 802	113	1.127	0.428
lodzkie	zgierski	Strykow	209321	3 485	3 072			969 384	111	1.106	0.420
zachodniopomorskie	gryficki	Gryfice	703087		20 474			968 502	111	1.105	0.420
pomorskie	czluchowski	Przechlewo	518348		20 302			960 366	110	1.096	0.416
mazowieckie	plocki	Brudzen Duzy	337789	28	19 729			939 882	107	1.073	0.408
swietokrzyskie	kielecki	Chmielnik	572609		19 389			917 177	105	1.047	0.398
opolskie	prudnicki	Biala	412105		19 205			908 473	104	1.037	0.394
warmińsko-mazurskie	ostrodzki	Morag	623972		18 929			895 417	102	1.022	0.388
pomorskie	czluchowski	Debrzno	518219		18 737			886 335	101	1.011	0.384
slaskie	wodzislawski	Lubomia	549980	592	15 762			885 590	101	1.011	0.384
dolnoslaskie	milicki	Milicz	7516		18 569			878 388	100	1.002	0.381
kujawsko-pomorskie	swiecki	Jezewo	42546		18 359			868 454	99	0.991	0.377
wielkopolskie	grodziski	Kamieniec	636941	9	17 747			841 632	96	0.960	0.365

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
mazowieckie	zurominski	Lutocin	399512		17 591			832 125	95	0.950	0.361
pomorskie	slupski	Debnica Kaszubska	527692		17 522			828 861	95	0.946	0.359
mazowieckie	zurominski	Zuromin	400673		17 455			825 691	94	0.942	0.358
mazowieckie	przysuski	Rusinow	354291		16 975			802 985	92	0.916	0.348
mazowieckie	makowski	Szelkow	310577		16 936			801 141	91	0.914	0.347
mazowieckie	zurominski	Zuromin	400665		16 511			781 036	89	0.891	0.339
wielkopolskie	leszczynski	Rydzyzna	664525		16 438			777 583	89	0.887	0.337
opolskie	kluczborski	Byczyna	404336		16 294			770 771	88	0.880	0.334
wielkopolskie	gniezienski	Kiszkowo	631575		16 262			769 258	88	0.878	0.334
zachodniopomorskie	lobeski	Lobez	705779		16 233			767 886	88	0.876	0.333
podkarpackie	lezajski	Nowa Sarzyna	433956		16 202			766 419	87	0.875	0.332
mazowieckie	radomski	Zakrzew	364994		16 173			765 048	87	0.873	0.332
wielkopolskie	grodziski	Granowo	636408		16 081			760 696	87	0.868	0.330
lubuskie	wschowski	Wschowa	140710	131	15 391			759 032	87	0.866	0.329
kujawsko-pomorskie	zninski	Rogowo	55276		15 867			750 573	86	0.856	0.325
warminsko-mazurskie	ostrodzki	Grunwald	623241		15 825			748 586	85	0.854	0.325
zachodniopomorskie	choszczenski	Drawno	701606		15 626			739 172	84	0.843	0.321
podlaskie	kolnenski	Kolno	481496		15 607			738 274	84	0.842	0.320
mazowieckie	zurominski	Lutocin	399590		15 329			725 123	83	0.827	0.314
opolskie	brzeski	Lubsza	402351		15 231			720 487	82	0.822	0.312
wielkopolskie	jarocinski	Jarocin	638803		15 179			718 027	82	0.819	0.311
mazowieckie	przysuski	Przysucha	353853		15 133			715 851	82	0.817	0.310
mazowieckie	radomski	Pionki	361756	20	14 864			707 856	81	0.808	0.307
wielkopolskie	poznanski	Swarzedz	681498		14 820			701 045	80	0.800	0.304
slaskie	klobucki	Krzepice	542282		14 729			696 741	80	0.795	0.302
warminsko-mazurskie	nowomiejski	Nowe Miasto Lubawskie	619961	2	14 528			687 705	79	0.785	0.298
zachodniopomorskie	stargardzki	Dolice	707983		14 434			682 786	78	0.779	0.296
mazowieckie	zurominski	Lubowidz	398842		14 405			681 414	78	0.778	0.295
wielkopolskie	poznanski	Dopiewo	679735		14 374			679 948	78	0.776	0.295
mazowieckie	radomski	Ilza	358835		14 343			678 481	77	0.774	0.294

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
zachodniopomorskie	koszalinski	Polanow	705490		14 337			678 197	77	0.774	0.294
mazowieckie	zurominski	Zuromin	400763		14 222			672 757	77	0.768	0.292
podlaskie	bialostocki	Poswietne	469752		14 176			670 582	77	0.765	0.291
mazowieckie	zurominski	Lutocin	399229	3	14 118			668 547	76	0.763	0.290
mazowieckie	sierpecki	Rosciszewo	372617	32	13 778			659 321	75	0.752	0.286
wielkopolskie	czarnkowsko-trzcianecki	Czarnkow	629322		13 882			656 674	75	0.749	0.285
wielkopolskie	poznancki	Swarzedz	681497		13 871			656 154	75	0.749	0.285
mazowieckie	zurominski	Lubowidz	398714		13 694			647 781	74	0.739	0.281
wielkopolskie	koscianski	Czempin	658296	30	13 455			643 569	73	0.734	0.279
wielkopolskie	leszczynski	Osieczna	664173		13 572			642 010	73	0.733	0.278
wielkopolskie	czarnkowsko-trzcianecki	Wielen	630734		13 421			634 867	72	0.724	0.275
lodzkie	brzezinski	Rogow	146116		13 411			634 394	72	0.724	0.275
wielkopolskie	wagrowiecki	Damaslawek	694679		12 954			612 776	70	0.699	0.266
lubuskie	zielonogorski	Sulechow	141274	2 544				601 556	69	0.686	0.261
warminsko-mazurskie	Olsztyn	Olsztyn	620956	5	12 646			599 389	68	0.684	0.260
wielkopolskie	obornicki	Rogozno	668110		12 569			594 564	68	0.678	0.258
lodzkie	kutnowski	Krzyzanow	147851	9	12 507			593 759	68	0.678	0.257
warminsko-mazurskie	goldapski	Goldap	612220		12 461			589 455	67	0.673	0.256
wielkopolskie	koscianski	Krzywin	659590		12 382			585 718	67	0.668	0.254
wielkopolskie	pilski	Wysoka	676532	1 678	3 963			584 247	67	0.667	0.253
wielkopolskie	poznancki	Kleszczewo	679938		12 281			580 940	66	0.663	0.252
mazowieckie	siedlecki	Mokobody	366515	2 449				579 093	66	0.661	0.251
warminsko-mazurskie	gizycki	Krukianki	610710		12 228			578 433	66	0.660	0.251
mazowieckie	przasnyski	Jednorozec	349326	234	10 887			570 330	65	0.651	0.247
wielkopolskie	gostynski	Pepowo	635126	398	10 062			570 084	65	0.651	0.247
mazowieckie	zurominski	Biezun	397708		12 050			570 013	65	0.650	0.247
mazowieckie	zurominski	Zuromin	400679		12 004			567 837	65	0.648	0.246
zachodniopomorskie	swidwinski	Brzezno	709099		11 949			565 235	65	0.645	0.245
zachodniopomorskie	walecki	Walcz	709781		11 782			557 336	64	0.636	0.242
zachodniopomorskie	stargardzki	Dobrzany	707953		11 691			553 031	63	0.631	0.240

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	leszczynski	Krzemieniewo	663565		11 586			548 064	63	0.625	0.238
warminsko-mazurskie	mragowski	Piecki	617291		11 484			543 239	62	0.620	0.236
zachodniopomorskie	swidwinski	Slawoborze	709371		11 444			541 347	62	0.618	0.235
lubelskie	radzynski	Komarowka Podlaska	117646		11 374			538 036	61	0.614	0.233
mazowieckie	plonski	Baboszewo	343068	1	11 365			537 846	61	0.614	0.233
warminsko-mazurskie	ilawski	Susz	614320		11 330			535 954	61	0.612	0.232
wielkopolskie	nowotomyski	Kuslin	666266		11 329			535 907	61	0.612	0.232
lubuskie	swiebodzinski	Swiebodzin	140138		11 098			524 980	60	0.599	0.228
wielkopolskie	chodzieski	Budzyn	628314		11 084			524 318	60	0.598	0.227
mazowieckie	sokolowski	Sabnie	380108		11 072			523 750	60	0.598	0.227
kujawsko-pomorskie	nakielski	Mrocza	34357	1	11 064			523 608	60	0.597	0.227
wielkopolskie	gniezienski	Trzemeszno	632907		10 886			514 951	59	0.588	0.223
wielkopolskie	gostynski	Borek Wielkopolski	633671	517	8 258			512 887	59	0.585	0.222
swietokrzyskie	kielecki	Checiny	572161	4	10 724			508 234	58	0.580	0.220
lubuskie	zielonogorski	Sulechow	141302	2 129				503 425	57	0.574	0.218
mazowieckie	plocki	Drobin	338938		10 623			502 510	57	0.573	0.218
lubuskie	nowosolski	Siedlisko	138434		10 585			500 713	57	0.571	0.217
zachodniopomorskie	bialogardzki	Bialogard	701142		10 581			500 524	57	0.571	0.217
wielkopolskie	zlotowski	Lipka	700160		10 556			499 341	57	0.570	0.217
wielkopolskie	nowotomyski	Kulin	666134		10 555			499 294	57	0.570	0.217
lodzkie	tomaszowski	Rokiciny	198803	22	10 389			496 643	57	0.567	0.215
zachodniopomorskie	kamienski	Golczewo	704123		10 492			496 314	57	0.566	0.215
wielkopolskie	koscianski	Krzywin	659531		10 482			495 841	57	0.566	0.215
opolskie	glubczycki	Kietrz	403036	2 095				495 386	57	0.565	0.215
wielkopolskie	wagrowiecki	Golancz	694977		10 419			492 860	56	0.562	0.214
lodzkie	lowicki	Kiernoza	157187		10 402			492 056	56	0.561	0.213
malopolskie	wielicki	Gdow	280985		10 374			490 732	56	0.560	0.213
lubuskie	miedzyrzecki	Przytoczna	137703		10 337			488 981	56	0.558	0.212
wielkopolskie	koscianski	Smigiel	659773	2 061				487 346	56	0.556	0.211
dolnoslaskie	olesnicki	Dobroszyce	7735		10 295			486 995	56	0.556	0.211

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
mazowieckie	zurominski	Biezun	397294	3	9 996			473 560	54	0.540	0.205
wielkopolskie	chodzieski	Chodziej	628356		9 999			472 993	54	0.540	0.205
pomorskie	slupski	Damnica	527599		9 963			471 290	54	0.538	0.204
swietokrzyskie	kielecki	Sitkowka-Nowiny	579364	2	9 866			467 174	53	0.533	0.203
warminsko-mazurskie	ilawski	Susz	614319		9 841			465 519	53	0.531	0.202
warminsko-mazurskie	ilawski	Lubawa	614016		9 760			461 687	53	0.527	0.200
opolskie	glubczycki	Kietrz	403035	1 944				459 680	52	0.525	0.199
wielkopolskie	pilski	Lobzenica	675211		9 648			456 389	52	0.521	0.198
zachodniopomorskie	gryfinski	Stare Czarnowo	703915	1 925				455 187	52	0.519	0.197
dolnoslaskie	olesnicki	Olesnica	8125		9 597			453 976	52	0.518	0.197
pomorskie	koscierski	Koscierzyna	523394		9 571			452 747	52	0.517	0.196
swietokrzyskie	kazimierski	Opatowiec	568971	1	9 518			450 476	51	0.514	0.195
mazowieckie	przysuski	Przysucha	353796		9 455	2		447 287	51	0.510	0.194
lubuskie	slubicki	Cybinka	138445	10	9 374			445 792	51	0.509	0.193
warminsko-mazurskie	nowomiejski	Grodziczno	619169		9 360			442 765	51	0.505	0.192
pomorskie	bytowski	Trzebielino	515858		9 283			439 123	50	0.501	0.190
pomorskie	koscierski	Nowa Karczma	524084		9 277			438 839	50	0.501	0.190
lubuskie	miedzyrzecki	Pszczew	137736	274	7 875			437 309	50	0.499	0.190
zachodniopomorskie	szczecinecki	Barwice	708593		9 195			434 960	50	0.496	0.189
wielkopolskie	koscianski	Czempin	658395		9 158			433 210	49	0.494	0.188
warminsko-mazurskie	gizycki	Krukanki	610708		9 105			430 703	49	0.491	0.187
kujawsko-pomorskie	zninski	Znin	55476	403	7 055			429 023	49	0.490	0.186
lubuskie	zaganski	Brzeznicza	141615		8 903			421 148	48	0.481	0.183
zachodniopomorskie	stargardzki	Dolice	707981	1 773				419 245	48	0.478	0.182
mazowieckie	gostyninski	Szczawin Koscielny	295065		8 844			418 357	48	0.477	0.181
podlaskie	grajewski	Rajgrad	477578		8 829			417 647	48	0.477	0.181
wielkopolskie	grodziski	Grodzisk Wielkopolski	636573		8 824			417 410	48	0.476	0.181
wielkopolskie	szamotulski	Pniewy	687379	5	8 754			415 282	47	0.474	0.180
mazowieckie	przysuski	Gielniow	352175		8 767			414 714	47	0.473	0.180
lubuskie	slubicki	Cybinka	138503	1 751				414 043	47	0.472	0.180

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
dolnoslaskie	wroclawski	Zorawina	13063		8 717			412 349	47	0.471	0.179
mazowieckie	lipski	Chotcza	300901		8 707			411 876	47	0.470	0.179
warminsko-mazurskie	goldapski	Goldap	612212		8 637			408 565	47	0.466	0.177
lubuskie	wschowski	Slawa	140350		8 631			408 281	47	0.466	0.177
warminsko-mazurskie	goldapski	Goldap	612051		8 603			406 956	46	0.464	0.176
wielkopolskie	obornicki	Oborniki	667792		8 562			405 017	46	0.462	0.176
zachodniopomorskie	walecki	Walcz	709714		8 549			404 402	46	0.461	0.175
zachodniopomorskie	swidwinski	Brzezno	709089	11	8 485			403 976	46	0.461	0.175
wielkopolskie	chodzieski	Budzyn	628198		8 522			403 125	46	0.460	0.175
warminsko-mazurskie	lidzbarski	Lidzbark Warminski	616165		8 516			402 841	46	0.460	0.175
mazowieckie	zurominski	Lutocin	399553		8 501			402 131	46	0.459	0.174
mazowieckie	plocki	Bielsk	336853		8 492			401 706	46	0.458	0.174
mazowieckie	zurominski	Kuczbork-Osada	398131		8 371			395 982	45	0.452	0.172
wielkopolskie	poznancki	Buk	679398	15	8 274			394 940	45	0.451	0.171
wielkopolskie	leszczynski	Swieciechowa	664715		8 332			394 137	45	0.450	0.171
lodzkie	lodzki wschodni	Koluszki	161285	1	8 267			391 299	45	0.447	0.170
mazowieckie	plocki	Mala Wies	340160		8 245			390 021	45	0.445	0.169
wielkopolskie	czarnkowsko-trzcianecki	Czarnkow	629240		8 230			389 312	44	0.444	0.169
mazowieckie	sierpecki	Sierpc	373457		8 226			389 123	44	0.444	0.169
wielkopolskie	pilski	Kaczory	675035		8 225			389 075	44	0.444	0.169
warminsko-mazurskie	ketrzyński	Korsze	615173		8 221			388 886	44	0.444	0.169
wielkopolskie	slupecki	Ostrowite	684728		8 208			388 271	44	0.443	0.168
mazowieckie	plonski	Naruszewo	344845	1 630				385 431	44	0.440	0.167
wielkopolskie	gostynski	Gostyn	633980		8 090			382 689	44	0.437	0.166
mazowieckie	zurominski	Lutocin	399482	2	8 073			382 358	44	0.436	0.166
lodzkie	pabianicki	Dlutow	167602		8 031			379 898	43	0.434	0.165
zachodniopomorskie	kamienski	Kamien Pomorski	704196		8 013			379 047	43	0.433	0.164
swietokrzyskie	ostrowiecki	Cmielow	586967		7 963			376 682	43	0.430	0.163
mazowieckie	zurominski	Zuromin	400678		7 952			376 161	43	0.429	0.163
podlaskie	bialostocki	Poswietne	469828	60	7 651			376 111	43	0.429	0.163

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	rawicki	Bojanowo	681730	1 582				374 081	43	0.427	0.162
pomorskie	sztumski	Sztum	531196	17	7 782			372 140	42	0.425	0.161
podlaskie	bielski	Bielsk Podlaski	472882		7 832			370 485	42	0.423	0.161
zachodniopomorskie	stargardzki	Dolice	707985	1 081	2 418			369 995	42	0.422	0.160
pomorskie	czluchowski	Rzeczenica	518463		7 780			368 025	42	0.420	0.160
mazowieckie	zurominski	Lutocin	399450	7	7 720			366 842	42	0.419	0.159
mazowieckie	zurominski	Zuromin	400202	6	7 723			366 748	42	0.418	0.159
kujawsko-pomorskie	swiecki	Swiecie	43748		7 713			364 856	42	0.416	0.158
warminsko-mazurskie	gizycki	Gizycko	610503		7 708			364 619	42	0.416	0.158
dolnoslaskie	legnicki	Chojnow	5034	1 539				363 913	42	0.415	0.158
zachodniopomorskie	walecki	Walcz	709762		7 686			363 579	42	0.415	0.158
lodzkie	wielunski	Patnow	203051		7 657			362 207	41	0.413	0.157
warminsko-mazurskie	nowomiejski	Biskupiec	618625		7 609			359 936	41	0.411	0.156
wielkopolskie	szamotulski	Ostrorog	687213	179	6 691			358 838	41	0.409	0.156
malopolskie	dabrowski	Olesno	217439		7 568			357 997	41	0.409	0.155
mazowieckie	zurominski	Kuczbork-Osada	398107	4	7 506			356 010	41	0.406	0.154
wielkopolskie	gniezienski	Trzemeszno	632916		7 491			354 354	40	0.404	0.154
warminsko-mazurskie	ilawski	Lubawa	613566		7 488			354 212	40	0.404	0.154
wielkopolskie	wagrowiecki	Golancz	695063		7 484			354 023	40	0.404	0.154
zachodniopomorskie	koszalinski	Sianow	705631		7 464			353 077	40	0.403	0.153
wielkopolskie	wolsztynski	Przemet	697133		7 420			350 996	40	0.401	0.152
zachodniopomorskie	swidwinski	Swidwin	709475	24	7 295			350 758	40	0.400	0.152
mazowieckie	zurominski	Kuczbork-Osada	398138		7 380			349 104	40	0.398	0.151
wielkopolskie	gostynski	Borek Wielkopolski	633697	255	6 090			348 379	40	0.398	0.151
warminsko-mazurskie	gizycki	Milki	610924		7 354			347 874	40	0.397	0.151
pomorskie	czluchowski	Czluchow	517950		7 341			347 259	40	0.396	0.151
pomorskie	slupski	Slupsk	528202		7 320			346 265	40	0.395	0.150
wielkopolskie	jarocinski	Jarocin	638864		7 316			346 076	40	0.395	0.150
warminsko-mazurskie	ketrzynski	Barciany	614682	1 461				345 469	39	0.394	0.150
wielkopolskie	koscianski	Czempin	658156	1 449				342 632	39	0.391	0.149
lubelskie	parczewski	Parczew	112321		7 210			341 062	39	0.389	0.148

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
mazowieckie	zurominski	Lutocin	399494		7 202			340 683	39	0.389	0.148
warminsko-mazurskie	goldapski	Dubeninki	611949		7 171			339 217	39	0.387	0.147
wielkopolskie	pilski	Lobzenica	675312		7 167			339 028	39	0.387	0.147
warminsko-mazurskie	gizycki	Wydminy	611466	1 432				338 612	39	0.386	0.147
mazowieckie	grojecki	Goszczyn	296200		7 141			337 798	39	0.385	0.146
mazowieckie	ciechanowski	Regimin	286663		7 129			337 230	38	0.385	0.146
lubuskie	wschowski	Szlichtyngowa	140529		7 115			336 568	38	0.384	0.146
wielkopolskie	wagrowiecki	Wagrowiec	695857		7 114			336 521	38	0.384	0.146
wielkopolskie	pilski	Lobzenica	675565		7 100			335 858	38	0.383	0.146
warminsko-mazurskie	ilawski	Lubawa	613691		7 062			334 061	38	0.381	0.145
zachodniopomorskie	swidwinski	Polczyn-Zdroj	709210		7 057			333 824	38	0.381	0.145
mazowieckie	mlawski	Szrensk	317969		7 031			332 594	38	0.380	0.144
wielkopolskie	sremski	Ksiaz Wielkopolski	689838		7 028			332 453	38	0.379	0.144
zachodniopomorskie	stargardzki	Dobrzany	707936		7 008			331 506	38	0.378	0.144
wielkopolskie	gostynski	Pepowo	635109	8	6 965			331 364	38	0.378	0.144
dolnoslaskie	zabkowicki	Kamieniec Zabkowicki	13226	1 393				329 390	38	0.376	0.143
wielkopolskie	pilski	Lobzenica	675624		6 927			327 675	37	0.374	0.142
zachodniopomorskie	stargardzki	Stargard Szczecinski	708270	1 385				327 498	37	0.374	0.142
zachodniopomorskie	kamienski	Kamien Pomorski	704203		6 859			324 458	37	0.370	0.141
wielkopolskie	sredzki	Sroda Wielkopolska	689013	1 351				319 459	36	0.365	0.139
mazowieckie	zurominski	Kuczbork-Osada	398127		6 706			317 221	36	0.362	0.138
mazowieckie	zurominski	Lutocin	399072	1	6 685			316 464	36	0.361	0.137
lodzkie	radomszczanski	Wielgomlyny	184594		6 663			315 187	36	0.360	0.137
zachodniopomorskie	kamienski	Wolin	704355	1 332				314 966	36	0.359	0.137
wielkopolskie	koscianski	Smigiel	660085	224	5 492			312 761	36	0.357	0.136
mazowieckie	zurominski	Lutocin	399557		6 600			312 206	36	0.356	0.135
podlaskie	moniecki	Goniadz	488870		6 583			311 402	36	0.355	0.135
lubelskie	wlodawski	Hansk	127984	1 314				310 710	35	0.355	0.135

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
pomorskie	sztumski	Stary Targ	531040		6 556			310 125	35	0.354	0.134
warmińsko-mazurskie	mragowski	Mikolajki	616731		6 546			309 652	35	0.353	0.134
mazowieckie	losicki	Stara Kornica	306461		6 504			307 665	35	0.351	0.133
warmińsko-mazurskie	ilawski	Ilawa	612816		6 478			306 435	35	0.350	0.133
wielkopolskie	poznański	Buk	679483	41	6 262			305 913	35	0.349	0.133
zachodniopomorskie	stargardzki	Stargard Szczeciński	708331	617	3 326			303 229	35	0.346	0.131
mazowieckie	mławski	Wiecźfnia Koscielna	318556	261	5 055			300 838	34	0.343	0.130
zachodniopomorskie	slawieński	Darłowo	707187		6 322			299 056	34	0.341	0.130
wielkopolskie	gnieźnieński	Kiszkowo	631576		6 293			297 684	34	0.340	0.129
wielkopolskie	leszczyński	Krzemieniewo	663564	1 257				297 231	34	0.339	0.129
wielkopolskie	chodzieski	Budzyn	628288		6 277			296 927	34	0.339	0.129
łódzkie	łowicki	Kocierzew Południowy	158033		6 246			295 461	34	0.337	0.128
wielkopolskie	gostyński	Pepowo	634967	1 247				294 867	34	0.336	0.128
wielkopolskie	czarnkowsko-trzcianecki	Trzcianka	630393	8	6 106			290 730	33	0.332	0.126
lubuskie	mieędzyrzecki	Bledzew	137550	82	5 729			290 394	33	0.331	0.126
kujawsko-pomorskie	włocławski	Chodecz	51197		6 137			290 305	33	0.331	0.126
pomorskie	slupski	Damnica	527584		6 112			289 122	33	0.330	0.125
kujawsko-pomorskie	inowrocławski	Kruszwica	27362	681	2 602	331		288 638	33	0.329	0.125
warmińsko-mazurskie	wegorzewski	Budry	627504		6 096			288 365	33	0.329	0.125
warmińsko-mazurskie	ilawski	Lubawa	613801		6 077			287 466	33	0.328	0.125
mazowieckie	zuromiński	Kuczbork-Osada	398145		6 072			287 230	33	0.328	0.125
zachodniopomorskie	stargardzki	Dolice	707984	419	3 961			286 448	33	0.327	0.124
kujawsko-pomorskie	znieski	Rogowo	55328		6 044			285 905	33	0.326	0.124
mazowieckie	sokolowski	Sokolow Podlaski	380640		6 015			284 534	32	0.325	0.123
wielkopolskie	wagrowiecki	Wagrowiec	696042	10	5 961			284 344	32	0.324	0.123
wielkopolskie	sremski	Brodnica	689223	1 200				283 753	32	0.324	0.123
wielkopolskie	sredzki	Dominowo	688201		5 988			283 256	32	0.323	0.123
mazowieckie	sokolowski	Sabnie	380077		5 983			283 020	32	0.323	0.123

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lodzkie	piotrkowski	Grabica	173101		5 968			282 310	32	0.322	0.122
warminsko-mazurskie	dzialdowski	Ilowo-Osada	605874		5 951			281 506	32	0.321	0.122
wielkopolskie	szamotulski	Duszniki	686649	705	2 423			281 323	32	0.321	0.122
wielkopolskie	gniezienski	Trzemeszno	632944	1 185				280 206	32	0.320	0.122
wielkopolskie	pilski	Wyrzysk	676307	5	5 849			277 863	32	0.317	0.120
lodzkie	lowicki	Kocierzew Poludniowy	157945		5 873			277 816	32	0.317	0.120
kujawsko-pomorskie	inowroclawski	Gniewkowo	26540	24	5 741			277 247	32	0.316	0.120
zachodniopomorskie	choszczenski	Recz	701782		5 850			276 728	32	0.316	0.120
lubelskie	wlodawski	Wlodawa	128602	1 164				275 240	31	0.314	0.119
mazowieckie	garwolinski	Miastkow Koscielny	290227		5 815			275 073	31	0.314	0.119
wielkopolskie	wolsztynski	Wolsztyn	698046	1 161	7			274 862	31	0.314	0.119
lodzkie	lodzki wschodni	Tuszyn	161969		5 810			274 836	31	0.314	0.119
slaskie	tarnogorski	Zbroslawice	549679	1 161				274 531	31	0.313	0.119
zachodniopomorskie	koszalinski	Bobolice	705357		5 792			273 985	31	0.313	0.119
warminsko-mazurskie	braniewski	Braniewo	604477		5 782			273 512	31	0.312	0.119
mazowieckie	lipski	Rzeczniow	302322		5 766			272 755	31	0.311	0.118
lubuskie	zarski	Lubsko	142370	1 153				272 639	31	0.311	0.118
wielkopolskie	leszczynski	Wloszakowice	665197		5 754			272 187	31	0.311	0.118
opolskie	glubczycki	Glubczyce	402873	1 148				271 457	31	0.310	0.118
dolnoslaskie	milicki	Cieszkow	6984		5 711			270 153	31	0.308	0.117
wielkopolskie	jarocinski	Jarocin	638833		5 706			269 917	31	0.308	0.117
lodzkie	belchatowski	Druzbiga	143409		5 701			269 680	31	0.308	0.117
mazowieckie	ciechanowski	Ciechanow	284154	5	5 671			269 443	31	0.307	0.117
wielkopolskie	slupecki	Zagorow	686354	7	5 652			269 017	31	0.307	0.117
lodzkie	lowicki	Kocierzew Poludniowy	158117		5 679			268 639	31	0.307	0.116
zachodniopomorskie	slawieski	Postomino	707585		5 675			268 450	31	0.306	0.116
wielkopolskie	gostynski	Borek Wielkopolski	633506		5 667			268 072	31	0.306	0.116
wielkopolskie	pilski	Lobzenica	675566	6	5 637			268 071	31	0.306	0.116

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lubuskie	wschowski	Szlichtyngowa	140459	1 130				267 201	31	0.305	0.116
slaskie	gliwicki	Sosnicowice	541037		5 622			265 943	30	0.303	0.115
lubelskie	parczewski	Jablon	111640	181	4 715			265 838	30	0.303	0.115
wielkopolskie	pilski	Wyrzysk	676237	678	2 210			264 862	30	0.302	0.115
podlaskie	siemiatycki	Nurzec-Stacja	496262		5 597			264 760	30	0.302	0.115
pomorskie	sztumski	Mikolajki Pomorskie	530643	1 119				264 600	30	0.302	0.115
mazowieckie	losicki	Losice	304444		5 560			263 010	30	0.300	0.114
warminsko-mazurskie	elblaski	Paslek	608544	1 111				262 708	30	0.300	0.114
mazowieckie	przysuski	Rusinow	354321		5 550			262 537	30	0.300	0.114
lodzkie	lowicki	Kocierzew Poludniowy	157789	1	5 532			261 922	30	0.299	0.114
wielkopolskie	pleszewski	Goluchow	678293	1 107				261 762	30	0.299	0.114
zachodniopomorskie	szczecinecki	Barwice	708606	27	5 388			261 258	30	0.298	0.113
wielkopolskie	sredzki	Nowe Miasto nad Warta	688647	423	3 405			261 093	30	0.298	0.113
lubelskie	tomaszowski	Lubycza Krolewska	124443		5 506			260 456	30	0.297	0.113
warminsko-mazurskie	mragowski	Mragowo	616801	1 098				259 634	30	0.296	0.113
wielkopolskie	poznanski	Mosina	680534	7	5 443			259 131	30	0.296	0.112
wielkopolskie	pilski	Wysoka	676531	246	4 247			259 069	30	0.296	0.112
lodzkie	laski	Widawa	151279	105	4 936	44		258 922	30	0.295	0.112
zachodniopomorskie	pyrzycki	Warnice	706944	1 094				258 688	30	0.295	0.112
lodzkie	lodzki wschodni	Tuszyn	161972		5 436			257 145	29	0.293	0.112
lubuskie	wschowski	Wschowa	140558	1 086				256 797	29	0.293	0.111
opolskie	glubczycki	Glubczyce	402872	1 084				256 324	29	0.292	0.111
zachodniopomorskie	swidwinski	Swidwin	709492	1 079				255 141	29	0.291	0.111
dolnoslaskie	zlotoryjski	Zagrodno	14529	1 078				254 905	29	0.291	0.111
mazowieckie	radomski	Skaryszew	363317		5 388			254 874	29	0.291	0.111
wielkopolskie	pilski	Lobzenica	675453		5 367			253 881	29	0.290	0.110
wielkopolskie	gostynski	Piaski	635381	1 072				253 486	29	0.289	0.110
wielkopolskie	leszczynski	Wijewo	664827	56	5 054			252 316	29	0.288	0.109

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
kujawsko-pomorskie	inowroclawski	Kruszwica	27533		5 309			251 137	29	0.287	0.109
wielkopolskie	leszczynski	Krzemieniewo	663305		5 307			251 042	29	0.286	0.109
wielkopolskie	pilski	Miasteczko Krajenskie	675727	1 052				248 757	28	0.284	0.108
dolnoslaskie	trzebnicki	Zmigrod	11605		5 247			248 204	28	0.283	0.108
podkarpackie	lezajski	Lezajsk	433494		5 244			248 062	28	0.283	0.108
pomorskie	kwidzynski	Kwidzyn	524954		5 233			247 542	28	0.282	0.107
wielkopolskie	poznancki	Pobiedziska	680994		5 231			247 447	28	0.282	0.107
lodzkie	piotrkowski	Wola Krzysztoporska	175862	3	5 216			247 447	28	0.282	0.107
wielkopolskie	gostynski	Borek Wielkopolski	633364		5 209			246 407	28	0.281	0.107
mazowieckie	zurominski	Lutocin	399160	19	5 109			246 169	28	0.281	0.107
lodzkie	piotrkowski	Moszczenica	174077	131	4 540			245 737	28	0.280	0.107
wielkopolskie	wolsztynski	Siedlec	697717		5 194			245 697	28	0.280	0.107
slaskie	Jastrzebie-Zdroj	Jastrzebie-Zdroj	541506		5 170			244 562	28	0.279	0.106
kujawsko-pomorskie	nakielski	Sadki	34906	1 027	5			243 082	28	0.277	0.105
warminsko-mazurskie	elcki	Elk	609236	1 028				243 082	28	0.277	0.105
zachodniopomorskie	swidwinski	Swidwin	709476		5 138			243 048	28	0.277	0.105
lodzkie	kutnowski	Kutno	148209		5 136			242 953	28	0.277	0.105
podkarpackie	sanocki	Zarszyn	459248	1 024			37	242 689	28	0.277	0.105
warminsko-mazurskie	nowomiejski	Grodziczno	619173		5 121			242 244	28	0.276	0.105
zachodniopomorskie	mysliborski	Debno	706267		5 086			240 588	27	0.275	0.104
zachodniopomorskie	Szczecin	Szczecin	708509		5 081			240 352	27	0.274	0.104
lubelskie	radzynski	Wohyn	119457		5 078			240 210	27	0.274	0.104
mazowieckie	makowski	Plonawy-Bramura	308960	82	4 666			240 110	27	0.274	0.104
lubelskie	bialski	Tuczna	62395	61	4 770			240 064	27	0.274	0.104
slaskie	raciborski	Krzanowice	548274	1 011				239 062	27	0.273	0.104
lubelskie	tomaszowski	Tyszowce	127035		5 052			238 980	27	0.273	0.104
lodzkie	lodzki wschodni	Tuszyn	161968		5 051			238 933	27	0.273	0.104
lubuskie	krosnienski	Dabie	137248	858	758			238 740	27	0.272	0.104
mazowieckie	zurominski	Zuromin	400778		5 042			238 507	27	0.272	0.103

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lodzkie	tomaszowski	Ujazd	200212	1 007				238 116	27	0.272	0.103
lubelskie	wlodawski	Wlodawa	128759	1 006				237 880	27	0.271	0.103
wielkopolskie	pilski	Wysoka	676412	260	3 728			237 829	27	0.271	0.103
warminsko-mazurskie	piski	Biala Piska	624695		5 016			237 277	27	0.271	0.103
kujawsko-pomorskie	rypinski	Rypin	39332		5 015			237 230	27	0.271	0.103
mazowieckie	gostyninski	Gostynin	293547		5 001			236 567	27	0.270	0.103
zachodniopomorskie	choszczenski	Choszczno	701564		4 987			235 905	27	0.269	0.102
warminsko-mazurskie	gizycki	Ryn	611095		4 982			235 669	27	0.269	0.102
warminsko-mazurskie	ostrodzki	Dabrowno	623087		4 980			235 574	27	0.269	0.102
mazowieckie	zurominski	Biezun	397773		4 976			235 385	27	0.269	0.102
wielkopolskie	zlotowski	Zlotow	700961		4 966			234 912	27	0.268	0.102
podlaskie	bialostocki	Juchnowiec Koscielny	468414		4 962			234 722	27	0.268	0.102
lodzkie	skierniewicki	Godzianow	194951	10	4 866			232 546	27	0.265	0.101
podlaskie	bielski	Orla	475121		4 911			232 310	27	0.265	0.101
wielkopolskie	chodzieski	Budzyn	628269		4 885			231 080	26	0.264	0.100
wielkopolskie	leszczynski	Rydzyzna	664497		4 883			230 985	26	0.264	0.100
lodzkie	wielunski	Mokrsko	201862		4 864			230 087	26	0.263	0.100
lubelskie	lubartowski	Ostrow Lubelski	91541		4 853			229 566	26	0.262	0.100
warminsko-mazurskie	piski	Biala Piska	624694		4 851			229 472	26	0.262	0.100
warminsko-mazurskie	ostrodzki	Grunwald	623213	969		13		229 308	26	0.262	0.099
wielkopolskie	gniezienski	Trzemeszno	632945	967				228 658	26	0.261	0.099
lubuskie	zielonogorski	Sulechow	141308		4 816			227 816	26	0.260	0.099
opolskie	glubczycki	Baborow	402595	962				227 475	26	0.260	0.099
opolskie	kedzierzynsko-kozielski	Pawlowiczki	403829	955				225 820	26	0.258	0.098
lubelskie	bialski	Miedzyrzec Podlaski	60194		4 750			224 694	26	0.256	0.097
wielkopolskie	kaliski	Zelazkow	645214	13	4 685			224 693	26	0.256	0.097
lodzkie	kutnowski	Strzelce	149065		4 746			224 505	26	0.256	0.097
lubelskie	bialski	Lesna Podlaska	58536		4 740			224 221	26	0.256	0.097
lubuskie	swiebodzinski	Swiebodzin	140083	948				224 165	26	0.256	0.097

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
kujawsko-pomorskie	inowroclawski	Kruszwica	27364	945				223 456	26	0.255	0.097
lodzkie	tomaszowski	Tomaszow Mazowiecki	199968		4 722			223 369	25	0.255	0.097
mazowieckie	sierpecki	Zawidz	374600	21	4 601			222 611	25	0.254	0.097
zachodniopomorskie	kamienski	Golczewo	704122		4 699			222 281	25	0.254	0.096
malopolskie	wadowicki	Wieprz	280206		4 671			220 957	25	0.252	0.096
warminsko-mazurskie	nowomiejski	Nowe Miasto Lubawskie	619820		4 656			220 247	25	0.251	0.096
pomorskie	tczewski	Pelplin	531724		4 612			218 166	25	0.249	0.095
opolskie	glubczycki	Glubczyce	402871	922				218 017	25	0.249	0.095
podlaskie	kolnenski	Kolno	481520	5	4 535			215 706	25	0.246	0.094
pomorskie	czluchowski	Koczala	518287		183 964			8 702 233	993	9.930	3.773
zachodniopomorskie	drawski	Czaplinek	701877		134 207			6 348 528	725	7.244	2.753
zachodniopomorskie	drawski	Wierzchowo	702227		129 395			6 120 901	699	6.985	2.654
warminsko-mazurskie	goldapski	Banie Mazurskie	611709		127 897			6 050 040	691	6.904	2.623
slaskie	gliwicki	Rudziniec	540942		98 145			4 642 651	530	5.298	2.013
mazowieckie	zurominski	Kuczbork-Osada	398136		96 537			4 566 586	521	5.211	1.980
mazowieckie	zurominski	Kuczbork-Osada	398228		88 096			4 167 293	476	4.755	1.807
zachodniopomorskie	drawski	Kalisz Pomorski	702079		87 356			4 132 288	472	4.715	1.792
pomorskie	czluchowski	Koczala	518288		76 858			3 635 691	415	4.149	1.577
pomorskie	czluchowski	Przechlewo	518346		72 327			3 421 356	391	3.904	1.484
zachodniopomorskie	lobeski	Lobez	705765		63 379			2 998 080	342	3.421	1.300
mazowieckie	mlawski	Strzegowo	317041		62 545			2 958 629	338	3.376	1.283
zachodniopomorskie	swidwinski	Rabino	709304		58 023			2 744 720	313	3.132	1.190
mazowieckie	wyszkowski	Wyszkow	393937		56 919			2 692 496	307	3.072	1.168
zachodniopomorskie	lobeski	Radowo Male	705816		55 022			2 602 761	297	2.970	1.129
pomorskie	czluchowski	Debrzno	518142		51 998			2 459 713	281	2.807	1.067
mazowieckie	zurominski	Lutocin	399525		50 770			2 401 624	274	2.741	1.041
pomorskie	czluchowski	Przechlewo	518347		41 827			1 978 584	226	2.258	0.858
kujawsko-pomorskie	inowroclawski	Dabrowa Biskupia	26388		39 604			1 873 428	214	2.138	0.812
zachodniopomorskie	drawski	Wierzchowo	702228		36 534			1 728 204	197	1.972	0.749
mazowieckie	zurominski	Biezun	397401	40	34 201			1 627 303	186	1.857	0.706

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lubelskie	leczyński	Ludwin	100693		34 181			1 616 898	185	1.845	0.701
łódzkie	łowicki	Kocierzew Południowy	158127		33 430			1 581 373	181	1.805	0.686
opolskie	namysłowski	Domaszowice	405981		31 501			1 490 123	170	1.700	0.646
śląskie	zawierciański	Włodowice	552364		30 390			1 437 569	164	1.640	0.623
wielkopolskie	wolsztyński	Wolsztyn	698098		30 059			1 421 911	162	1.623	0.617
mazowieckie	zuromiński	Kuczbork-Osada	398155		30 052			1 421 580	162	1.622	0.616
lubelskie	radzyński	Radzyn Podlaski	118088		29 350			1 388 372	158	1.584	0.602
dolnośląskie	wrocławski	Długoleka	12657		28 474			1 346 934	154	1.537	0.584
wielkopolskie	miedzychodzki	Kwilcz	665671		28 059			1 327 303	152	1.515	0.576
mazowieckie	sierpecki	Sierpc	373344		27 863			1 318 031	150	1.504	0.572
mazowieckie	zuromiński	Kuczbork-Osada	398210		27 644			1 307 672	149	1.492	0.567
zachodniopomorskie	szczecinecki	Grzmiaca	708821		26 890			1 272 005	145	1.451	0.552
zachodniopomorskie	szczecinecki	Barwice	708613		26 410			1 249 299	143	1.426	0.542
wielkopolskie	grodziski	Wielichowo	637819	24	25 177			1 196 648	137	1.366	0.519
wielkopolskie	gostyński	Borek Wielkopolski	633672		24 294			1 149 203	131	1.311	0.498
wielkopolskie	poznański	Buk	679643	22	24 029			1 141 870	130	1.303	0.495
wielkopolskie	leszczyński	Osieczna	664090		23 933			1 132 127	129	1.292	0.491
dolnośląskie	złotoryjski	Pielgrzymka	14291		23 048			1 090 263	124	1.244	0.473
mazowieckie	przysuski	Przysucha	353815		22 949			1 085 579	124	1.239	0.471
warmińsko-mazurskie	nowomiejski	Grodziczno	619097		22 722			1 074 841	123	1.227	0.466
lubuskie	ślubicki	Cybinka	138505		22 412			1 060 177	121	1.210	0.460
mazowieckie	Siedlce	Siedlce	365053		21 975			1 039 505	119	1.186	0.451
zachodniopomorskie	swidwiński	Swidwin	709504		21 924			1 037 093	118	1.183	0.450
wielkopolskie	sredzki	Sroda Wielkopolska	689041		21 853			1 033 734	118	1.180	0.448
kujawsko-pomorskie	zniski	Janowiec Wielkopolski	54617		21 592			1 021 388	117	1.166	0.443
zachodniopomorskie	ślawieński	Malechowo	707389		21 561			1 019 922	116	1.164	0.442
mazowieckie	sierpecki	Rosciszewo	372644	2	20 872			987 802	113	1.127	0.428
łódzkie	zgiński	Stryków	209321	3 485	3 072			969 384	111	1.106	0.420

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
zachodniopomorskie	gryficki	Gryfice	703087		20 474			968 502	111	1.105	0.420
pomorskie	człuchowski	Przechlewo	518348		20 302			960 366	110	1.096	0.416
mazowieckie	plocki	Brudzen Duzy	337789	28	19 729			939 882	107	1.073	0.408
swietokrzyskie	kielecki	Chmielnik	572609		19 389			917 177	105	1.047	0.398
opolskie	prudnicki	Biala	412105		19 205			908 473	104	1.037	0.394
warminsko-mazurskie	ostrodzki	Morag	623972		18 929			895 417	102	1.022	0.388
pomorskie	człuchowski	Debrzno	518219		18 737			886 335	101	1.011	0.384
slaskie	wodzislawski	Lubomia	549980	592	15 762			885 590	101	1.011	0.384
dolnoslaskie	milicki	Milicz	7516		18 569			878 388	100	1.002	0.381
kujawsko-pomorskie	swiecki	Jezewo	42546		18 359			868 454	99	0.991	0.377
wielkopolskie	grodziski	Kamieniec	636941	9	17 747			841 632	96	0.960	0.365
mazowieckie	zurominski	Lutocin	399512		17 591			832 125	95	0.950	0.361
pomorskie	slupski	Debnica Kaszubska	527692		17 522			828 861	95	0.946	0.359
mazowieckie	zurominski	Zuromin	400673		17 455			825 691	94	0.942	0.358
mazowieckie	przysuski	Rusinow	354291		16 975			802 985	92	0.916	0.348
mazowieckie	makowski	Szelkow	310577		16 936			801 141	91	0.914	0.347
mazowieckie	zurominski	Zuromin	400665		16 511			781 036	89	0.891	0.339
wielkopolskie	leszczynski	Rydzyzna	664525		16 438			777 583	89	0.887	0.337
opolskie	kluczborski	Byczyna	404336		16 294			770 771	88	0.880	0.334
wielkopolskie	gnieznienski	Kiszkowo	631575		16 262			769 258	88	0.878	0.334
zachodniopomorskie	lobeski	Lobez	705779		16 233			767 886	88	0.876	0.333
podkarpackie	lezajski	Nowa Sarzyna	433956		16 202			766 419	87	0.875	0.332
mazowieckie	radomski	Zakrzew	364994		16 173			765 048	87	0.873	0.332
wielkopolskie	grodziski	Granowo	636408		16 081			760 696	87	0.868	0.330
lubuskie	wschowski	Wschowa	140710	131	15 391			759 032	87	0.866	0.329
kujawsko-pomorskie	zninski	Rogowo	55276		15 867			750 573	86	0.856	0.325
warminsko-mazurskie	ostrodzki	Grunwald	623241		15 825			748 586	85	0.854	0.325
zachodniopomorskie	choszczenski	Drawno	701606		15 626			739 172	84	0.843	0.321
podlaskie	kolnenski	Kolno	481496		15 607			738 274	84	0.842	0.320
mazowieckie	zurominski	Lutocin	399590		15 329			725 123	83	0.827	0.314
opolskie	brzeski	Lubsza	402351		15 231			720 487	82	0.822	0.312

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	jarocinski	Jarocin	638803		15 179			718 027	82	0.819	0.311
mazowieckie	przysuski	Przysucha	353853		15 133			715 851	82	0.817	0.310
mazowieckie	radomski	Pionki	361756	20	14 864			707 856	81	0.808	0.307
wielkopolskie	poznanski	Swarzedz	681498		14 820			701 045	80	0.800	0.304
slaskie	klobucki	Krzepice	542282		14 729			696 741	80	0.795	0.302
warminsko-mazurskie	nowomiejski	Nowe Miasto Lubawskie	619961	2	14 528			687 705	79	0.785	0.298
zachodniopomorskie	stargardzki	Dolice	707983		14 434			682 786	78	0.779	0.296
mazowieckie	zurominski	Lubowidz	398842		14 405			681 414	78	0.778	0.295
wielkopolskie	poznanski	Dopiewo	679735		14 374			679 948	78	0.776	0.295
mazowieckie	radomski	Ilza	358835		14 343			678 481	77	0.774	0.294
zachodniopomorskie	koszalinski	Polanow	705490		14 337			678 197	77	0.774	0.294
mazowieckie	zurominski	Zuromin	400763		14 222			672 757	77	0.768	0.292
podlaskie	bialostocki	Posvietne	469752		14 176			670 582	77	0.765	0.291
mazowieckie	zurominski	Lutocin	399229	3	14 118			668 547	76	0.763	0.290
mazowieckie	sierpecki	Rosciszewo	372617	32	13 778			659 321	75	0.752	0.286
wielkopolskie	czarnkowsko-trzcianecki	Czarnkow	629322		13 882			656 674	75	0.749	0.285
wielkopolskie	poznanski	Swarzedz	681497		13 871			656 154	75	0.749	0.285
mazowieckie	zurominski	Lubowidz	398714		13 694			647 781	74	0.739	0.281
wielkopolskie	koscianski	Czempin	658296	30	13 455			643 569	73	0.734	0.279
wielkopolskie	leszczynski	Osieczna	664173		13 572			642 010	73	0.733	0.278
wielkopolskie	czarnkowsko-trzcianecki	Wielen	630734		13 421			634 867	72	0.724	0.275
lodzkie	brzezinski	Rogow	146116		13 411			634 394	72	0.724	0.275
wielkopolskie	wagrowiecki	Damaslawek	694679		12 954			612 776	70	0.699	0.266
lubuskie	zielonogorski	Sulechow	141274	2 544				601 556	69	0.686	0.261
warminsko-mazurskie	Olsztyn	Olsztyn	620956	5	12 646			599 389	68	0.684	0.260
wielkopolskie	obornicki	Rogozno	668110		12 569			594 564	68	0.678	0.258
lodzkie	kutnowski	Krzyzanow	147851	9	12 507			593 759	68	0.678	0.257
warminsko-mazurskie	goldapski	Goldap	612220		12 461			589 455	67	0.673	0.256
wielkopolskie	koscianski	Krzywin	659590		12 382			585 718	67	0.668	0.254

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	pilski	Wysoka	676532	1 678	3 963			584 247	67	0.667	0.253
wielkopolskie	poznancki	Kleszczewo	679938		12 281			580 940	66	0.663	0.252
mazowieckie	siedlecki	Mokobody	366515	2 449				579 093	66	0.661	0.251
warmińsko-mazurskie	gizycki	Kruklanki	610710		12 228			578 433	66	0.660	0.251
mazowieckie	przasnyski	Jednorozec	349326	234	10 887			570 330	65	0.651	0.247
wielkopolskie	gostynski	Pepowo	635126	398	10 062			570 084	65	0.651	0.247
mazowieckie	zurominski	Biezun	397708		12 050			570 013	65	0.650	0.247
mazowieckie	zurominski	Zuromin	400679		12 004			567 837	65	0.648	0.246
zachodniopomorskie	swidwinski	Brzezno	709099		11 949			565 235	65	0.645	0.245
zachodniopomorskie	walecki	Walcz	709781		11 782			557 336	64	0.636	0.242
zachodniopomorskie	stargardzki	Dobrzany	707953		11 691			553 031	63	0.631	0.240
wielkopolskie	leszczynski	Krzemieniewo	663565		11 586			548 064	63	0.625	0.238
warmińsko-mazurskie	mragowski	Piecki	617291		11 484			543 239	62	0.620	0.236
zachodniopomorskie	swidwinski	Slawoborze	709371		11 444			541 347	62	0.618	0.235
lubelskie	radzynski	Komarowka Podlaska	117646		11 374			538 036	61	0.614	0.233
mazowieckie	plonski	Baboszewo	343068	1	11 365			537 846	61	0.614	0.233
warmińsko-mazurskie	ilawski	Susz	614320		11 330			535 954	61	0.612	0.232
wielkopolskie	nowotomyski	Kuslin	666266		11 329			535 907	61	0.612	0.232
lubuskie	swiebodzinski	Swiebodzin	140138		11 098			524 980	60	0.599	0.228
wielkopolskie	chodzieski	Budzyn	628314		11 084			524 318	60	0.598	0.227
mazowieckie	sokolowski	Sabnie	380108		11 072			523 750	60	0.598	0.227
kujawsko-pomorskie	nakielski	Mrocza	34357	1	11 064			523 608	60	0.597	0.227
wielkopolskie	gnieziński	Trzemeszno	632907		10 886			514 951	59	0.588	0.223
wielkopolskie	gostynski	Borek Wielkopolski	633671	517	8 258			512 887	59	0.585	0.222
swietokrzyskie	kielecki	Checiny	572161	4	10 724			508 234	58	0.580	0.220
lubuskie	zielonogorski	Sulechów	141302	2 129				503 425	57	0.574	0.218
mazowieckie	plocki	Drobin	338938		10 623			502 510	57	0.573	0.218
lubuskie	nowosolski	Siedlisko	138434		10 585			500 713	57	0.571	0.217
zachodniopomorskie	bialogardzki	Białogard	701142		10 581			500 524	57	0.571	0.217
wielkopolskie	zlotowski	Lipka	700160		10 556			499 341	57	0.570	0.217

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	nowotomyski	Kuslin	666134		10 555			499 294	57	0.570	0.217
lodzkie	tomaszowski	Rokiciny	198803	22	10 389			496 643	57	0.567	0.215
zachodniopomorskie	kamienski	Golczewo	704123		10 492			496 314	57	0.566	0.215
wielkopolskie	koscianski	Krzywin	659531		10 482			495 841	57	0.566	0.215
opolskie	glubczycki	Kietrz	403036	2 095				495 386	57	0.565	0.215
wielkopolskie	wagrowiecki	Golancz	694977		10 419			492 860	56	0.562	0.214
lodzkie	lowicki	Kiernozia	157187		10 402			492 056	56	0.561	0.213
malopolskie	wielicki	Gdow	280985		10 374			490 732	56	0.560	0.213
lubuskie	miedzyrzecki	Przytoczna	137703		10 337			488 981	56	0.558	0.212
wielkopolskie	koscianski	Smigiel	659773	2 061				487 346	56	0.556	0.211
dolnoslaskie	olesnicki	Dobroszyce	7735		10 295			486 995	56	0.556	0.211
mazowieckie	zurominski	Biezun	397294	3	9 996			473 560	54	0.540	0.205
wielkopolskie	chodzieski	Chodziej	628356		9 999			472 993	54	0.540	0.205
pomorskie	slupski	Damnica	527599		9 963			471 290	54	0.538	0.204
swietokrzyskie	kielecki	Sitkowa-Nowiny	579364	2	9 866			467 174	53	0.533	0.203
warminsko-mazurskie	ilawski	Susz	614319		9 841			465 519	53	0.531	0.202
warminsko-mazurskie	ilawski	Lubawa	614016		9 760			461 687	53	0.527	0.200
opolskie	glubczycki	Kietrz	403035	1 944				459 680	52	0.525	0.199
wielkopolskie	pilski	Lobzenica	675211		9 648			456 389	52	0.521	0.198
zachodniopomorskie	gryfinski	Stare Czarnowo	703915	1 925				455 187	52	0.519	0.197
dolnoslaskie	olesnicki	Olesnica	8125		9 597			453 976	52	0.518	0.197
pomorskie	koscierski	Koscierzyna	523394		9 571			452 747	52	0.517	0.196
swietokrzyskie	kazimierski	Opatowiec	568971	1	9 518			450 476	51	0.514	0.195
mazowieckie	przysuski	Przysucha	353796		9 455	2		447 287	51	0.510	0.194
lubuskie	slubicki	Cybinka	138445	10	9 374			445 792	51	0.509	0.193
warminsko-mazurskie	nowomiejski	Grodziczno	619169		9 360			442 765	51	0.505	0.192
pomorskie	bytowski	Trzebielino	515858		9 283			439 123	50	0.501	0.190
pomorskie	koscierski	Nowa Karczma	524084		9 277			438 839	50	0.501	0.190
lubuskie	miedzyrzecki	Pszczew	137736	274	7 875			437 309	50	0.499	0.190
zachodniopomorskie	szczecinecki	Barwice	708593		9 195			434 960	50	0.496	0.189
wielkopolskie	koscianski	Czempin	658395		9 158			433 210	49	0.494	0.188
warminsko-mazurskie	gizycki	Kruklanki	610708		9 105			430 703	49	0.491	0.187

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
kujawsko-pomorskie	zninski	Znin	55476	403	7 055			429 023	49	0.490	0.186
lubuskie	zaganski	Brzeznicza	141615		8 903			421 148	48	0.481	0.183
zachodniopomorskie	stargardzki	Dolice	707981	1 773				419 245	48	0.478	0.182
mazowieckie	gostyninski	Szczawin Koscielny	295065		8 844			418 357	48	0.477	0.181
podlaskie	grajewski	Rajgrad	477578		8 829			417 647	48	0.477	0.181
wielkopolskie	grodziski	Grodzisk Wielkopolski	636573		8 824			417 410	48	0.476	0.181
wielkopolskie	szamotulski	Pniewy	687379	5	8 754			415 282	47	0.474	0.180
mazowieckie	przysuski	Gielniow	352175		8 767			414 714	47	0.473	0.180
lubuskie	slubicki	Cybinka	138503	1 751				414 043	47	0.472	0.180
dolnoslaskie	wroclawski	Zorawina	13063		8 717			412 349	47	0.471	0.179
mazowieckie	lipski	Chotcza	300901		8 707			411 876	47	0.470	0.179
warminsko-mazurskie	goldapski	Goldap	612212		8 637			408 565	47	0.466	0.177
lubuskie	wschowski	Slawa	140350		8 631			408 281	47	0.466	0.177
warminsko-mazurskie	goldapski	Goldap	612051		8 603			406 956	46	0.464	0.176
wielkopolskie	obornicki	Oborniki	667792		8 562			405 017	46	0.462	0.176
zachodniopomorskie	walecki	Walcz	709714		8 549			404 402	46	0.461	0.175
zachodniopomorskie	swidwinski	Brzezno	709089	11	8 485			403 976	46	0.461	0.175
wielkopolskie	chodzieski	Budzyn	628198		8 522			403 125	46	0.460	0.175
warminsko-mazurskie	lidzbarski	Lidzbark Warminski	616165		8 516			402 841	46	0.460	0.175
mazowieckie	zurominski	Lutocin	399553		8 501			402 131	46	0.459	0.174
mazowieckie	plocki	Bielsk	336853		8 492			401 706	46	0.458	0.174
mazowieckie	zurominski	Kuczbork-Osada	398131		8 371			395 982	45	0.452	0.172
wielkopolskie	poznanski	Buk	679398	15	8 274			394 940	45	0.451	0.171
wielkopolskie	leszczynski	Swieciechowa	664715		8 332			394 137	45	0.450	0.171
lodzkie	lodzki wschodni	Koluszki	161285	1	8 267			391 299	45	0.447	0.170
mazowieckie	plocki	Mala Wies	340160		8 245			390 021	45	0.445	0.169
wielkopolskie	czarnkowsko-trzciancki	Czarnkow	629240		8 230			389 312	44	0.444	0.169
mazowieckie	sierpecki	Sierpc	373457		8 226			389 123	44	0.444	0.169

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	pilski	Kaczory	675035		8 225			389 075	44	0.444	0.169
warminsko-mazurskie	ketrzynski	Korsze	615173		8 221			388 886	44	0.444	0.169
wielkopolskie	slupecki	Ostrowite	684728		8 208			388 271	44	0.443	0.168
mazowieckie	plonski	Naruszewo	344845	1 630				385 431	44	0.440	0.167
wielkopolskie	gostynski	Gostyn	633980		8 090			382 689	44	0.437	0.166
mazowieckie	zurominski	Lutocin	399482	2	8 073			382 358	44	0.436	0.166
lodzkie	pabianicki	Dlutow	167602		8 031			379 898	43	0.434	0.165
zachodniopomorskie	kamienski	Kamien Pomorski	704196		8 013			379 047	43	0.433	0.164
swietokrzyskie	ostrowiecki	Cmielow	586967		7 963			376 682	43	0.430	0.163
mazowieckie	zurominski	Zuromin	400678		7 952			376 161	43	0.429	0.163
podlaskie	bialostocki	Posvietne	469828	60	7 651			376 111	43	0.429	0.163
wielkopolskie	rawicki	Bojanowo	681730	1 582				374 081	43	0.427	0.162
pomorskie	sztumski	Sztum	531196	17	7 782			372 140	42	0.425	0.161
podlaskie	bielski	Bielsk Podlaski	472882		7 832			370 485	42	0.423	0.161
zachodniopomorskie	stargardzki	Dolice	707985	1 081	2 418			369 995	42	0.422	0.160
pomorskie	czluchowski	Rzeczenica	518463		7 780			368 025	42	0.420	0.160
mazowieckie	zurominski	Lutocin	399450	7	7 720			366 842	42	0.419	0.159
mazowieckie	zurominski	Zuromin	400202	6	7 723			366 748	42	0.418	0.159
kujawsko-pomorskie	swiecki	Swiecie	43748		7 713			364 856	42	0.416	0.158
warminsko-mazurskie	gizycki	Gizycko	610503		7 708			364 619	42	0.416	0.158
dolnoslaskie	legnicki	Chojnow	5034	1 539				363 913	42	0.415	0.158
zachodniopomorskie	walecki	Walcz	709762		7 686			363 579	42	0.415	0.158
lodzkie	wielunski	Patnow	203051		7 657			362 207	41	0.413	0.157
warminsko-mazurskie	nowomiejski	Biskupiec	618625		7 609			359 936	41	0.411	0.156
wielkopolskie	szamotulski	Ostrorog	687213	179	6 691			358 838	41	0.409	0.156
malopolskie	dabrowski	Olesno	217439		7 568			357 997	41	0.409	0.155
mazowieckie	zurominski	Kuczbork-Osada	398107	4	7 506			356 010	41	0.406	0.154
wielkopolskie	gniezienski	Trzemeszno	632916		7 491			354 354	40	0.404	0.154
warminsko-mazurskie	ilawski	Lubawa	613566		7 488			354 212	40	0.404	0.154
wielkopolskie	wagrowiecki	Golancz	695063		7 484			354 023	40	0.404	0.154
zachodniopomorskie	koszalin	Sianow	705631		7 464			353 077	40	0.403	0.153
wielkopolskie	wolsztynski	Przemet	697133		7 420			350 996	40	0.401	0.152

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
zachodniopomorskie	swidwinski	Swidwin	709475	24	7 295			350 758	40	0.400	0.152
mazowieckie	zurominski	Kuczbork-Osada	398138		7 380			349 104	40	0.398	0.151
wielkopolskie	gostynski	Borek Wielkopolski	633697	255	6 090			348 379	40	0.398	0.151
warminsko-mazurskie	gizycki	Milki	610924		7 354			347 874	40	0.397	0.151
pomorskie	czluchowski	Czluchow	517950		7 341			347 259	40	0.396	0.151
pomorskie	slupski	Slupsk	528202		7 320			346 265	40	0.395	0.150
wielkopolskie	jarocinski	Jarocin	638864		7 316			346 076	40	0.395	0.150
warminsko-mazurskie	ketrzynski	Barciany	614682	1 461				345 469	39	0.394	0.150
wielkopolskie	koscianski	Czempin	658156	1 449				342 632	39	0.391	0.149
lubelskie	parczewski	Parczew	112321		7 210			341 062	39	0.389	0.148
mazowieckie	zurominski	Lutocin	399494		7 202			340 683	39	0.389	0.148
warminsko-mazurskie	goldapski	Dubeninki	611949		7 171			339 217	39	0.387	0.147
wielkopolskie	pilski	Lobzenica	675312		7 167			339 028	39	0.387	0.147
warminsko-mazurskie	gizycki	Wydminy	611466	1 432				338 612	39	0.386	0.147
mazowieckie	grojecki	Goszczyn	296200		7 141			337 798	39	0.385	0.146
mazowieckie	ciechanowski	Regimin	286663		7 129			337 230	38	0.385	0.146
lubuskie	wschowski	Szlichtyngowa	140529		7 115			336 568	38	0.384	0.146
wielkopolskie	wagrowiecki	Wagrowiec	695857		7 114			336 521	38	0.384	0.146
wielkopolskie	pilski	Lobzenica	675565		7 100			335 858	38	0.383	0.146
warminsko-mazurskie	ilawski	Lubawa	613691		7 062			334 061	38	0.381	0.145
zachodniopomorskie	swidwinski	Polczyn-Zdroj	709210		7 057			333 824	38	0.381	0.145
mazowieckie	mlawski	Szrensk	317969		7 031			332 594	38	0.380	0.144
wielkopolskie	sremski	Ksiaz Wielkopolski	689838		7 028			332 453	38	0.379	0.144
zachodniopomorskie	stargardzki	Dobrzany	707936		7 008			331 506	38	0.378	0.144
wielkopolskie	gostynski	Pepowo	635109	8	6 965			331 364	38	0.378	0.144
dolnoslaskie	zabkowicki	Kamieniec Zabkowicki	13226	1 393				329 390	38	0.376	0.143
wielkopolskie	pilski	Lobzenica	675624		6 927			327 675	37	0.374	0.142
zachodniopomorskie	stargardzki	Stargard Szczecinski	708270	1 385				327 498	37	0.374	0.142

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
zachodniopomorskie	kamienski	Kamien Pomorski	704203		6 859			324 458	37	0.370	0.141
wielkopolskie	sredzki	Sroda Wielkopolska	689013	1 351				319 459	36	0.365	0.139
mazowieckie	zurominski	Kuczbork-Osada	398127		6 706			317 221	36	0.362	0.138
mazowieckie	zurominski	Lutocin	399072	1	6 685			316 464	36	0.361	0.137
lodzkie	radomszczanski	Wielgomlyny	184594		6 663			315 187	36	0.360	0.137
zachodniopomorskie	kamienski	Wolin	704355	1 332				314 966	36	0.359	0.137
wielkopolskie	koscianski	Smigiel	660085	224	5 492			312 761	36	0.357	0.136
mazowieckie	zurominski	Lutocin	399557		6 600			312 206	36	0.356	0.135
podlaskie	moniecki	Goniadz	488870		6 583			311 402	36	0.355	0.135
lubelskie	wlodawski	Hansk	127984	1 314				310 710	35	0.355	0.135
pomorskie	sztumski	Stary Targ	531040		6 556			310 125	35	0.354	0.134
warminsko-mazurskie	mragowski	Mikolajki	616731		6 546			309 652	35	0.353	0.134
mazowieckie	losicki	Stara Kornica	306461		6 504			307 665	35	0.351	0.133
warminsko-mazurskie	ilawski	Ilawa	612816		6 478			306 435	35	0.350	0.133
wielkopolskie	poznanski	Buk	679483	41	6 262			305 913	35	0.349	0.133
zachodniopomorskie	stargardzki	Stargard Szczecinski	708331	617	3 326			303 229	35	0.346	0.131
mazowieckie	mlawski	Wieczfnia Koscielna	318556	261	5 055			300 838	34	0.343	0.130
zachodniopomorskie	slawienski	Darlowo	707187		6 322			299 056	34	0.341	0.130
wielkopolskie	gniezienski	Kiszkowo	631576		6 293			297 684	34	0.340	0.129
wielkopolskie	leszczynski	Krzemieniewo	663564	1 257				297 231	34	0.339	0.129
wielkopolskie	chodzieski	Budzyn	628288		6 277			296 927	34	0.339	0.129
lodzkie	lowicki	Kocierzew Poludniowy	158033		6 246			295 461	34	0.337	0.128
wielkopolskie	gostynski	Pepowo	634967	1 247				294 867	34	0.336	0.128
wielkopolskie	czarnkowsko-trzcianecki	Trzcianka	630393	8	6 106			290 730	33	0.332	0.126
lubuskie	miedzyrzecki	Bledzew	137550	82	5 729			290 394	33	0.331	0.126
kujawsko-pomorskie	wloclawski	Chodecz	51197		6 137			290 305	33	0.331	0.126
pomorskie	slupski	Damnica	527584		6 112			289 122	33	0.330	0.125

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
kujawsko-pomorskie	inowroclawski	Kruszwica	27362	681	2 602	331		288 638	33	0.329	0.125
warminsko-mazurskie	wegorzewski	Budry	627504		6 096			288 365	33	0.329	0.125
warminsko-mazurskie	ilawski	Lubawa	613801		6 077			287 466	33	0.328	0.125
mazowieckie	zurominski	Kuczbork-Osada	398145		6 072			287 230	33	0.328	0.125
zachodniopomorskie	stargardzki	Dolice	707984	419	3 961			286 448	33	0.327	0.124
kujawsko-pomorskie	zninski	Rogowo	55328		6 044			285 905	33	0.326	0.124
mazowieckie	sokolowski	Sokolow Podlaski	380640		6 015			284 534	32	0.325	0.123
wielkopolskie	wagrowiecki	Wagrowiec	696042	10	5 961			284 344	32	0.324	0.123
wielkopolskie	sremski	Brodnica	689223	1 200				283 753	32	0.324	0.123
wielkopolskie	sredzki	Dominowo	688201		5 988			283 256	32	0.323	0.123
mazowieckie	sokolowski	Sabnie	380077		5 983			283 020	32	0.323	0.123
lodzkie	piotrkowski	Grabica	173101		5 968			282 310	32	0.322	0.122
warminsko-mazurskie	dzialdowski	Ilowo-Osada	605874		5 951			281 506	32	0.321	0.122
wielkopolskie	szamotulski	Duszniki	686649	705	2 423			281 323	32	0.321	0.122
wielkopolskie	gniezienski	Trzemeszno	632944	1 185				280 206	32	0.320	0.122
wielkopolskie	pilski	Wyrzysk	676307	5	5 849			277 863	32	0.317	0.120
lodzkie	lowicki	Kocierzew Poludniowy	157945		5 873			277 816	32	0.317	0.120
kujawsko-pomorskie	inowroclawski	Gniewkowo	26540	24	5 741			277 247	32	0.316	0.120
zachodniopomorskie	choszczanski	Recz	701782		5 850			276 728	32	0.316	0.120
lubelskie	wlodawski	Wlodawa	128602	1 164				275 240	31	0.314	0.119
mazowieckie	garwolinski	Miastkow Koscielny	290227		5 815			275 073	31	0.314	0.119
wielkopolskie	wolsztynski	Wolsztyn	698046	1 161	7			274 862	31	0.314	0.119
lodzkie	lodzki wschodni	Tuszyn	161969		5 810			274 836	31	0.314	0.119
slaskie	tarnogorski	Zbroslawice	549679	1 161				274 531	31	0.313	0.119
zachodniopomorskie	koszalinski	Bobolice	705357		5 792			273 985	31	0.313	0.119
warminsko-mazurskie	braniewski	Braniewo	604477		5 782			273 512	31	0.312	0.119
mazowieckie	lipski	Rzeczniow	302322		5 766			272 755	31	0.311	0.118
lubuskie	zarski	Lubsko	142370	1 153				272 639	31	0.311	0.118
wielkopolskie	leszczynski	Wloszakowice	665197		5 754			272 187	31	0.311	0.118
opolskie	glubczycki	Glubczyce	402873	1 148				271 457	31	0.310	0.118

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
dolnolaskie	milicki	Cieszkow	6984		5 711			270 153	31	0.308	0.117
wielkopolskie	jarocinski	Jarocin	638833		5 706			269 917	31	0.308	0.117
lodzkie	belchatowski	Druzvice	143409		5 701			269 680	31	0.308	0.117
mazowieckie	ciechanowski	Ciechanow	284154	5	5 671			269 443	31	0.307	0.117
wielkopolskie	slupecki	Zagorow	686354	7	5 652			269 017	31	0.307	0.117
lodzkie	lowicki	Kocierzew Poludniowy	158117		5 679			268 639	31	0.307	0.116
zachodniopomorskie	slawieski	Postomino	707585		5 675			268 450	31	0.306	0.116
wielkopolskie	gostynski	Borek Wielkopolski	633506		5 667			268 072	31	0.306	0.116
wielkopolskie	pilski	Lobzenica	675566	6	5 637			268 071	31	0.306	0.116
lubuskie	wschowski	Szlichtyngowa	140459	1 130				267 201	31	0.305	0.116
slaskie	gliwicki	Sosnicowice	541037		5 622			265 943	30	0.303	0.115
lubelskie	parczewski	Jablon	111640	181	4 715			265 838	30	0.303	0.115
wielkopolskie	pilski	Wyrzysk	676237	678	2 210			264 862	30	0.302	0.115
podlaskie	siemiatycki	Nurzec-Stacja	496262		5 597			264 760	30	0.302	0.115
pomorskie	sztumski	Mikolajki Pomorskie	530643	1 119				264 600	30	0.302	0.115
mazowieckie	losicki	Losice	304444		5 560			263 010	30	0.300	0.114
warminsko-mazurskie	elblaski	Paslek	608544	1 111				262 708	30	0.300	0.114
mazowieckie	przysuski	Rusinow	354321		5 550			262 537	30	0.300	0.114
lodzkie	lowicki	Kocierzew Poludniowy	157789	1	5 532			261 922	30	0.299	0.114
wielkopolskie	pleszewski	Goluchow	678293	1 107				261 762	30	0.299	0.114
zachodniopomorskie	szczecinecki	Barwice	708606	27	5 388			261 258	30	0.298	0.113
wielkopolskie	sredzki	Nowe Miasto nad Warta	688647	423	3 405			261 093	30	0.298	0.113
lubelskie	tomaszowski	Lubycza Krolewska	124443		5 506			260 456	30	0.297	0.113
warminsko-mazurskie	mragowski	Mragowo	616801	1 098				259 634	30	0.296	0.113
wielkopolskie	poznancki	Mosina	680534	7	5 443			259 131	30	0.296	0.112
wielkopolskie	pilski	Wysoka	676531	246	4 247			259 069	30	0.296	0.112

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lodzkie	laski	Widawa	151279	105	4 936	44		258 922	30	0.295	0.112
zachodniopomorskie	pyrzycki	Warnice	706944	1 094				258 688	30	0.295	0.112
lodzkie	lodzki wschodni	Tuszyn	161972		5 436			257 145	29	0.293	0.112
lubuskie	wschowski	Wschowa	140558	1 086				256 797	29	0.293	0.111
opolskie	glubczycki	Glubczyce	402872	1 084				256 324	29	0.292	0.111
zachodniopomorskie	swidwinski	Swidwin	709492	1 079				255 141	29	0.291	0.111
dolnoslaskie	zlotoryjski	Zagrodno	14529	1 078				254 905	29	0.291	0.111
mazowieckie	radomski	Skaryszew	363317		5 388			254 874	29	0.291	0.111
wielkopolskie	pilski	Lobzenica	675453		5 367			253 881	29	0.290	0.110
wielkopolskie	gostynski	Piaski	635381	1 072				253 486	29	0.289	0.110
wielkopolskie	leszczynski	Wijewo	664827	56	5 054			252 316	29	0.288	0.109
kujawsko-pomorskie	inowroclawski	Kruszwica	27533		5 309			251 137	29	0.287	0.109
wielkopolskie	leszczynski	Krzemieniewo	663305		5 307			251 042	29	0.286	0.109
wielkopolskie	pilski	Miasteczko Krajenskie	675727	1 052				248 757	28	0.284	0.108
dolnoslaskie	trzebnicki	Zmigrod	11605		5 247			248 204	28	0.283	0.108
podkarpackie	lezajski	Lezajsk	433494		5 244			248 062	28	0.283	0.108
pomorskie	kwidzynski	Kwidzyn	524954		5 233			247 542	28	0.282	0.107
wielkopolskie	poznanski	Pobiedziska	680994		5 231			247 447	28	0.282	0.107
lodzkie	piotrkowski	Wola Krzysztoporska	175862	3	5 216			247 447	28	0.282	0.107
wielkopolskie	gostynski	Borek Wielkopolski	633364		5 209			246 407	28	0.281	0.107
mazowieckie	zurominski	Lutocin	399160	19	5 109			246 169	28	0.281	0.107
lodzkie	piotrkowski	Moszczenica	174077	131	4 540			245 737	28	0.280	0.107
wielkopolskie	wolsztynski	Siedlec	697717		5 194			245 697	28	0.280	0.107
slaskie	Jastrzebie-Zdroj	Jastrzebie-Zdroj	541506		5 170			244 562	28	0.279	0.106
kujawsko-pomorskie	nakielski	Sadki	34906	1 027	5			243 082	28	0.277	0.105
warminsko-mazurskie	elcki	Elk	609236	1 028				243 082	28	0.277	0.105
zachodniopomorskie	swidwinski	Swidwin	709476		5 138			243 048	28	0.277	0.105
lodzkie	kutnowski	Kutno	148209		5 136			242 953	28	0.277	0.105
podkarpackie	sanocki	Zarszyn	459248	1 024			37	242 689	28	0.277	0.105

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
warminsko-mazurskie	nowomiejski	Grodziczno	619173		5 121			242 244	28	0.276	0.105
zachodniopomorskie	mysliborski	Debno	706267		5 086			240 588	27	0.275	0.104
zachodniopomorskie	Szczecin	Szczecin	708509		5 081			240 352	27	0.274	0.104
lubelskie	radzynski	Wohyn	119457		5 078			240 210	27	0.274	0.104
mazowieckie	makowski	Ploniawy-Bramura	308960	82	4 666			240 110	27	0.274	0.104
lubelskie	bialski	Tuczna	62395	61	4 770			240 064	27	0.274	0.104
slaskie	raciborski	Krzanowice	548274	1 011				239 062	27	0.273	0.104
lubelskie	tomaszowski	Tyszowce	127035		5 052			238 980	27	0.273	0.104
lodzkie	lodzki wschodni	Tuszyn	161968		5 051			238 933	27	0.273	0.104
lubuskie	krosnienski	Dabie	137248	858	758			238 740	27	0.272	0.104
mazowieckie	zurominski	Zuromin	400778		5 042			238 507	27	0.272	0.103
lodzkie	tomaszowski	Ujazd	200212	1 007				238 116	27	0.272	0.103
lubelskie	wlodawski	Wlodawa	128759	1 006				237 880	27	0.271	0.103
wielkopolskie	pilski	Wysoka	676412	260	3 728			237 829	27	0.271	0.103
warminsko-mazurskie	piski	Biala Piska	624695		5 016			237 277	27	0.271	0.103
kujawsko-pomorskie	rypinski	Rypin	39332		5 015			237 230	27	0.271	0.103
mazowieckie	gostyninski	Gostynin	293547		5 001			236 567	27	0.270	0.103
zachodniopomorskie	choszczenski	Choszczno	701564		4 987			235 905	27	0.269	0.102
warminsko-mazurskie	gizycki	Ryn	611095		4 982			235 669	27	0.269	0.102
warminsko-mazurskie	ostrodzki	Dabrowno	623087		4 980			235 574	27	0.269	0.102
mazowieckie	zurominski	Biezun	397773		4 976			235 385	27	0.269	0.102
wielkopolskie	zlotowski	Zlotow	700961		4 966			234 912	27	0.268	0.102
podlaskie	bialostocki	Juchnowiec Koscielny	468414		4 962			234 722	27	0.268	0.102
lodzkie	skierniewicki	Godzianow	194951	10	4 866			232 546	27	0.265	0.101
podlaskie	bielski	Orla	475121		4 911			232 310	27	0.265	0.101
wielkopolskie	chodzieski	Budzyn	628269		4 885			231 080	26	0.264	0.100
wielkopolskie	leszczynski	Rydzyzna	664497		4 883			230 985	26	0.264	0.100
lodzkie	wielunski	Mokrsko	201862		4 864			230 087	26	0.263	0.100
lubelskie	lubartowski	Ostrow Lubelski	91541		4 853			229 566	26	0.262	0.100
warminsko-mazurskie	piski	Biala Piska	624694		4 851			229 472	26	0.262	0.100
warminsko-mazurskie	ostrodzki	Grunwald	623213	969		13		229 308	26	0.262	0.099

Livestock Farms in Poland

Province	County	District	Farm Location Number	Cattle [head]	Swine [head]	Sheep [head]	Goat [head]	CH4 potentially generated [m ³ /year]	CH4 potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	gniezienski	Trzemeszno	632945	967				228 658	26	0.261	0.099
lubuskie	zielonogorski	Sulechow	141308		4 816			227 816	26	0.260	0.099
opolskie	glubczycki	Baborow	402595	962				227 475	26	0.260	0.099
opolskie	kedzierzynsko-kozielski	Pawlowiczki	403829	955				225 820	26	0.258	0.098
lubelskie	bialski	Miedzyrzec Podlaski	60194		4 750			224 694	26	0.256	0.097
wielkopolskie	kaliski	Zelazkow	645214	13	4 685			224 693	26	0.256	0.097
lodzkie	kutnowski	Strzelce	149065		4 746			224 505	26	0.256	0.097
lubelskie	bialski	Lesna Podlaska	58536		4 740			224 221	26	0.256	0.097
lubuskie	swiebodzinski	Swiebodzin	140083	948				224 165	26	0.256	0.097
kujawsko-pomorskie	inowroclawski	Kruszwica	27364	945				223 456	26	0.255	0.097
lodzkie	tomaszowski	Tomaszow Mazowiecki	199968		4 722			223 369	25	0.255	0.097
mazowieckie	sierpecki	Zawidz	374600	21	4 601			222 611	25	0.254	0.097
zachodniopomorskie	kamienski	Golczewo	704122		4 699			222 281	25	0.254	0.096
malopolskie	wadowicki	Wieprz	280206		4 671			220 957	25	0.252	0.096
warminsko-mazurskie	nowomiejski	Nowe Miasto Lubawskie	619820		4 656			220 247	25	0.251	0.096
pomorskie	tczewski	Pelplin	531724		4 612			218 166	25	0.249	0.095
opolskie	glubczycki	Glubczyce	402871	922				218 017	25	0.249	0.095
podlaskie	kolnenski	Kolno	481520	5	4 535			215 706	25	0.246	0.094
							Total	262 334 482	29 947	299	114

Livestock Farms in Poland

County No.	County Name	Province Name
1.1	bytowski	pomorskie
1.2	chojnicki	pomorskie
1.3	czluchowski	pomorskie
1.4	Gdansk	pomorskie
1.5	gdanski	pomorskie
1.6	Gdynia	pomorskie
1.7	kartuski	pomorskie
1.8	koscierski	pomorskie
1.9	kwidzynski	pomorskie
1.10	leborski	pomorskie
1.11	malborski	pomorskie
1.12	nowodworski	pomorskie
1.13	pucki	pomorskie
1.14	Slupsk	pomorskie
1.15	slupski	pomorskie
1.16	starogardzki	pomorskie
1.17	sztumski	pomorskie
1.18	tczewski	pomorskie
1.19	wejherowski	pomorskie
2.1	bialogardzki	zachodniopomorskie
2.2	choszczenski	zachodniopomorskie
2.3	drawski	zachodniopomorskie
2.4	goleniowski	zachodniopomorskie
2.5	gryficki	zachodniopomorskie
2.6	Gryfinski	zachodniopomorskie
2.7	kamienski	zachodniopomorskie
2.8	kolobrzesci	zachodniopomorskie
2.9	Koszalin	zachodniopomorskie
2.10	koszalinski	zachodniopomorskie
2.11	lobeski	zachodniopomorskie
2.12	Szczecin	zachodniopomorskie
2.13	mysliborski	zachodniopomorskie
2.14	Policki	zachodniopomorskie
2.15	pyrzycki	zachodniopomorskie
2.16	slawienski	zachodniopomorskie
2.17	stargardzki	zachodniopomorskie
2.18	szczecinecki	zachodniopomorskie
2.19	swidwinski	zachodniopomorskie
2.20	Swinoujscie	zachodniopomorskie
2.21	walecki	zachodniopomorskie
3.1	bartoszycki	warminsko-mazurskie
3.2	braniewski	warminsko-mazurskie
3.3	dzialdowski	warminsko-mazurskie
3.4	Elblag	warminsko-mazurskie
3.5	elblaski	warminsko-mazurskie
3.6	elcki	warminsko-mazurskie
3.7	gizycki	warminsko-mazurskie
3.8	goldapski	warminsko-mazurskie
3.9	ilawski	warminsko-mazurskie
3.10	ketrzyński	warminsko-mazurskie
3.11	lidzbarski	warminsko-mazurskie

Livestock Farms in Poland

County No.	County Name	Province Name
3.12	mragowski	warminsko-mazurskie
3.13	nidzicki	warminsko-mazurskie
3.14	nowomiejski	warminsko-mazurskie
3.15	olecki	warminsko-mazurskie
3.16	Olsztyn	warminsko-mazurskie
3.17	olsztynski	warminsko-mazurskie
3.18	ostrodzki	warminsko-mazurskie
3.19	piski	warminsko-mazurskie
3.20	szczycienski	warminsko-mazurskie
3.21	wegorzewski	warminsko-mazurskie
4.1	aleksandrowski	kujawsko-pomorskie
4.2	brodnicki	kujawsko-pomorskie
4.3	bydgoski	kujawsko-pomorskie
4.4	Bydgoszcz	kujawsko-pomorskie
4.5	chelminski	kujawsko-pomorskie
4.6	Golubsko-dobrzynski	kujawsko-pomorskie
4.7	Grudziadz	kujawsko-pomorskie
4.8	grudziadzki	kujawsko-pomorskie
4.9	inowroclawski	kujawsko-pomorskie
4.10	lipnowski	kujawsko-pomorskie
4.11	mogilenski	kujawsko-pomorskie
4.12	nakielski	kujawsko-pomorskie
4.13	radziejowski	kujawsko-pomorskie
4.14	rypinski	kujawsko-pomorskie
4.15	sepolenski	kujawsko-pomorskie
4.16	swiecki	kujawsko-pomorskie
4.17	Torun	kujawsko-pomorskie
4.18	torunski	kujawsko-pomorskie
4.19	tucholski	kujawsko-pomorskie
4.20	wabrzeski	kujawsko-pomorskie
4.21	Wloclawek	kujawsko-pomorskie
4.22	wloclawski	kujawsko-pomorskie
4.23	zninski	kujawsko-pomorskie
5.1	chodzierski	wielkopolskie
5.2	czarnkowsko-trzcianecki	wielkopolskie
5.3	gnieznienski	wielkopolskie
5.4	gostynski	wielkopolskie
5.5	grodziski	wielkopolskie
5.6	jarocinski	wielkopolskie
5.7	kaliski	wielkopolskie
5.8	Kalisz	wielkopolskie
5.9	kepinski	wielkopolskie
5.10	kolski	wielkopolskie
5.11	Konin	wielkopolskie
5.12	koninski	wielkopolskie
5.13	koscianski	wielkopolskie
5.14	krotoszynski	wielkopolskie
5.15	leszczynski	wielkopolskie
5.16	Leszno	wielkopolskie
5.17	miedzychodzki	wielkopolskie
5.18	nowotomyski	wielkopolskie

Livestock Farms in Poland

County No.	County Name	Province Name
5.19	obornicki	wielkopolskie
5.20	ostrowski	wielkopolskie
5.21	ostrzeszowski	wielkopolskie
5.22	pilski	wielkopolskie
5.23	pleszewski	wielkopolskie
5.24	Poznan	wielkopolskie
5.25	poznanski	wielkopolskie
5.26	rawicki	wielkopolskie
5.27	slupecki	wielkopolskie
5.28	szamotulski	wielkopolskie
5.29	sredzki	wielkopolskie
5.30	sremski	wielkopolskie
5.31	turecki	wielkopolskie
5.32	wagrowiecki	wielkopolskie
5.33	wolsztynski	wielkopolskie
5.34	wrzesinski	wielkopolskie
5.35	zlotowski	wielkopolskie
6.1	augustowski	podlaskie
6.2	bialostocki	podlaskie
6.3	Bialystok	podlaskie
6.4	bielski	podlaskie
6.5	grajewski	podlaskie
6.6	hajnowski	podlaskie
6.7	kolnenski	podlaskie
6.8	Lomza	podlaskie
6.9	lomzynski	podlaskie
6.10	moniecki	podlaskie
6.11	sejnenki	podlaskie
6.12	siemiatycki	podlaskie
6.13	sokolski	podlaskie
6.14	suwalski	podlaskie
6.15	Suwalki	podlaskie
6.16	wysokomazowiecki	podlaskie
6.17	zambrowski	podlaskie
7.1	bialobrzesci	mazowieckie
7.2	ciechanowski	mazowieckie
7.3	garwolinski	mazowieckie
7.4	gostyninski	mazowieckie
7.5	grodziski	mazowieckie
7.6	grojecki	mazowieckie
7.7	kozienicki	mazowieckie
7.8	legionowski	mazowieckie
7.9	lipski	mazowieckie
7.10	losicki	mazowieckie
7.11	makowski	mazowieckie
7.12	minski	mazowieckie
7.13	mlawski	mazowieckie
7.14	nowodworski	mazowieckie
7.15	ostrolecki	mazowieckie
7.16	Ostroleka	mazowieckie
7.17	ostrowski	mazowieckie

Livestock Farms in Poland

County No.	County Name	Province Name
7.18	otwocki	mazowieckie
7.19	piaseczynski	mazowieckie
7.20	Plock	mazowieckie
7.21	plocki	mazowieckie
7.22	plonski	mazowieckie
7.23	pruszkowski	mazowieckie
7.24	przasnyski	mazowieckie
7.25	przysuski	mazowieckie
7.26	pultuski	mazowieckie
7.27	Radom	mazowieckie
7.28	radomski	mazowieckie
7.29	Siedlce	mazowieckie
7.30	siedlecki	mazowieckie
7.31	sierpecki	mazowieckie
7.32	sochaczewski	mazowieckie
7.33	sokolowski	mazowieckie
7.34	szydlowiecki	mazowieckie
7.35	Warszawa	mazowieckie
7.36	warszawski zachodni	mazowieckie
7.37	wegrowski	mazowieckie
7.38	wolominski	mazowieckie
7.39	wyszkowski	mazowieckie
7.40	zwolenski	mazowieckie
7.41	zurominski	mazowieckie
7.42	zyrardowski	mazowieckie
8.1	gorzowski	lubuskie
8.2	Gorzow Wielkopolski	lubuskie
8.3	krosnienski	lubuskie
8.4	miedzyrzeczki	lubuskie
8.5	nowosolski	lubuskie
8.6	slubicki	lubuskie
8.7	strzelecko-drezdenecki	lubuskie
8.8	sulecinski	lubuskie
8.9	swiebodzinski	lubuskie
8.10	wschowski	lubuskie
8.11	Zielona Gora	lubuskie
8.12	zielonogorski	lubuskie
8.13	zaganski	lubuskie
8.14	zarski	lubuskie
9.1	belchatowski	lodzkie
9.2	brzezinski	lodzkie
9.3	kutnowski	lodzkie
9.4	laski	lodzkie
9.5	leczycki	lodzkie
9.6	lowicki	lodzkie
9.7	lodz	lodzkie
9.8	opoczynski	lodzkie
9.9	pabianicki	lodzkie
9.10	pajeczanski	lodzkie
9.11	piotrkowski	lodzkie
9.12	Piotrkow Trybunalski	lodzkie

Livestock Farms in Poland

County No.	County Name	Province Name
9.13	poddebicki	lodzkie
9.14	radomszczanski	lodzkie
9.15	rawski	lodzkie
9.16	sieradzki	lodzkie
9.17	Skierniewice	lodzkie
9.18	skierniewicki	lodzkie
9.19	tomaszowski	lodzkie
9.20	wielunski	lodzkie
9.21	wieruszowski	lodzkie
9.22	zdunskowolski	lodzkie
9.23	zgierski	lodzkie
10.1	boleslawiecki	dolnoslaskie
10.2	dzierzoniowski	dolnoslaskie
10.3	glogowski	dolnoslaskie
10.4	gorowski	dolnoslaskie
10.5	jaworski	dolnoslaskie
10.6	Jelenia Gora	dolnoslaskie
10.7	jeleniogorski	dolnoslaskie
10.8	kamiennogorski	dolnoslaskie
10.9	klodzki	dolnoslaskie
10.10	Legnica	dolnoslaskie
10.11	legnicki	dolnoslaskie
10.12	lubanski	dolnoslaskie
10.13	lubinski	dolnoslaskie
10.14	lwowecki	dolnoslaskie
10.15	milicki	dolnoslaskie
10.16	olesnicki	dolnoslaskie
10.17	olawski	dolnoslaskie
10.18	polkowicki	dolnoslaskie
10.19	strzelinski	dolnoslaskie
10.20	sredzki	dolnoslaskie
10.21	swidnicki	dolnoslaskie
10.22	trzebnicki	dolnoslaskie
10.23	Walbrzych	dolnoslaskie
10.24	walbrzyski	dolnoslaskie
10.25	wolowski	dolnoslaskie
10.26	Wroclaw	dolnoslaskie
10.27	wroclawski	dolnoslaskie
10.28	zabkowicki	dolnoslaskie
10.29	zgorzelecki	dolnoslaskie
10.30	zlotoryjski	dolnoslaskie
11.1	bialski	lubelskie
11.2	Biala Podlaska	lubelskie
11.3	bilgorajski	lubelskie
11.4	Chelm	lubelskie
11.5	chelmski	lubelskie
11.6	hrubieszowski	lubelskie
11.7	janowski	lubelskie
11.8	krasnostawski	lubelskie
11.9	krasnicki	lubelskie
11.10	lubartowski	lubelskie

County No.	County Name	Province Name
11.11	lubelski	lubelskie
11.12	Lublin	lubelskie
11.13	leczyński	lubelskie
11.14	lukowski	lubelskie
11.15	opolski	lubelskie
11.16	parczewski	lubelskie
11.17	pulawski	lubelskie
11.18	radzyński	lubelskie
11.19	rycki	lubelskie
11.20	swidnicki	lubelskie
11.21	tomaszowski	lubelskie
11.22	włodawski	lubelskie
11.23	zamojski	lubelskie
11.24	Zamosc	lubelskie
12.1	buski	swietokrzyskie
12.2	jedrzejowski	swietokrzyskie
12.3	kazimierski	swietokrzyskie
12.4	Kielce	swietokrzyskie
12.5	kielecki	swietokrzyskie
12.6	konecki	swietokrzyskie
12.7	opatowski	swietokrzyskie
12.8	ostrowiecki	swietokrzyskie
12.9	pinczowski	swietokrzyskie
12.10	sandomierski	swietokrzyskie
12.11	skarzynski	swietokrzyskie
12.12	starachowicki	swietokrzyskie
12.13	staszowski	swietokrzyskie
12.14	włoszczowski	swietokrzyskie
13.1	brzeski	opolskie
13.2	glubczycki	opolskie
13.3	kedzierzynsko-kozielski	opolskie
13.4	kluczborski	opolskie
13.5	krapkowicki	opolskie
13.6	namyslowski	opolskie
13.7	nyski	opolskie
13.8	oleski	opolskie
13.9	Opole	opolskie
13.10	opolski	opolskie
13.11	prudnicki	opolskie
13.12	strzelecki	opolskie
14.1	bedzinski	slaskie
14.2	bielski	slaskie
14.3	Bielsko-Biala	slaskie
14.4	bierunsko-ledzinski	slaskie
14.5	Bytom	slaskie
14.6	Chorzow	slaskie
14.7	cieszynski	slaskie
14.8	Czestochowa	slaskie
14.9	czestochowski	slaskie
14.10	Dabrowa Gornicza	slaskie
14.11	Gliwice	slaskie

Livestock Farms in Poland

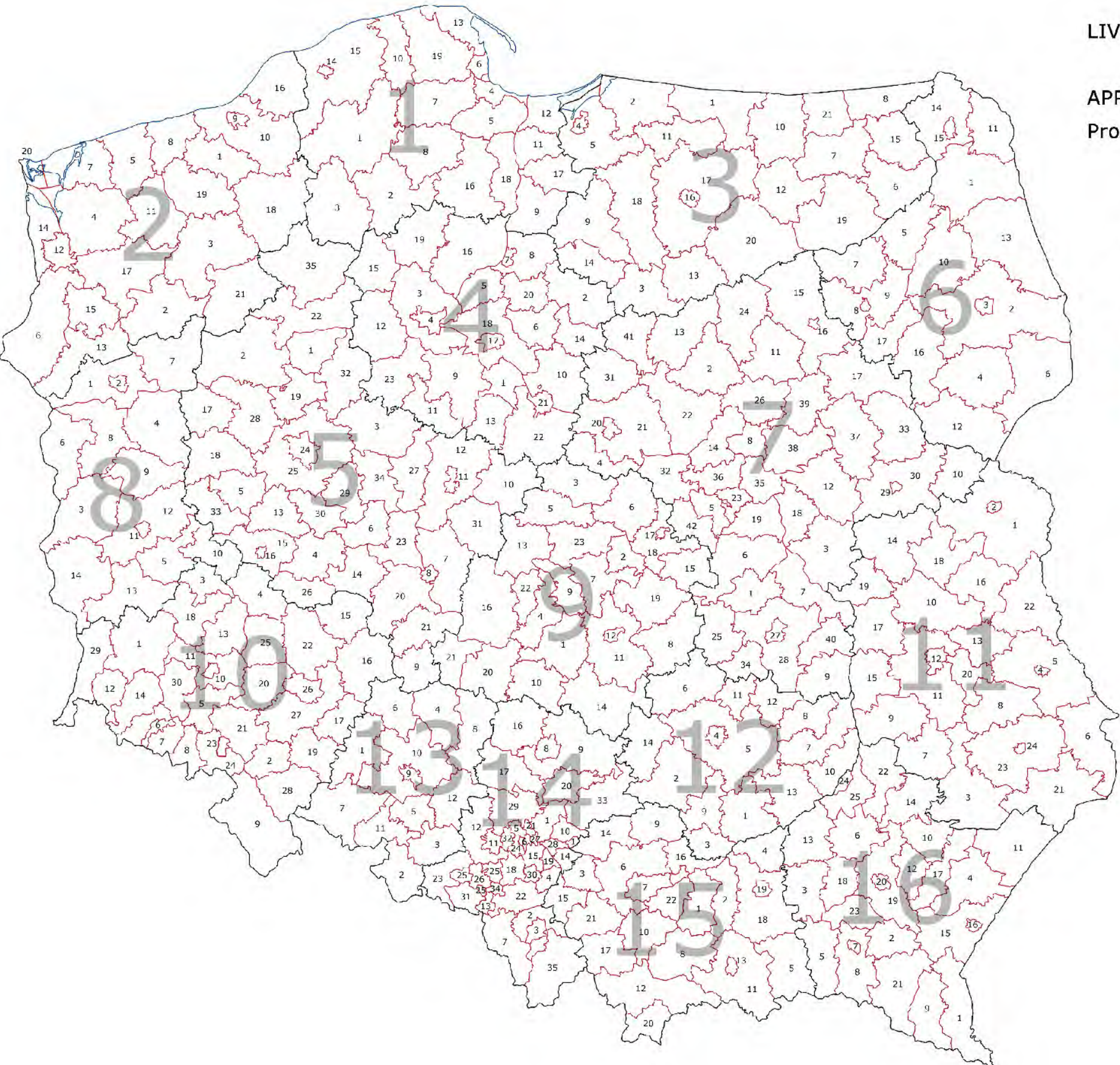
County No.	County Name	Province Name
14.12	gliwicki	slaskie
14.13	Jastrzebie-Zdroj	slaskie
14.14	Jaworzno	slaskie
14.15	Katowice	slaskie
14.16	klobucki	slaskie
14.17	lubliniecki	slaskie
14.18	mikolowski	slaskie
14.19	Myslowice	slaskie
14.20	myszkowski	slaskie
14.21	Piekary slaskie	slaskie
14.22	pszczyński	slaskie
14.23	raciborski	slaskie
14.24	Ruda slaska	slaskie
14.25	rybnicki	slaskie
14.26	Rybnik	slaskie
14.27	Siemianowice slaskie	slaskie
14.28	Sosnowiec	slaskie
14.29	tarnogorski	slaskie
14.30	Tychy	slaskie
14.31	wodzislawski	slaskie
14.32	Zabrze	slaskie
14.33	zawiercianski	slaskie
14.34	zory	slaskie
14.35	zywiecki	slaskie
15.1	bochenski	malopolskie
15.2	brzeski	malopolskie
15.3	chrzanowski	malopolskie
15.4	dabrowski	malopolskie
15.5	gorlicki	malopolskie
15.6	krakowski	malopolskie
15.7	Krakow	malopolskie
15.8	limanowski	malopolskie
15.9	miechowski	malopolskie
15.10	myslenicki	malopolskie
15.11	nowosadecki	malopolskie
15.12	nowotarski	malopolskie
15.13	Nowy Sacz	malopolskie
15.14	olkuski	malopolskie
15.15	oswiecimski	malopolskie
15.16	proszowicki	malopolskie
15.17	suski	malopolskie
15.18	tarnowski	malopolskie
15.19	Tarnow	malopolskie
15.20	tatrzański	malopolskie
15.21	wadowicki	malopolskie
15.22	wielicki	malopolskie
16.1	bieszczadzki	podkarpackie
16.2	brzozowski	podkarpackie
16.3	debicki	podkarpackie
16.4	jaroslowski	podkarpackie
16.5	jasielski	podkarpackie



Livestock Farms in Poland

County No.	County Name	Province Name
16.6	kolbuszowski	podkarpackie
16.7	Krosno	podkarpackie
16.8	krosnienski	podkarpackie
16.9	leski	podkarpackie
16.10	lezajski	podkarpackie
16.11	lubaczowski	podkarpackie
16.12	lancucki	podkarpackie
16.13	mielecki	podkarpackie
16.14	nizanski	podkarpackie
16.15	przemyski	podkarpackie
16.16	Przemysl	podkarpackie
16.17	przeworski	podkarpackie
16.18	ropczycko-siedziszowski	podkarpackie
16.19	rzeszowski	podkarpackie
16.20	Rzeszow	podkarpackie
16.21	sanocki	podkarpackie
16.22	stalowowolski	podkarpackie
16.23	stryzowski	podkarpackie
16.24	Tarnobrzeg	podkarpackie
16.25	tarnobrzesci	podkarpackie

LIVESTOCK FARMS IN POLAND

APPENDIX A3:
Provinces and Counties numbers



- LEGEND:
- 8 - province number
 -  - province borders
 - 18 3 - county number
 -  - county borders

Livestock Farms in Poland

Province Name	Province No.	Swine [head]	Swine [%]	Cattle [head]	Cattle [%]	Sheep [head]	Sheep [%]	Goats [head]	Goats [%]
pomorskie	1	1 091 997	6.53	208 526	3.35	13 779	5.50	1 543	4.12
zachodniopomorskie	2	1 202 438	7.19	107 891	1.74	7 586	3.03	2 002	5.35
warminko-mazurskie	3	1 054 162	6.31	483 346	7.77	12 773	5.10	1 999	5.34
kujawsko-pomorskie	4	1 481 427	8.86	493 217	7.93	12 332	4.93	2 370	6.33
wielkopolskie	5	4 237 119	25.34	907 155	14.59	22 310	8.91	7 610	20.33
podlaskie	6	505 888	3.03	948 655	15.26	19 234	7.68	961	2.57
mazowieckie	7	2 442 190	14.61	1 199 603	19.29	8 078	3.23	2 497	6.67
lubuskie	8	262 017	1.57	80 940	1.30	4 861	1.94	1 057	2.82
lodzkie	9	1 382 158	8.27	483 971	7.78	15 682	6.26	1 873	5.00
dolnoslaskie	10	285 909	1.71	113 790	1.83	12 171	4.86	3 541	9.46
lubelskie	11	883 653	5.29	402 534	6.47	14 860	5.94	2 611	6.98
swietokrzyskie	12	410 942	2.46	196 977	3.17	4 328	1.73	2 031	5.43
opolskie	13	537 317	3.21	124 672	2.01	2 416	0.97	909	2.43
slaskie	14	412 713	2.47	134 209	2.16	10 576	4.22	2 058	5.50
malopolskie	15	268 112	1.60	217 654	3.50	75 238	30.05	2 026	5.41
podkarpackie	16	260 437	1.56	114 136	1.84	14 136	5.65	2 338	6.25
Total		16 718 479	100.00	6 217 276	100.00	250 360	100.00	37 426	100.00

Livestock Farms in Poland

County No.	County Name	Province Name	Cattle [head]	Sheep [head]	Goats [head]	Swine [head]
1.1	bytowski	pomorskie	16 079	3 210	178	49 264
1.2	chojnicki	pomorskie	25 255	569	78	37 453
1.3	czluchowski	pomorskie	4 024	159	38	521 811
1.4	Gdansk	pomorskie	464	36	5	437
1.5	gdanski	pomorskie	6 099	502	77	6 818
1.6	Gdynia	pomorskie	273	423	12	158
1.7	kartuski	pomorskie	25 124	1 112	130	49 052
1.8	koscierski	pomorskie	22 275	1 138	119	55 249
1.9	kwidzynski	pomorskie	10 689	373	70	30 205
1.10	leborski	pomorskie	7 239	1 356	83	13 797
1.11	malborski	pomorskie	6 543	35	29	6 420
1.12	nowodworski	pomorskie	8 347	17	34	5 595
1.13	pucki	pomorskie	8 406	72	81	10 155
1.14	Slupsk	pomorskie	17	0	0	203
1.15	slupski	pomorskie	11 088	1 742	267	73 479
1.16	starogardzki	pomorskie	15 236	384	182	103 956
1.17	sztumski	pomorskie	16 805	20	59	41 289
1.18	tczewski	pomorskie	10 294	1 389	48	48 480
1.19	wejherowski	pomorskie	14 269	1 242	53	38 176
2.1	bialogardzki	zachodniopomorskie	3 769	884	27	16 789
2.2	choszczanski	zachodniopomorskie	6 661	844	16	44 196
2.3	drawski	zachodniopomorskie	4 660	182	130	396 888
2.4	goleniowski	zachodniopomorskie	7 965	412	78	7 908
2.5	gryficki	zachodniopomorskie	6 754	145	34	28 166
2.6	Gryfinski	zachodniopomorskie	5 220	567	133	23 637
2.7	kamienski	zachodniopomorskie	8 739	153	39	36 044
2.8	kolobrzanski	zachodniopomorskie	4 685	99	106	16 562
2.9	Koszalin	zachodniopomorskie	50	22	0	41
2.10	koszalin	zachodniopomorskie	9 964	379	188	60 918
2.11	lobeski	zachodniopomorskie	2 373	186	115	144 666
2.12	Szczecin	zachodniopomorskie	88	0	51	5 132
2.13	mysliborski	zachodniopomorskie	3 619	40	56	14 896
2.14	Policki	zachodniopomorskie	1 514	37	125	870
2.15	pyrzycki	zachodniopomorskie	3 742	393	10	5 727
2.16	slawieski	zachodniopomorskie	7 402	328	92	60 233
2.17	stargardzki	zachodniopomorskie	14 289	550	34	60 419
2.18	szczecinecki	zachodniopomorskie	7 024	1 874	369	82 285
2.19	swidwinski	zachodniopomorskie	8 028	274	352	140 851
2.20	Swinoujscie	zachodniopomorskie	209	16	1	0
2.21	walecki	zachodniopomorskie	1 136	201	46	56 210
3.1	bartoszycki	warmińsko-mazurskie	22 001	488	114	7 536
3.2	braniewski	warmińsko-mazurskie	17 397	1 501	86	19 168
3.3	dzialdowski	warmińsko-mazurskie	26 708	13	24	52 064
3.4	Elbląg	warmińsko-mazurskie	282	186	1	843
3.5	elblaski	warmińsko-mazurskie	34 834	1 141	66	8 760
3.6	elcki	warmińsko-mazurskie	32 048	1 219	43	6 632
3.7	gizycki	warmińsko-mazurskie	24 066	836	58	71 538
3.8	goldapski	warmińsko-mazurskie	15 688	1 794	80	181 670
3.9	ilawski	warmińsko-mazurskie	29 519	846	77	225 210
3.10	ketrzynski	warmińsko-mazurskie	19 756	206	81	14 058

Livestock Farms in Poland

County No.	County Name	Province Name	Cattle [head]	Sheep [head]	Goats [head]	Swine [head]
3.11	lidzbarski	warminsko-mazurskie	23 363	132	117	16 351
3.12	mragowski	warminsko-mazurskie	28 316	224	133	27 950
3.13	nidzicki	warminsko-mazurskie	16 583	221	78	7 579
3.14	nowomiejski	warminsko-mazurskie	18 025	29	80	201 734
3.15	olecki	warminsko-mazurskie	24 244	951	72	34 068
3.16	Olsztyn	warminsko-mazurskie	154	37	12	17 537
3.17	olsztynski	warminsko-mazurskie	36 552	1 199	531	26 967
3.18	ostrodzki	warminsko-mazurskie	26 253	1 014	148	65 202
3.19	piski	warminsko-mazurskie	33 731	270	45	20 934
3.20	szczycki	warminsko-mazurskie	41 524	108	141	10 072
3.21	wegorzewski	warminsko-mazurskie	12 302	358	12	38 289
4.1	aleksandrowski	kujawsko-pomorskie	19 055	303	33	39 960
4.2	brodnicki	kujawsko-pomorskie	41 092	316	79	113 640
4.3	bydgoski	kujawsko-pomorskie	15 249	870	293	69 204
4.4	Bydgoszcz	kujawsko-pomorskie	102	4	23	3 498
4.5	chelminski	kujawsko-pomorskie	13 161	450	634	41 917
4.6	Golubsko-dobrzynski	kujawsko-pomorskie	25 327	444	51	101 160
4.7	Grudziadz	kujawsko-pomorskie	117	0	6	305
4.8	grudziadzki	kujawsko-pomorskie	17 941	27	60	63 515
4.9	inowroclawski	kujawsko-pomorskie	32 339	2 151	52	126 322
4.10	lipnowski	kujawsko-pomorskie	35 117	580	157	36 732
4.11	mogilenski	kujawsko-pomorskie	18 404	180	89	57 235
4.12	nakielski	kujawsko-pomorskie	33 592	3 653	56	78 065
4.13	radziejowski	kujawsko-pomorskie	38 548	438	34	26 679
4.14	rypinski	kujawsko-pomorskie	34 416	13	28	62 210
4.15	sepolenski	kujawsko-pomorskie	19 105	188	55	66 263
4.16	swiecki	kujawsko-pomorskie	21 248	468	98	141 268
4.17	Torun	kujawsko-pomorskie	126	4	3	3 801
4.18	torunski	kujawsko-pomorskie	29 570	421	92	79 105
4.19	tucholski	kujawsko-pomorskie	16 834	20	93	58 363
4.20	wabrzeski	kujawsko-pomorskie	17 137	351	65	59 819
4.21	Wloclawek	kujawsko-pomorskie	77	0	0	34
4.22	wloclawski	kujawsko-pomorskie	36 006	269	233	69 035
4.23	zninski	kujawsko-pomorskie	28 654	1 182	136	183 297
5.1	chodzierski	wielkopolskie	10 736	13	1 383	115 423
5.2	czarnkowsko-trzcianecki	wielkopolskie	28 450	345	100	132 412
5.3	gnieznienski	wielkopolskie	36 194	876	196	203 473
5.4	gostynski	wielkopolskie	68 319	420	664	307 735
5.5	grodziski	wielkopolskie	26 235	125	36	168 733
5.6	jarocinski	wielkopolskie	23 529	50	32	108 312
5.7	kaliski	wielkopolskie	37 787	560	162	144 975
5.8	Kalisz	wielkopolskie	391	6	1	8 322
5.9	kepinski	wielkopolskie	14 087	38	61	99 619
5.10	kolski	wielkopolskie	50 756	11	527	43 580
5.11	Konin	wielkopolskie	497	32	6	451
5.12	koninski	wielkopolskie	51 903	423	222	84 819
5.13	koscianski	wielkopolskie	45 740	1 978	55	204 539
5.14	krotoszynski	wielkopolskie	58 819	1 170	789	148 535

Livestock Farms in Poland

County No.	County Name	Province Name	Cattle [head]	Sheep [head]	Goats [head]	Swine [head]
5.15	leszczynski	wielkopolskie	32 241	1 618	525	269 207
5.16	Leszno	wielkopolskie	366	5	4	11 485
5.17	miedzychodzki	wielkopolskie	7 729	1 246	166	83 006
5.18	nowotomyski	wielkopolskie	14 740	2 588	175	85 902
5.19	obornicki	wielkopolskie	14 309	258	45	99 662
5.20	ostrowski	wielkopolskie	38 951	453	41	94 589
5.21	ostrzeszowski	wielkopolskie	25 057	145	250	71 766
5.22	pilski	wielkopolskie	36 623	661	86	182 415
5.23	pleszewski	wielkopolskie	19 650	183	63	112 267
5.24	Poznan	wielkopolskie	815	23	15	3 161
5.25	poznanski	wielkopolskie	28 089	2 119	414	285 553
5.26	rawicki	wielkopolskie	43 824	339	124	131 614
5.27	slupecki	wielkopolskie	21 427	1 622	105	85 163
5.28	szamotulski	wielkopolskie	19 077	381	106	142 597
5.29	sredzki	wielkopolskie	16 626	512	32	111 260
5.30	sremski	wielkopolskie	20 341	1 439	295	118 029
5.31	turecki	wielkopolskie	32 312	935	255	33 553
5.32	wagrowiecki	wielkopolskie	22 394	266	69	220 646
5.33	wolsztyński	wielkopolskie	21 540	288	74	175 224
5.34	wrzesinski	wielkopolskie	20 285	1 020	409	80 854
5.35	zlotowski	wielkopolskie	17 316	162	123	68 238
6.1	augustowski	podlaskie	65 363	852	53	7 300
6.2	bialostocki	podlaskie	75 838	2 059	141	82 970
6.3	Bialystok	podlaskie	72	5	0	443
6.4	bielski	podlaskie	58 444	3 046	67	30 456
6.5	grajewski	podlaskie	66 242	384	25	15 366
6.6	hajnowski	podlaskie	12 509	2 554	106	7 315
6.7	kolnenski	podlaskie	83 654	9	26	61 838
6.8	Lomza	podlaskie	339	0	12	633
6.9	lomzynski	podlaskie	99 598	174	47	32 536
6.10	moniecki	podlaskie	63 327	734	30	68 335
6.11	sejnenski	podlaskie	34 655	296	51	27 041
6.12	siemiatycki	podlaskie	50 676	1 080	82	23 768
6.13	sokolski	podlaskie	75 062	6 844	120	26 973
6.14	suwalski	podlaskie	70 190	468	127	53 777
6.15	Suwalki	podlaskie	331	0	2	2 148
6.16	wysokomazowiecki	podlaskie	134 187	710	58	37 674
6.17	zambrowski	podlaskie	58 168	19	14	27 315
7.1	bialobrzesci	mazowieckie	10 489	40	20	7 308
7.2	ciechanowski	mazowieckie	48 011	210	30	87 157
7.3	garwoliniski	mazowieckie	37 025	727	59	52 530
7.4	gostyninski	mazowieckie	16 410	102	56	41 049
7.5	grodziski	mazowieckie	4 573	45	93	2 271
7.6	grojecki	mazowieckie	5 595	1 110	74	16 377
7.7	kozienicki	mazowieckie	11 110	132	51	27 692
7.8	legionowski	mazowieckie	1 612	73	33	1 150
7.9	lipski	mazowieckie	11 744	32	63	32 542
7.10	losicki	mazowieckie	23 431	425	100	93 269
7.11	makowski	mazowieckie	59 577	277	84	49 062

Livestock Farms in Poland

County No.	County Name	Province Name	Cattle [head]	Sheep [head]	Goats [head]	Swine [head]
7.12	minski	mazowieckie	32 207	368	231	14 000
7.13	mlawski	mazowieckie	71 379	41	48	142 068
7.14	nowodworski	mazowieckie	7 278	16	66	13 032
7.15	ostrolecki	mazowieckie	144 717	159	92	13 916
7.16	Ostroleka	mazowieckie	184	6	0	54
7.17	ostrowski	mazowieckie	76 040	17	46	28 180
7.18	otwocki	mazowieckie	4 784	126	40	3 886
7.19	piaseczynski	mazowieckie	3 523	382	215	4 449
7.20	Plock	mazowieckie	529	2	4	1 103
7.21	plocki	mazowieckie	62 077	795	97	142 808
7.22	plonski	mazowieckie	50 647	81	45	71 549
7.23	pruskowski	mazowieckie	902	10	20	229
7.24	przasnyski	mazowieckie	77 618	115	31	69 060
7.25	przysuski	mazowieckie	13 402	347	66	101 360
7.26	pultuski	mazowieckie	34 795	58	61	26 131
7.27	Radom	mazowieckie	471	5	17	486
7.28	radomski	mazowieckie	32 239	325	157	92 369
7.29	Siedlce	mazowieckie	23	0	0	22 212
7.30	siedlecki	mazowieckie	66 904	556	49	65 183
7.31	sierpecki	mazowieckie	50 766	12	62	153 316
7.32	sochaczewski	mazowieckie	13 099	179	14	30 754
7.33	sokolowski	mazowieckie	57 486	96	40	94 871
7.34	sztydlowiecki	mazowieckie	4 185	101	49	8 141
7.35	Warszawa	mazowieckie	87	502	4	896
7.36	warszawski zachodni	mazowieckie	3 353	53	20	1 790
7.37	wegrowski	mazowieckie	46 256	282	60	21 878
7.38	wolominski	mazowieckie	16 442	74	125	2 513
7.39	wyszowski	mazowieckie	23 882	108	44	68 810
7.40	zwolenski	mazowieckie	14 967	2	39	23 921
7.41	zurominski	mazowieckie	55 200	76	11	799 434
7.42	zyrardowski	mazowieckie	4 584	11	81	13 384
8.1	gorzowski	lubuskie	10 409	159	99	8 237
8.2	Gorzow Wielkopolski	lubuskie	428	0	22	212
8.3	krosnienski	lubuskie	4 167	295	64	4 949
8.4	miedzyrzecki	lubuskie	5 405	850	99	45 619
8.5	nowosolski	lubuskie	2 509	169	189	15 277
8.6	slubicki	lubuskie	4 215	414	48	36 239
8.7	strzelecko-drezdenecki	lubuskie	7 969	122	48	3 443
8.8	sulecinski	lubuskie	9 226	90	106	6 227
8.9	swiebodzinski	lubuskie	4 441	740	31	32 255
8.10	wschowski	lubuskie	11 796	135	27	68 902
8.11	Zielona Gora	lubuskie	14	0	3	8
8.12	zielonogorski	lubuskie	11 173	174	129	24 319
8.13	zaganski	lubuskie	3 046	87	112	14 155
8.14	zarski	lubuskie	6 142	1 626	80	2 175
9.1	belchatowski	lodzkie	12 277	618	104	32 118
9.2	brzezinski	lodzkie	5 444	241	38	46 626

Livestock Farms in Poland

County No.	County Name	Province Name	Cattle [head]	Sheep [head]	Goats [head]	Swine [head]
9.3	kutnowski	lodzkie	38 820	209	36	74 324
9.4	laski	lodzkie	15 189	1 284	43	20 830
9.5	leczycki	lodzkie	40 703	165	97	17 777
9.6	lowicki	lodzkie	72 092	212	52	214 570
9.7	lodz	lodzkie	8 844	687	94	102 308
9.8	opoczynski	lodzkie	21 748	1 544	104	17 771
9.9	pabianicki	lodzkie	10 562	312	45	25 307
9.10	pajeczanski	lodzkie	11 447	942	117	17 996
9.11	piotrkowski	lodzkie	27 781	662	90	296 444
9.12	Piotrkow Trybunalski	lodzkie	522	19	12	1 033
9.13	poddebicki	lodzkie	36 015	768	234	28 061
9.14	radomszczanski	lodzkie	21 606	1 781	136	64 085
9.15	rawski	lodzkie	7 105	725	68	16 968
9.16	sieradzki	lodzkie	57 905	1 156	135	80 112
9.17	Skierniewice	lodzkie	89	3	6	43
9.18	skierniewicki	lodzkie	17 025	1 439	66	50 362
9.19	tomaszowski	lodzkie	24 011	949	82	91 110
9.20	wielunski	lodzkie	14 033	1 420	75	69 314
9.21	wieruszowski	lodzkie	7 834	143	107	59 050
9.22	zdunskowolski	lodzkie	6 321	203	83	14 716
9.23	zgierski	lodzkie	26 598	200	49	41 233
10.1	boleslawiecki	dolnoslaskie	2 108	258	69	11 084
10.2	dzierzoniowski	dolnoslaskie	3 142	354	145	3 910
10.3	glogowski	dolnoslaskie	3 824	133	156	3 205
10.4	gorowski	dolnoslaskie	7 948	17	88	17 428
10.5	jaworski	dolnoslaskie	3 988	805	173	4 878
10.6	Jelenia Gora	dolnoslaskie	434	9	14	16
10.7	jeleniogorski	dolnoslaskie	4 096	716	161	303
10.8	kamiennogorski	dolnoslaskie	5 293	1 025	194	707
10.9	klodzki	dolnoslaskie	9 117	1 842	336	4 091
10.10	Legnica	dolnoslaskie	8	0	4	104
10.11	legnicki	dolnoslaskie	5 014	170	153	7 857
10.12	lubanski	dolnoslaskie	2 988	36	81	1 331
10.13	lubinski	dolnoslaskie	1 388	203	86	2 008
10.14	lwowecki	dolnoslaskie	6 113	567	151	3 504
10.15	milicki	dolnoslaskie	6 344	60	191	37 607
10.16	olesnicki	dolnoslaskie	7 366	286	120	39 758
10.17	olawski	dolnoslaskie	744	42	54	3 573
10.18	polkowicki	dolnoslaskie	2 479	428	148	4 404
10.19	strzelinski	dolnoslaskie	3 534	5	20	12 803
10.20	sredzki	dolnoslaskie	2 230	245	169	6 084
10.21	swidnicki	dolnoslaskie	5 676	1 873	84	8 853
10.22	trzebnicki	dolnoslaskie	8 097	69	100	24 363
10.23	Walbrzych	dolnoslaskie	170	0	13	81
10.24	walbrzyski	dolnoslaskie	4 847	274	171	652
10.25	wolowski	dolnoslaskie	3 444	548	131	5 716
10.26	Wroclaw	dolnoslaskie	423	656	227	87
10.27	wroclawski	dolnoslaskie	1 397	40	32	43 992
10.28	zabkowicki	dolnoslaskie	5 937	498	55	7 102

Livestock Farms in Poland

County No.	County Name	Province Name	Cattle [head]	Sheep [head]	Goats [head]	Swine [head]
10.29	zgorzelecki	dolnoslaskie	1 557	272	147	1 230
10.30	zlotoryjski	dolnoslaskie	4 084	740	68	29 178
11.1	bialski	lubelskie	49 713	4 302	287	130 952
11.2	Biala Podlaska	lubelskie	120	25	12	623
11.3	bilgorajski	lubelskie	14 361	221	88	28 699
11.4	Chelm	lubelskie	15	0	0	49
11.5	chelmski	lubelskie	21 076	1 205	240	27 427
11.6	hrubieszowski	lubelskie	21 357	114	77	9 348
11.7	janowski	lubelskie	11 672	37	53	22 563
11.8	krasnostawski	lubelskie	14 391	441	172	18 084
11.9	krasnicki	lubelskie	10 700	165	81	37 124
11.10	lubartowski	lubelskie	22 279	181	150	53 631
11.11	lubelski	lubelskie	32 314	151	214	80 303
11.12	Lublin	lubelskie	376	23	7	1 333
11.13	leczyński	lubelskie	8 089	318	182	45 352
11.14	lukowski	lubelskie	61 104	165	92	51 013
11.15	opolski	lubelskie	2 617	90	106	9 108
11.16	parczewski	lubelskie	13 435	700	80	104 814
11.17	pulawski	lubelskie	8 912	325	203	23 310
11.18	radzynski	lubelskie	27 488	2 573	118	131 817
11.19	rycki	lubelskie	18 373	279	48	16 569
11.20	swidnicki	lubelskie	5 484	242	51	6 035
11.21	tomaszowski	lubelskie	14 903	65	93	28 463
11.22	wlodawski	lubelskie	15 964	2 580	92	19 507
11.23	zamojski	lubelskie	27 728	658	165	37 409
11.24	Zamosc	lubelskie	63	0	0	120
12.1	buski	swietokrzyskie	20 316	271	342	24 874
12.2	jedrzejewski	swietokrzyskie	30 079	321	120	129 379
12.3	kazimierski	swietokrzyskie	11 720	79	167	42 839
12.4	Kielce	swietokrzyskie	237	6	9	1 170
12.5	kielecki	swietokrzyskie	37 000	1 695	423	86 413
12.6	konecki	swietokrzyskie	11 592	362	157	4 689
12.7	opatowski	swietokrzyskie	22 978	251	53	33 247
12.8	ostrowiecki	swietokrzyskie	9 724	164	72	19 577
12.9	pinchowski	swietokrzyskie	12 078	344	99	21 785
12.10	sandomierski	swietokrzyskie	4 666	38	117	3 703
12.11	skarzynski	swietokrzyskie	774	209	82	1 758
12.12	starachowicki	swietokrzyskie	6 894	252	46	5 157
12.13	staszowski	swietokrzyskie	10 703	59	232	17 100
12.14	wloszczowski	swietokrzyskie	18 216	277	112	19 251
13.1	brzeski	opolskie	4 810	80	53	27 496
13.2	glubczycki	opolskie	14 544	8	46	13 770
13.3	kedzierzynsko-kozielski	opolskie	11 784	56	70	40 717
13.4	kluczborski	opolskie	11 162	386	52	75 027
13.5	krapkowicki	opolskie	6 820	68	46	36 906
13.6	namyslowski	opolskie	4 331	186	84	47 011
13.7	nyski	opolskie	9 962	574	89	34 618
13.8	oleski	opolskie	17 324	398	203	66 472
13.9	Opole	opolskie	1 254	282	13	5 933

Livestock Farms in Poland

County No.	County Name	Province Name	Cattle [head]	Sheep [head]	Goats [head]	Swine [head]
13.10	opolski	opolskie	11 771	210	125	41 331
13.11	prudnicki	opolskie	15 036	75	48	112 966
13.12	strzelecki	opolskie	15 874	93	80	35 070
14.1	bedzinski	slaskie	3 257	93	23	4 417
14.2	bielski	slaskie	5 138	730	112	13 732
14.3	Bielsko-Biala	slaskie	281	56	24	903
14.4	bierunsko-ledzinski	slaskie	1 882	0	8	3 618
14.5	Bytom	slaskie	52	0	0	653
14.6	Chorzow	slaskie	9	34	36	11
14.7	cieszynski	slaskie	11 320	2 264	184	11 049
14.8	Czestochowa	slaskie	330	20	4	119
14.9	czestochowski	slaskie	15 809	982	92	6 167
14.10	Dabrowa Gornicza	slaskie	156	0	8	0
14.11	Gliwice	slaskie	667	0	17	2 035
14.12	gliwicki	slaskie	6 732	98	61	119 373
14.13	Jastrzebie-Zdroj	slaskie	566	19	16	7 438
14.14	Jaworzno	slaskie	56	0	3	429
14.15	Katowice	slaskie	94	23	20	995
14.16	klobucki	slaskie	7 077	486	131	59 318
14.17	lubliniecki	slaskie	10 876	61	141	31 411
14.18	mikolowski	slaskie	3 221	77	32	5 039
14.19	Myslowice	slaskie	330	3	8	130
14.20	myszkowski	slaskie	5 748	413	47	3 325
14.21	Piekary slaskie	slaskie	38	7	14	225
14.22	pszczyński	slaskie	6 269	1 424	62	33 777
14.23	raciborski	slaskie	13 685	230	90	19 279
14.24	Ruda slaska	slaskie	56	0	2	255
14.25	rybnicki	slaskie	988	140	36	2 923
14.26	Rybnik	slaskie	239	13	22	334
14.27	Siemianowice slaskie	slaskie	25	0	2	68
14.28	Sosnowiec	slaskie	17	0	0	14
14.29	tarnogorski	slaskie	3 792	67	88	11 528
14.30	Tychy	slaskie	868	2	4	1 872
14.31	wodzislowski	slaskie	1 764	75	44	25 961
14.32	Zabrze	slaskie	115	0	8	399
14.33	zawiercianski	slaskie	28 245	366	494	43 793
14.34	zory	slaskie	362	46	11	1 816
14.35	zywiecki	slaskie	4 145	2 847	214	307
15.1	bochenski	malopolskie	7 785	298	112	9 938
15.2	brzeski	malopolskie	7 576	223	149	6 605
15.3	chrzanowski	malopolskie	397	24	5	392
15.4	dabrowski	malopolskie	7 943	68	89	34 789
15.5	gorlicki	malopolskie	16 483	1 644	140	3 328
15.6	krakowski	malopolskie	10 604	607	162	39 405
15.7	Krakow	malopolskie	854	181	16	1 168
15.8	limanowski	malopolskie	22 117	4 975	68	1 405
15.9	miechowski	malopolskie	15 846	192	39	33 648
15.10	myslenicki	malopolskie	6 542	673	123	1 170

Livestock Farms in Poland

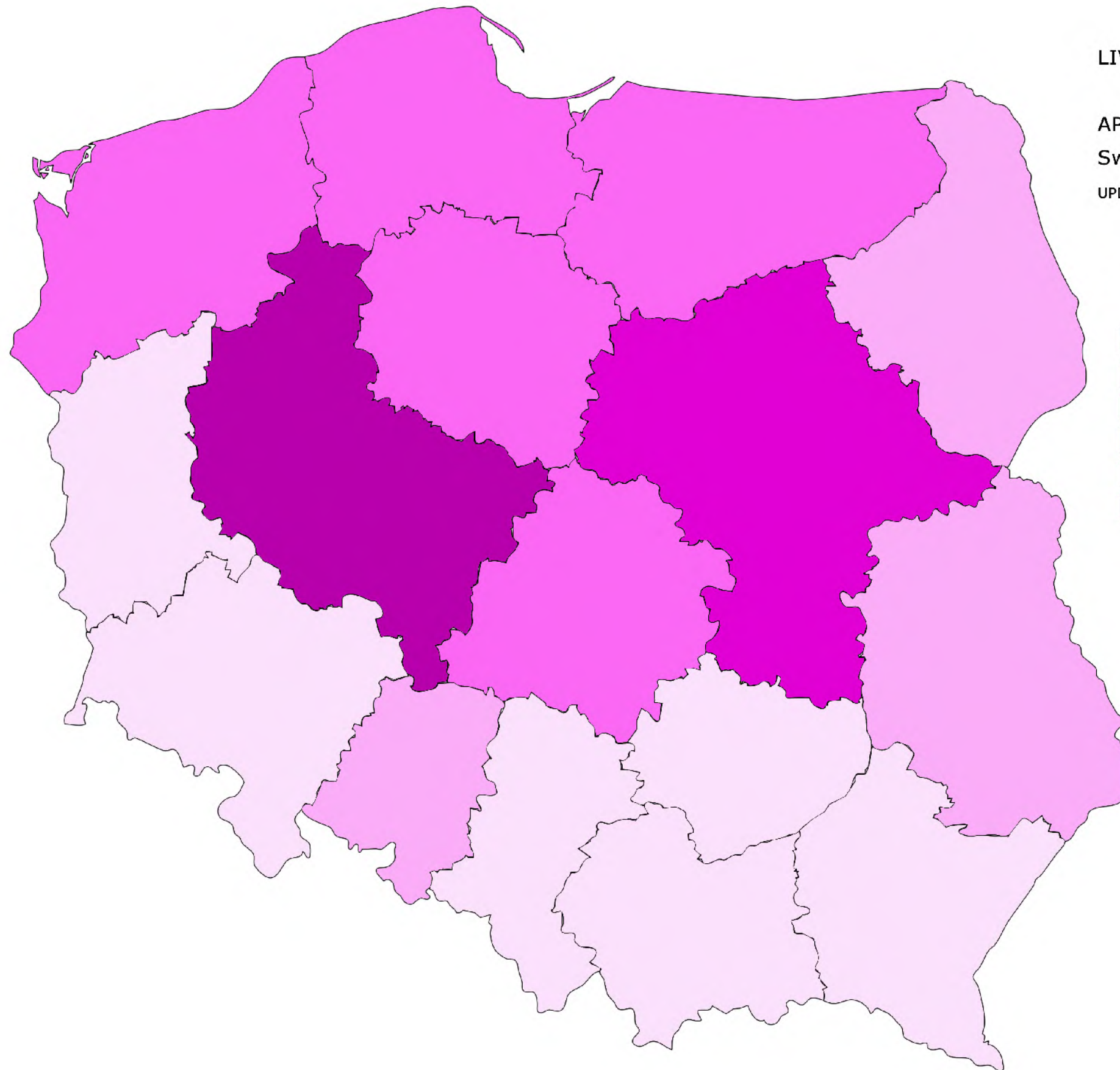
County No.	County Name	Province Name	Cattle [head]	Sheep [head]	Goats [head]	Swine [head]
15.11	nowosadecki	malopolskie	28 117	5 060	209	5 803
15.12	nowotarski	malopolskie	36 297	34 284	126	1 908
15.13	Nowy Sacz	malopolskie	470	1	3	218
15.14	olkuski	malopolskie	5 713	177	47	12 298
15.15	oswiecimski	malopolskie	2 590	36	57	12 272
15.16	proszowicki	malopolskie	5 251	30	107	27 761
15.17	suski	malopolskie	4 020	254	57	477
15.18	tarnowski	malopolskie	18 842	749	224	23 269
15.19	Tarnow	malopolskie	265	0	6	1 190
15.20	tatrzański	malopolskie	7 845	25 091	59	124
15.21	wadowicki	malopolskie	7 312	365	159	31 854
15.22	wielicki	malopolskie	4 785	306	69	19 090
16.1	bieszczadzki	podkarpackie	3 483	1 630	283	0
16.2	brzozowski	podkarpackie	4 079	234	52	926
16.3	debicki	podkarpackie	8 291	134	70	34 329
16.4	jaroslawski	podkarpackie	5 980	440	77	17 041
16.5	jasielski	podkarpackie	6 370	779	91	2 197
16.6	kolbuszowski	podkarpackie	6 194	53	66	4 081
16.7	Krosno	podkarpackie	55	0	11	14
16.8	krosnienski	podkarpackie	5 931	861	328	1 228
16.9	leski	podkarpackie	1 543	2 174	128	825
16.10	lezajski	podkarpackie	4 304	55	69	30 237
16.11	lubaczowski	podkarpackie	7 113	2 087	32	17 710
16.12	lancucki	podkarpackie	3 047	475	55	10 436
16.13	mielecki	podkarpackie	7 647	257	100	77 640
16.14	nizanski	podkarpackie	3 791	61	125	1 052
16.15	przemyski	podkarpackie	4 718	717	80	4 837
16.16	Przemysl	podkarpackie	28	0	12	32
16.17	przeworski	podkarpackie	6 889	301	27	12 012
16.18	ropczycko-sędziszowski	podkarpackie	7 725	84	104	23 908
16.19	rzeszowski	podkarpackie	8 936	472	139	5 690
16.20	Rzeszow	podkarpackie	243	6	13	292
16.21	sanocki	podkarpackie	9 429	2 852	257	1 069
16.22	stalowowolski	podkarpackie	1 950	1	49	7 010
16.23	strzyzowski	podkarpackie	3 384	459	69	6 194
16.24	Tarnobrzeg	podkarpackie	198	0	13	237
16.25	tarnobrzanski	podkarpackie	2 808	4	88	1 440

LIVESTOCK FARMS IN POLAND







APPENDIX A6:

Swine population in the Polish Provinces

UPDATED ON APRIL 2013

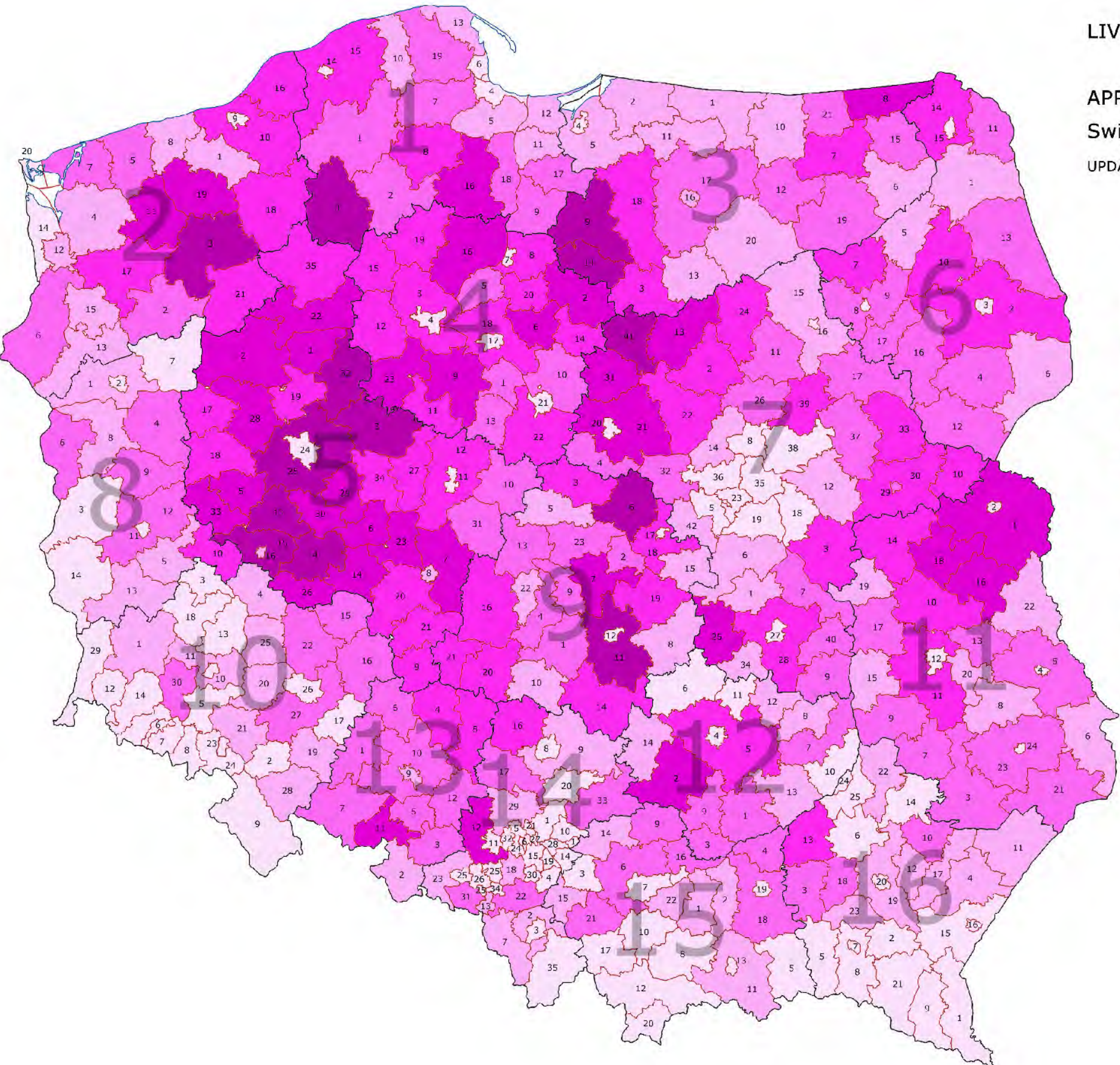




LEGEND:

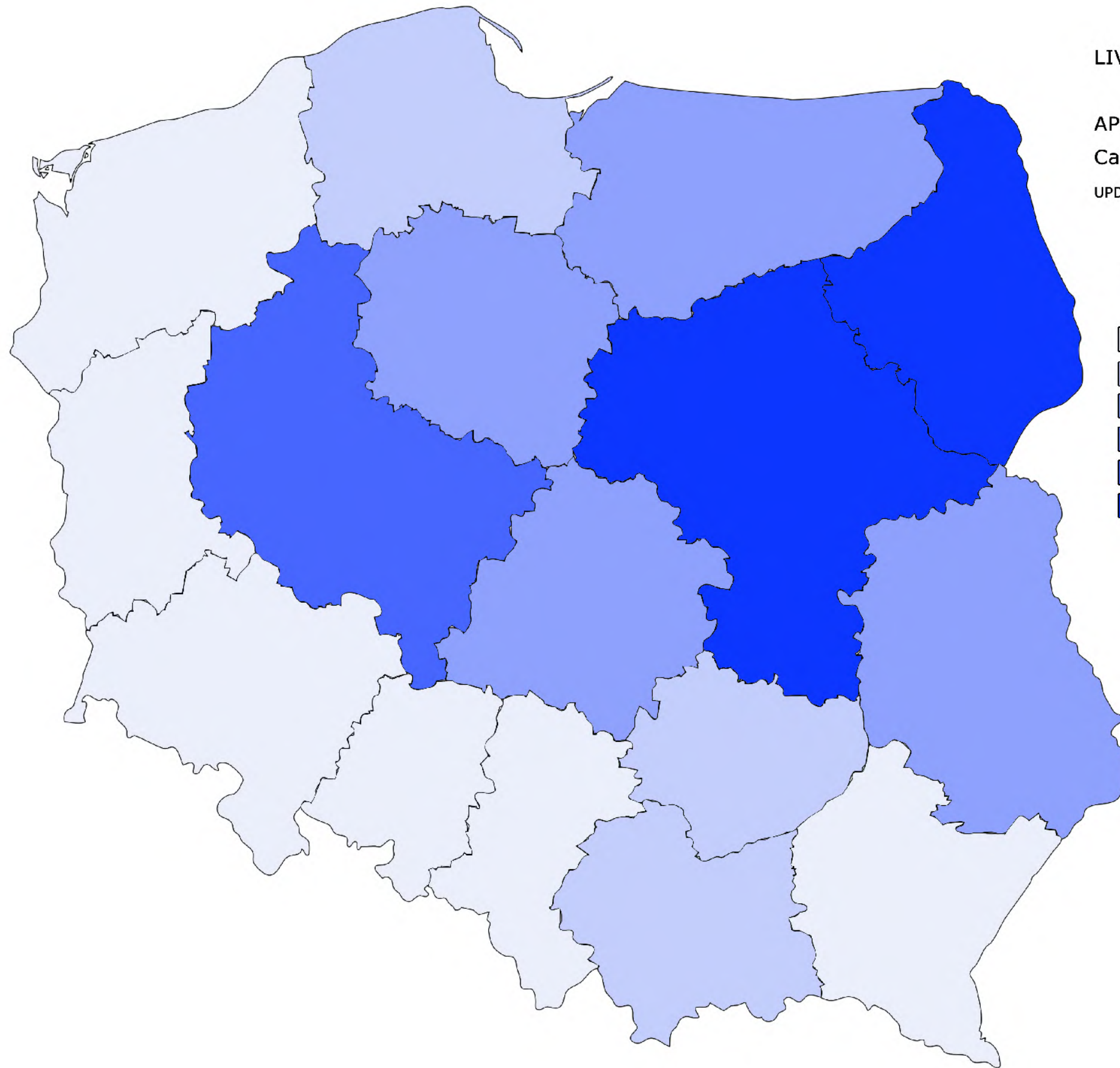
	[%]	[head]
	- 0-3 %	(0 - 501 550)
	- 3-6 %	(501 551 - 1 003 100)
	- 6-9 %	(1 003 101 - 1 504 600)
	- 9-12 %	(1 504 601 - 2 006 200)
	- 12-15 %	(2 006 201 - 2 507 700)
	- > 15%	(2 507 701 - more)

LIVESTOCK FARMS IN POLAND

APPENDIX A7:
Swine population in the Polish Counties
UPDATED ON APRIL 2013



- LEGEND:
- [head]
- 0 - 5 000
 - 5 001 - 20 000
 - 20 001 - 50 000
 - 50 001 - 100 000
 - 100 001 - 200 000
 - 200 001 - more
- 8 - province number
-  - province borders
- 18 35 3 - county number
-  - county borders









LIVESTOCK FARMS IN POLAND

APPENDIX A8:

Cattle population in the Polish Provinces

UPDATED ON APRIL 2013

LEGEND:

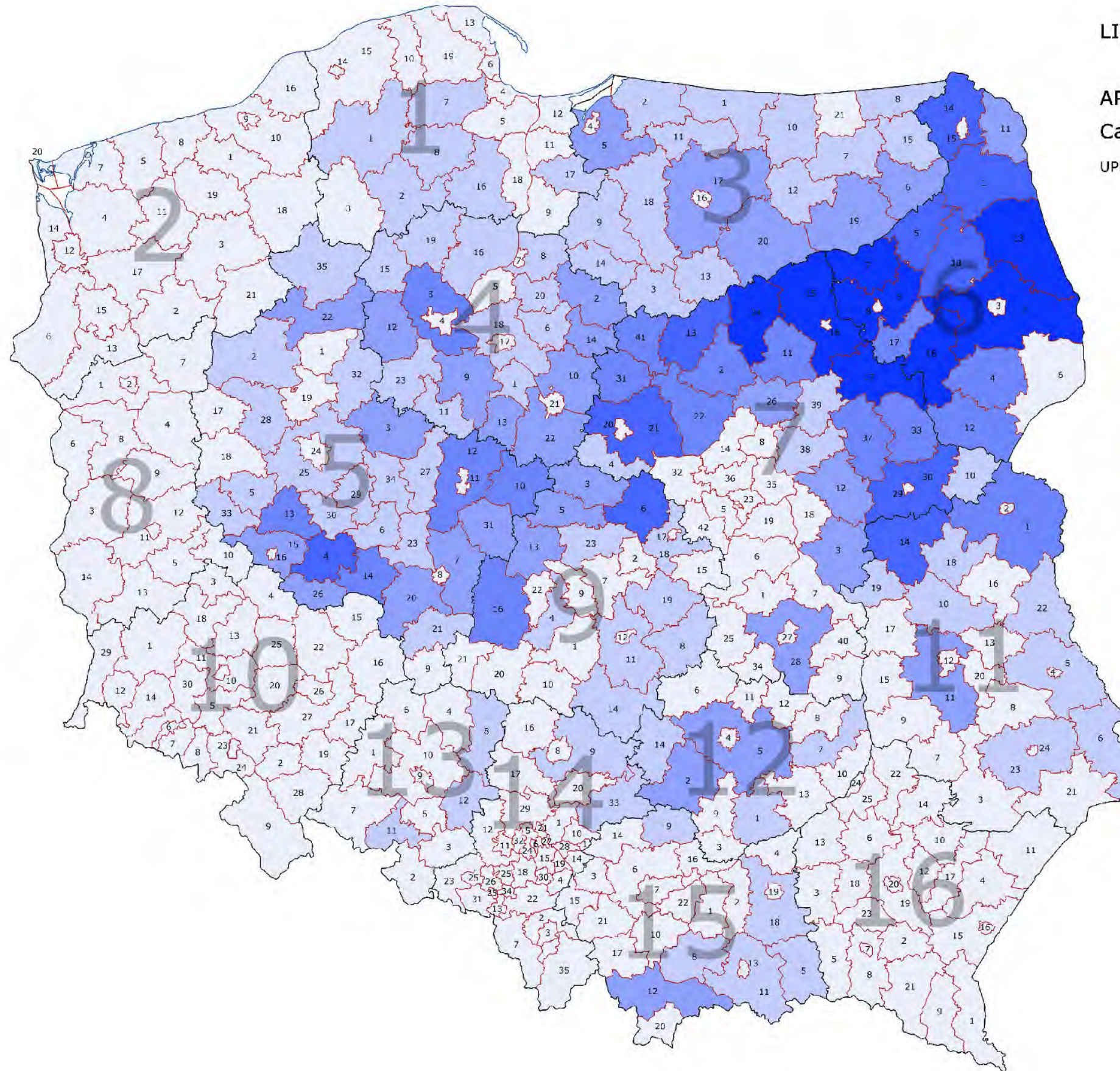
	[%]	[head]
	- 0-3 %	(0 - 186 500)
	- 3-6 %	(186 501 - 373 000)
	- 6-9 %	(373 001 - 559 550)
	- 9-12 %	(559 551 - 746 070)
	- 12-15 %	(746 071 - 932 600)
	- > 15%	(932 601 - more)

LIVESTOCK FARMS IN POLAND

APPENDIX A9:







Cattle population in the Polish Counties





UPDATED ON APRIL 2013



LEGEND:

[head]

-  - 0 - 15 000
-  - 15 001 - 30 000
-  - 30 001 - 45 000
-  - 45 001 - 60 000
-  - 60 001 - 75 000
-  - 75 001 - more

-  - province number
-  - province borders
-  - county number
-  - county borders







LIVESTOCK FARMS IN POLAND

APPENDIX A10: Sheep population in the Polish Provinces

UPDATED ON APRIL 2013

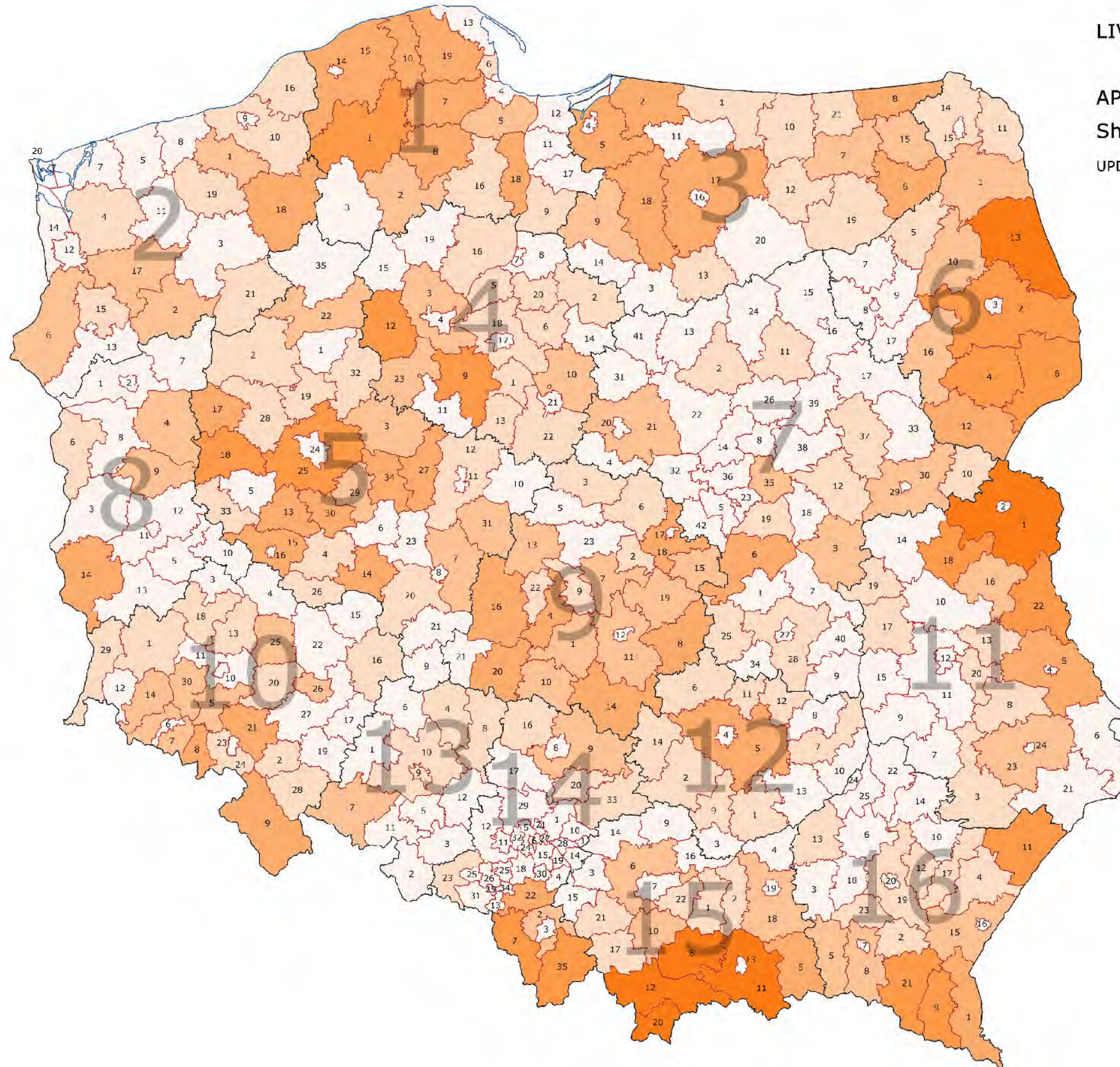


LEGEND:

	[%]	[head]
	- 0-3 %	(0 - 7 500)
	- 3-6 %	(7 501 - 15 000)
	- 6-9 %	(15 001 - 22 500)
	- 9-12 %	(22 501 - 30 000)
	- 12-15 %	(30 001 - 37 550)
	- > 15%	(37 551 - more)

LIVESTOCK FARMS IN POLAND

APPENDIX A11: Sheep population in the Polish Counties UPDATED ON APRIL 2013




LEGEND:


[head]

- 0 - 200
- 201 - 500
- 501 - 1 000
- 1 001 - 2 000
- 2 001 - 4 000
- 4 001 - more

8 - province number

 - province borders

18 3 - county number

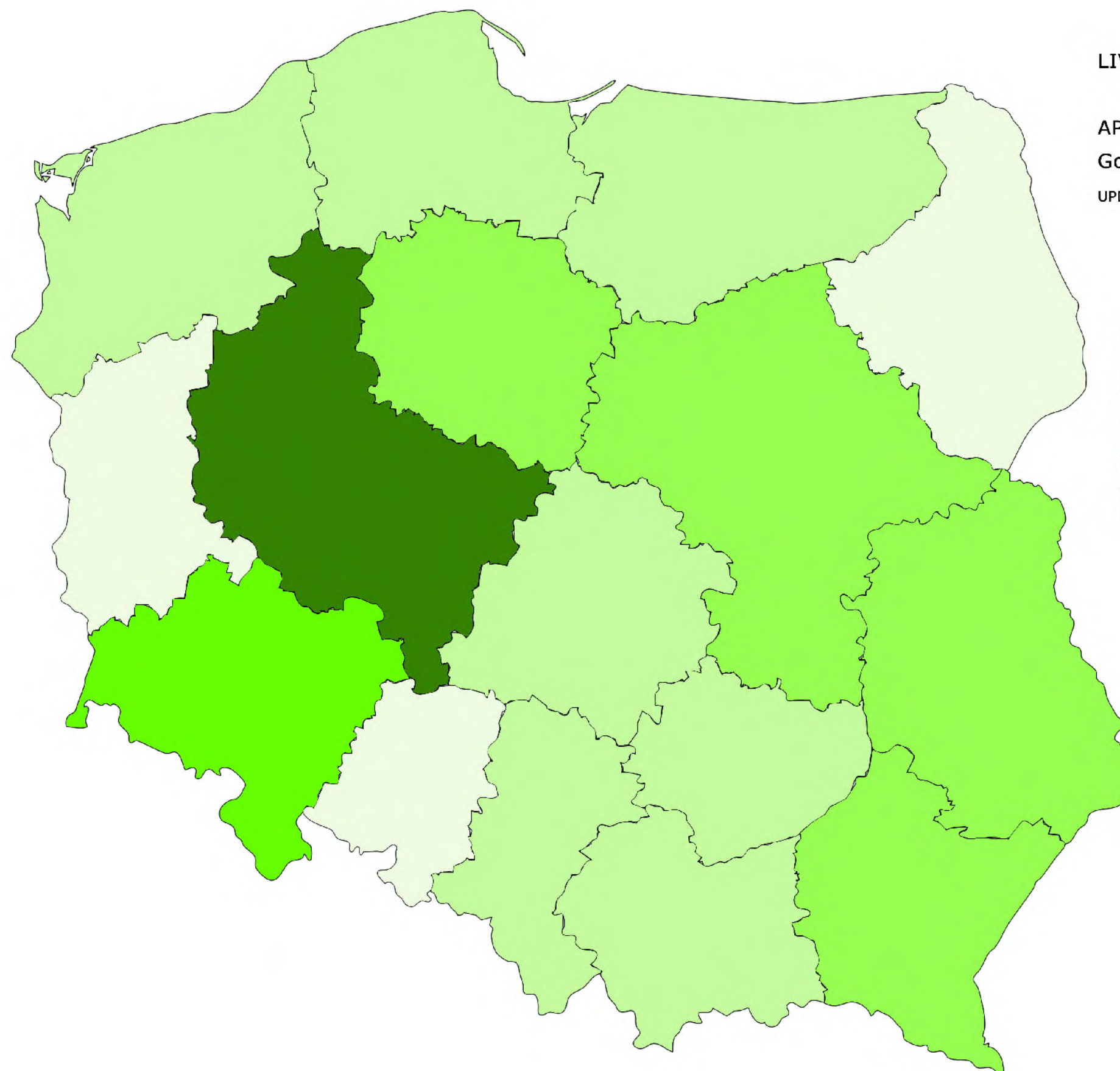
 - county borders

LIVESTOCK FARMS IN POLAND







APPENDIX A12:

Goats population in the Polish Provinces

UPDATED ON APRIL 2013



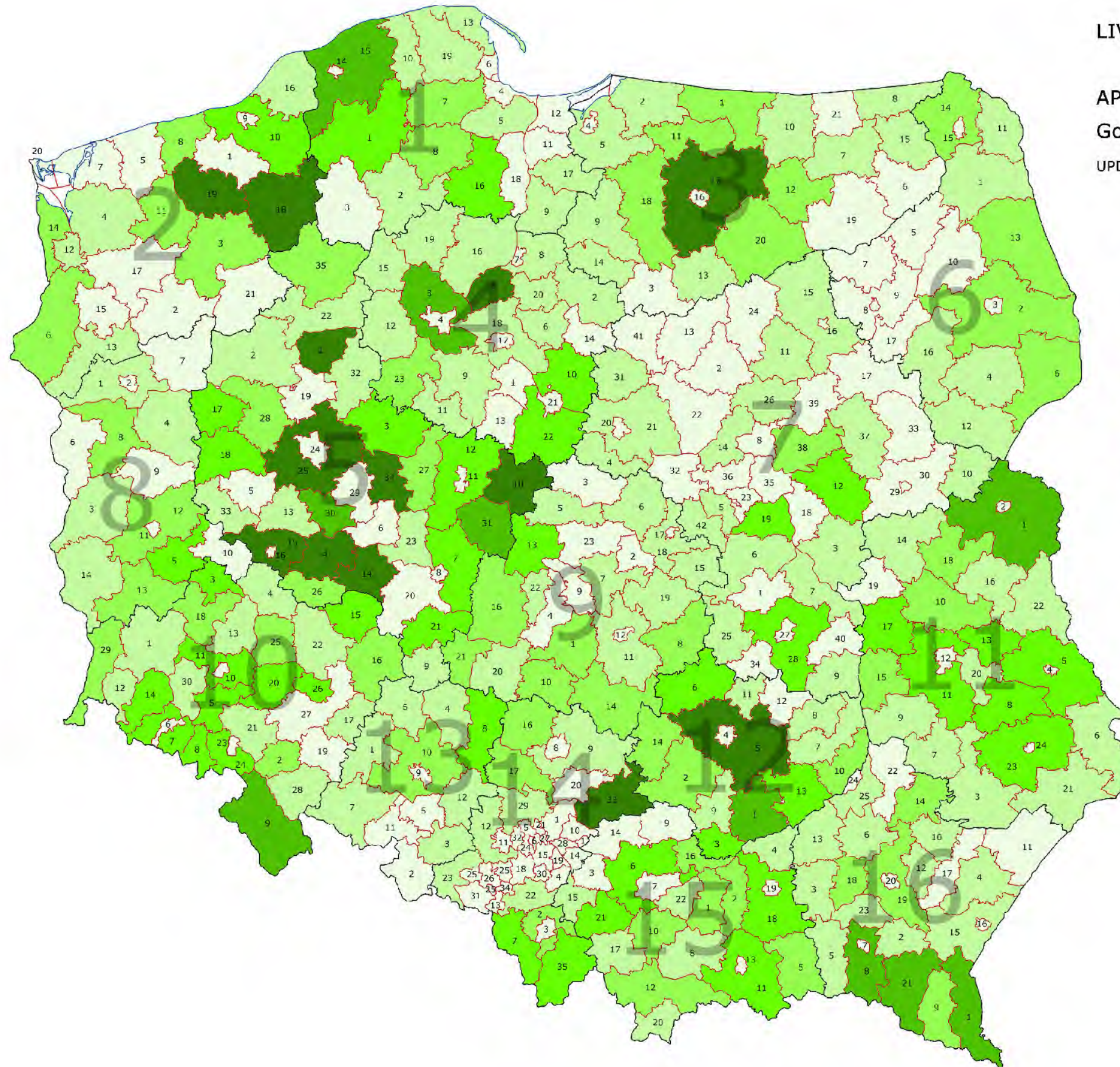
LEGEND:

	[%]	[head]
	- 0-3 %	(0 - 1 120)
	- 3-6 %	(1 121 - 2 240)
	- 6-9 %	(2 241 - 3 360)
	- 9-12 %	(3 361 - 4 490)
	- 12-15 %	(4 491 - 5 610)
	- > 15%	(5 611 - more)









LIVESTOCK FARMS IN POLAND

APPENDIX A13: Goats population in the Polish Counties

UPDATED ON APRIL 2013



LEGEND:

- [head]
-  - 0 - 50
 -  - 51 - 100
 -  - 101 - 150
 -  - 151 - 250
 -  - 251 - 350
 -  - 351 - more
- 8 - province number
-  - province borders
- 18 35 3 - county number
-  - county borders

Livestock Farms in Poland

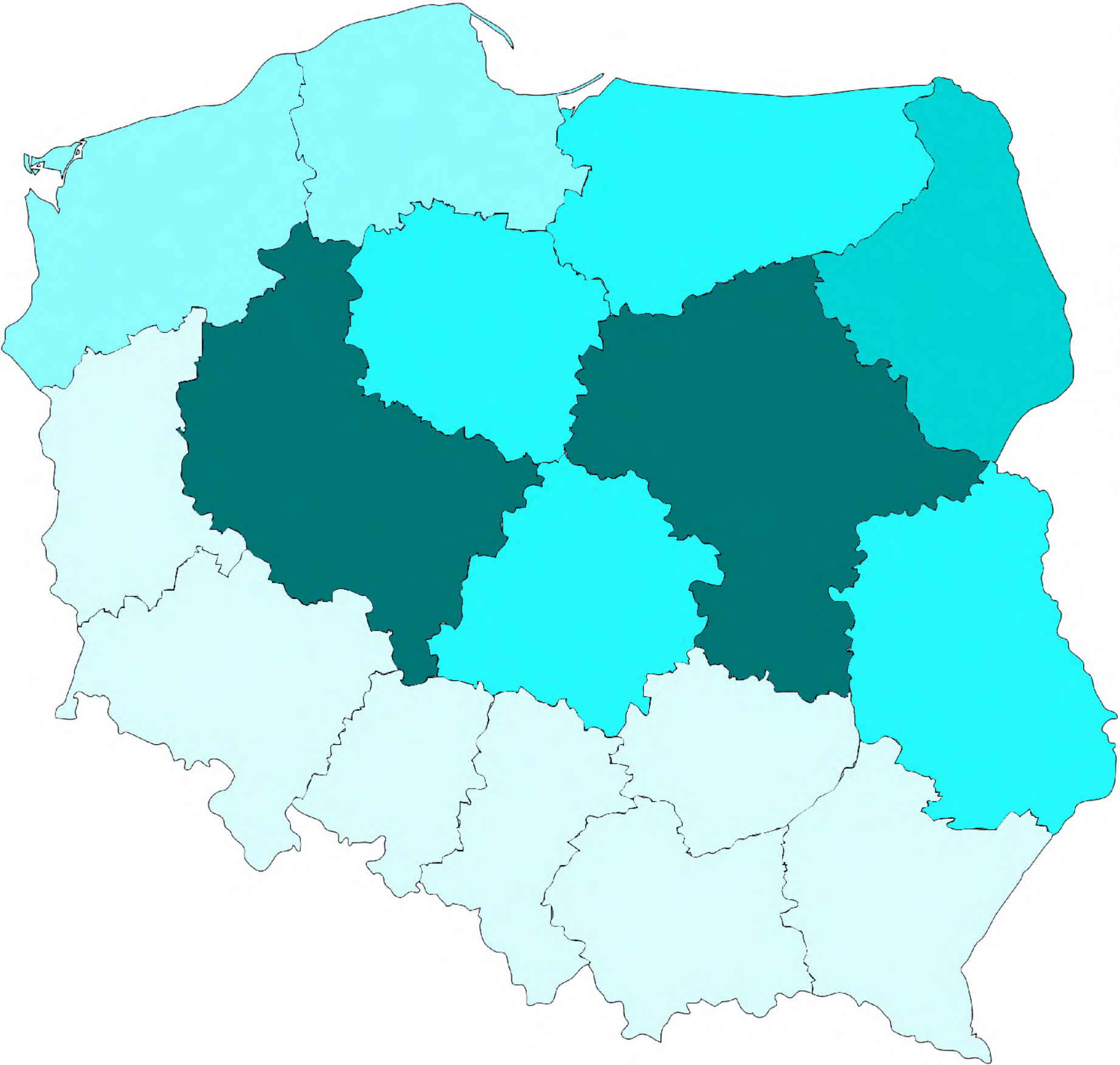
Province Name	Province No.	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	CH ₄ potentially generated [%]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
pomorskie	1	101 175 427	11 550	4.47	115.452	43.872
zachodniopomorskie	2	82 525 718	9 421	3.64	94.171	35.785
warminko-mazurskie	3	164 362 924	18 763	7.26	187.556	71.271
kujawsko-pomorskie	4	186 907 892	21 337	8.25	213.282	81.047
wielkopolskie	5	415 357 962	47 415	18.34	473.968	180.108
podlaskie	6	248 527 521	28 371	10.97	283.597	107.767
mazowieckie	7	399 332 238	45 586	17.63	455.681	173.159
lubuskie	8	31 615 822	3 609	1.40	36.077	13.709
lodzkie	9	180 064 105	20 555	7.95	205.473	78.080
dolnoslaskie	10	40 650 772	4 640	1.79	46.387	17.627
lubelskie	11	137 225 958	15 665	6.06	156.590	59.504
swietokrzyskie	12	66 106 055	7 546	2.92	75.434	28.665
opolskie	13	54 943 896	6 272	2.43	62.697	23.825
slaskie	14	51 433 440	5 871	2.27	58.691	22.303
malopolskie	15	65 207 879	7 444	2.88	74.409	28.276
podkarpackie	16	39 536 532	4 513	1.75	45.115	17.144
Total		2 264 974 139	258 559	100.00	2584.581	982.141

LIVESTOCK FARMS IN POLAND

APPENDIX A15:
Theoretical amount of biogas
in Polish Provinces

LEGEND:

-  - 0-3 %
-  - 3-6 %
-  - 6-9 %
-  - 9-12 %
-  - 12-15 %
-  - > 15%



Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
pomorskie	1.1	bytowski	6 178 966	705	7.051	2.679
pomorskie	1.2	chojnicki	7 752 438	885	8.846	3.362
pomorskie	1.3	czluchowski	25 638 007	2 927	29.256	11.117
pomorskie	1.4	Gdansk	130 956	15	0.149	0.057
pomorskie	1.5	gdanski	1 772 705	202	2.023	0.769
pomorskie	1.6	Gdynia	77 988	9	0.089	0.034
pomorskie	1.7	kartuski	8 278 338	945	9.446	3.590
pomorskie	1.8	koscierski	7 897 995	902	9.012	3.425
pomorskie	1.9	kwidzynski	3 962 491	452	4.522	1.718
pomorskie	1.10	leborski	2 384 165	272	2.721	1.034
pomorskie	1.11	malborski	1 851 767	211	2.113	0.803
pomorskie	1.12	nowodworski	2 239 145	256	2.555	0.971
pomorskie	1.13	pucki	2 470 257	282	2.819	1.071
pomorskie	1.14	Slupsk	13 623	2	0.016	0.006
pomorskie	1.15	slupski	6 125 525	699	6.990	2.656
pomorskie	1.16	starogardzki	8 528 220	974	9.732	3.698
pomorskie	1.17	sztumski	5 928 015	677	6.765	2.571
pomorskie	1.18	tczewski	4 747 125	542	5.417	2.058
pomorskie	1.19	wejherowski	5 197 703	593	5.931	2.254
zachodniopomorskie	2.1	bialogardzki	1 697 892	194	1.937	0.736
zachodniopomorskie	2.2	choszczenski	3 677 486	420	4.196	1.595
zachodniopomorskie	2.3	drawski	19 880 728	2 269	22.686	8.621
zachodniopomorskie	2.4	goleniowski	2 264 287	258	2.584	0.982
zachodniopomorskie	2.5	gryficki	2 931 911	335	3.346	1.271
zachodniopomorskie	2.6	gryfinski	2 362 187	270	2.696	1.024
zachodniopomorskie	2.7	kamienski	3 774 131	431	4.307	1.637
zachodniopomorskie	2.8	kolobrzesci	1 894 205	216	2.161	0.821
zachodniopomorskie	2.9	Koszalin	14 063	2	0.016	0.006
zachodniopomorskie	2.10	koszaliniski	5 245 750	599	5.986	2.275
zachodniopomorskie	2.11	lobeski	7 408 663	846	8.454	3.213

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
zachodniopomorskie	2.12	Szczecin	264 335	30	0.302	0.115
zachodniopomorskie	2.13	mysliborski	1 561 776	178	1.782	0.677
zachodniopomorskie	2.14	Policki	401 530	46	0.458	0.174
zachodniopomorskie	2.15	pyrzycki	1 161 267	133	1.325	0.504
zachodniopomorskie	2.16	slawieski	4 605 403	526	5.255	1.997
zachodniopomorskie	2.17	stargardzki	6 244 874	713	7.126	2.708
zachodniopomorskie	2.18	szczecinecki	5 584 435	637	6.372	2.422
zachodniopomorskie	2.19	swidwinski	8 570 129	978	9.779	3.716
zachodniopomorskie	2.20	Swinoujscie	49 654	6	0.057	0.022
zachodniopomorskie	2.21	walecki	2 931 012	335	3.345	1.271
warminsko-mazurskie	3.1	bartoszycki	5 567 231	636	6.353	2.414
warminsko-mazurskie	3.2	braniewski	5 042 230	576	5.754	2.186
warminsko-mazurskie	3.3	dzialdowski	8 778 769	1 002	10.018	3.807
warminsko-mazurskie	3.4	Elblag	109 116	12	0.125	0.047
warminsko-mazurskie	3.5	elblaski	8 667 840	989	9.891	3.759
warminsko-mazurskie	3.6	elcki	7 909 119	903	9.025	3.430
warminsko-mazurskie	3.7	gizycki	9 086 992	1 037	10.369	3.940
warminsko-mazurskie	3.8	goldapski	12 329 028	1 407	14.069	5.346
warminsko-mazurskie	3.9	ilawski	17 646 134	2 014	20.136	7.652
warminsko-mazurskie	3.10	ketrzyński	5 340 546	610	6.094	2.316
warminsko-mazurskie	3.11	lidzbarski	6 301 456	719	7.191	2.732
warminsko-mazurskie	3.12	mragowski	8 022 822	916	9.155	3.479
warminsko-mazurskie	3.13	niedzicki	4 283 934	489	4.888	1.858
warminsko-mazurskie	3.14	nowomiejski	13 806 624	1 576	15.755	5.987
warminsko-mazurskie	3.15	olecki	7 358 382	840	8.397	3.191
warminsko-mazurskie	3.16	Olsztyn	866 670	99	0.989	0.376
warminsko-mazurskie	3.17	olsztynski	9 943 086	1 135	11.346	4.312
warminsko-mazurskie	3.18	ostrodzki	9 308 192	1 063	10.622	4.036
warminsko-mazurskie	3.19	piski	8 970 686	1 024	10.237	3.890
warminsko-mazurskie	3.20	szczycienski	10 298 830	1 176	11.752	4.466

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
warminko-mazurskie	3.21	wegorzewski	4 725 236	539	5.392	2.049
kujawsko-pomorskie	4.1	aleksandrowski	6 400 664	731	7.304	2.775
kujawsko-pomorskie	4.2	brodnicki	15 097 776	1 723	17.228	6.547
kujawsko-pomorskie	4.3	bydgoski	6 895 686	787	7.869	2.990
kujawsko-pomorskie	4.4	Bydgoszcz	189 987	22	0.217	0.082
kujawsko-pomorskie	4.5	chelminski	5 110 529	583	5.832	2.216
kujawsko-pomorskie	4.6	Golubsko-dobrzynski	10 780 947	1 231	12.302	4.675
kujawsko-pomorskie	4.7	Grudziadz	42 183	5	0.048	0.018
kujawsko-pomorskie	4.8	grudziadzki	7 248 124	827	8.271	3.143
kujawsko-pomorskie	4.9	inowroclawski	13 652 616	1 559	15.579	5.920
kujawsko-pomorskie	4.10	lipnowski	10 051 640	1 147	11.470	4.359
kujawsko-pomorskie	4.11	mogilenski	7 063 060	806	8.060	3.063
kujawsko-pomorskie	4.12	nakielski	11 686 738	1 334	13.336	5.068
kujawsko-pomorskie	4.13	radziejowski	10 383 611	1 185	11.849	4.503
kujawsko-pomorskie	4.14	rypinski	11 081 415	1 265	12.645	4.805
kujawsko-pomorskie	4.15	sepolenski	7 655 481	874	8.736	3.320
kujawsko-pomorskie	4.16	swiecki	11 714 722	1 337	13.368	5.080
kujawsko-pomorskie	4.17	Torun	209 696	24	0.239	0.091
kujawsko-pomorskie	4.18	torunski	10 741 259	1 226	12.257	4.658
kujawsko-pomorskie	4.19	tucholski	6 743 049	770	7.695	2.924
kujawsko-pomorskie	4.20	wabrzeski	6 887 676	786	7.860	2.987
kujawsko-pomorskie	4.21	Wloclawek	19 816	2	0.023	0.009
kujawsko-pomorskie	4.22	wloclawski	11 786 800	1 346	13.450	5.111
kujawsko-pomorskie	4.23	zninski	15 464 417	1 765	17.647	6.706
wielkopolskie	5.1	chodzierski	8 019 463	915	9.151	3.477
wielkopolskie	5.2	czarnkowsko-trzciancki	12 997 138	1 484	14.831	5.636
wielkopolskie	5.3	gniezienski	18 198 452	2 077	20.766	7.891
wielkopolskie	5.4	gostynski	30 727 531	3 508	35.063	13.324
wielkopolskie	5.5	grodziski	14 187 543	1 620	16.190	6.152
wielkopolskie	5.6	jarocinski	10 688 440	1 220	12.197	4.635

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	5.7	kaliski	15 803 118	1 804	18.033	6.853
wielkopolskie	5.8	Kalisz	486 217	56	0.555	0.211
wielkopolskie	5.9	kepinski	8 044 832	918	9.180	3.488
wielkopolskie	5.10	kolski	14 071 343	1 606	16.057	6.102
wielkopolskie	5.11	Konin	139 382	16	0.159	0.060
wielkopolskie	5.12	koninski	16 294 405	1 860	18.594	7.066
wielkopolskie	5.13	koscianski	20 519 086	2 342	23.414	8.898
wielkopolskie	5.14	krotoszynski	20 962 473	2 393	23.920	9.090
wielkopolskie	5.15	leszczynski	20 388 261	2 327	23.265	8.841
wielkopolskie	5.16	Leszno	629 959	72	0.719	0.273
wielkopolskie	5.17	miedzychodzki	5 773 630	659	6.588	2.504
wielkopolskie	5.18	nowotomyski	7 586 924	866	8.658	3.290
wielkopolskie	5.19	obornicki	8 102 128	925	9.245	3.513
wielkopolskie	5.20	ostrowski	13 691 629	1 563	15.624	5.937
wielkopolskie	5.21	ostrzeszowski	9 325 537	1 065	10.641	4.044
wielkopolskie	5.22	pilski	17 299 184	1 975	19.740	7.501
wielkopolskie	5.23	pleszewski	9 960 577	1 137	11.366	4.319
wielkopolskie	5.24	Poznan	342 782	39	0.391	0.149
wielkopolskie	5.25	poznanski	20 184 894	2 304	23.033	8.753
wielkopolskie	5.26	rawicki	16 595 016	1 894	18.937	7.196
wielkopolskie	5.27	slupecki	9 118 933	1 041	10.406	3.954
wielkopolskie	5.28	szamotulski	11 263 163	1 286	12.852	4.884
wielkopolskie	5.29	sredzki	9 201 917	1 050	10.500	3.990
wielkopolskie	5.30	sremski	10 417 168	1 189	11.887	4.517
wielkopolskie	5.31	turecki	9 244 304	1 055	10.549	4.009
wielkopolskie	5.32	wagrowiecki	15 737 409	1 797	17.958	6.824
wielkopolskie	5.33	wolsztynski	13 387 205	1 528	15.276	5.805
wielkopolskie	5.34	wrzesinski	8 641 378	986	9.861	3.747
wielkopolskie	5.35	zlotowski	7 326 539	836	8.360	3.177
podlaskie	6.1	augustowski	15 813 546	1 805	18.045	6.857

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
podlaskie	6.2	bialostocki	21 887 777	2 499	24.976	9.491
podlaskie	6.3	Bialystok	38 049	4	0.043	0.016
podlaskie	6.4	bielski	15 303 037	1 747	17.462	6.636
podlaskie	6.5	grajewski	16 396 135	1 872	18.710	7.110
podlaskie	6.6	hajnowski	3 340 404	381	3.812	1.448
podlaskie	6.7	kolnenski	22 706 594	2 592	25.911	9.846
podlaskie	6.8	Lomza	110 283	13	0.126	0.048
podlaskie	6.9	lomzynski	25 093 193	2 865	28.634	10.881
podlaskie	6.10	moniecki	18 217 355	2 080	20.788	7.899
podlaskie	6.11	sejnencki	9 478 506	1 082	10.816	4.110
podlaskie	6.12	siemiatycki	13 123 197	1 498	14.975	5.690
podlaskie	6.13	sokolski	19 120 478	2 183	21.819	8.291
podlaskie	6.14	suwalski	19 149 349	2 186	21.851	8.304
podlaskie	6.15	Suwalki	179 907	21	0.205	0.078
podlaskie	6.16	wysokomazowiecki	33 522 675	3 827	38.253	14.536
podlaskie	6.17	zambrowski	15 047 034	1 718	17.170	6.525
mazowieckie	7.1	bialobrzesci	2 826 781	323	3.226	1.226
mazowieckie	7.2	ciechanowski	15 478 916	1 767	17.663	6.712
mazowieckie	7.3	garwolinski	11 250 660	1 284	12.838	4.879
mazowieckie	7.4	gostyninski	5 824 336	665	6.646	2.526
mazowieckie	7.5	grodziski	1 190 768	136	1.359	0.516
mazowieckie	7.6	grojecki	2 113 971	241	2.412	0.917
mazowieckie	7.7	kozienicki	3 939 589	450	4.495	1.708
mazowieckie	7.8	legionowski	437 065	50	0.499	0.190
mazowieckie	7.9	lipski	4 317 742	493	4.927	1.872
mazowieckie	7.10	losicki	9 959 814	1 137	11.365	4.319
mazowieckie	7.11	makowski	16 413 499	1 874	18.730	7.117
mazowieckie	7.12	minski	8 286 433	946	9.456	3.593
mazowieckie	7.13	mlawski	23 600 003	2 694	26.930	10.233
mazowieckie	7.14	nowodworski	2 338 633	267	2.669	1.014

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
mazowieckie	7.15	ostrolecki	34 881 738	3 982	39.804	15.125
mazowieckie	7.16	Ostroleka	46 145	5	0.053	0.020
mazowieckie	7.17	ostrowski	19 314 431	2 205	22.040	8.375
mazowieckie	7.18	otwocki	1 317 372	150	1.503	0.571
mazowieckie	7.19	piaseczynski	1 051 941	120	1.200	0.456
mazowieckie	7.20	Plock	177 351	20	0.202	0.077
mazowieckie	7.21	plocki	21 446 485	2 448	24.473	9.300
mazowieckie	7.22	plonski	15 362 367	1 754	17.530	6.661
mazowieckie	7.23	pruszkowski	224 556	26	0.256	0.097
mazowieckie	7.24	przasnyski	21 622 469	2 468	24.674	9.376
mazowieckie	7.25	przysuski	7 969 510	910	9.094	3.456
mazowieckie	7.26	pultuski	9 465 461	1 081	10.801	4.104
mazowieckie	7.27	Radom	134 685	15	0.154	0.058
mazowieckie	7.28	radomski	11 999 473	1 370	13.693	5.203
mazowieckie	7.29	Siedlce	1 056 155	121	1.205	0.458
mazowieckie	7.30	siedlecki	18 911 925	2 159	21.581	8.201
mazowieckie	7.31	sierpecki	19 257 723	2 198	21.975	8.351
mazowieckie	7.32	sochaczewski	4 554 844	520	5.198	1.975
mazowieckie	7.33	sokolowski	18 082 877	2 064	20.635	7.841
mazowieckie	7.34	szydlowiecki	1 376 803	157	1.571	0.597
mazowieckie	7.35	Warszawa	69 876	8	0.080	0.030
mazowieckie	7.36	warszawski zachodni	878 551	100	1.003	0.381
mazowieckie	7.37	wegrowski	11 977 401	1 367	13.668	5.194
mazowieckie	7.38	wolominski	4 009 644	458	4.575	1.739
mazowieckie	7.39	wyszkowski	8 904 280	1 016	10.161	3.861
mazowieckie	7.40	zwolenski	4 671 279	533	5.330	2.026
mazowieckie	7.41	zurominski	50 870 269	5 807	58.048	22.058
mazowieckie	7.42	zyrardowski	1 718 414	196	1.961	0.745
lubuskie	8.1	gorzowski	2 854 617	326	3.257	1.238
lubuskie	8.2	Gorzow Wielkopolski	111 563	13	0.127	0.048

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lubuskie	8.3	krosnienski	1 224 428	140	1.397	0.531
lubuskie	8.4	miedzyrzecki	3 449 128	394	3.936	1.496
lubuskie	8.5	nowosolski	1 321 078	151	1.507	0.573
lubuskie	8.6	slubicki	2 717 307	310	3.101	1.178
lubuskie	8.7	strzelecko-drezdenecki	2 049 609	234	2.339	0.889
lubuskie	8.8	sulecinski	2 478 964	283	2.829	1.075
lubuskie	8.9	swiebodzinski	2 586 489	295	2.951	1.122
lubuskie	8.10	wschowski	6 050 881	691	6.905	2.624
lubuskie	8.11	Zielona Gora	3 734	0	0.004	0.002
lubuskie	8.12	zielonogorski	3 796 669	433	4.332	1.646
lubuskie	8.13	zaganski	1 392 711	159	1.589	0.604
lubuskie	8.14	zarski	1 578 645	180	1.801	0.685
lodzkie	9.1	belchatowski	4 432 340	506	5.058	1.922
lodzkie	9.2	brzezinski	3 496 751	399	3.990	1.516
lodzkie	9.3	kutnowski	12 698 628	1 450	14.491	5.506
lodzkie	9.4	laski	4 595 136	525	5.244	1.993
lodzkie	9.5	leczycki	10 469 295	1 195	11.947	4.540
lodzkie	9.6	lowicki	27 200 631	3 105	31.039	11.795
lodzkie	9.7	lodz	6 941 631	792	7.921	3.010
lodzkie	9.8	opoczynski	6 005 845	686	6.853	2.604
lodzkie	9.9	pabianicki	3 699 558	422	4.222	1.604
lodzkie	9.10	pajeczanski	3 572 672	408	4.077	1.549
lodzkie	9.11	piotrkowski	20 602 498	2 352	23.510	8.934
lodzkie	9.12	Piotrkow Trybunalski	172 737	20	0.197	0.075
lodzkie	9.13	poddebicki	9 857 528	1 125	11.249	4.274
lodzkie	9.14	radomszczanski	8 166 822	932	9.319	3.541
lodzkie	9.15	rawski	2 493 633	285	2.846	1.081
lodzkie	9.16	sieradzki	17 499 700	1 998	19.969	7.588
lodzkie	9.17	Skierniewice	23 210	3	0.026	0.010
lodzkie	9.18	skierniewicki	6 428 722	734	7.336	2.788

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lodzkie	9.19	tomaszowski	10 001 724	1 142	11.413	4.337
lodzkie	9.20	wielunski	6 617 611	755	7.551	2.870
lodzkie	9.21	wieruszowski	4 649 289	531	5.305	2.016
lodzkie	9.22	zdunskowolski	2 194 810	251	2.505	0.952
lodzkie	9.23	zgierski	8 243 338	941	9.407	3.574
dolnoslaskie	10.1	boleslawiecki	1 027 334	117	1.172	0.445
dolnoslaskie	10.2	dzierzoniowski	934 924	107	1.067	0.405
dolnoslaskie	10.3	glogowski	1 059 985	121	1.210	0.460
dolnoslaskie	10.4	gorowski	2 705 353	309	3.087	1.173
dolnoslaskie	10.5	jaworski	1 187 341	136	1.355	0.515
dolnoslaskie	10.6	Jelenia Gora	103 713	12	0.118	0.045
dolnoslaskie	10.7	jeleniogorski	995 068	114	1.135	0.431
dolnoslaskie	10.8	kamiennogorski	1 301 938	149	1.486	0.565
dolnoslaskie	10.9	klodzki	2 379 529	272	2.715	1.032
dolnoslaskie	10.10	Legnica	6 871	1	0.008	0.003
dolnoslaskie	10.11	legnicki	1 561 892	178	1.782	0.677
dolnoslaskie	10.12	lubanski	771 209	88	0.880	0.334
dolnoslaskie	10.13	lubinski	427 254	49	0.488	0.185
dolnoslaskie	10.14	lwowecki	1 621 244	185	1.850	0.703
dolnoslaskie	10.15	milicki	3 282 744	375	3.746	1.423
dolnoslaskie	10.16	olesnicki	3 628 185	414	4.140	1.573
dolnoslaskie	10.17	olawski	346 325	40	0.395	0.150
dolnoslaskie	10.18	polkowicki	802 574	92	0.916	0.348
dolnoslaskie	10.19	strzelinski	1 441 653	165	1.645	0.625
dolnoslaskie	10.20	sredzki	820 979	94	0.937	0.356
dolnoslaskie	10.21	swidnicki	1 787 785	204	2.040	0.775
dolnoslaskie	10.22	trzebnicki	3 069 529	350	3.503	1.331
dolnoslaskie	10.23	Walbrzych	44 224	5	0.050	0.019
dolnoslaskie	10.24	walbrzyski	1 183 268	135	1.350	0.513
dolnoslaskie	10.25	wolowski	1 094 208	125	1.249	0.474

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
dolnoslaskie	10.26	Wroclaw	116 496	13	0.133	0.051
dolnoslaskie	10.27	wroclawski	2 412 358	275	2.753	1.046
dolnoslaskie	10.28	zabkowicki	1 747 449	199	1.994	0.758
dolnoslaskie	10.29	zgorzelecki	432 268	49	0.493	0.187
dolnoslaskie	10.30	zlotoryjski	2 357 071	269	2.690	1.022
lubelskie	11.1	bialski	18 012 812	2 056	20.555	7.811
lubelskie	11.2	Biala Podlaska	58 367	7	0.067	0.025
lubelskie	11.3	bilgorajski	4 757 727	543	5.429	2.063
lubelskie	11.4	Chelm	5 865	1	0.007	0.003
lubelskie	11.5	chelmski	6 301 110	719	7.190	2.732
lubelskie	11.6	hrubieszowski	5 495 001	627	6.270	2.383
lubelskie	11.7	janowski	3 828 589	437	4.369	1.660
lubelskie	11.8	krasnostawski	4 266 951	487	4.869	1.850
lubelskie	11.9	krasnicki	4 289 711	490	4.895	1.860
lubelskie	11.10	lubartowski	7 809 788	892	8.912	3.386
lubelskie	11.11	lubelski	11 444 912	1 306	13.060	4.963
lubelskie	11.12	Lublin	152 384	17	0.174	0.066
lubelskie	11.13	leczynski	4 065 129	464	4.639	1.763
lubelskie	11.14	lukowski	16 865 454	1 925	19.245	7.313
lubelskie	11.15	opolski	1 052 477	120	1.201	0.456
lubelskie	11.16	parczewski	8 145 735	930	9.295	3.532
lubelskie	11.17	pulawski	3 217 471	367	3.671	1.395
lubelskie	11.18	radzynski	12 772 233	1 458	14.575	5.538
lubelskie	11.19	rycki	5 132 806	586	5.857	2.226
lubelskie	11.20	swidnicki	1 586 300	181	1.810	0.688
lubelskie	11.21	tomaszowski	4 872 668	556	5.560	2.113
lubelskie	11.22	wlodawski	4 734 253	540	5.402	2.053
lubelskie	11.23	zamojski	8 337 641	952	9.514	3.615
lubelskie	11.24	Zamosc	20 574	2	0.023	0.009
swietokrzyskie	12.1	buski	5 989 394	684	6.835	2.597

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
swietokrzyskie	12.2	jedrzejewski	13 238 831	1 511	15.107	5.741
swietokrzyskie	12.3	kazimierski	4 801 353	548	5.479	2.082
swietokrzyskie	12.4	Kielce	111 603	13	0.127	0.048
swietokrzyskie	12.5	kielecki	12 866 218	1 469	14.682	5.579
swietokrzyskie	12.6	konecki	2 970 156	339	3.389	1.288
swietokrzyskie	12.7	opatowski	7 010 336	800	8.000	3.040
swietokrzyskie	12.8	ostrowiecki	3 228 733	369	3.684	1.400
swietokrzyskie	12.9	pinczowski	3 892 673	444	4.442	1.688
swietokrzyskie	12.10	sandomierski	1 280 761	146	1.461	0.555
swietokrzyskie	12.11	skarzynski	270 263	31	0.308	0.117
swietokrzyskie	12.12	starachowicki	1 878 239	214	2.143	0.814
swietokrzyskie	12.13	staszowski	3 344 013	382	3.816	1.450
swietokrzyskie	12.14	wloszczowski	5 223 480	596	5.961	2.265
opolskie	13.1	brzeski	2 439 933	279	2.784	1.058
opolskie	13.2	glubczycki	4 091 260	467	4.669	1.774
opolskie	13.3	kedzierzynsko-kozielski	4 714 343	538	5.380	2.044
opolskie	13.4	kluczborski	6 194 506	707	7.069	2.686
opolskie	13.5	krapkowicki	3 360 081	384	3.834	1.457
opolskie	13.6	namyslowski	3 251 718	371	3.711	1.410
opolskie	13.7	nyski	4 002 367	457	4.567	1.736
opolskie	13.8	oleski	7 249 313	828	8.272	3.143
opolskie	13.9	Opole	581 225	66	0.663	0.252
opolskie	13.10	opolski	4 743 241	541	5.413	2.057
opolskie	13.11	prudnicki	8 900 912	1 016	10.157	3.860
opolskie	13.12	strzelecki	5 414 998	618	6.179	2.348
slaskie	14.1	bedzinski	980 709	112	1.119	0.425
slaskie	14.2	bielski	1 876 164	214	2.141	0.814
slaskie	14.3	Bielsko-Biala	110 285	13	0.126	0.048
slaskie	14.4	bierunsko-ledzinski	616 285	70	0.703	0.267
slaskie	14.5	Bytom	43 185	5	0.049	0.019

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
slaskie	14.6	Chorzow	3 651	0	0.004	0.002
slaskie	14.7	cieszynski	3 233 088	369	3.689	1.402
slaskie	14.8	Czestochowa	83 994	10	0.096	0.036
slaskie	14.9	czestochowski	4 044 728	462	4.615	1.754
slaskie	14.10	Dabrowa Gornicza	37 007	4	0.042	0.016
slaskie	14.11	Gliwice	254 237	29	0.290	0.110
slaskie	14.12	gliwicki	7 240 926	827	8.263	3.140
slaskie	14.13	Jastrzebie-Zdroj	486 183	56	0.555	0.211
slaskie	14.14	Jaworzno	33 580	4	0.038	0.015
slaskie	14.15	Katowice	69 908	8	0.080	0.030
slaskie	14.16	klobucki	4 488 012	512	5.121	1.946
slaskie	14.17	lubliniecki	4 060 555	464	4.634	1.761
slaskie	14.18	mikolowski	1 001 536	114	1.143	0.434
slaskie	14.19	Myslowice	84 342	10	0.096	0.037
slaskie	14.20	myszkowski	1 522 809	174	1.738	0.660
slaskie	14.21	Piekary slaskie	19 934	2	0.023	0.009
slaskie	14.22	pszczyński	3 100 547	354	3.538	1.344
slaskie	14.23	raciborski	4 152 429	474	4.738	1.801
slaskie	14.24	Ruda slaska	25 334	3	0.029	0.011
slaskie	14.25	rybnicki	374 344	43	0.427	0.162
slaskie	14.26	Rybnik	72 820	8	0.083	0.032
slaskie	14.27	Siemianowice slaskie	9 158	1	0.010	0.004
slaskie	14.28	Sosnowiec	4 682	1	0.005	0.002
slaskie	14.29	tarnogorski	1 444 211	165	1.648	0.626
slaskie	14.30	Tychy	293 888	34	0.335	0.127
slaskie	14.31	wodzislawski	1 646 859	188	1.879	0.714
slaskie	14.32	Zabrze	46 187	5	0.053	0.020
slaskie	14.33	zawiercianski	8 762 807	1 000	9.999	3.800
slaskie	14.34	zory	172 296	20	0.197	0.075
slaskie	14.35	zywiecki	1 036 757	118	1.183	0.450

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
malopolskie	15.1	bochenski	2 316 701	264	2.644	1.005
malopolskie	15.2	brzeski	2 109 145	241	2.407	0.915
malopolskie	15.3	chrzanowski	112 821	13	0.129	0.049
malopolskie	15.4	dabrowski	3 526 127	403	4.024	1.529
malopolskie	15.5	gorlicki	4 079 571	466	4.655	1.769
malopolskie	15.6	krakowski	4 382 162	500	5.001	1.900
malopolskie	15.7	Krakow	259 901	30	0.297	0.113
malopolskie	15.8	limanowski	5 365 270	612	6.122	2.326
malopolskie	15.9	miechowski	5 341 851	610	6.096	2.316
malopolskie	15.10	myslenicki	1 613 308	184	1.841	0.700
malopolskie	15.11	nowosadecki	6 995 347	799	7.982	3.033
malopolskie	15.12	nowotarski	9 143 471	1 044	10.434	3.965
malopolskie	15.13	Nowy Sacz	121 507	14	0.139	0.053
malopolskie	15.14	olkuski	1 935 767	221	2.209	0.839
malopolskie	15.15	oswiecimski	1 194 292	136	1.363	0.518
malopolskie	15.16	proszowicki	2 556 872	292	2.918	1.109
malopolskie	15.17	suski	977 460	112	1.115	0.424
malopolskie	15.18	tarnowski	5 569 696	636	6.356	2.415
malopolskie	15.19	Tarnow	119 044	14	0.136	0.052
malopolskie	15.20	tatrzański	2 204 667	252	2.516	0.956
malopolskie	15.21	wadowicki	3 243 188	370	3.701	1.406
malopolskie	15.22	wielicki	2 039 712	233	2.328	0.884
podkarpackie	16.1	bieszczadzki	850 098	97	0.970	0.369
podkarpackie	16.2	brzozowski	1 012 302	116	1.155	0.439
podkarpackie	16.3	debicki	3 587 274	410	4.093	1.556
podkarpackie	16.4	jaroslawski	2 227 307	254	2.542	0.966
podkarpackie	16.5	jasielski	1 622 188	185	1.851	0.703
podkarpackie	16.6	kolbuszowski	1 659 397	189	1.894	0.720
podkarpackie	16.7	Krosno	13 832	2	0.016	0.006
podkarpackie	16.8	krosnienski	1 477 207	169	1.686	0.641

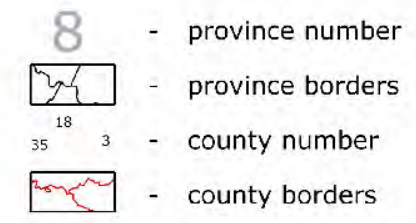
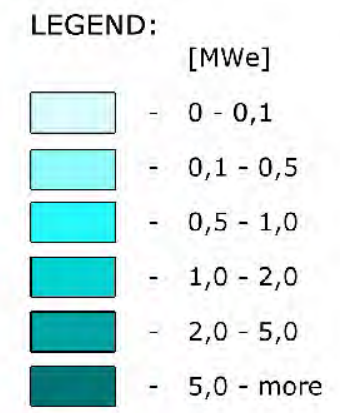
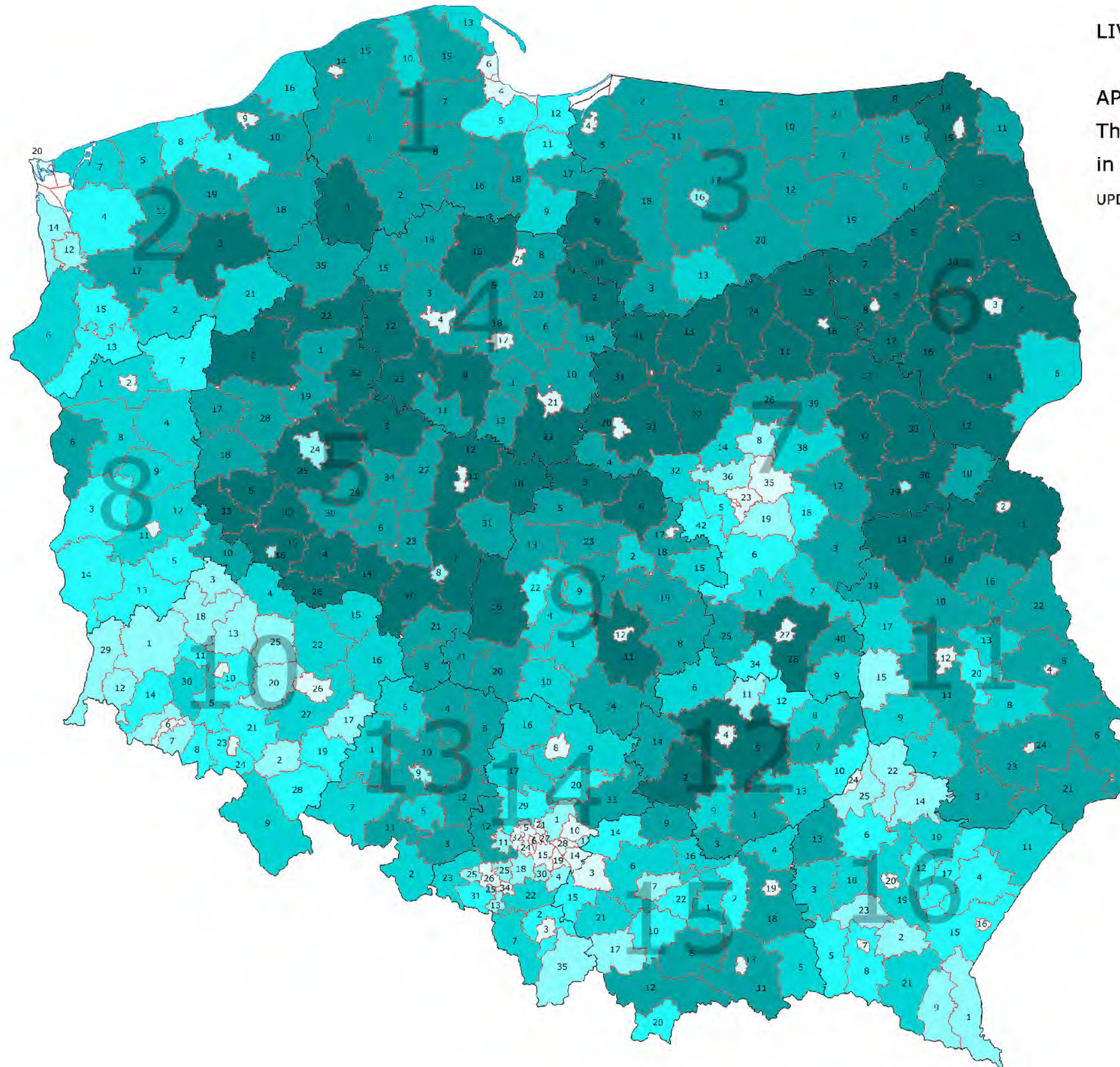
Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
podkarpackie	16.9	leski	435 507	50	0.497	0.189
podkarpackie	16.10	lezajski	2 449 842	280	2.796	1.062
podkarpackie	16.11	lubaczowski	2 548 698	291	2.908	1.105
podkarpackie	16.12	lancucki	1 221 474	139	1.394	0.530
podkarpackie	16.13	mielecki	5 485 906	626	6.260	2.379
podkarpackie	16.14	nizanski	948 889	108	1.083	0.411
podkarpackie	16.15	przemyski	1 355 426	155	1.547	0.588
podkarpackie	16.16	Przemysl	8 314	1	0.009	0.004
podkarpackie	16.17	przeworski	2 201 711	251	2.512	0.955
podkarpackie	16.18	ropczycko-sedziszowski	2 960 307	338	3.378	1.284
podkarpackie	16.19	rzeszowski	2 390 702	273	2.728	1.037
podkarpackie	16.20	Rzeszow	71 549	8	0.082	0.031
podkarpackie	16.21	sanocki	2 322 973	265	2.651	1.007
podkarpackie	16.22	stalowowolski	793 446	91	0.905	0.344
podkarpackie	16.23	stryzowski	1 100 488	126	1.256	0.477
podkarpackie	16.24	Tarnobrzeg	58 225	7	0.066	0.025
podkarpackie	16.25	tarnobrzesci	733 470	84	0.837	0.318

LIVESTOCK FARMS IN POLAND

APPENDIX A17: Theoretical amount of biogas in Polish Counties

UPDATED ON APRIL 2013









Livestock Farms in Poland

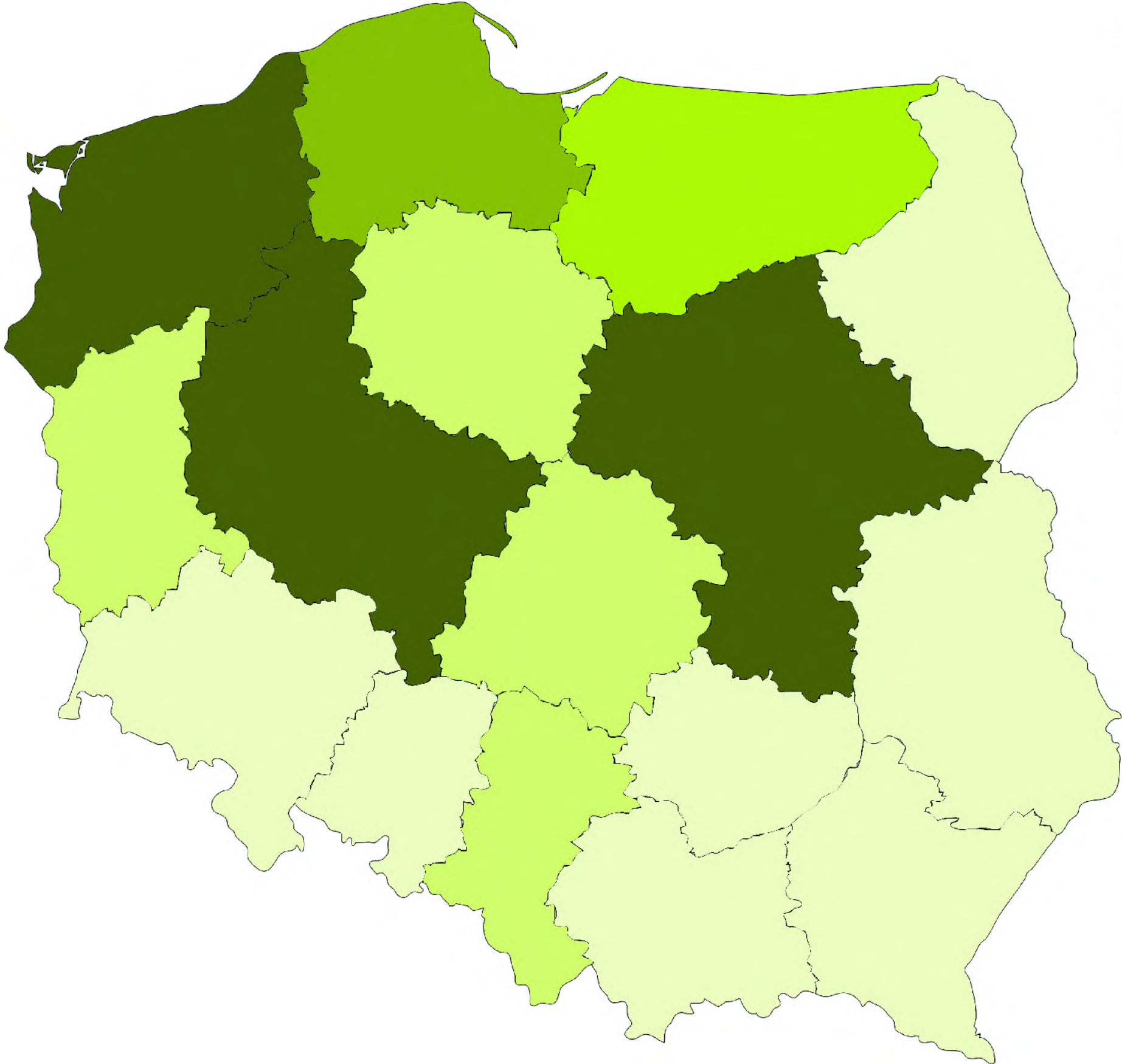
Province Name	Province No.	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	CH ₄ potentially generated [%]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
pomorskie	1	27 438 382	3 132	10.46	31.310	11.898
zachodniopomorskie	2	47 535 768	5 426	18.12	54.243	20.613
warminsko-mazurskie	3	22 637 134	2 584	8.63	25.831	9.816
kujawsko-pomorskie	4	7 928 329	905	3.02	9.047	3.438
wielkopolskie	5	46 119 075	5 265	17.58	52.627	19.998
podlaskie	6	3 831 999	437	1.46	4.373	1.662
mazowieckie	7	54 832 456	6 259	20.90	62.570	23.777
lubuskie	8	8 679 758	991	3.31	9.905	3.764
lodzkie	9	10 786 624	1 231	4.11	12.309	4.677
dolnoslaskie	10	6 135 470	700	2.34	7.001	2.660
lubelskie	11	6 632 226	757	2.53	7.568	2.876
swietokrzyskie	12	2 719 743	310	1.04	3.104	1.179
opolskie	13	6 044 014	690	2.30	6.897	2.621
slaskie	14	8 686 649	992	3.31	9.912	3.767
malopolskie	15	1 069 685	122	0.41	1.221	0.464
podkarpackie	16	1 257 171	144	0.48	1.435	0.545
Total		262 334 482	29 947	100.00	299.352	113.754

LIVESTOCK FARMS IN POLAND

APPENDIX A19:
Total Energy Capacity in Polish
Provinces for Livestock Farms with
Capacity Over 0.1 MWe

LEGEND:

-  - 0-3 %
-  - 3-6 %
-  - 6-9 %
-  - 9-12 %
-  - 12-15 %
-  - > 15%



Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
pomorskie	1.1	bytowski	439 123	50	0.501	0.190
pomorskie	1.2	chojnicki	b.l.	b.l.	b.l.	b.l.
pomorskie	1.3	czluchowski	22 759 563	2 598	25.971	9.869
pomorskie	1.4	Gdansk	b.l.	b.l.	b.l.	b.l.
pomorskie	1.5	gdanski	b.l.	b.l.	b.l.	b.l.
pomorskie	1.6	Gdynia	b.l.	b.l.	b.l.	b.l.
pomorskie	1.7	kartuski	b.l.	b.l.	b.l.	b.l.
pomorskie	1.8	koscierski	891 586	102	1.017	0.387
pomorskie	1.9	kwidzynski	247 542	28	0.282	0.107
pomorskie	1.10	leborski	b.l.	b.l.	b.l.	b.l.
pomorskie	1.11	malborski	b.l.	b.l.	b.l.	b.l.
pomorskie	1.12	nowodworski	b.l.	b.l.	b.l.	b.l.
pomorskie	1.13	pucki	b.l.	b.l.	b.l.	b.l.
pomorskie	1.14	Slupsk	b.l.	b.l.	b.l.	b.l.
pomorskie	1.15	slupski	1 935 538	221	2.209	0.839
pomorskie	1.16	starogardzki	b.l.	b.l.	b.l.	b.l.
pomorskie	1.17	sztumski	946 864	108	1.080	0.411
pomorskie	1.18	tczewski	218 166	25	0.249	0.095
pomorskie	1.19	wejherowski	b.l.	b.l.	b.l.	b.l.
zachodniopomorskie	2.1	bialogardzki	500 524	57	0.571	0.217
zachodniopomorskie	2.2	choszczenski	1 251 806	143	1.428	0.543
zachodniopomorskie	2.3	drawski	18 329 922	2 092	20.916	7.948
zachodniopomorskie	2.4	goleniowski	b.l.	b.l.	b.l.	b.l.
zachodniopomorskie	2.5	gryficki	968 502	111	1.105	0.420
zachodniopomorskie	2.6	gryfinski	455 187	52	0.519	0.197
zachodniopomorskie	2.7	kamienski	1 737 066	198	1.982	0.753
zachodniopomorskie	2.8	kolobrzesci	b.l.	b.l.	b.l.	b.l.
zachodniopomorskie	2.9	Koszalin	b.l.	b.l.	b.l.	b.l.

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
zachodniopomorskie	2.10	koszalinski	1 305 259	149	1.489	0.566
zachodniopomorskie	2.11	lobeski	6 368 727	727	7.267	2.762
zachodniopomorskie	2.12	Szczecin	240 352	27	0.274	0.104
zachodniopomorskie	2.13	mysliborski	240 588	27	0.275	0.104
zachodniopomorskie	2.14	Policki	b.l.	b.l.	b.l.	b.l.
zachodniopomorskie	2.15	pyrzycki	258 688	30	0.295	0.112
zachodniopomorskie	2.16	slawienski	1 587 428	181	1.811	0.688
zachodniopomorskie	2.17	stargardzki	3 273 740	374	3.736	1.420
zachodniopomorskie	2.18	szczecinecki	3 217 522	367	3.672	1.395
zachodniopomorskie	2.19	swidwinski	6 475 142	739	7.389	2.808
zachodniopomorskie	2.20	Swinoujscie	b.l.	b.l.	b.l.	b.l.
zachodniopomorskie	2.21	walecki	1 325 316	151	1.512	0.575
warminsko-mazurskie	3.1	bartoszycki	b.l.	b.l.	b.l.	b.l.
warminsko-mazurskie	3.2	braniewski	273 512	31	0.312	0.119
warminsko-mazurskie	3.3	dzialdowski	281 506	32	0.321	0.122
warminsko-mazurskie	3.4	Elblag	b.l.	b.l.	b.l.	b.l.
warminsko-mazurskie	3.5	elblaski	262 708	30	0.300	0.114
warminsko-mazurskie	3.6	elcki	243 082	28	0.277	0.105
warminsko-mazurskie	3.7	gizycki	2 295 910	262	2.620	0.996
warminsko-mazurskie	3.8	goldapski	7 794 233	890	8.894	3.380
warminsko-mazurskie	3.9	ilawski	2 745 335	313	3.133	1.190
warminsko-mazurskie	3.10	ketrzynski	734 356	84	0.838	0.318
warminsko-mazurskie	3.11	lidzbarski	402 841	46	0.460	0.175
warminsko-mazurskie	3.12	mragowski	1 112 525	127	1.270	0.482
warminsko-mazurskie	3.13	niedzicki	b.l.	b.l.	b.l.	b.l.
warminsko-mazurskie	3.14	nowomiejski	3 027 740	346	3.455	1.313
warminsko-mazurskie	3.15	olecki	b.l.	b.l.	b.l.	b.l.
warminsko-mazurskie	3.16	Olsztyn	599 389	68	0.684	0.260

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
warminsko-mazurskie	3.17	olsztynski	b.l.	b.l.	b.l.	b.l.
warminsko-mazurskie	3.18	ostrodzki	2 108 885	241	2.406	0.914
warminsko-mazurskie	3.19	piski	466 749	53	0.533	0.202
warminsko-mazurskie	3.20	szczycienski	b.l.	b.l.	b.l.	b.l.
warminsko-mazurskie	3.21	wegorzewski	288 365	33	0.329	0.125
kujawsko-pomorskie	4.1	aleksandrowski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.2	brodnicki	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.3	bydgoski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.4	Bydgoszcz	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.5	chelminski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.6	Golubsko-dobrzynski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.7	Grudziadz	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.8	grudziadzki	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.9	inowroclawski	2 913 906	333	3.325	1.264
kujawsko-pomorskie	4.10	lipnowski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.11	mogilenski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.12	nakielski	766 690	88	0.875	0.332
kujawsko-pomorskie	4.13	radziejowski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.14	rypinski	237 230	27	0.271	0.103
kujawsko-pomorskie	4.15	sepolenski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.16	swiecki	1 233 310	141	1.407	0.535
kujawsko-pomorskie	4.17	Torun	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.18	torunski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.19	tucholski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.20	wabrzeski	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.21	Wloclawek	b.l.	b.l.	b.l.	b.l.
kujawsko-pomorskie	4.22	wloclawski	290 305	33	0.331	0.126
kujawsko-pomorskie	4.23	zninski	2 486 889	284	2.838	1.078

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	5.1	chodzierski	1 928 442	220	2.201	0.836
wielkopolskie	5.2	czarnkowsko-trzcianecki	1 971 583	225	2.250	0.855
wielkopolskie	5.3	gnieźniński	2 445 111	279	2.790	1.060
wielkopolskie	5.4	gostynski	4 357 438	497	4.972	1.889
wielkopolskie	5.5	grodziski	3 216 386	367	3.670	1.395
wielkopolskie	5.6	jarocinski	1 334 020	152	1.522	0.578
wielkopolskie	5.7	kaliski	224 693	26	0.256	0.097
wielkopolskie	5.8	Kalisz	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.9	kepinski	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.10	kolski	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.11	Konin	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.12	koninski	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.13	koscianski	3 301 076	377	3.767	1.431
wielkopolskie	5.14	krotoszynski	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.15	leszczyński	4 797 683	548	5.475	2.080
wielkopolskie	5.16	Leszno	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.17	miedzzychodzki	1 327 303	152	1.515	0.576
wielkopolskie	5.18	nowotomyski	1 035 201	118	1.181	0.449
wielkopolskie	5.19	obornicki	999 581	114	1.141	0.433
wielkopolskie	5.20	ostrowski	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.21	ostrzeszowski	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.22	pilski	4 242 606	484	4.841	1.840
wielkopolskie	5.23	pleszewski	261 762	30	0.299	0.114
wielkopolskie	5.24	Poznan	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.25	poznanski	4 967 388	567	5.668	2.154
wielkopolskie	5.26	rawicki	374 081	43	0.427	0.162
wielkopolskie	5.27	slupecki	657 289	75	0.750	0.285
wielkopolskie	5.28	szamotulski	1 055 442	120	1.204	0.458

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
wielkopolskie	5.29	sredzki	1 897 542	217	2.165	0.823
wielkopolskie	5.30	sremski	616 206	70	0.703	0.267
wielkopolskie	5.31	turecki	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.32	wagrowiecki	2 080 524	238	2.374	0.902
wielkopolskie	5.33	wolsztynski	2 293 466	262	2.617	0.994
wielkopolskie	5.34	wrzesinski	b.l.	b.l.	b.l.	b.l.
wielkopolskie	5.35	zlotowski	734 253	84	0.838	0.318
podlaskie	6.1	augustowski	b.l.	b.l.	b.l.	b.l.
podlaskie	6.2	bialostocki	1 281 415	146	1.462	0.556
podlaskie	6.3	Bialystok	b.l.	b.l.	b.l.	b.l.
podlaskie	6.4	bielski	602 795	69	0.688	0.261
podlaskie	6.5	grajewski	417 647	48	0.477	0.181
podlaskie	6.6	hajnowski	b.l.	b.l.	b.l.	b.l.
podlaskie	6.7	kolnenski	953 979	109	1.089	0.414
podlaskie	6.8	Lomza	b.l.	b.l.	b.l.	b.l.
podlaskie	6.9	lomzynski	b.l.	b.l.	b.l.	b.l.
podlaskie	6.10	moniecki	311 402	36	0.355	0.135
podlaskie	6.11	sejnenski	b.l.	b.l.	b.l.	b.l.
podlaskie	6.12	siemiatycki	264 760	30	0.302	0.115
podlaskie	6.13	sokolski	b.l.	b.l.	b.l.	b.l.
podlaskie	6.14	suwalski	b.l.	b.l.	b.l.	b.l.
podlaskie	6.15	Suwalki	b.l.	b.l.	b.l.	b.l.
podlaskie	6.16	wysokomazowiecki	b.l.	b.l.	b.l.	b.l.
podlaskie	6.17	zambrowski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.1	bialobrzesci	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.2	ciechanowski	606 674	69	0.692	0.263
mazowieckie	7.3	garwolinski	275 073	31	0.314	0.119
mazowieckie	7.4	gostyninski	654 924	75	0.747	0.284

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
mazowieckie	7.5	grodziski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.6	grojecki	337 798	39	0.385	0.146
mazowieckie	7.7	kozienicki	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.8	legionowski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.9	lipski	684 631	78	0.781	0.297
mazowieckie	7.10	losicki	570 675	65	0.651	0.247
mazowieckie	7.11	makowski	1 041 251	119	1.188	0.452
mazowieckie	7.12	minski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.13	mławski	3 592 061	410	4.099	1.558
mazowieckie	7.14	nowodworski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.15	ostrolecki	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.16	Ostroleka	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.17	ostrowski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.18	otwocki	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.19	piaseczyński	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.20	Plock	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.21	plocki	2 234 119	255	2.549	0.969
mazowieckie	7.22	plonski	923 278	105	1.054	0.400
mazowieckie	7.23	pruszkowski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.24	przasnyski	570 330	65	0.651	0.247
mazowieckie	7.25	przysuski	3 728 954	426	4.255	1.617
mazowieckie	7.26	pultuski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.27	Radom	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.28	radomski	2 406 259	275	2.746	1.043
mazowieckie	7.29	Siedlce	1 039 505	119	1.186	0.451
mazowieckie	7.30	siedlecki	579 093	66	0.661	0.251
mazowieckie	7.31	sierpecki	3 576 889	408	4.082	1.551
mazowieckie	7.32	sochaczewski	b.l.	b.l.	b.l.	b.l.

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
mazowieckie	7.33	sokolowski	1 091 303	125	1.245	0.473
mazowieckie	7.34	sztywnicki	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.35	Warszawa	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.36	warszawski zachodni	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.37	wegrowski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.38	wolominski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.39	wyszowski	2 692 496	307	3.072	1.168
mazowieckie	7.40	zwolenski	b.l.	b.l.	b.l.	b.l.
mazowieckie	7.41	zurominski	28 227 143	3 222	32.210	12.240
mazowieckie	7.42	zyrdowski	b.l.	b.l.	b.l.	b.l.
lubuskie	8.1	gorzowski	b.l.	b.l.	b.l.	b.l.
lubuskie	8.2	Gorzow Wielkopolski	b.l.	b.l.	b.l.	b.l.
lubuskie	8.3	krosnienski	238 740	27	0.272	0.104
lubuskie	8.4	miedzyrzecki	1 216 685	139	1.388	0.528
lubuskie	8.5	nowosolski	500 713	57	0.571	0.217
lubuskie	8.6	slubicki	1 920 013	219	2.191	0.833
lubuskie	8.7	strzelecko-drezdenecki	b.l.	b.l.	b.l.	b.l.
lubuskie	8.8	sulecinski	b.l.	b.l.	b.l.	b.l.
lubuskie	8.9	swiebodzinski	749 145	86	0.855	0.325
lubuskie	8.10	wschowski	2 027 878	231	2.314	0.879
lubuskie	8.11	Zielona Gora	b.l.	b.l.	b.l.	b.l.
lubuskie	8.12	zielonogorski	1 332 798	152	1.521	0.578
lubuskie	8.13	zaganski	421 148	48	0.481	0.183
lubuskie	8.14	zarski	272 639	31	0.311	0.118
lodzkie	9.1	belchatowski	269 680	31	0.308	0.117
lodzkie	9.2	brzezinski	634 394	72	0.724	0.275
lodzkie	9.3	kutnowski	1 061 217	121	1.211	0.460
lodzkie	9.4	laski	258 922	30	0.295	0.112

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lodzkie	9.5	leczycki	b.l.	b.l.	b.l.	b.l.
lodzkie	9.6	lowicki	3 177 268	363	3.626	1.378
lodzkie	9.7	lodz	1 162 212	133	1.326	0.504
lodzkie	9.8	opoczynski	b.l.	b.l.	b.l.	b.l.
lodzkie	9.9	pabianicki	379 898	43	0.434	0.165
lodzkie	9.10	pajeczanski	b.l.	b.l.	b.l.	b.l.
lodzkie	9.11	piotrkowski	775 494	89	0.885	0.336
lodzkie	9.12	Piotrkow Trybunalski	b.l.	b.l.	b.l.	b.l.
lodzkie	9.13	poddebicki	b.l.	b.l.	b.l.	b.l.
lodzkie	9.14	radomszczanski	315 187	36	0.360	0.137
lodzkie	9.15	rawski	b.l.	b.l.	b.l.	b.l.
lodzkie	9.16	sieradzki	b.l.	b.l.	b.l.	b.l.
lodzkie	9.17	Skierniewice	b.l.	b.l.	b.l.	b.l.
lodzkie	9.18	skierniewicki	232 546	27	0.265	0.101
lodzkie	9.19	tomaszowski	958 129	109	1.093	0.415
lodzkie	9.20	wielunski	592 293	68	0.676	0.257
lodzkie	9.21	wieruszowski	b.l.	b.l.	b.l.	b.l.
lodzkie	9.22	zdunskowolski	b.l.	b.l.	b.l.	b.l.
lodzkie	9.23	zgierski	969 384	111	1.106	0.420
dolnoslaskie	10.1	boleslawiecki	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.2	dzierzoniowski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.3	glogowski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.4	gorowski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.5	jaworski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.6	Jelenia Gora	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.7	jeleniogorski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.8	kamiennogorski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.9	klodzki	b.l.	b.l.	b.l.	b.l.

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
dolnoslaskie	10.10	Legnica	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.11	legnicki	363 913	42	0.415	0.158
dolnoslaskie	10.12	lubanski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.13	lubinski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.14	lwowecki	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.15	milicki	1 148 541	131	1.311	0.498
dolnoslaskie	10.16	olesnicki	940 971	107	1.074	0.408
dolnoslaskie	10.17	olawski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.18	polkowicki	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.19	strzelinski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.20	sredzki	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.21	swidnicki	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.22	trzebnicki	248 204	28	0.283	0.108
dolnoslaskie	10.23	Walbrzych	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.24	walbrzyski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.25	wolowski	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.26	Wroclaw	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.27	wroclawski	1 759 283	201	2.008	0.763
dolnoslaskie	10.28	zabkowicki	329 390	38	0.376	0.143
dolnoslaskie	10.29	zgorzelecki	b.l.	b.l.	b.l.	b.l.
dolnoslaskie	10.30	zlotoryjski	1 345 167	154	1.535	0.583
lubelskie	11.1	bialski	688 979	79	0.786	0.299
lubelskie	11.2	Biala Podlaska	b.l.	b.l.	b.l.	b.l.
lubelskie	11.3	bilgorajski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.4	Chelm	b.l.	b.l.	b.l.	b.l.
lubelskie	11.5	chelmski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.6	hrubieszowski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.7	janowski	b.l.	b.l.	b.l.	b.l.

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
lubelskie	11.8	krasnostawski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.9	krasnicki	b.l.	b.l.	b.l.	b.l.
lubelskie	11.10	lubartowski	229 566	26	0.262	0.100
lubelskie	11.11	lubelski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.12	Lublin	b.l.	b.l.	b.l.	b.l.
lubelskie	11.13	leczynski	1 616 898	185	1.845	0.701
lubelskie	11.14	lukowski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.15	opolski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.16	parczewski	606 900	69	0.693	0.263
lubelskie	11.17	pulawski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.18	radzynski	2 166 618	247	2.472	0.939
lubelskie	11.19	rycki	b.l.	b.l.	b.l.	b.l.
lubelskie	11.20	swidnicki	b.l.	b.l.	b.l.	b.l.
lubelskie	11.21	tomaszowski	499 436	57	0.570	0.217
lubelskie	11.22	wlodawski	823 830	94	0.940	0.357
lubelskie	11.23	zamojski	b.l.	b.l.	b.l.	b.l.
lubelskie	11.24	Zamosc	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.1	buski	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.2	jedrzejowski	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.3	kazimierski	450 476	51	0.514	0.195
swietokrzyskie	12.4	Kielce	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.5	kielecki	1 892 585	216	2.160	0.821
swietokrzyskie	12.6	konecki	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.7	opatowski	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.8	ostrowiecki	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.9	pinczowski	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.10	sandomierski	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.11	skarzynski	b.l.	b.l.	b.l.	b.l.

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
swietokrzyskie	12.12	starachowicki	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.13	staszowski	b.l.	b.l.	b.l.	b.l.
swietokrzyskie	12.14	wloszczowski	b.l.	b.l.	b.l.	b.l.
opolskie	13.1	brzeski	720 487	82	0.822	0.312
opolskie	13.2	glubczycki	1 928 338	220	2.200	0.836
opolskie	13.3	kedzierzynsko-kozielski	225 820	26	0.258	0.098
opolskie	13.4	kluczborski	770 771	88	0.880	0.334
opolskie	13.5	krapkowicki	b.l.	b.l.	b.l.	b.l.
opolskie	13.6	namyslowski	1 490 123	170	1.700	0.646
opolskie	13.7	nyski	b.l.	b.l.	b.l.	b.l.
opolskie	13.8	oleski	b.l.	b.l.	b.l.	b.l.
opolskie	13.9	Opole	b.l.	b.l.	b.l.	b.l.
opolskie	13.10	opolski	b.l.	b.l.	b.l.	b.l.
opolskie	13.11	prudnicki	908 473	104	1.037	0.394
opolskie	13.12	strzelecki	b.l.	b.l.	b.l.	b.l.
slaskie	14.1	bedzinski	b.l.	b.l.	b.l.	b.l.
slaskie	14.2	bielski	b.l.	b.l.	b.l.	b.l.
slaskie	14.3	Bielsko-Biala	b.l.	b.l.	b.l.	b.l.
slaskie	14.4	bierunsko-ledzinski	b.l.	b.l.	b.l.	b.l.
slaskie	14.5	Bytom	b.l.	b.l.	b.l.	b.l.
slaskie	14.6	Chorzow	b.l.	b.l.	b.l.	b.l.
slaskie	14.7	cieszynski	b.l.	b.l.	b.l.	b.l.
slaskie	14.8	Czestochowa	b.l.	b.l.	b.l.	b.l.
slaskie	14.9	czestochowski	b.l.	b.l.	b.l.	b.l.
slaskie	14.10	Dabrowa Gornicza	b.l.	b.l.	b.l.	b.l.
slaskie	14.11	Gliwice	b.l.	b.l.	b.l.	b.l.
slaskie	14.12	gliwicki	4 908 594	560	5.601	2.128
slaskie	14.13	Jastrzebie-Zdroj	244 562	28	0.279	0.106

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
slaskie	14.14	Jaworzno	b.l.	b.l.	b.l.	b.l.
slaskie	14.15	Katowice	b.l.	b.l.	b.l.	b.l.
slaskie	14.16	klobucki	696 741	80	0.795	0.302
slaskie	14.17	lubliniecki	b.l.	b.l.	b.l.	b.l.
slaskie	14.18	mikolowski	b.l.	b.l.	b.l.	b.l.
slaskie	14.19	Myslowice	b.l.	b.l.	b.l.	b.l.
slaskie	14.20	myszkowski	b.l.	b.l.	b.l.	b.l.
slaskie	14.21	Piekary slaskie	b.l.	b.l.	b.l.	b.l.
slaskie	14.22	pszczyński	b.l.	b.l.	b.l.	b.l.
slaskie	14.23	raciborski	239 062	27	0.273	0.104
slaskie	14.24	Ruda slaska	b.l.	b.l.	b.l.	b.l.
slaskie	14.25	rybnicki	b.l.	b.l.	b.l.	b.l.
slaskie	14.26	Rybnik	b.l.	b.l.	b.l.	b.l.
slaskie	14.27	Siemianowice slaskie	b.l.	b.l.	b.l.	b.l.
slaskie	14.28	Sosnowiec	b.l.	b.l.	b.l.	b.l.
slaskie	14.29	tarnogorski	274 531	31	0.313	0.119
slaskie	14.30	Tychy	b.l.	b.l.	b.l.	b.l.
slaskie	14.31	wodzislawski	885 590	101	1.011	0.384
slaskie	14.32	Zabrze	b.l.	b.l.	b.l.	b.l.
slaskie	14.33	zawiercianski	1 437 569	164	1.640	0.623
slaskie	14.34	zory	b.l.	b.l.	b.l.	b.l.
slaskie	14.35	zywiecki	b.l.	b.l.	b.l.	b.l.
malopolskie	15.1	bochenski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.2	brzeski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.3	chrzanowski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.4	dabrowski	357 997	41	0.409	0.155
malopolskie	15.5	gorlicki	b.l.	b.l.	b.l.	b.l.
malopolskie	15.6	krakowski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.7	Krakow	b.l.	b.l.	b.l.	b.l.

Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
malopolskie	15.8	limanowski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.9	miechowski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.10	myslenicki	b.l.	b.l.	b.l.	b.l.
malopolskie	15.11	nowosadecki	b.l.	b.l.	b.l.	b.l.
malopolskie	15.12	nowotarski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.13	Nowy Sacz	b.l.	b.l.	b.l.	b.l.
malopolskie	15.14	olkuski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.15	oswiecimski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.16	proszowicki	b.l.	b.l.	b.l.	b.l.
malopolskie	15.17	suski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.18	tarnowski	b.l.	b.l.	b.l.	b.l.
malopolskie	15.19	Tarnow	b.l.	b.l.	b.l.	b.l.
malopolskie	15.20	tatrzański	b.l.	b.l.	b.l.	b.l.
malopolskie	15.21	wadowicki	220 957	25	0.252	0.096
malopolskie	15.22	wielicki	490 732	56	0.560	0.213
podkarpackie	16.1	bieszczadzki	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.2	brzozowski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.3	debicki	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.4	jaroslawski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.5	jasielski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.6	kolbuszowski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.7	Krosno	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.8	krosnienski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.9	leski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.10	lezajski	1 014 482	116	1.158	0.440
podkarpackie	16.11	lubaczowski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.12	lancucki	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.13	mielecki	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.14	nizanski	b.l.	b.l.	b.l.	b.l.

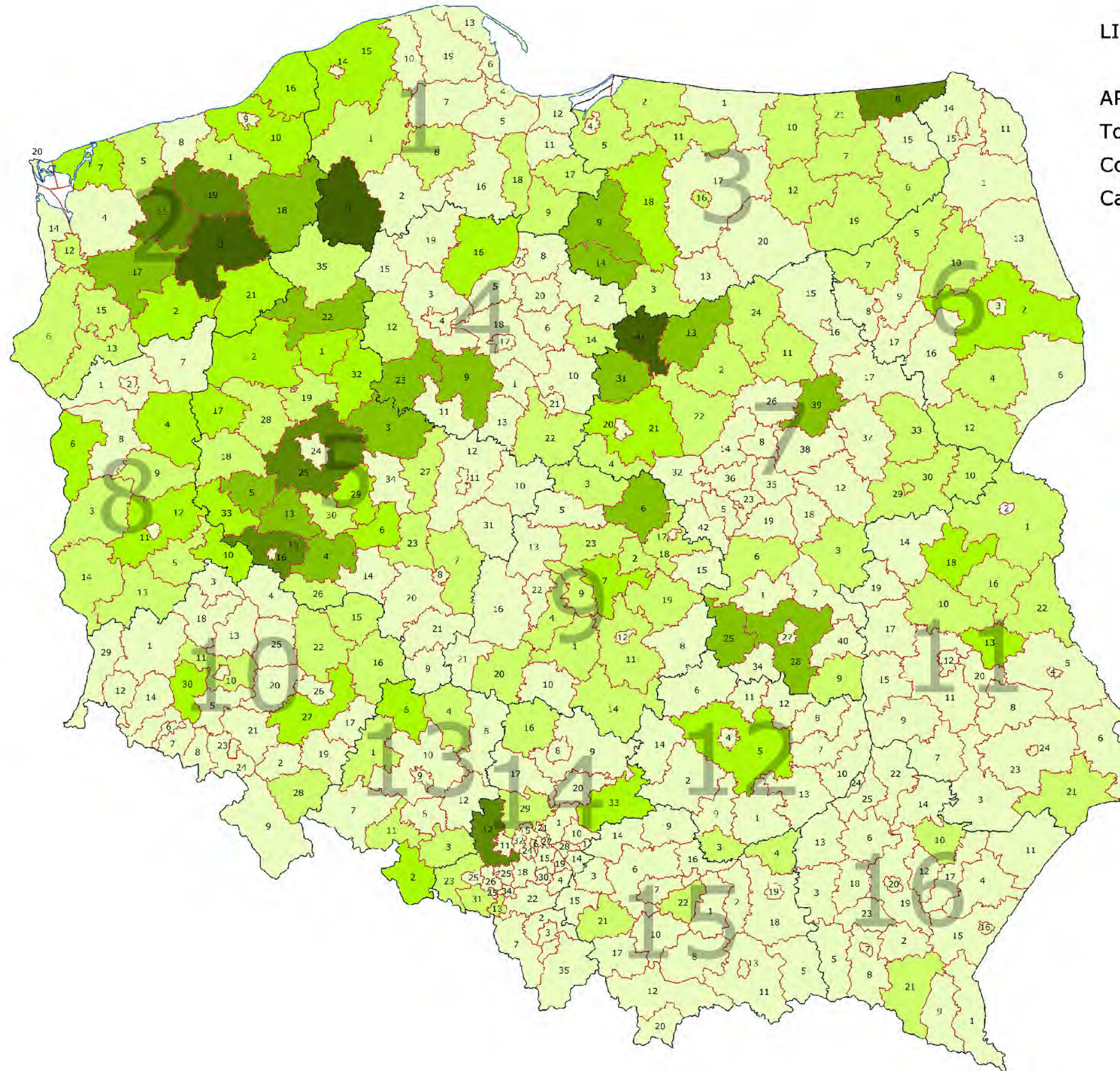
Livestock Farms in Poland

Province Name	County No.	County Name	CH ₄ potentially generated [m ³ /year]	CH ₄ potentially generated [m ³ /h]	Potential Capacity [MW]	Potential Electrical Capacity [MWe] $\eta = 38\%$
podkarpackie	16.15	przemyski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.16	Przemysl	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.17	przeworski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.18	ropczycko-siedziszowski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.19	rzeszowski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.20	Rzeszow	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.21	sanocki	242 689	28	0.277	0.105
podkarpackie	16.22	stalowowolski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.23	strzyzowski	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.24	Tarnobrzeg	b.l.	b.l.	b.l.	b.l.
podkarpackie	16.25	tarnobrzanski	b.l.	b.l.	b.l.	b.l.

b.l. – below the limit of 0.1 MWe per farm.

LIVESTOCK FARMS IN POLAND

APPENDIX A21: Total Energy Capacity in Polish Counties for Livestock Farms with Capacity Over 0.1 MWe

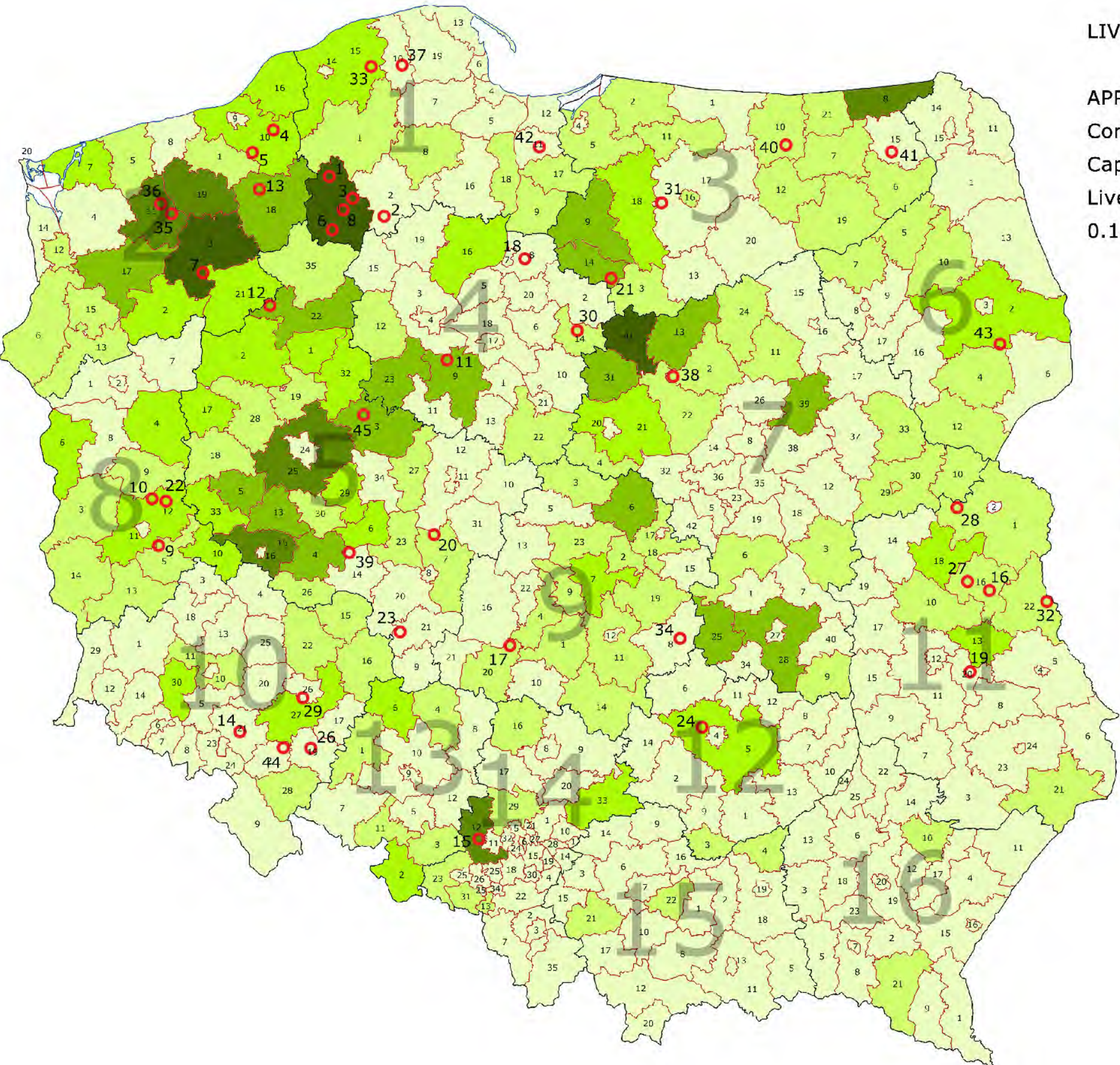


- LEGEND: [MWe]
- 0 - 0,1
 - 0,1 - 0,5
 - 0,5 - 1,0
 - 1,0 - 2,0
 - 2,0 - 5,0
 - 5,0 - more

- 8 - province number
- province borders
- 18 35 3 - county number
- county borders

LIVESTOCK FARMS IN POLAND

APPENDIX A22:
 Correlation Between Total Energy Capacity in Polish Counties for Livestock Farms with Capacity Over 0.1 MWe and existing biogas plants



- LEGEND:
- [Lightest green box] - 0 - 0,1 [MWe]
 - [Light green box] - 0,1 - 0,5
 - [Medium light green box] - 0,5 - 1,0
 - [Medium green box] - 1,0 - 2,0
 - [Dark green box] - 2,0 - 5,0
 - [Darkest green box] - 5,0 - more
- 8 - province number
 - [Province border icon] - province borders
 - 18 3 - county number
 - [County border icon] - county borders
 - - existing biogas plant
 - 16 - biogas plant number