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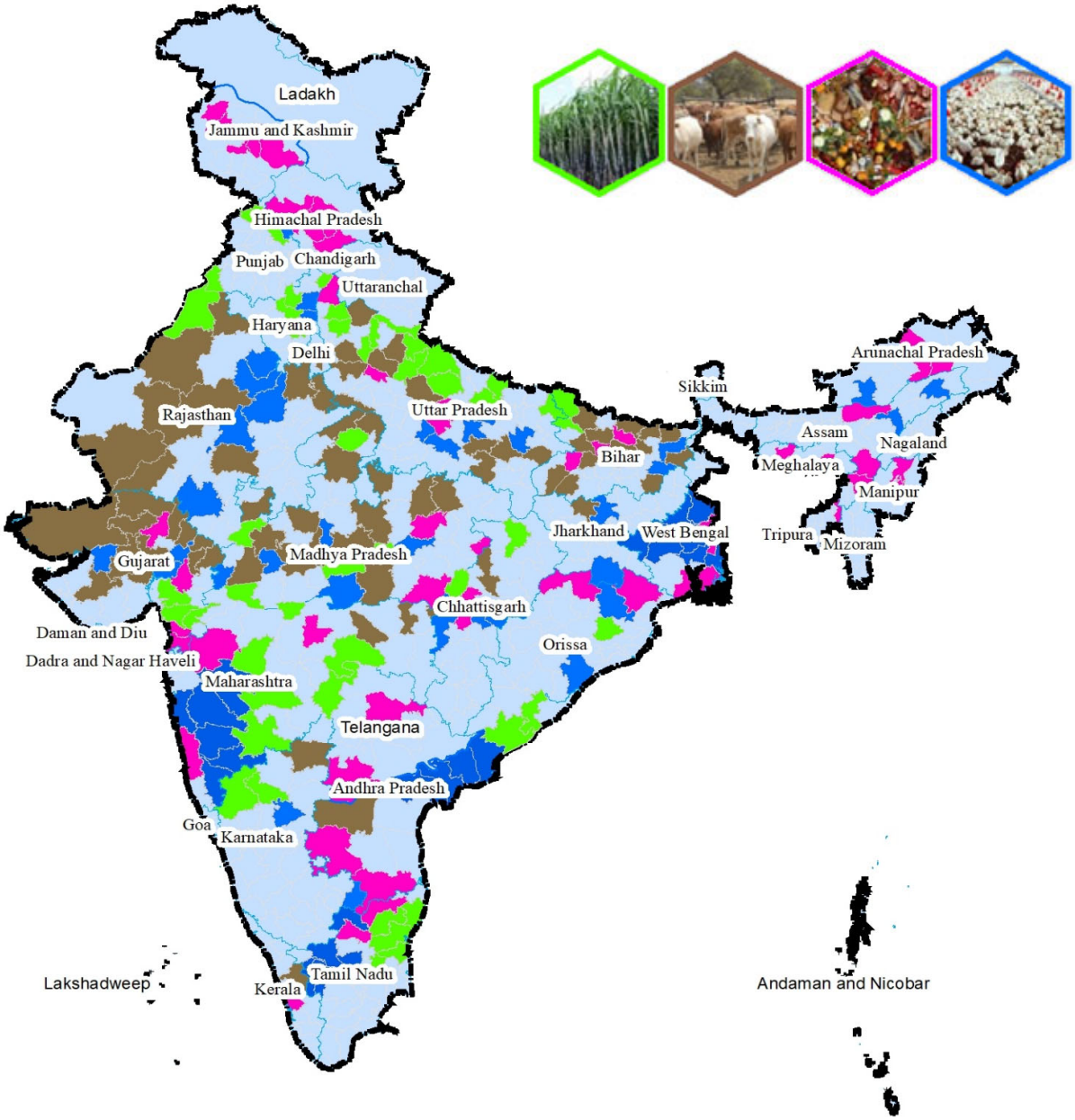

FIRST REPORT – DISTRICT WISE ASSESSMENT OF WASTE AVAILABILITY AND ENERGY GENERATION POTENTIAL (POWER, BIO- CNG) IN FOUR PRIORITY INDUSTRIAL SECTORS (FRUIT & VEGETABLE PROCESSING, POULTRY, CATTLE AND PRESS MUD) ACROSS INDIA.

Extended Mapping of the available urban and industrial organic waste in various locations in India

PREFACE

United Nations Industrial Development Organisation (UNIDO) is implementing a GEF supported project "Organic Waste Streams for Industrial Energy Applications in India" jointly with the Ministry of New and Renewable Energy (MNRE), Government of India. The project aims to contribute to its climate change strategic objective namely, promoting investment in renewable energy technologies by transforming the market for using organic waste for SME industrial energy applications in India; and focusses on supporting different technological and commercial innovations in the application of bio-methanation technology (Biogas or Anaerobic Digestion).

A study for extended mapping of the urban and industrial organic waste availability across India is being carried out by UNIDO, also to determine energy generation potential from different organic wastes. A comprehensive and integrated "Bio-Resource Map" of the organic waste from four targeted sectors and five additional sectors will be developed using GIS applications. A complete study will have following outcome reports.

First Report	District wise assessment of waste availability and energy generation potential (Power, Bio-CNG) in four priority industrial sectors (Fruit & vegetable processing, poultry, cattle and press mud) across India.
Second Report	Pan India district wise assessment of waste availability and energy generation potential (power and/or, bio-CNG) in the five sectors:(Urban organic solid waste, Urban organic liquid waste, Slaughterhouse, Distillery industry and Pulp & Paper industry.
Final Report	"Comprehensive Map" using GIS applications based on the detailed outcomes and analyses indicating Availability and Energy Potential for all the sectors and for all the States in India.

The current report is an extension of the four priority industrial sectors (Fruit & Vegetable, Poultry, Cattle and Press mud) to all the districts in all States of India.

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Abbreviations

AIDA	:	All India Distillers' Association
AIFPA	:	All India Food Processors' Association
AIWPA	:	All India Wine Processing Association
APEDA	:	The Agricultural and Processed Food Products Export Development Authority
ASI	:	Annual Survey of Industries
BioCNG	:	Bio Compressed Natural Gas
BOD	:	Biological Oxygen Demand
CBG	:	Compressed Biogas
CNG	:	Compressed Natural Gas
COD	:	Chemical Oxygen Demand
CPCB	:	Central Pollution Control Board
DAHD	:	Department of Animal Husbandry & Dairying
ETP	:	Effluent Treatment Plant
F&V	:	Fruits and Vegetable
FOASTAT	:	Foundation for Open Access Statistics
GEF	:	Global Environment Facility
HPMC	:	Himachal Pradesh Horticulture Produce Marketing and Processing Corporation Ltd
IARPMA	:	Indian Agro & Recycled Paper Mills Association
ICAR	:	Indian Council of Agriculture Research
ISMA	:	Indian Sugar Mill Association
ISL	:	Islands
IWA	:	Indian Wine Academy
LPG	:	Liquefied Petroleum Gas
MNRE	:	Ministry of New & Renewable Energy
MoAFW	:	Ministry of Agriculture & Farmers Welfare
MoSPI	:	Ministry of Statistics and Program Implementation
MPEDA	:	Marine Products Export Development Authority
MSME	:	Micro, Small and Medium Enterprises
MT	:	Metric Ton
MW	:	Mega Watt
NHB	:	National Horticulture Board
SNA	:	State Nodal Agency
TPA	:	Ton Per Annum
TPD	:	Ton Per Day
TS	:	Total Solids
UNDP	:	United Nations Development Program
UNIDO	:	United Nations Industrial Development Organization
UP	:	Uttar Pradesh
VS	:	Volatile Solid
WTE	:	Waste to Energy

1 ORGANIC WASTE STREAMS IN INDIA

1.1 Background

The project "Organic waste streams for industrial renewable energy applications in India" reflects the Government's priorities to promote sustainable development as set out in the National Action Plan on Climate Change (NAPCC). To further access the potential of energy generation from industrial and urban organic wastes, a study entitled "Organic waste streams for industrial renewable energy application in India" was undertaken by GEF under the project preparation grant (PPG) and in consultation with Ministry of New and Renewable Energy (MNRE). During the study bio methanation (Anaerobic Digestion) was identified as most feasible technology for organic waste to energy generation.

The platform for accelerating the implementation of bio methanation technologies in India to maximize potential of available organic industrial waste for energy generation was built upon four important areas, which included:

- Identification of SMEs sector with highest untapped potential
- Identification of most suitable business models based on level of innovation, technology, integration capability, end applications and acceptance by technical and financial due diligence.
- Ease of financing through innovative mechanism and
- Mapping of actual availability of selected categories of industrial organic wastes across various locations in India.

With the above background, this assignment aims to develop comprehensive and integrated "**Bio Resource Map**" of organic industrial waste using GIS application for mapping actual availability of organic wastes in identified sectors across various locations in India. The Bio Resource Map developed for the project will facilitate the potential investor in exploring different regions and waste sectors; and installation of potential organic waste to energy projects.

Phase I of the study covered four industrial sectors identified as priority industrial sectors namely Poultry, Sugar (Press mud), Fruit and vegetables and cattle for mapping the organic waste availability across identified potential states in India. The final report for the phase I of the assessment included the following outcome.

1. Identification of Organic Waste Streams in India.
2. Estimation of waste generation quantities.
3. Identification of potential states for energy generation using organic waste from the targeted industries.
4. Characterization of organic waste from targeted Industries in potential states.
5. A Comprehensive map (GIS) of the organic waste from targeted industries in potential states.

The Phase II of the assessment is divided into two parts. Part I include extension of the Phase I study to cover district wise assessment of waste availability and energy generation potential in four priority industrial sectors of Phase I (poultry industry, sugar industry, fruit & vegetable and food processing industry and cattle farming) to all the districts in India.

Part II includes district wise assessment of waste availability and energy generation potential assessment of five new industrial sectors. The new five industrial sectors include Urban organic solid waste, Urban organic liquid waste, Slaughterhouse, Distillery industry and Pulp and Paper industry.

The current report provides pan India district wise assessment of the four sectors covered in Part I (poultry industry, sugar industry, fruit & vegetable and food processing industry and cattle farming) of the assignment; and is an extension of final report submitted for Phase I of the assessment. Data relevant to the sectors has been updated and added for all the districts in India and detail matrix on estimated waste generation and energy potential of urban and industrial organic waste has been developed. The report also priorities and shortlist states and key districts within the states based on the waste generation/ availability and other parameters. The outcome of the report and the Bio Resource Map developed for the sectors will serve as a guide for potential investors for identification of areas with maximum availability of waste, areas with multi / mixed feedstock and will also support the potential investor in selection of the region having maximum potential to set up a biomethanation plant from the selected four sectors.

2 SECTORAL ANALYSIS

2.1 Poultry Sector

Indian poultry industry has registered a very high growth rate in last few years. While the production of agricultural crops has been rising at a rate of 1.5 to 2 percent per annum, egg and broiler production has shown growth rate of 8 to 10 percent[1]. As a result, India is now the world's fifth largest egg producer and eighteenth largest producer of broilers (APEDA, Ministry of Commerce and Industry, Government of India). Poultry industry in India has undergone a transformation in the last few years. From backyard activity, it has taken a shape of commercial activity. Poultry meat is the fastest growing component of global meat demand, and India, the world's second largest developing country, is experiencing rapid growth in its poultry sector.

Poultry farming includes breeding and raising chickens for various purposes. Breeding farms incubate and raise poultry for sale. Broiler farms rear chickens for their meat and layer farms keep hens to produce eggs for commercial purposes. Another category of operators, which can loosely be termed as “integrators” (also known as contract farming), keep breeding stock and also operate hatcheries and commercial broiler farms.

Backyard poultry production system is a low input business in rural areas, playing a major role in the rural economy and women empowerment and is characterized by indigenous night shelter system, scavenging system, natural hatching of chicks, poor productivity of birds, with little supplementary feeding and local marketing. As per the 20th Livestock Census 2019, the total population of poultry in poultry farm and backyard poultry farm in India is approx. 851.81 million.

Table 2-1 presents the data regarding the state wise number of total poultry birds in the poultry farm and backyard poultry system.

Table 2- 1 : State wise total number of Poultry birds

SN	States/ UTs	Total Poultry Birds (in Millions)	Percentage (%)
1	Andaman and Nicobar ISL	1.29	0.15
2	Andhra Pradesh	107.86	12.66
3	Arunachal Pradesh	1.60	0.19
4	Assam	46.71	5.48
5	Bihar	16.53	1.94
6	Chandigarh	0.05	0.01
7	Chhattisgarh	18.71	2.20
8	Dadra and Nagar Haveli	0.09	0.01
9	Daman and Diu	0.02	0.00
10	Delhi	0.04	0.01
11	Goa	0.35	0.04
12	Gujarat	21.77	2.56
13	Haryana	46.29	5.43
14	Himachal Pradesh	1.34	0.16
15	Jammu and Kashmir	7.37	0.86
16	Jharkhand	24.83	2.92
17	Karnataka	59.49	6.98
18	Kerala	29.77	3.50
19	Lakshadweep	0.23	0.03
20	Madhya Pradesh	16.66	1.96
21	Maharashtra	74.30	8.72
22	Manipur	5.90	0.69
23	Meghalaya	5.38	0.63
24	Mizoram	2.05	0.24
25	Nagaland	2.84	0.33

[1] http://apeda.gov.in/apedawebsite/SubHead_Products/Poultry_Products.htm

SN	States/ UTs	Total Poultry Birds (in Millions)	Percentage (%)
26	Odisha	27.44	3.22
27	Puducherry	0.24	0.03
28	Punjab	17.65	2.07
29	Rajasthan	14.62	1.72
30	Sikkim	0.58	0.07
31	Tamil Nadu	120.78	14.18
32	Telangana	80.00	9.39
33	Tripura	4.17	0.49
34	Uttar Pradesh	12.52	1.47
35	Uttarakhand	5.02	0.59
36	West Bengal	77.32	9.08
	Total	**851.81**	**100.00**

Source: 20th Livestock Census 2019

Poultry population

As per the 19th Livestock Census 2012 conducted by the DAHD, the total poultry birds including the backyard poultry and poultry farm was 729.81 million whereas, as per the 20th Livestock Census 2019 the total poultry birds in the country is around 851.81 million. Poultry birds have registered a substantial growth of 16.81% from 2012 to 2019.

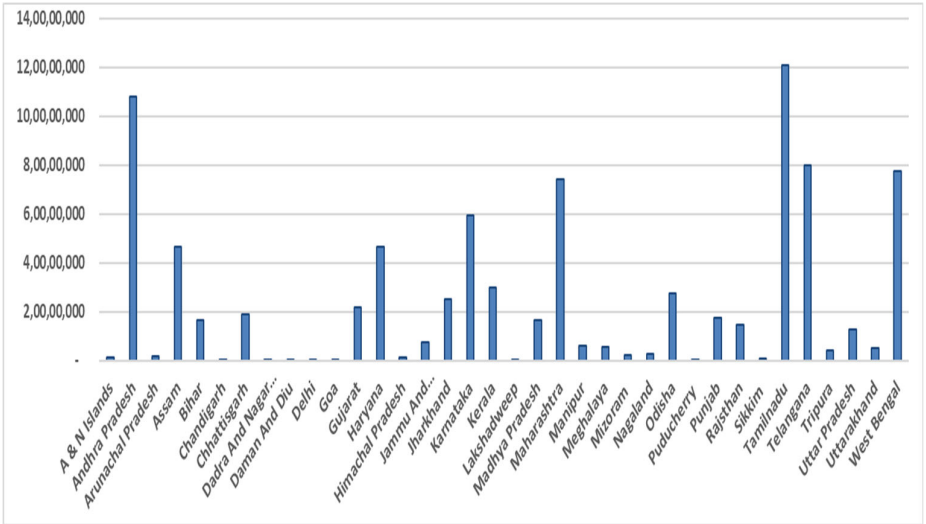
Table 2- 2 : Poultry population 2012 and 2019

Category	In 2012 (in Million)	In 2019 (in Million)	% Change
Total Poultry Population	729.21	851.81	16.81

Source: 20th Livestock Census 2019 and 19th Livestock Census 2012

The poultry industry is spread across all the states and UTs of India. The major concentration of the poultry industry can be seen in southern part of the country. The top five states are Tamil Nadu with 14.18% of the share, followed by Andhra Pradesh (12.66%) Telangana (9.39%), West Bengal (9.08%) and Maharashtra (8.72%). The top five states contribute to approximately 54% of the total poultry population of India. **Figure 2-1** presents the state-wise distribution of poultry population in India.

Figure 2- 1 : State wise poultry population in India



Poultry litter

Poultry rearing results in various types of waste which include hatchery wastes, manure (bird excrement),

litter (bedding materials such as sawdust, wood shavings, straw and peanut or rice hulls), and on-farm mortalities. Poultry manure is the organic waste material from poultry consisting of animal faeces and urine. Poultry litter refers to the manure mixed with some of the bedding material or litter (wood shavings or sawdust) and feathers. Poultry houses are regularly cleaned out by removing a thin layer of the bedding along with the manure.

Current utilization of poultry litter - Historically, poultry litter has been used as fertilizer in crop production and cattle feed. However, recently poultry litter has been banned as cattle feed due to concerns over Mad Cow Disease, along with increased restrictions on use as fertilizer and land applications. Land applications of poultry litter in the agricultural fields leads to ground water pollution because of its high phosphorous content. Fertilizing value of the poultry litter is comparable to the chemical fertilizer however, if not consumed within 4-5 days, its nitrogen value decreases very quickly. Therefore, it is generally used in the nearby agriculture farms. Currently, most of the poultry litter is being dumped near poultry farms, gets degraded with release of methane into the atmosphere, along with other environmental problems as odor, pest generation etc. The concerns on safe disposal of poultry litter and high potential of energy generation from poultry litter is making poultry litter-based waste to energy plants as one of the most preferred alternatives for poultry litter management. Based on field investigations conducted by the team, the poultry litter was available in the range of Rs 500- 800 per tonne in various states of India.

Layer and broiler farms are the two types of birds available in poultry sector. Layers are egg laying birds, whereas broilers are developed for meat purpose: The collection of poultry litter varies in broiler and layer farms. In broiler farms, the birds are developed on ground over the layer of paddy husk. The droppings from the broiler birds gets mixed with paddy husk and therefore collection of poultry litter separately from the broiler farms every day is not possible. The collection of poultry litter from broiler farms is possible only after development and removal of birds for slaughtering. Whereas in the layer farms, the droppings of birds directly fall into the pit constructed under the cages of birds and can be collected easily.

Poultry litter generation

For estimating total amount of waste generated from poultry farms and backyard poultry, data on average bird dropping was estimated based on the_primary field investigation conducted by the team during first phase of the project. Field investigations indicated that approximately 40 gm per bird of poultry litter is generated per day and the same estimate is used for further calculation in the report. It is assumed that the poultry litter in poultry farm and backyard poultry system is generated throughout the year i.e., 365 days. It has been further estimated that approximately 12.4 million MT of poultry waste is generated in India. Biogas potential for poultry litter has been assumed 0.058m^3 of biogas from 1 kg of waste. The total power generation and Bio Compressed Natural Gas (Bio-CNG) from the poultry litter in India is estimated to be 182.29 MW and 874.98 MT respectively. **Table 2-3** shows total number of poultry birds, poultry waste generation and estimated energy and Bio-CNG potential for different states.

Table 2- 3 : State wise poultry litter generation and estimated energy potential

SN	State & UT	Total poultry (in '000)	Poultry waste per day (in '000 KG)	Poultry waste per year (in '000 MT)	Energy potential[2] (MW)	Bio-CNG (T)
1	Andaman and Nicobar Islands	1,289.16	51.57	18.82	0.28	1.32
2	Andhra Pradesh	1,07,863.15	4,314.53	1,574.80	23.08	110.80
3	Arunachal Pradesh	1,599.58	63.98	23.35	0.34	1.64
4	Assam	46,712.34	1,868.49	682.00	10.00	47.98
5	Bihar	16,525.35	661.01	241.27	3.54	16.97
6	Chandigarh	48.88	1.96	0.71	0.01	0.05
7	Chhattisgarh	18,711.82	748.47	273.19	4.00	19.22
8	Dadra and Nagar Haveli	89.67	3.59	1.31	0.02	0.09

[2] *Biogas potential has been assumed considering 0.058m3 of biogas from 1 kg of waste. (Source: Imam Md. Forhad Ibne Al., Khan, M. Z. H. Sarkar, M. A. R. and Ali, S. M. 2013. Development of Biogas Processing from Cow dung, Poultry waste, and Water Hyacinth. International Journal of Natural and Applied Science, 2: 13-17)

SN	State & UT	Total poultry (in '000)	Poultry waste per day (in '000 KG)	Poultry waste per year (in '000 MT)	Energy potential[2] (MW)	Bio-CNG (T)
9	Daman and Diu	18.26	0.73	0.27	0.00	0.02
10	Delhi	43.83	1.75	0.64	0.01	0.05
11	Goa	349.54	13.98	5.10	0.07	0.36
12	Gujarat	21,773.39	870.94	317.89	4.66	22.37
13	Haryana	46,294.97	1,851.80	675.91	9.91	47.55
14	Himachal Pradesh	1,341.95	53.68	19.59	0.29	1.38
15	Jammu and Kashmir	7,366.31	294.65	107.55	1.58	7.57
16	Jharkhand	24,832.91	993.32	362.56	5.31	25.51
17	Karnataka	59,494.48	2,379.78	868.62	12.73	61.11
18	Kerala	29,771.91	1,190.88	434.67	6.37	30.58
19	Lakshadweep	226.03	9.04	3.30	0.05	0.23
20	Madhya Pradesh	16,659.90	666.40	243.24	3.57	17.11
21	Maharashtra	74,297.77	2,971.91	1,084.75	15.90	76.32
22	Manipur	5,897.64	235.91	86.11	1.26	6.06
23	Meghalaya	5,379.53	215.18	78.54	1.15	5.53
24	Mizoram	2,047.81	81.91	29.90	0.44	2.10
25	Nagaland	2,838.94	113.56	41.45	0.61	2.92
26	Odisha	27,439.26	1,097.57	400.61	5.87	28.19
27	Puducherry	236.00	9.44	3.45	0.05	0.24
28	Punjab	17,649.98	706.00	257.69	3.78	18.13
29	Rajasthan	14,622.98	584.92	213.50	3.13	15.02
30	Sikkim	580.86	23.23	8.48	0.12	0.60
31	Tamil Nadu	1,20,781.10	4,831.24	1,763.40	25.85	124.07
32	Telangana	79,999.40	3,199.98	1,167.99	17.12	82.18
33	Tripura	4,168.25	166.73	60.86	0.89	4.28
34	Uttar Pradesh	12,515.70	500.63	182.73	2.68	12.86
35	Uttarakhand	5,018.68	200.75	73.27	1.07	5.16
36	West Bengal	77,322.60	3,092.90	1,128.91	16.55	79.43
	Total	**8,51,809.93**	**34,072.40**	**12,436.43**	**182.29**	**874.98**

Source: 20th Livestock Census 2019

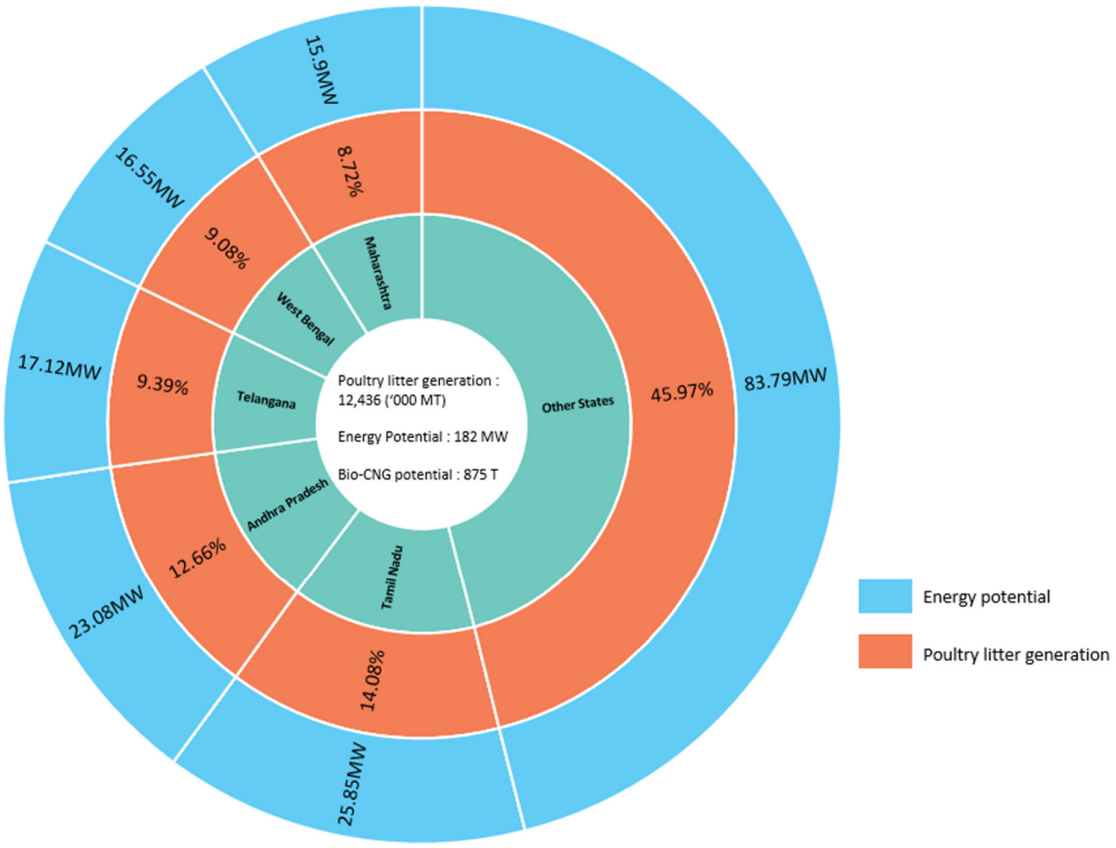
Energy potential

Poultry manure and litter contain organic matter can be converted into bioenergy both through anaerobic route as well as through thermochemical process by pyrolysis/ gasification /combustion route. There are number of plants based on both anaerobic decomposition as well as combustion-based technologies in India from Poultry waste.

This report reviews the biogas and energy generated through anaerobic route for further evaluation. With a total litter production of approximately 12,436 '000 MT per year, the estimated energy potential from poultry waste in India is approximately 182.29 MW. Cow dung is normally used as co-substrate with poultry litter to generate biogas. Other waste material having potential to mix with poultry litter are silage (agriculture/horticulture waste/forage corps etc.), grain waste, de-oiled cake and recycled waste.

The top five states generating maximum poultry litter and having maximum energy potential are Tamil Nadu followed by Andhra Pradesh, Telangana, West Bengal and Maharashtra and have energy potential of 25.85 MW, 23.08 MW, 17.12 MW, 16.55 MW and 15.90 MW respectively.

Figure 2- 2 : Top 5 states - Poultry litter production and Energy potential



States and districts with maximum potential

District level data from shortlisted states has been analyzed from 20th Livestock Census 2019 DAHD, Ministry of Agriculture and Farmer Welfare to identify the key regions and districts contributing to maximum poultry litter and having maximum energy potential.

Energy potential of the selected top five states in the sector is 98.50 MW which is 54% of the total estimated energy potential in the country. Districts having energy potential higher than the state's average energy potential are identified in all the five selected stated. These Identified districts in all the five states together have an energy potential of 71.11 MW contributing to almost 72.19% of the total energy potential estimated from these five states shown in **Figure 2-3** and **Figure 2-4**.

The top 10 districts across India having the maximum potential for energy and Bio Compressed Natural Gas (Bio-CNG) from the poultry litter are shown in **Table 2-4**. These top 10 district contributes to 23.60% of total energy estimated to be generated from poultry litter.

Table 2- 4 : Top 10 districts across India

SN	State	District	Energy potential (in MW)	Bio-CNG (T)
1	Tamil Nadu	Namakkal	10.35	49.69
2	Andhra Pradesh	East Godavari	6.02	28.88
3	Telangana	Rangareddi	5.15	24.72
4	Andhra Pradesh	West Godavari	3.91	18.77
5	Tamil Nadu	Tiruppur	3.58	17.18
6	Maharashtra	Pune	3.51	16.85

SN	State	District	Energy potential (in MW)	Bio-CNG (T)
7	Andhra Pradesh	Krishna	3.38	16.21
8	Andhra Pradesh	Chittoor	3.10	14.87
9	Haryana	Karnal	2.05	9.83
10	West Bengal	24 Paraganas South	1.98	9.52
Total			**43.03**	206.54

Source: 20th Livestock Census 2019

Figure 2- 3 : Location of major states generating poultry litter and energy potential.

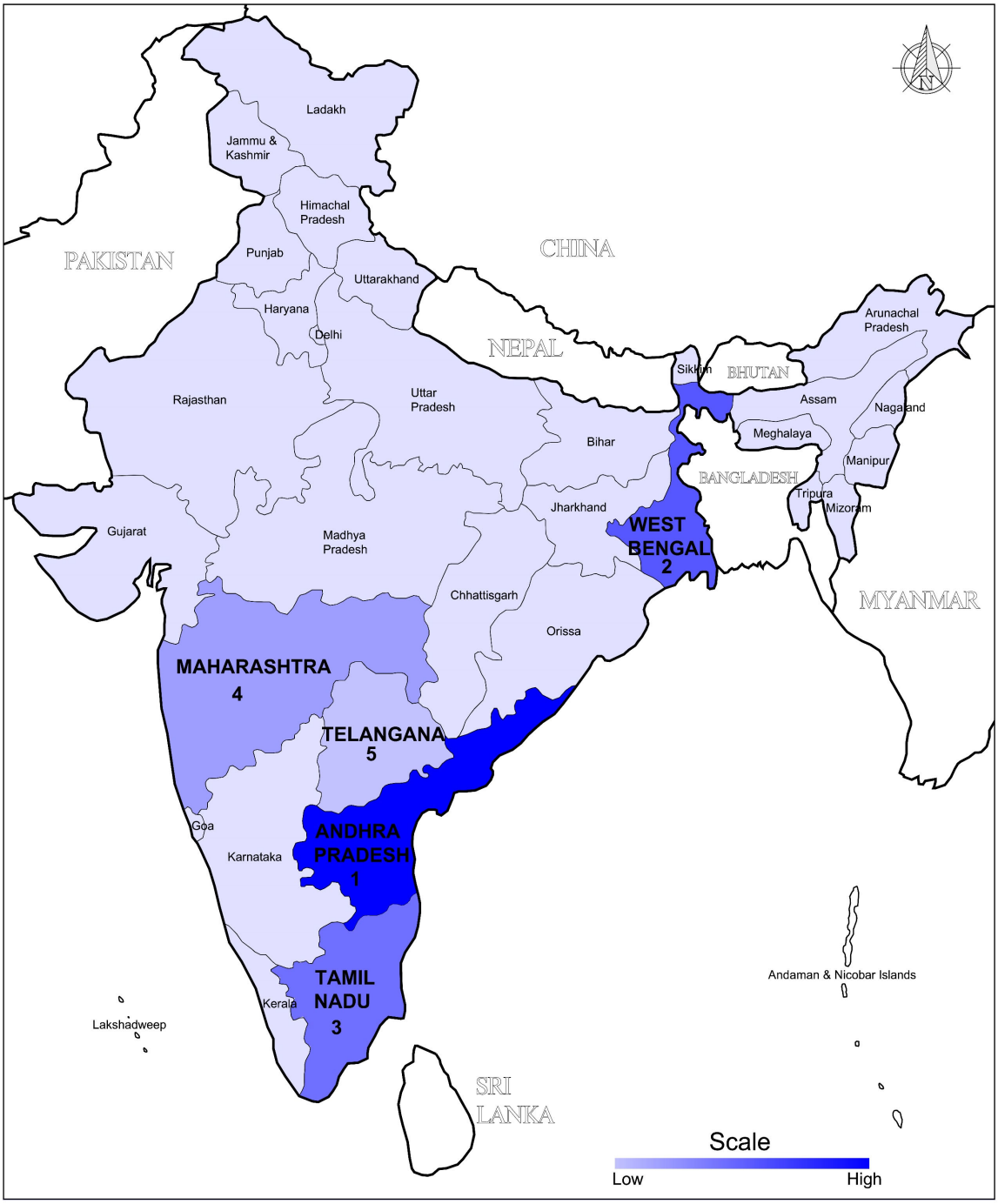
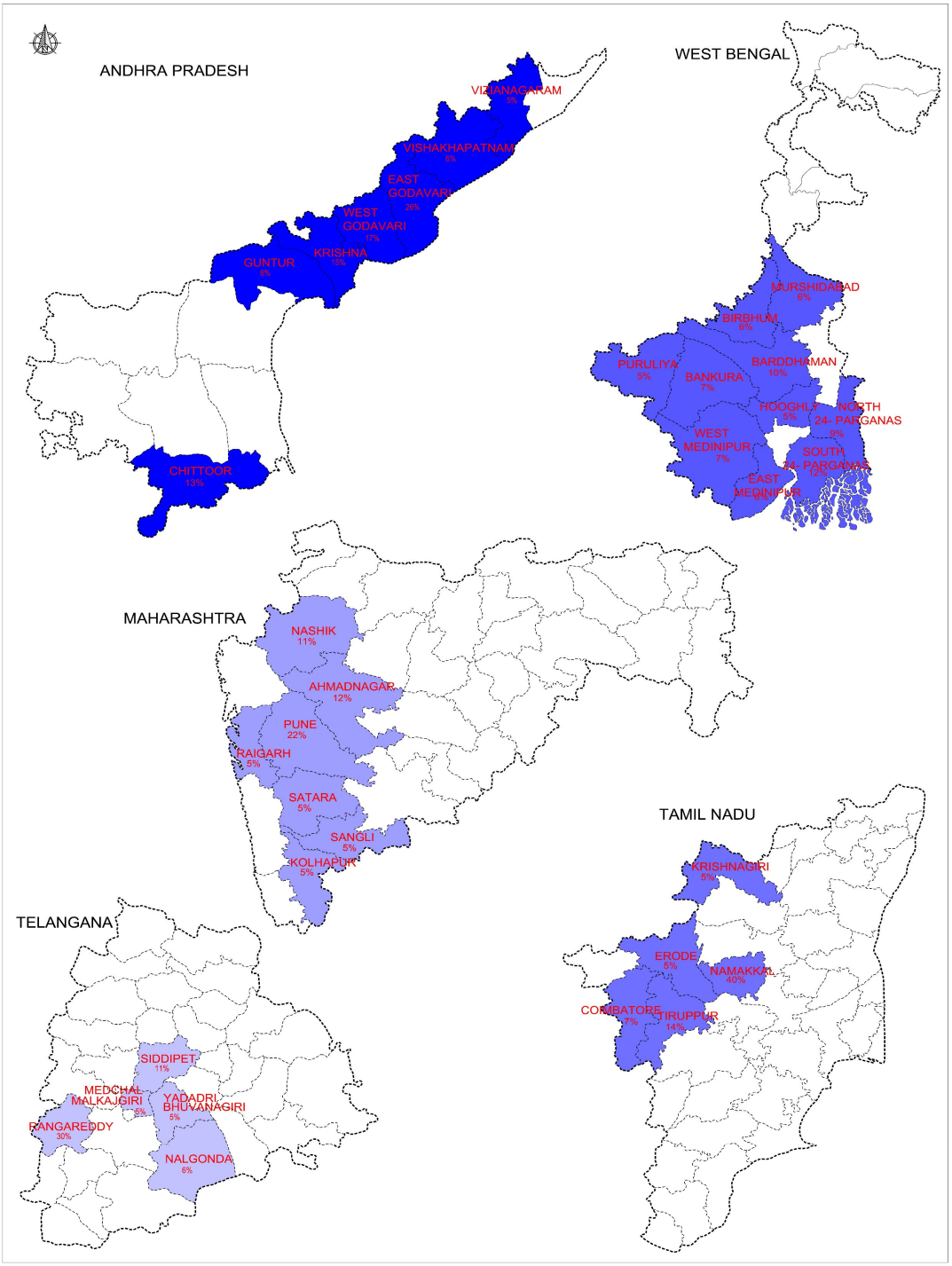


Figure 2- 4 : Identification of districts/regions in the top 5 states for energy potential-Poultry Litter



Existing waste to energy plants in India based on poultry litter

In India, there are many wastes to energy plants based on poultry litter in urban and rural areas. Currently, poultry litter-based power plants are operating on both bio-methanation and combustion technology. The poultry litter-based power plants are majorly concentrated in the southern part of India. Telangana, Andhra Pradesh and Tamil Nadu state remain the top generators of poultry litter-based electricity. **Annexure 2** presents details of poultry-based power plants including location, associated industry, plant capacity and year of establishment.

2.2 Cattle Farm

India ranks first among the world's leading milk producing nations since 1998 and has the largest bovine population in the world. The total cattle and buffalo population in India contributes to around 35.94% and 20.45% respectively of the total livestock as per Census 2019. No separate data on the number of cattle farms or number of cattle and buffalo in the cattle farm is available with us. Therefore, for the current assessment only female population of cattle (exotic & indigenous) and buffalo have been taken into consideration for calculation of waste generation from bovine animals in cattle farm. Further, we have assumed that only 50 % of the milk producing bovine animal would form part of cattle farm.

As per the previous Livestock Census i.e., 19th Livestock Census 2012 conducted by the DAHD, the total female population of cattle (including cattle – (exotic & indigenous) and buffalo) was 215.57 million whereas, as per the 20th Livestock Census 2019 the total female population of cattle is 246.27 million. It is observed that there has been a substantial population growth of 14.26% from 2012 to 2019.

Table 2- 5 : Cattle population in 2012 and 2019

Category	In 2012 (in Million)	In 2019 (in Million)	% Change
Cattle population	215.57	246.27	14.26%

Source: 20th Livestock Census 2019 and 19th Livestock Census 2012

Table 2-6 presents the state wise total female cattle population (including cattle (exotic & indigenous) and buffalo).

Table 2- 6 : State wise population of female - buffalo and total cattle

SN	State/UT	Total Cattle (in '000)	Percentage (%)
1	Andaman and Nicobar Islands	29.24	0.01%
2	Andhra Pradesh	9,246.00	3.75%
3	Arunachal Pradesh	201.69	0.08%
4	Assam	7,953.25	3.23%
5	Bihar	21,302.36	8.65%
6	Chandigarh	22.25	0.01%
7	Chhattisgarh	5,958.23	2.42%
8	Dadra and Nagar Haveli	13.72	0.01%
9	Daman and Diu	1.63	0.00%
10	Goa	69.37	0.03%
11	Gujarat	17,656.67	7.17%
12	Haryana	5,547.81	2.25%
13	Himachal Pradesh	1,976.18	0.80%
14	Jammu And Kashmir	2,697.82	1.10%
15	Jharkhand	7,439.99	3.02%
16	Karnataka	9,414.06	3.82%
17	Kerala	1,236.39	0.50%
18	Lakshadweep	1.72	0.00%
19	Madhya Pradesh	21,957.91	8.92%
20	Maharashtra	14,289.70	5.80%
21	Manipur	177.86	0.07%
22	Meghalaya	565.70	0.23%
23	Mizoram	33.78	0.01%
24	Nagaland	47.95	0.02%
25	Odisha	6,095.57	2.48%
26	Puducherry	69.68	0.03%
27	Punjab	6,199.84	2.52%
28	Rajasthan	24,624.66	10.00%
29	Sikkim	115.58	0.05%

SN	State/UT	Total Cattle (in '000)	Percentage (%)
30	Tamil Nadu	9,222.46	3.74%
31	Telangana	6,549.81	2.66%
32	Tripura	621.66	0.25%
33	Uttar Pradesh	47,483.83	19.28%
34	Uttarakhand	2,167.87	0.88%
35	West Bengal	15,273.56	6.20%
Total		**2,46,265.78**	**100%**
Total in million		**246.27**	

Source: 20th Livestock Census 2019

As per the 20th livestock Census 2019, Uttar Pradesh has highest number of cattle population with 19.28% of the share followed by Rajasthan, Madhya Pradesh, Bihar and Gujarat with respective share of 10.00%, 8.92%, 8.65% and 7.17%.

Cattle dung

A cattle farm generates two types of waste i.e., solid waste (dung) and liquid waste (slurry). Slurry contains cattle urine and wastewater which is normally drained out in the municipal drain.

Current Utilization of cattle dung – Cattle dung is used in various ways such as manure for agriculture fields, fuel, and direct application on the floor and biogas generation. A very small quantity of cattle dung is diverted for biogas generation and is primarily used as domestic cooking fuel in various part of rural India. Cattle dung is easily available across the country at the rate of approximately Rs 500 -800 per ton. However, transportation of cattle dung to longer distance is a challenge since cow dung is relatively heavy and in semi liquid form. Waste to energy plants based on cow dung needs to be set up near the cattle farm.

Cow dung production

For estimating total amount of waste generated from cattle farm, data on average bovine animal dung was estimated based on the primary field investigation conducted by the team during first phase of the project. Field investigations indicated that approximately 10 Kg cattle dung per cattle is generated per day and the same estimate is used for further calculation in the report. It is assumed that the cattle dung in cattle farm is generated throughout the year i.e., 365 days. Waste generation from cattle farm and subsequent energy potential from the waste has been estimated in **Table 2-7**.

Table 2- 7 : State wise estimation of waste and energy potential from cattle farm

SN	State/UT	Total no. of Cattle (In '000)	No. of Cattle available in Cattle Farm[3] (In '000)	Cattle Dung Production ('000 Kg/day)	Production (in'000 TPA)	Energy Potential[4] (MW)	Bio-CNG (T)
1	Andaman & Nicobar ISL	29.24	14.62	146.20	53.36	0.46	2.19
2	Andhra Pradesh	9,246.00	4,623.00	46,229.99	16,873.95	144.28	692.53
3	Arunachal Pradesh	201.69	100.85	1,008.47	368.09	3.15	15.11
4	Assam	7,953.25	3,976.63	39,766.25	14,514.68	124.10	595.70
5	Bihar	21,302.36	10,651.18	1,06,511.78	38,876.80	332.41	1,595.55
6	Chandigarh	22.25	11.12	111.24	40.60	0.35	1.67
7	Chhattisgarh	5,958.23	2,979.12	29,791.16	10,873.77	92.97	446.27
8	Dadra & Nagar Haveli	13.72	6.86	68.60	25.04	0.21	1.03

[3] *For the waste calculation, we have assumed that 50 % of the cattle would form part of cattle farm, therefore 50% of the cattle dung generated has been considered to estimate the energy potential.*

[4] *0.034m^3 of biogas can be generated from 1 kg of cattle waste (Source: Imam Md. Forhad Ibne Al., Khan, M. Z. H. Sarkar, M. A. R. and Ali, S. M. 2013. Development of Biogas Processing from Cow dung, Poultry waste, and Water Hyacinth. International Journal of Natural and Applied Science, 2: 13-17)*

SN	State/UT	Total no. of Cattle (In '000)	No. of Cattle available in Cattle Farm[3] (In '000)	Cattle Dung Production ('000 Kg/day)	Production (in'000 TPA)	Energy Potential[4] (MW)	Bio-CNG (T)
9	Daman and Diu	1.63	0.81	8.14	2.97	0.03	0.12
10	Goa	69.37	34.69	346.87	126.61	1.08	5.20
11	Gujarat	17,656.67	8,828.33	88,283.34	32,223.42	275.52	1,322.48
12	Haryana	5,547.81	2,773.90	27,739.04	10,124.75	86.57	415.53
13	Himachal Pradesh	1,976.18	988.09	9,880.88	3,606.52	30.84	148.02
14	Jammu And Kashmir	2,697.82	1,348.91	13,489.10	4,923.52	42.10	202.07
15	Jharkhand	7,439.99	3,720.00	37,199.96	13,577.99	116.09	557.26
16	Karnataka	9,414.06	4,707.03	47,070.28	17,180.65	146.90	705.11
17	Kerala	1,236.39	618.20	6,181.95	2,256.41	19.29	92.61
18	Lakshadweep	1.72	0.86	8.62	3.15	0.03	0.13
19	Madhya Pradesh	21,957.91	10,978.96	1,09,789.55	40,073.19	342.63	1,644.65
20	Maharashtra	14,289.70	7,144.85	71,448.50	26,078.70	222.98	1,070.30
21	Manipur	177.86	88.93	889.31	324.60	2.78	13.32
22	Meghalaya	565.70	282.85	2,828.52	1,032.41	8.83	42.37
23	Mizoram	33.78	16.89	168.90	61.65	0.53	2.53
24	Nagaland	47.95	23.98	239.76	87.51	0.75	3.59
25	Odisha	6,095.57	3,047.79	30,477.87	11,124.42	95.12	456.56
26	Puducherry	69.68	34.84	348.42	127.17	1.09	5.22
27	Punjab	6,199.84	3,099.92	30,999.18	11,314.70	96.74	464.37
28	Rajasthan	24,624.66	12,312.33	1,23,123.31	44,940.01	384.25	1,844.39
29	Sikkim	115.58	57.79	577.92	210.94	1.80	8.66
30	Tamil Nadu	9,222.46	4,611.23	46,112.30	16,830.99	143.91	690.76
31	Telangana	6,549.81	3,274.91	32,749.06	11,953.41	102.20	490.58
32	Tripura	621.66	310.83	3,108.29	1,134.52	9.70	46.56
33	Uttar Pradesh	47,483.83	23,741.91	2,37,419.14	86,657.98	740.95	3,556.54
34	Uttarakhand	2,167.87	1,083.93	10,839.34	3,956.36	33.83	162.37
35	West Bengal	15,273.56	7,636.78	76,367.78	27,874.24	238.33	1,143.99
	Total	**2,46,265.7**	**1,23,132.89**	**12,31,328.91**	**4,49,435.05**	**3,842.77**	**18,445.31**

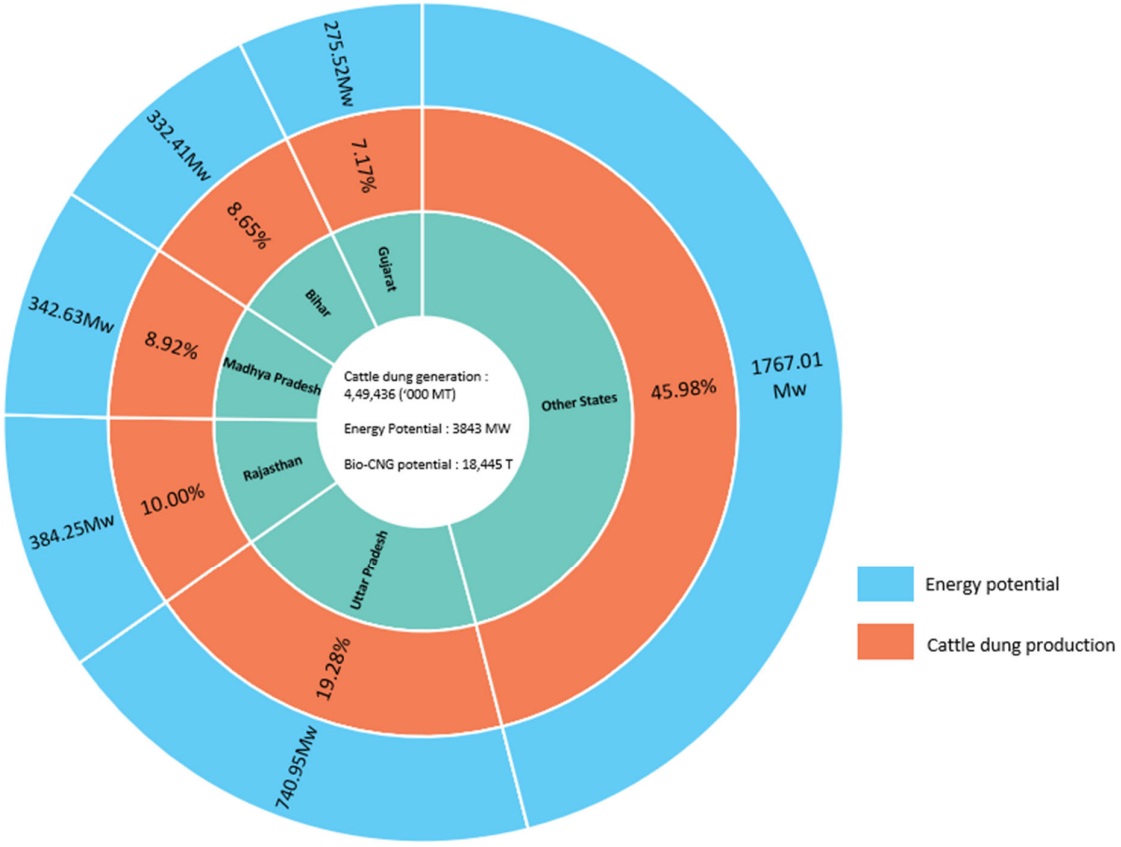
Source: 20th Livestock Census 2019

Energy potential

Cow dung is composed of 1.8-2.4% nitrogen (N_2), 1.0-1.2% phosphorus (P_2O_5), 0.6-0.8% potassium (K_2O) and 50-75% organic humus and has high potential of biogas generation under anaerobic condition. This gas is used as cooking fuel in various rural households of India and also to generate electricity.

The total estimated energy potential and Bio CNG from waste generated in cattle farm is 3843 MW and 18,445 MT respectively. The maximum energy potential being for the state of Uttar Pradesh (19.28%) followed by Rajasthan (10.00%), Madhya Pradesh (9.65%), Bihar (8.65%) and Gujarat (7.17%).

Figure 2- 5 : Top 5 states - Cattle dung production and Energy potential



States and districts with maximum potential

After shortlisting of major states having maximum energy potential of 3843 MW from cattle dung, information on the districts contributing to maximum resource availability have been identified. Based on the district level data available from 20th Livestock Census 2019 published by DAHD, Ministry of Agriculture and Farmer Welfare, the key districts within the 5 major states have been shown in **Figure 2-6** and **Figure 2-7**. Energy potential of the selected top five states is 2076 MW which is 54% of the total energy potential for cattle farm sector. Districts have been identified in all the five selected states with energy potential higher than the state's average. Above table presents details on share of the energy potential for the identified districts in all the five states. These identified districts have 1096 MW of energy potential contributing to 53% of the respective five states.

The top 10 districts across India having the maximum potential for energy and Bio-Compressed Natural Gas (Bio-CNG) from the Cattle dung are shown in **Table 2-8**. These top 10 district contributes to 6.17% of total energy estimated to be generated from Cattle dung.

Table 2- 8 : Top 10 district across India

SN	State	District	Energy potential (in MW)	Bio-CNG (T)
1	Gujarat	Banas Kantha	41.88	201.03
2	Rajasthan	Jaipur	28.30	135.86
3	West Bengal	Medinipur West	22.60	108.48
4	Maharashtra	Ahmednagar	22.10	106.09
5	West Bengal	Bardhaman	21.35	102.47
6	Uttar Pradesh	Allahabad	20.44	98.10
7	Uttar Pradesh	Agra	20.38	97.84

SN	State	District	Energy potential (in MW)	Bio-CNG (T)
8	Rajasthan	Alwar	20.31	97.50
9	Rajasthan	Bikaner	19.96	95.80
10	Rajasthan	Jodhpur	19.79	94.99
Total			**237.12**	**1138.16**

Source: 20th Livestock Census 2019

Existing cattle dung based WTE plants

As per the information available on secondary sources, there are many commercial as well as small-scale family size biogas plants running at household level or institutional/community level in India. Annexure-4 provides details of location of the plant, associated industry, plant capacity and year of establishment.

Figure 2- 6 : Location of major states generating cattle dung and energy potential.

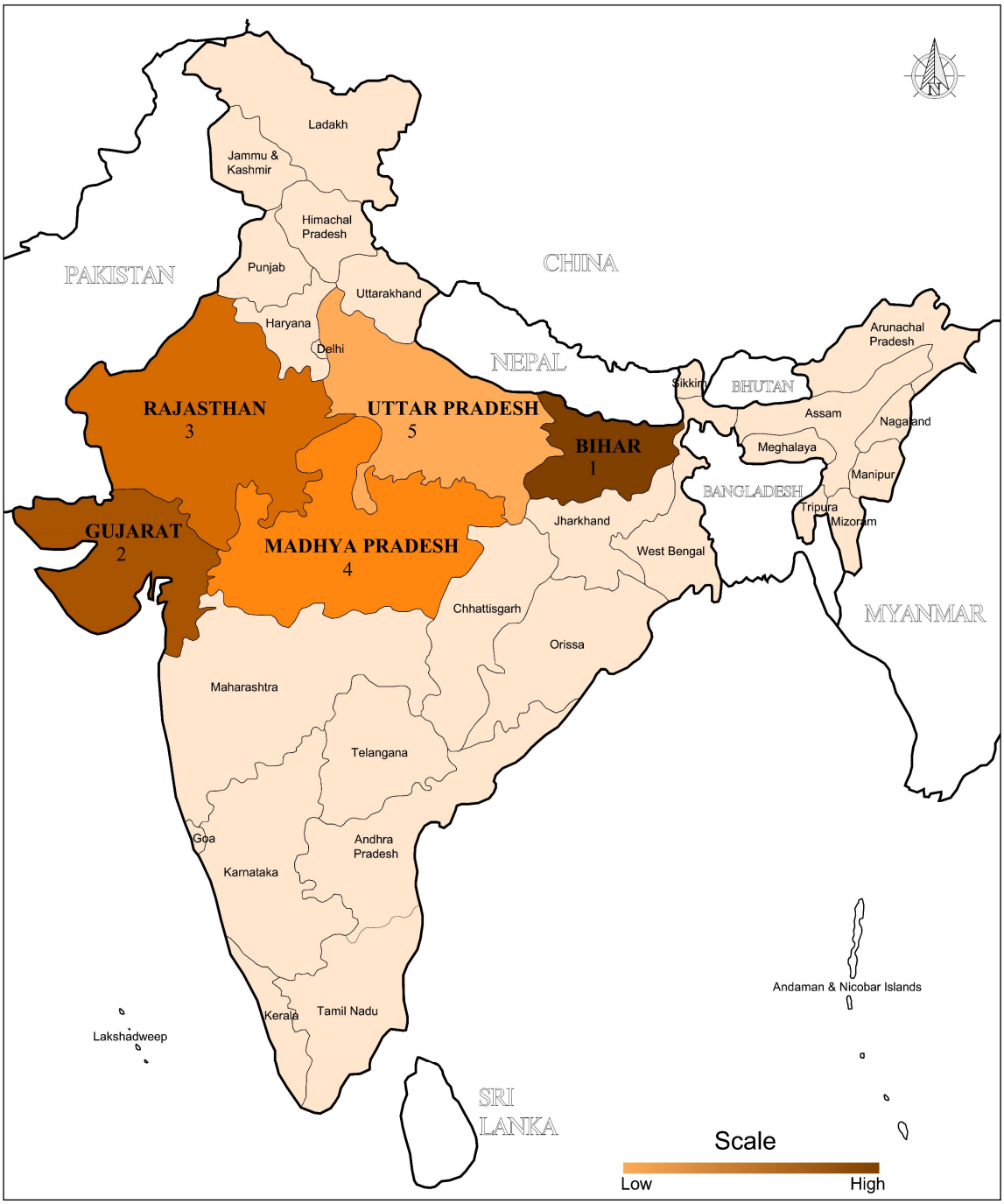
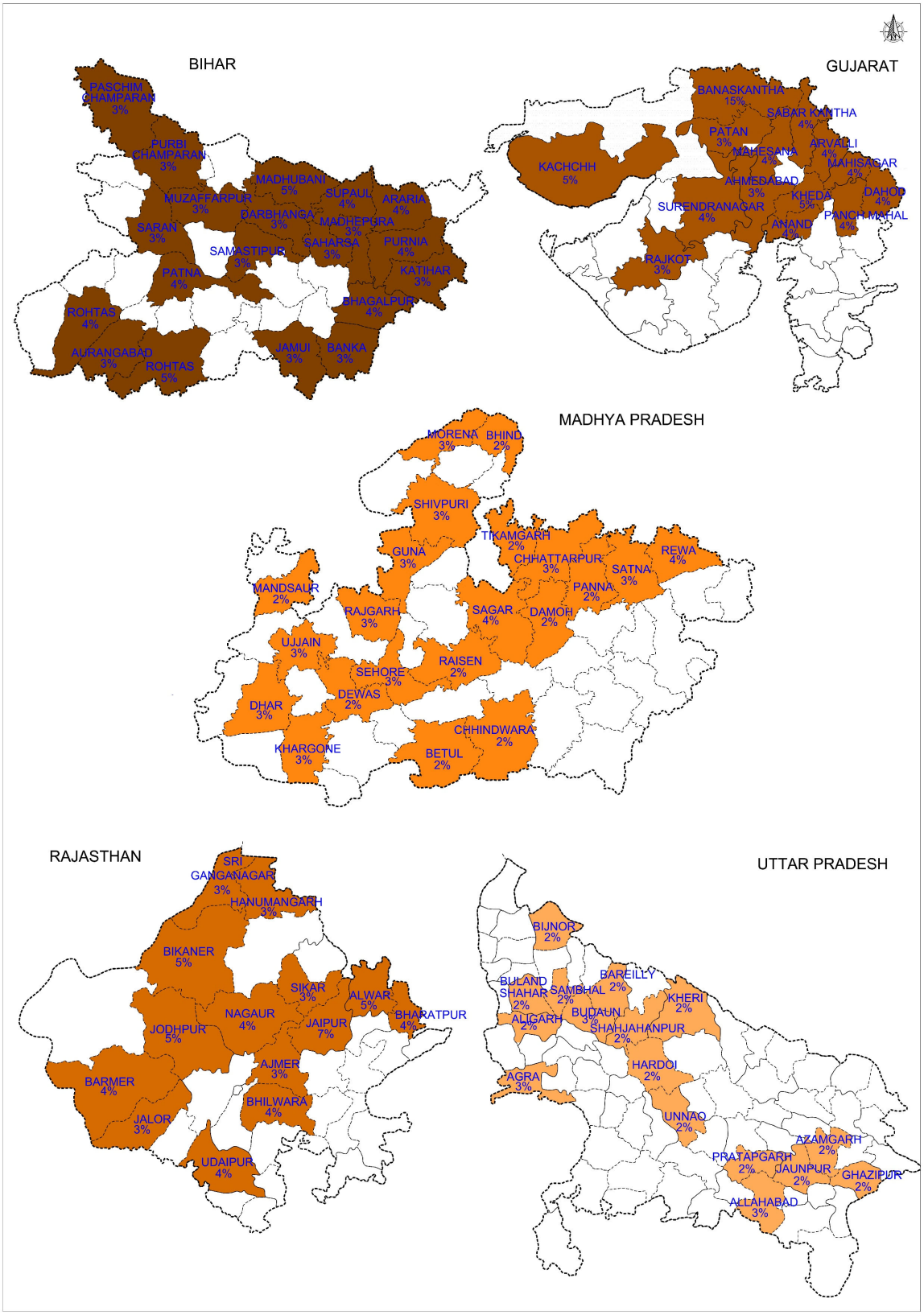

Ladakh
Jammu & Kashmir
Himachal Pradesh
Punjab
Uttarakhand
Haryana
Delhi
PAKISTAN
CHINA
NEPAL
BHUTAN
Sikkim
Arunachal Pradesh
Assam
Nagaland
Meghalaya
Manipur
Tripura
Mizoram
BANGLADESH
RAJASTHAN
3
UTTAR PRADESH
5
BIHAR
1
GUJARAT
2
MADHYA PRADESH
4
Jharkhand
West Bengal
Chhattisgarh
Orissa
MYANMAR
Maharashtra
Telangana
Goa
Andhra Pradesh
Karnataka
Kerala
Tamil Nadu
Lakshadweep
Andaman & Nicobar Islands
SRI LANKA
Scale
Low
High

Figure 2- 7 : Identification of districts/regions in the top 5 states for energy potential-Cattle Dung



2.3 Fruit and Vegetable Processing Industry

India is the second largest producer of the Fruits (45.5 Million ton) and vegetables (90.8 Million ton) in the world, contributing 10.23% and 14.45% of the total world production of fruits and vegetables respectively. (Source: National Horticulture Board). India currently processes less than 10%5 of its agriculture output (only around 2% of fruits and vegetables, 6% of poultry, 21% of meat, 23% of marine and 35% of milk) 6. The major food processing industries are limited to primary food processing of rice, sugar, edible oil and flour mills etc. Fruits & vegetables undergo secondary processing in the processing industry.

Banana, mango, citrus, papaya, guava and grape account for major share in total fruit production across India. The major fruit producing states are Andhra Pradesh, Maharashtra, Uttar Pradesh, Gujarat, Karnataka and Madhya Pradesh. These six states account for 71% of the total fruit production in India. Potato, onion, tomato, brinjal, cauliflower, cabbage and tapioca account for maximum share in total vegetable production across India. The major vegetable producing states are West Bengal, Uttar Pradesh, Madhya Pradesh, Bihar, Maharashtra, and Gujarat. These six states account for 68% of the total vegetable production in India.

Seasonal variation in fruit and vegetable processing industry

Seasonal variation for fruit and vegetable processing has been observed and is in correlation to the production season. All the fruits and vegetables are perishable in nature and need immediate processing in order to preserve. Therefore, harvesting season provided by the National Horticulture Board for fruits and vegetables will align with the operation of processing industry.

Fruit production in India

Table 2-9 present the state wise total production of various fruits including Apple, mango, banana, pineapple, orange and papaya.

Table 2- 9 : Statewise production of various fruits

SN	State	Apple (in '000 MT)	Mango (in '000 MT)	Banana (in '000 MT)	Pineapple (in '000 MT)	Orange (in '000 MT)	Papaya (in '000 MT)
1	Andhra Pradesh		4,043	4,673	64		1,486.00
2	Arunachal Pradesh	7.18		17	27		0.80
3	Assam		47	855	269		142.00
4	Bihar		1,472	1,528	117		44.00
5	Chhattisgarh		434	609			380.00
6	Gujarat		1,425	4,293			1,289.00
7	Haryana		97				
8	Himachal Pradesh	468	48	0.35			1.23
9	Jammu & Kashmir	1,726	24				
10	Jharkhand		439	32			110.00
11	Karnataka		1,720	2,446	164		532.00
12	Kerala		388	1,251	310		86.00
13	Madhya Pradesh		586	1,876			496.00
14	Maharashtra		604	3,889			344.00
15	Manipur			110	127		
16	Meghalaya			94	141		7.78
17	Mizoram		4.18	141	33		27.00
18	Nagaland	2.00	4.23	117	133		17.00
19	Odisha		818	466	12		71.00
20	Punjab		114	5.27			

[5] Ministry of Food Processing Industries
[6] Indian food processing sector trends & opportunities 2019

SN	State	Apple (in '000 MT)	Mango (in '000 MT)	Banana (in '000 MT)	Pineapple (in '000 MT)	Orange (in '000 MT)	Papaya (in '000 MT)
21	Rajasthan		155	0.35			8.71
22	Sikkim		0	3.87			0.60
23	Tamil Nadu	0.12	1,282	3,499	26		365.00
24	Telangana		482	73			52.00
25	Tripura		57	115	95		29.00
26	Uttar Pradesh		4,341	3,161			93.00
27	Uttarakhand	62	150				
28	West Bengal		737	1,172	336		358.00
29	Others		34	49	7		1.54
	Total	**2,265**	**19,506**	**30,477**	**1861**		**5,940**

Source: Indian Horticulture Database, National Horticulture Board, 2018

Figure 2- 8 : States with Energy Potential from Fruits and Vegetable Processing Waste

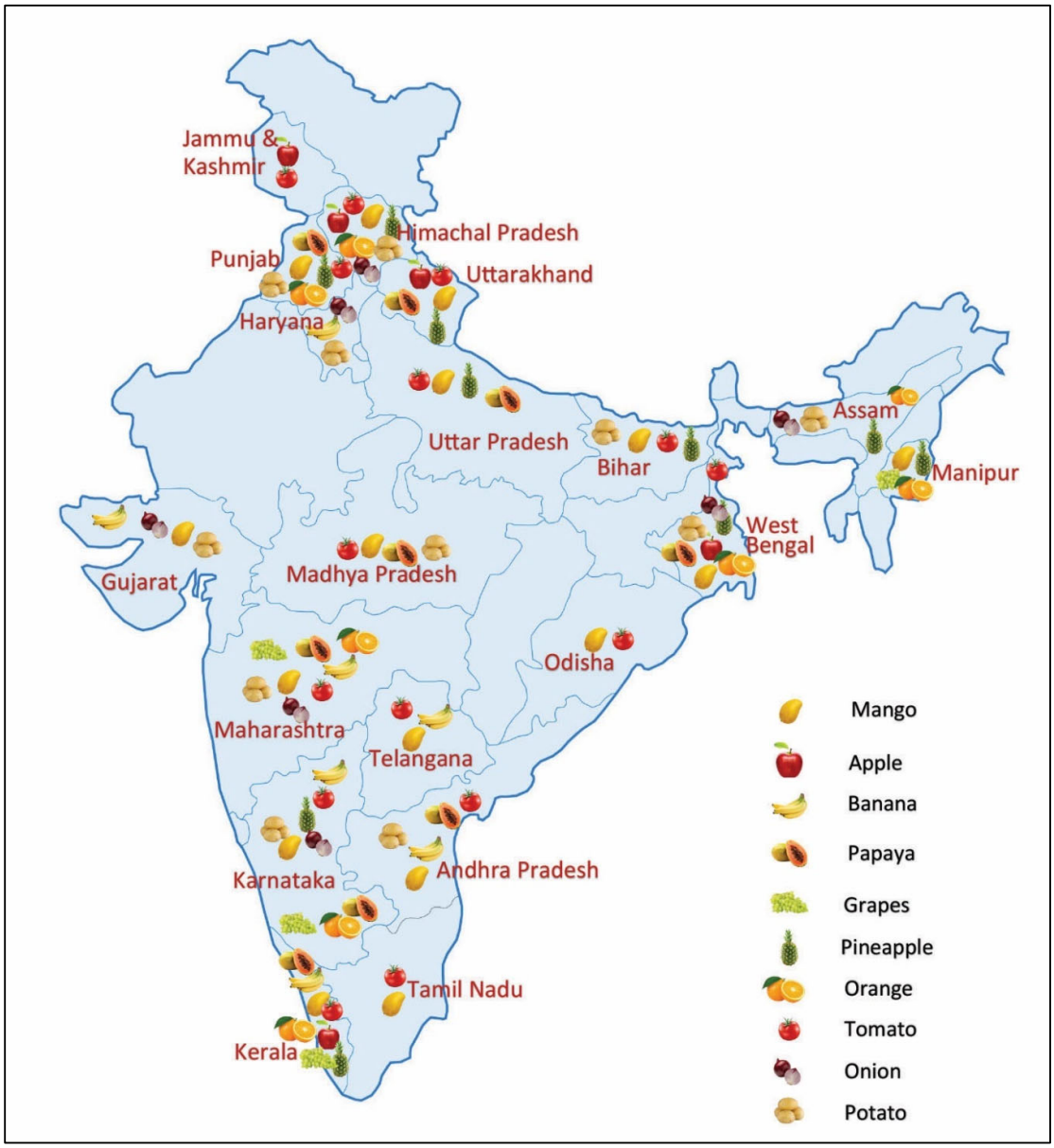
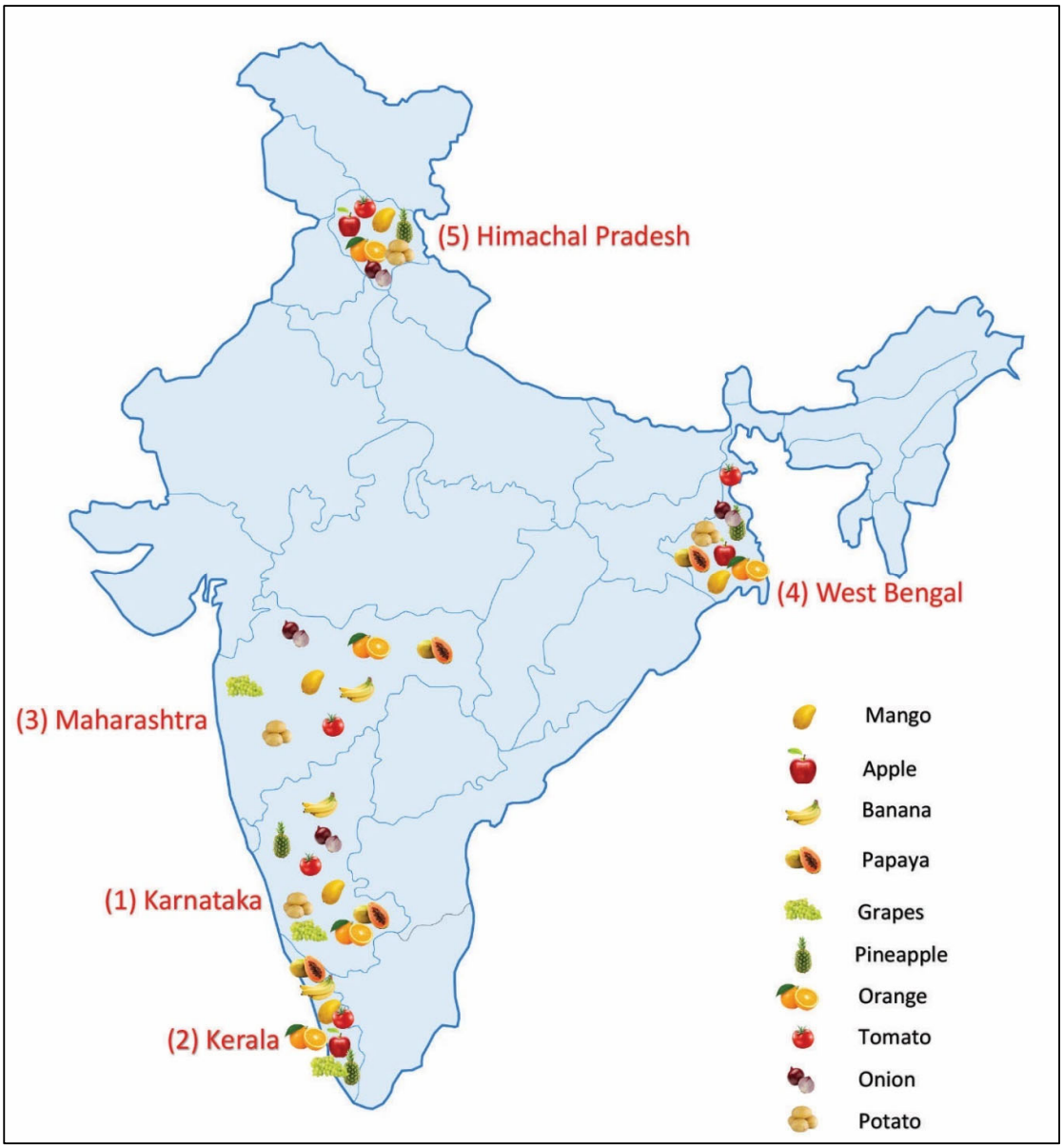


Figure 2- 9 : Major States with Energy Potential from Fruits and Vegetable Processing Waste



Apple

Apples are mostly consumed fresh, but a small part of the production is processed into juices, jellies, canned slices and other items. The major 3 states accounting for 99% of production and processing of apple in India is Jammu & Kashmir, Himachal Pradesh and Uttarakhand. The major processing industries are located in Kangra, Baddi & Nalagarh, Kullu, Hamirpur, and Mandi districts of Himachal Pradesh[7].

The average waste production from apple processing industry is 30%. The details of apple processing and energy potential from wastage from processing industry have been estimated in **Table 2-10.** Biogas yield from apple processing waste is 148 m^3/ton[8]. The estimated energy potential from processing of apple waste is 0.07 MW and Bio CNG potential is 0.34 T.

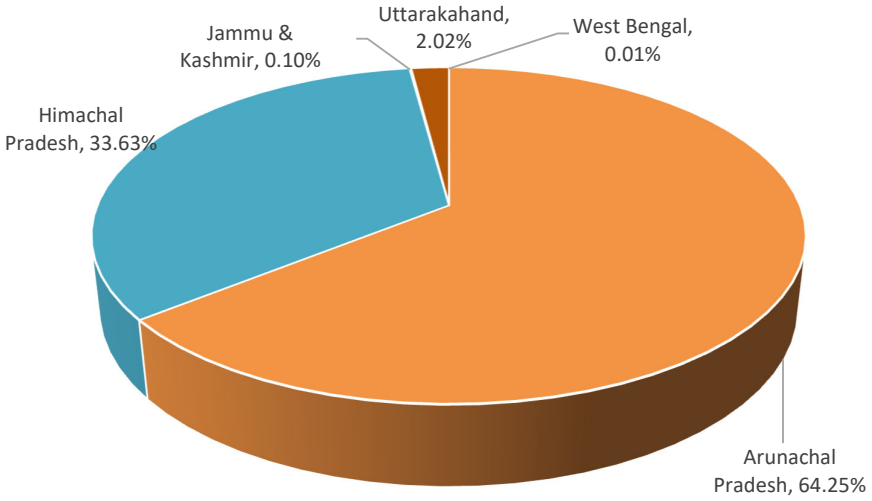
[7] https://himachal.nic.in/WriteReadData/l892s/11_l892s/1469704275.pdf
[8] Biogas potential from apple processing waste has been considered as 148m^3/ton *(http://www.balticbiogasbus.eu/web/Upload/Supply_of_biogas/Act_4_8/4_8_1_Biogas_potential_ENG_Endfassung_webb.pdf)*

Table 2- 10 : Apple processing share, waste generation and Energy potential

SN	State/UT	Processing Quantity Annual - ('000 Tons)	Wastage in Processing Annual - ('000Tons)	Biogas (m^3)	Power Potential (MW)	Bio CNG (TPD)
1	Himachal Pradesh	4.20	1.261	1,86,573	0.05	0.22
2	Jammu & Kashmir	2.20	0.660	97,658	0.02	0.11
3	Kerala	0.01	0.002	282	0.00	0.00
4	Uttarakhand	0.13	0.040	5,860	0.00	0.01
5	West Bengal	0.00	0.0	24	0.00	0.00
Total		**6.54**	**1.962**	**290373**	**0.07**	**0.34**

Source: Annual Survey of Industries (2016-17)

Figure 2- 10 : Major States Energy Potential from Apple Processing Waste



Mango

Mango pulp is the main processed product extracted from the fresh mangoes. India is one of the major exporters of mango pulp. The majority of the mango pulp processing industries are located in the states of Andhra Pradesh, Tamil Nadu, Maharashtra and Gujarat. The major districts for mango processing industries are located in Chittoor in Andhra Pradesh, Ratnagiri in Maharashtra, Navsari, Valsad & Surat in Gujarat[9] and Krishnagiri, Vellore & Dharmapuri in Tamil Nadu[10]. The average waste production from mango processing industry varies from 30% to 50%. The details of mango processing and energy potential from wastage from processing industry have been estimated in **Table 2-11.** The biogas yield from mango processing waste is 96.61 m^3/ton[11]. The estimated energy potential from mango waste is 8.50 MW and BioCNG potential is 40.80 T.

Table 2- 11 : Mango processing share, waste generation and Energy potential

SN	State	Processing Quantity Annual - - ('000 TPA)	Wastage in Processing ('000 TPA)	Annual Biogas yield (m^3)	Energy Potential (MW)	BioCNG(T)
1	Andhra Pradesh	197.77	79.108	76,42,624	1.87	8.96
2	Bihar	0.28	0.111	10,704	0.00	0.01

[9] Analysis of marketing mix of various mango pulp brands in south Gujarat. Asian journal of dairy and food research.2014.(33):209-214

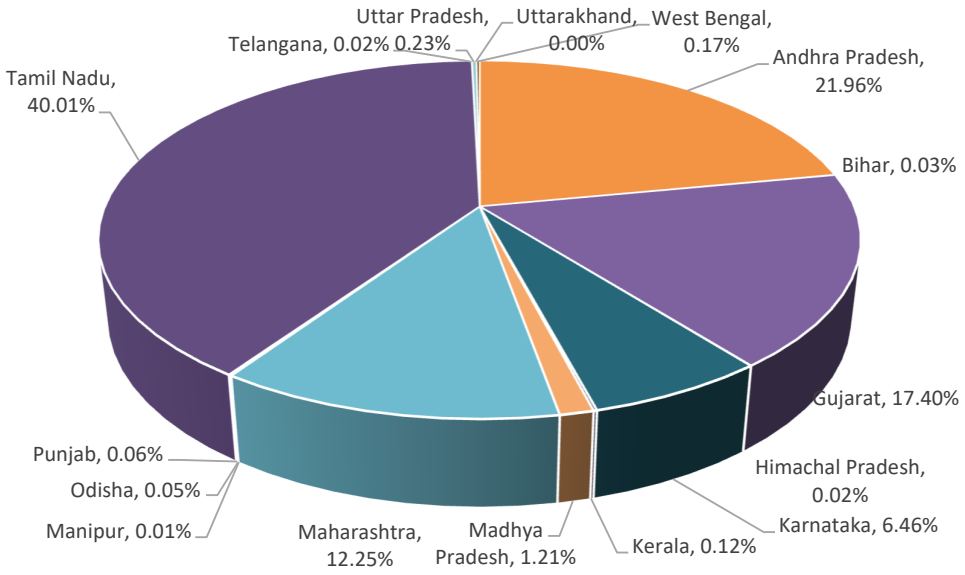
[10] L.JAGADEESAN & H.SHANKAR, Dr. (2011). Operational Performance of Mango Pulp Industry in Tamilnadu – An Analysis. Indian Journal of Applied Research. 4. 90-94. 10.15373/2249555X/August2014/24.

[11] *Biogas potential from mango raw and processing waste has been considered as 96.61m3/ ton considering biogas yield of 0.43m3 /kg VS (Ranges from 0.22 to 0.63, average value taken 0.43), TS -26.3% and VS- 95.2% (http://journal.gnest.org/sites/default/files/Submissions/639/639_published.pdf);*

SN	State	Processing Quantity Annual - - ('000 TPA)	Wastage in Processing ('000 TPA)	Annual Biogas yield (m^3)	Energy Potential (MW)	BioCNG(T)
3	Gujarat	156.66	62.665	60,54,046	1.48	7.10
4	Himachal Pradesh	0.20	0.080	7729	0.00	0.01
5	Karnataka	58.16	23.264	22,47,496	0.55	2.64
6	Kerala	1.10	0.442	42,663	0.01	0.05
7	Madhya Pradesh	10.94	4.374	4,22,611	0.10	0.50
8	Maharashtra	110.34	44.134	42,63,824	1.04	5.00
9	Manipur	0.07	0.028	2,705	0.00	0.00
10	Odisha	0.48	0.190	18,356	0.00	0.02
11	Punjab	0.50	0.201	19,399	0.00	0.02
12	Tamil Nadu	360.25	144.099	1,39,21,385	3.40	16.32
13	Telangana	0.15	0.059	5,681	0.00	0.01
14	Uttar Pradesh	2.03	0.813	78,563	0.02	0.09
15	Uttarakhand	0.01	0.003	309	0.00	0.00
16	West Bengal	1.50	0.600	57,927	0.01	0.07
	Total	**900.425**	**360.170**	**3,47,96,024**	**8.50**	**40.80**

Source: Annual Survey of Industries (2016-17)

Figure 2- 11 : Major States Energy Potential from Mango Processing Waste



Banana

Bananas are consumed fresh and about 2% is processed for banana chips & other products. The processing of banana for value addition was found to be limited to banana figs (dried banana) and banana chips. Maharashtra, Gujarat and Haryana lead the processing production in India. The average waste production is 20%. The details of banana processing and energy potential from wastage from processing industry have been estimated in **Table 2-12.** The biogas yield from banana waste is 49.26 m^3/ton[12]. The estimated energy potential from processing of banana waste is 0.06 MW and BioCNG potential is 0.28 T.

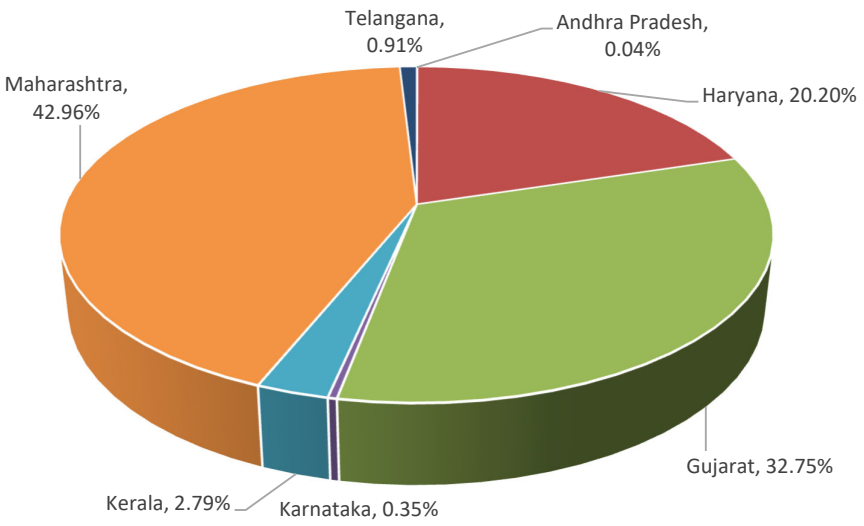
[12] *Biogas potential from banana raw and processing waste has been considered as 49.26m3/ ton considering biogas yield of 0.28m3 /kg VS (http://journal.library.iisc.ernet.in/index.php/iisc/article/view/25/25)*

Table 2- 12 : Banana processing share, waste generation and Energy potential

SN	State	Processing Quantity Annual - ('000 TPA)	Wastage in processing ('000TPA)	Annual Biogas yield (m^3)	Energy Potential (MW)	BioCNG (T)
1	Andhra Pradesh	0.009	0.002	89	0.00	0.00
2	Haryana	4.898	0.980	48,255	0.01	0.06
3	Gujarat	7.939	1.588	78,215	0.03	0.09
4	Karnataka	0.085	0.017	837	0.00	0.00
5	Kerala	0.676	0.135	6,660	0.00	0.01
6	Maharashtra	10.414	2.083	1,02,599	0.03	0.12
7	Telangana	0.221	0.044	2177	0.00	0.00
Total		**24.242**	**4.848**	**238832**	**0.06**	**0.28**

Source: Annual Survey of Industries (2016-17)

Figure 2- 12 : Major States Energy Potential from Banana Processing Waste



Pineapple

West Bengal, Assam, Kerala and Karnataka are the leading states in production of Pineapple. Additionally, pineapple production is there in North eastern states of Manipur, Tripura, Mizoram, Meghalaya and Nagaland.

In West Bengal, the processing industries are in the districts of Jalpaiguri and North 24 parganas; and in Kerala Ernakulam district has pineapple processing units. In the north eastern states of India, Imphal East, Cachar, North Tripura, East Khasi Hills, East Garo Hills are few of the districts in which processing plants are operating or are defunct. NorthEastern Regional Agricultural Marketing Corporation Limited (NERAMAC) is a fruit processing company which is in the business of fruit processing in the north eastern states of India.

During processing, 45-50% of the fruit compromising of non-edible parts (peels, crown, core), are lost. The details of pineapple processing and energy potential from wastage from processing industry have been estimated in **Table 2-13**. Biogas yield from pineapple waste is 61 m^3/ton[13]. The estimated energy potential from processing of pineapple waste is 0.11 MW and Bio CNG potential is 0.54 T.

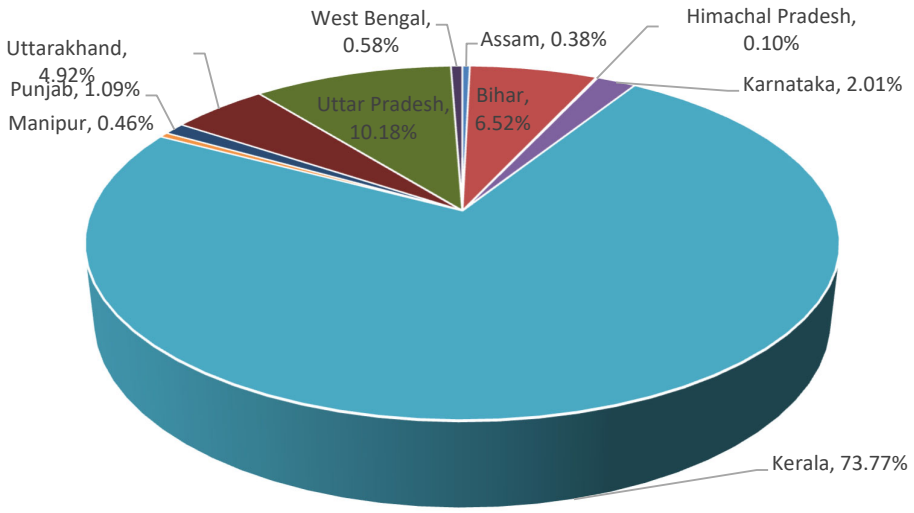
[13] *Biogas potential from pineapple raw and processing waste has been considered as 61m^3/ ton considering biogas yield of 0.55m_3 /kg VS (http://www.resjournal.kku.ac.th/abstract/17_5_734.pdf),*

Table 2- 13 : Pineapple processing share, waste generation and Energy potential

SN	State	Processing Quantity Annual - ('000 TPA)	Wastage in processing ('000TPA)	Annual Biogas yield (m^3)	Energy Potential (MW)	Bio CNG(T)
1	Assam	0.06	0.029	1757	0.00	0.00
2	Bihar	1.09	0.492	30,030	0.01	0.04
3	Himachal Pradesh	0.02	0.007	439	0.00	0.00
4	Karnataka	0.34	0.152	9251	0.00	0.01
5	Kerala	12.39	5.574	3,40,023	0.08	0.40
6	Manipur	0.08	0.035	2114	0.00	0.00
7	Punjab	0.18	0.082	5023	0.00	0.01
8	Uttarakhand	0.83	0.372	22674	0.01	0.03
9	Uttar Pradesh	1.71	0.769	46912	0.01	0.06
10	West Bengal	0.10	0.044	2690	0.00	0.00
Total		**16.79**	**7.556**	**4,60,913**	**0.11**	**0.54**

Source: Annual Survey of Industries (2016-17)

Figure 2- 13 : Major States Energy Potential from Pinapple Processing Waste



Papaya

Papayas are predominantly grown in Andhra Pradesh, Gujarat, Tamil Nadu, Maharashtra, Madhya Pradesh, Chhattisgarh and Karnataka. The papaya processing industry generates 30-35% waste[14] post processing. Papaya processing is limited to Andhra Pradesh, Tamil Nadu, Karnataka and Maharashtra.

Key papaya processing districts include Krishnagiri and Vellore districts in Tamil Nadu, Satara in Maharashtra. The details of papaya processing and energy potential from wastage from processing industry have been estimated in **Table 2-14**. Biogas yield from papaya waste is 82.69 m^3/ton[15]. The estimated energy potential from processing of papaya waste is 0.09 MW and BioCNG Potential is 0.47T.

[14] M M C, Rajivgandhi & Singaravelu, Mariappan & Kamaraj, Soundarapandiyan. (2013). Biomethanation of Papaya Fruit Processing Industrial Wastes.. Madras Agric. J.,. 100. 212-215.

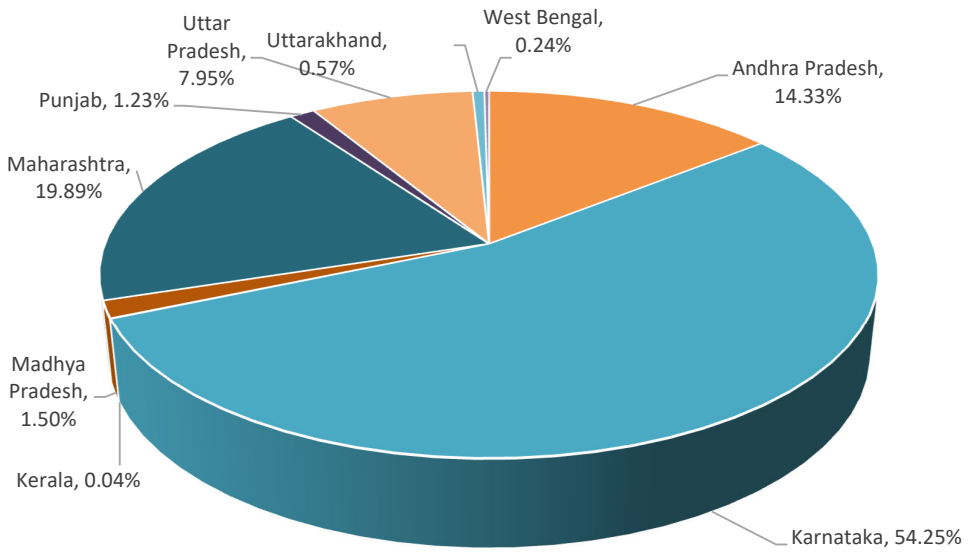
[15] *Biogas potential from papaya raw and processing waste has been considered as 82.69m^3/ ton considering methane yield of 0.42m^3 CH4 /kg VS (https://repository.ugm.ac.id/125397/) with methane percentage of 99.13%; TS -31.35% and VS- 92.12% (Production of Biogas from Fruit and Vegetable Wastes Mixed with Different Wastes, Environment and Ecology Research 3(3): 65-71, 2015).*

Table 2- 14 : Papaya processing share, waste generation and Energy potential

SN	State	Processing Quantity Annual - ('000 TPA)	Wastage in processing ('000TPA)	Annual Biogas yield (m^3)	Power Potential (MW)	BioCNG (T)
1	Andhra Pradesh	1.40	0.701	57,924	0.01	0.07
2	Karnataka	5.30	2.651	2,19,211	0.05	0.26
3	Kerala	0.00	0.002	165	0.00	0.00
4	Madhya Pradesh	0.15	0.074	6,078	0.00	0.01
5	Maharashtra	1.94	0.972	80,375	0.02	0.09
6	Punjab	0.12	0.060	4,961	0.00	0.01
7	Uttar Pradesh	0.78	0.389	32,125	0.01	0.04
8	Uttarakhand	0.06	0.028	2,315	0.00	0.00
9	West Bengal	0.02	0.012	951	0.00	0.00
	Total	**9.77**	**4.887**	**4,04,106**	**0.09**	**0.47**

Source: Annual Survey of Industries (2016-17)

Figure 2- 14 : Major States Energy Potential from Papaya Processing Waste



Grapes

Maharashtra ranks first in terms of production, followed by Karnataka & Tamil Nadu. Presently in India about 78% of grape is used for table purpose, nearly 20% is dried for raisin production, while 1.5% is used for juice and only 0.5% is used in manufacturing wine.[16] Grape processing yield grape pomace which consists of stems, skin and seeds of the grape. The grape processing industry generates on an average 20% waste post processing.

Nashik district in Maharashtra is known for wine processing and Vijayapura, Bagalkot,and Belagavi district are known for raisin production in Karnataka. The details of grapes processing and energy potential from wastage from processing industry have been estimated in **Table 2-15**. Biogas yield from Grape waste is 230m^3/ton[17].The estimated energy potential from processing of grapes waste is 0.63 MW and BioCNG potential is 3.01 T.

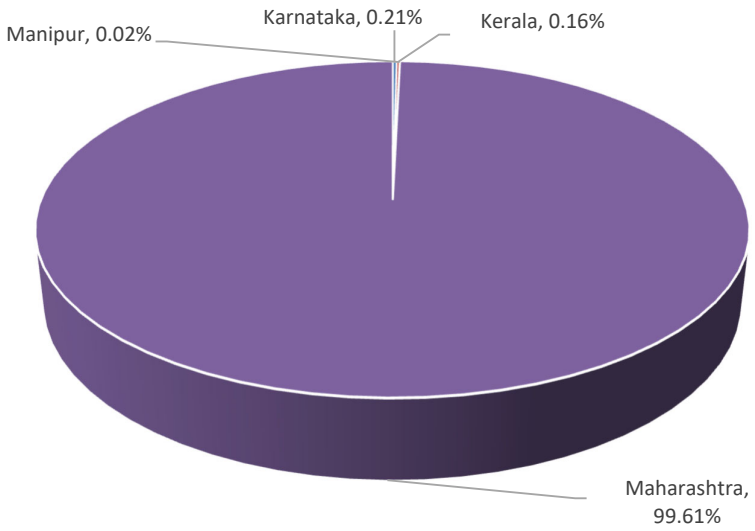
[16] https://dst.gov.in/pressrelease/grape-variety-ari-pune-gives-excellent-juice
[17] https://core.ac.uk/download/pdf/188223411.pdf

Table 2- 15 : Grapes processing share, waste generation and Energy potential

SN	State	Processing Quantity Annual - ('000 TPA)	Wastage in processing ('000TPA)	Annual Biogas yield (m3)	Power Potential (MW)	BioCNG(T)
1	Karnataka	0.116	0.023	5336	0.00	0.00
2	Kerala	0.090	0.018	4140	0.00	0.00
3	Maharashtra	55.712	11.142	25,62,752	0.63	3.01
4	Manipur	0.013	0.003	598	0.00	0.00
	Total	**56.000**	**11.186**	**5,51,032**	**0.63**	**3.01**

Source: Annual Survey of Industries (2016-17)

Figure 2- 15 : Major States Energy Potential from Grapes Processing Waste



Oranges

Punjab ranks first in terms of production, followed by Madhya Pradesh & Maharashtra Orange processing yield orange pomace which consists of peel, orange segment membrane and seeds. The orange processing industry generates on an average 30% waste post processing.

Nanded district in Maharashtra is known for orange processing. The details of orange processing and energy potential from wastage from processing industry have been estimated in **Table 2-16**. Biogas yield from orange processing waste is 23.44 m^3/ton[18]. The estimated energy potential from processing of oranges waste is 0.002 MW and BioCNG Potential is 0.01 T.

Table 2- 16 : Orange processing share, waste generation and Energy potential

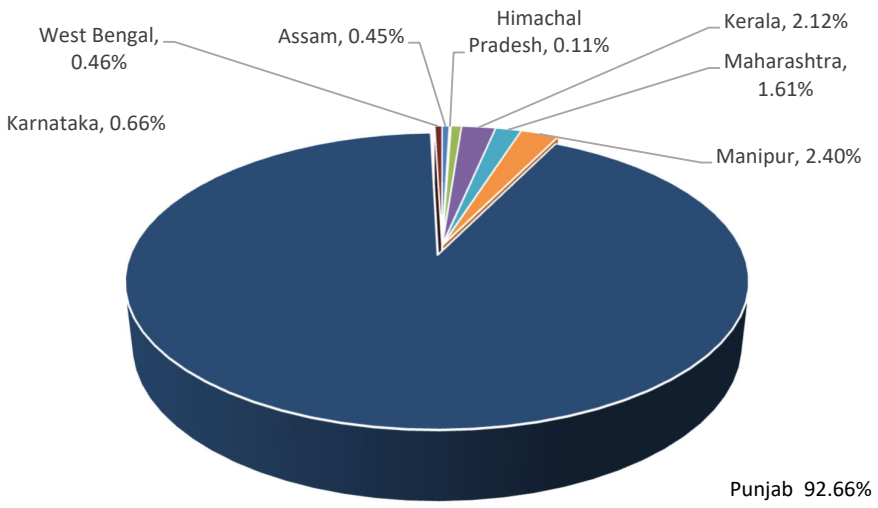
SN	State	Processing Quantity Annual - ('000 TPA)	Wastage in processing ('000TPA)	Annual Biogas yield (m^3)	Energy Potential (MW)	Bio CNG(T)
1	Assam	0.004	0.001	30	0.00	0.00
2	Himachal Pradesh	0.001	0.000	7	0.00	0.00
3	Karnataka	0.006	0.002	44	0.00	0.00
4	Kerala	0.020	0.006	142	0.00	0.00
5	Maharashtra	0.015	0.005	107	0.00	0.00
6	Manipur	0.023	0.007	160	0.00	0.00

[18] *Biogas potential from orange raw and processing waste has been considered as 23.44m^3/ ton considering methane yield of 0.33m3 CH4 /kg VS (http://www.mdpi.com/2077-0375/4/3/596) with assumed methane percentage of 60%; TS -7.5% and VS- 94.7% (http://www.ijaser.com/articles/vol4issue52015/vol4issue4/JASER4077.pdf).*

SN	State	Processing Quantity Annual - ('000 TPA)	Wastage in processing ('000TPA)	Annual Biogas yield (m^3)	Energy Potential (MW)	Bio CNG(T)
7	Punjab	0.88	0.264	6,185	0.00	0.00
8	West Bengal	0.00	0.001	31	0.00	0.00
	Total	**0.949**	**0.285**	**6,674**	**0.002**	**0.01**

Source: Annual Survey of Industries (2016-17)

Figure 2- 16 : Major States Energy Potential from Orange Processing Waste



Vegetable production in India

Table 2-17 present the state wise total production of various vegetable including Onion, Tomato and Potato.

Table 2- 17 : Statewise production of various vegetable

SN	State	Onion (in '000 MT)	Tomato (in '000 MT)	Potato (in '000 MT)
1	Andhra Pradesh	916	4,481	49
2	Arunachal Pradesh		2	
3	Assam	81	394	778
4	Bihar	1,249	1,010	6,378
5	Chhattisgarh	422	1,082	679
6	Gujarat	1,290	1,412	3,798
7	Haryana	683	644	897
8	Himachal Pradesh	50	473	202
9	Jammu & Kashmir	69	93	131
10	Jharkhand	293	231	669
11	Karnataka	3,039	1,917	508
12	Kerala		3	5
13	Madhya Pradesh	3,722	2,720	3,461
14	Maharashtra	6,735	1,125	537
15	Manipur	6	66	

SN	State	Onion (in '000 MT)	Tomato (in '000 MT)	Potato (in '000 MT)
16	Meghalaya	5	35	194
17	Mizoram	8	13	1
18	Nagaland	7	22	66
19	Odisha	379	1,311	302
20	Punjab	203	200	2,423
21	Rajasthan	1,149	91	235
22	Sikkim	2	4	54
23	Tamil Nadu	751	629	93
24	Telangana	402	520	33
25	Tripura	3	57	144
26	Uttar Pradesh	427	832	15,543
27	Uttarakhand	42	94	360
28	West Bengal	465	1,233	11,053
29	others	18	15	15
	Total	**22,417**	**20,708**	**48,605**

Source: Indian Horticulture Database, National Horticulture Board, 2018

Vegetable Processing sector

Vegetable processing in India is being done majorly for tomato, potato and onion only and the waste generated from processing have biogas potential. Production quantity, processing quantity, processing regions and wastage details for key vegetables in India is presented in **Table 2-18**.

Table 2- 18 : Vegetable production, processing and wastage generation

Vegetables	Total production ('000 TPA)	Wastage after production – 20% ('000 TPA)	Total processing quantity in ('000 TPA)	Processing wastage in ('000 TPA)	Type of processing waste	% of processing waste	Region
Onion	22,417	4,483	382.00	134.00	Peel, stalks, roots	35%-40%	Gujarat and Maharashtra
Tomato	20,708	4,142	102.00	20.00	Pulp and juice	20%	Karnataka and Andhra Pradesh
Potato	48,605	9,721	29.83	4.47	Potato pulp and Juice	15%	Assam and Punjab

Source: Indian Horticulture Database, National Horticulture Board, 2018

Potato

Assam, Punjab, Madhya Pradesh, Karnataka and Maharashtra are major potato processing states in the country accounting for more than 98% of the total processing in the year 2016-2017. Potato is processed for preservation and value addition in the form of wafers/ chips, powder, flakes, granules, canned slices etc. Chips making alone consumes 60% of the total raw potatoes in processing industry. 15% of the potato is wasted during potato processing which include raw pieces, pulp, cooked pulp and juice. Since these materials have a high moisture content, they are an eligible feedstock for anaerobic digestion. The biogas

yield from potato is 156.40 m^3/ton[19].The total annual energy potential and Bio-CNG estimated from potato processing waste is 0.17 MW and 0.82 Tons respectively. Assam alone contribute 38% of the total potato processing waste in India. The processing, waste generation and energy potential is presented in **Table 2-19.** The top 5 states are shown in **Figure 2-17**

Figure 2- 17 : Major States Energy Potential from Potato Processing Waste

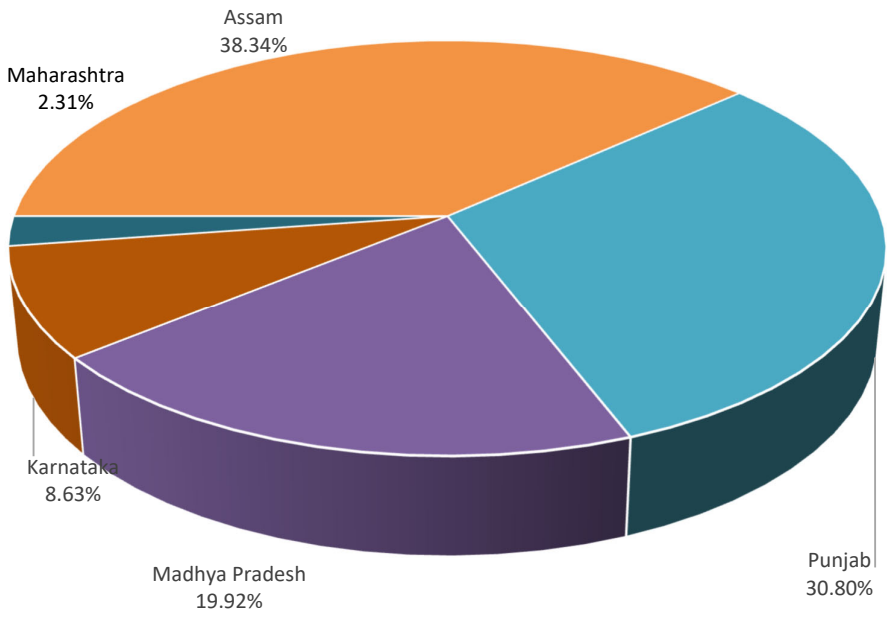


Table 2- 19 : Potato processing, waste generation and energy potential

SN	State	Processing quantity* ('000 TPA)	Wastage in processing ('000 TPA)	Annual Biogas yield (m^3)	Energy Potential (MW)	Bio-CNG (T)
1	Andhra Pradesh	0.001	0.000	23	0.00	0.00
2	Assam	11.20	1.680	2,62,799	0.06	0.31
3	Bihar	0.08	0.012	1,947	0.00	0.00
4	Gujarat	0.05	0.008	1,267	0.00	0.00
5	Haryana	0.17	0.025	3,894	0.00	0.00
6	Himachal Pradesh	0.15	0.022	3,402	0.00	0.00
7	Karnataka	2.52	0.378	59,166	0.01	0.07
8	Madhya Pradesh	5.82	0.873	1,36,537	0.03	0.16
9	Maharashtra	0.67	0.101	15,812	0.00	0.02
10	Punjab	9.00	1.350	2,11,140	0.05	0.25
11	West Bengal	0.17	0.025	3,894	0.00	0.00
	Total	**29.83**	**4.47**	**6,99,882**	**0.17**	**0.82**

*Source: *Annual Survey of Industry, 2016-17*

Tomato

More than 50% of the total tomato production is contributed by four states i.e. Andhra Pradesh (22%), Madhya Pradesh (13%), Karnataka (9%) and Gujarat (7%). Processed tomato products have wide applications in household consumption, food processing industry, snacks foods, hotels, restaurants and

[19] *Biogas potential from potato processing waste has been considered as 156.4m^3/ton of solid waste (http://www.seai.ie/Renewables/Bioenergy/Bioenergy_Technologies/Anaerobic_Digestion/The_Process_and_Techniques_of_Anaerobic_Digestion/Gas_Yields_Table.pdf)*

fast-food joints. Tomato products can be grouped into many end-use categories like peeled, concentrated, partially dehydrated, strained and diced tomatoes, tomato juice, pulp, paste, powder and ketchup. Tomato pulp and peel constitute 20% of the wastage in tomato processing industry. Tomato waste has high potential to generate bioenergy through anaerobic digestion. The biogas yield from Tomato is 125.24 m^3/ton[20] of waste.

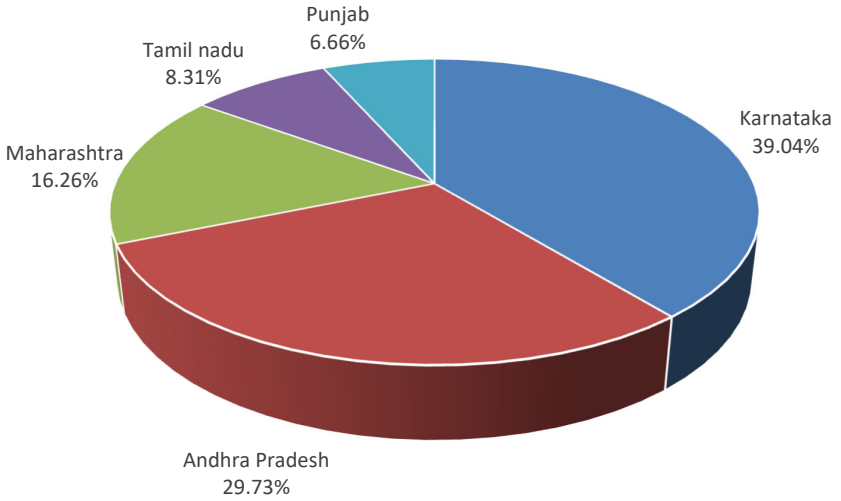
The total annual energy potential and Bio-CNG estimated from tomato processing waste is 0.62 MW and 2.99 Tons respectively. Karnataka, Andhra Pradesh, Maharashtra, Tamil Nadu and Punjab are major states engaged in tomato processing. These states are processing more than 93% of the total tomato processed in country and are major generator of waste from tomato processing. The details of tomato processing and energy potential from wastage from processing industry have been estimated in **Table 2-20**.

Table 2- 20 : Tomato processing share and waste generation and energy potential

SN	State	Processing quantity* ('000 TPA)	Wastage in processing ('000 TPA)	Annual Biogas yield(m^3)	Energy Potential (MW)-	Bio-CNG (T)
1	Andhra Pradesh	28.00	5.608	7,02,396	0.1700	0.8200
2	Bihar	1.09	0.218	27,302	0.0100	0.0300
3	Himachal Pradesh	0.03	0.006	802	0.0002	0.0009
4	Jammu and Kashmir	0.25	0.049	6,162	0.0015	0.0072
5	Karnataka	37.00	7.366	9,22,568	0.2300	1.0800
6	Kerala	0.22	0.043	5,385	0.0013	0.0100
7	Madhya Pradesh	0.80	0.161	20,114	0.0049	0.0200
8	Maharashtra	15.00	3.068	3,84,236	0.0900	0.4500
9	Odisha	0.98	0.197	24,647	0.0100	0.0300
10	Punjab	6.28	1.256	1,57,301	0.0400	0.1800
11	Tamil Nadu	7.84	1.569	1,96,451	0.0500	0.2300
12	Telangana	0.06	0.012	1,553	0.0004	0.0018
13	Uttar Pradesh	0.28	0.056	6,963	0.0017	0.0100
14	Uttarakhand	2.63	0.526	65,926	0.0200	0.0800
15	West Bengal	1.34	0.268	33,589	0.0100	0.0400
	Total	**101.80**	**20.403**	**25,55,397**	**0.64**	**2.99**

*Source: *Annual Survey of Industry, 2016-17*

Figure 2- 18 : Major States Energy Potential from Tomato Processing Waste



[20] *Biogas potential from tomato processing waste has been considered as 125.24m^3/ ton considering biogas yield of 0.8m^3/kg VS* (http://dl.uctm.edu/journal/node/j2009-1/8_B_Kumanova_Martin_55-60.pdf),

Onion

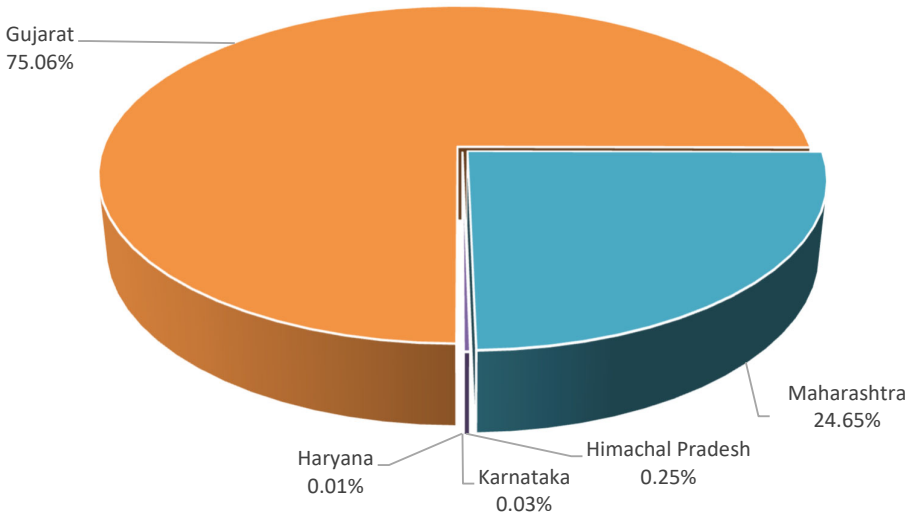
Almost 60% of the total onion production is contributed by three states i.e. Maharashtra (30%), Madhya Pradesh (17%) and Karnataka (14%). Onion can be processed into a wide variety of products. Minimally processed, ready to use or ready to cook fresh onions, onion paste, dehydrated onion flakes, onion powder, onion oil, onion vinegar, onion sauce, pickled onion, onion wine and beverage. Large amount of onion waste is produced while processing which is almost 35% to 40% of total raw material. The main onion waste include onion skins, two outer fleshy scales, roots generated during industrial peeling and undersized malformed or damaged bulbs, all of which can be anaerobically digested in a bio-digester to produce bio-gas[21]. Biogas yield from Onion waste is 154.77 m^3/ton[22]. The total energy potential estimated from onion processing waste is 5.06 MW. Maharashtra and Gujarat together contribute almost 100% of the total onion processed in India. The details of onion processing and energy potential from wastage from processing industry have been estimated in **Table 2-21**.

Table 2- 21 : Onion processing share and waste generation and energy potential

SN	State	Processing quantity* ('000 TPA)	Wastage in processing- ('000 TPA)	Annual Biogas yield (m3)	Energy Potential (MW)	Bio-CNG (T)
1	Assam	0.002	0.0010	117	0.00003	0.0001
2	Gujarat	287.020	100.0000	1,55,47,806	3.79820	18.2300
3	Haryana	0.050	0.0200	2,680	0.00070	0.0031
4	Himachal Pradesh	0.950	0.3300	51,288	0.01250	0.0600
5	Karnataka	0.100	0.0400	5,618	0.00140	0.0100
6	Maharashtra	94.240	33.0000	51,05,146	1.24710	5.9900
7	West Bengal	0.001	0.0003	45	0.00001	0.0001
	Total	**382.363**	**134**	**2,07,12,700**	**5.06**	**24.28**

*Source: *Annual Survey of Industry, 2016-17*

Figure 2- 19 : Major States Energy Potential from Onion Processing Waste



[21] http://www.dogr.res.in/index.php?option=com_content&view=article&id=68&Itemid=108&lang=en

[22] *Biogas potential from onion processing waste has been considered as 154.77m3/ ton of solid waste (http://www.uiennieuws.nl/kennis/docs/Anaerobic%20Digestion%20of%20Onion%20Wastes%20Using%20a%20Continuous%20Two.pdf)*

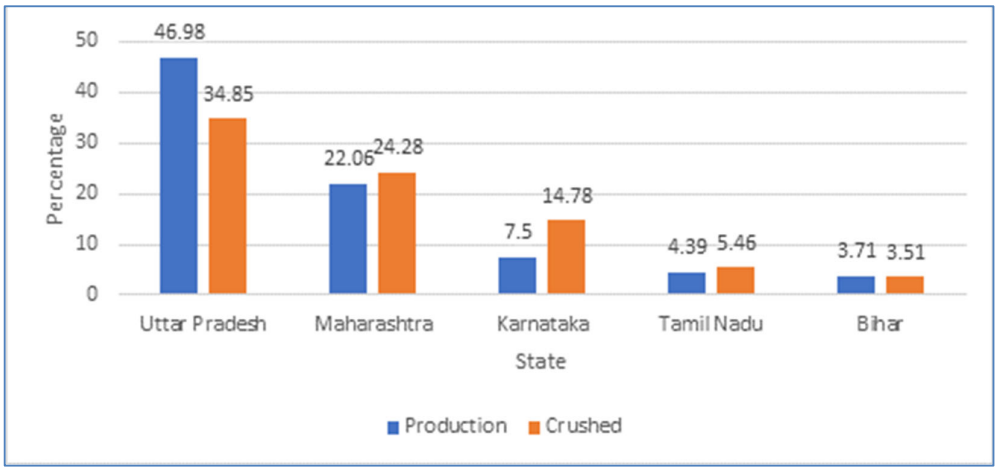
2.4 Press Mud

India is the second largest sugar producing country in the world after Brazil with 18.17% and 39.38% of the total world production[23]. In India, sugar industry is the second largest agro based industry after textile industry. Sugar industry are normally established near the sugarcane production areas, the reason being, the raw material (sugarcane) is heavy, low value, weight losing and perishable which cannot be transported to long distance due to high transportation cost.

As per the data available from APEDA Agri Exchange, it is evident that sugarcane production (2017-18) is concentrated in few states only. Approximate 84.64% of the country's production is in the states of Uttar Pradesh (46.98%), Maharashtra (22.06%), Karnataka (7.50%) Tamil Nadu (4.39%) and Bihar (3.71%).

Location of sugar industry is directly proportional to the availability of raw material. Regions having high sugarcane production also have the cluster of sugar industries. At present there are approximately 700 sugar industries in India, out of which 454 are in operation, based on data available from Indian Sugar Mill association. These industries are mix of public, private and cooperative units having total production capacity of 281 million tonnes per annum. As per the data available for the year 2019-2020, Uttar Pradesh contributes 34.85%, Maharashtra 24.29%, Karnataka 14.79%, Tamil Nadu 5.47% and Bihar 3.51% of the total sugarcane crushed quantities in India.

Figure 2- 20 : Top 5 States – Sugarcane Production & Crushed



As per the Handbook of sugar statistics 2014-15 published by the Indian Sugar Mills Association, the total no. of operational units of sugar industries in India in the year 2014-2015 were 630; whereas in the year 2019-20 the total no. of operational units of sugar industries were 454 as per the 2019-20 list of sugar mills from Indian Sugar Mills Association. The annual sugarcane crushed in the year 2014-15 and 2019-20 by the operational units was 273 million tons and 281 million tons respectively. The crushing capacity of the operational units increased by 3.09% despite the decrease in the number of operational units in India.

Table 2- 22 : Sugar Industries and Sugarcane Crushing in 2014-15 and 2019-20

Category	Year 2014-15	Year 2019-20	% Change
Sugar industries (nos.)	630	454	-27.93
Annual sugarcane crushing	273 MT	281 MT	3.09

Source: Handbook of Sugar Statistics, 2014-15, Indian Sugar Mills Association
List of Sugar Mills in India, 2019-20, Indian Sugar Mills Association

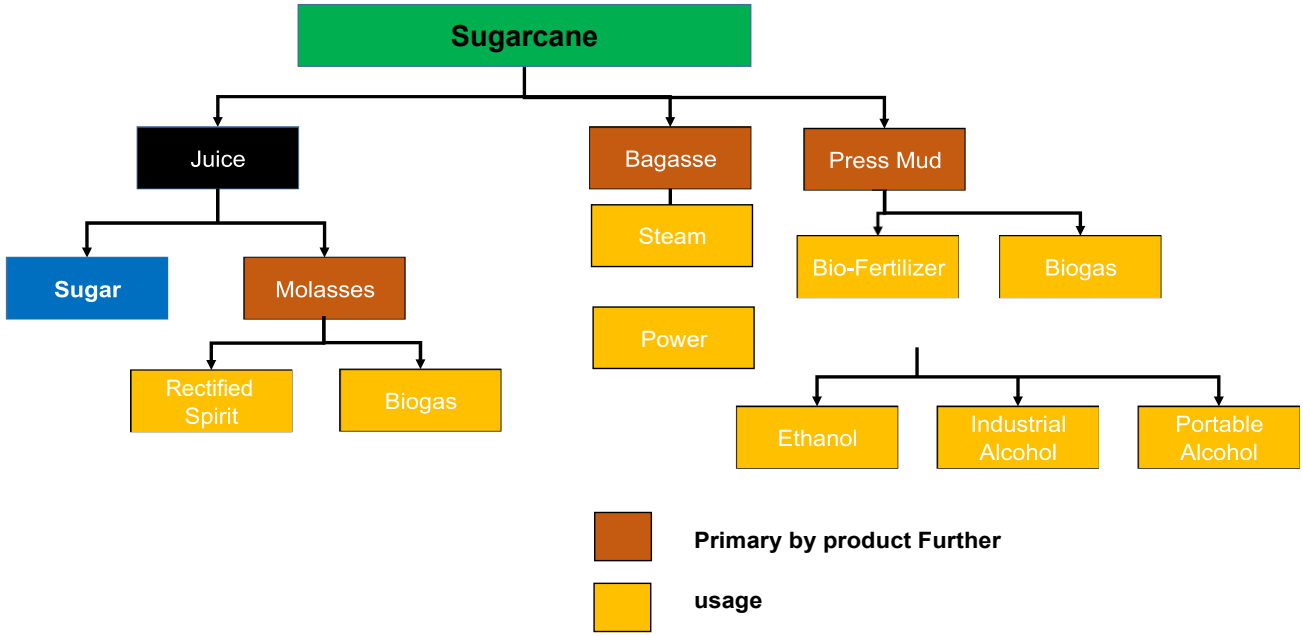
[23] Source: Sugarcane in World: Major Countries (https://sugarcane.dac.gov.in/pdf/StatisticsAPY.pdf)

Table 2- 23 : State wise Sugarcane Crushed, Waste Generation & Energy Potential.

SN	States/ UTs	No. of Units	Installed Capacity Sugarcane Crushing per day (in '000 tons)	Sugarcane Crushed Annually (in '000 tons)[24]	Annual Press Mud Production (in '000 tons)[25]	Energy potential in MW[26]	Bio-CNG(T)
1	Andhra Pradesh	13	50.95	8,152.00	285.32	6.97	33.46
2	Bihar	13	61.80	9,888.00	346.08	8.45	40.58
3	Chhattisgarh	3	6.25	1,000.00	35.00	0.86	4.10
4	Goa	1	1.25	200.00	7.00	0.17	0.82
5	Gujarat	15	56.65	9,064.00	317.24	7.75	37.20
6	Haryana	10	32.60	5,216.00	182.56	4.46	21.41
7	Karnataka	54	260.15	41,624.00	1,456.84	35.59	170.83
8	Madhya Pradesh	15	32.92	5,266.56	184.33	4.50	21.61
9	Maharashtra	141	427.20	68,352.00	2,392.32	58.44	280.52
10	Odisha	2	5.00	800.00	28.00	0.68	3.28
11	Punjab	18	56.10	8,976.00	314.16	7.67	36.84
12	Rajasthan	1	1.00	160.00	5.60	0.14	0.66
13	Tamil Nadu	29	96.20	15,392.00	538.72	13.16	63.17
14	Telangana	7	24.70	3,952.00	138.32	3.38	16.22
15	Uttar Pradesh	125	613.06	98,089.76	3,433.14	83.87	402.57
16	Uttarakhand	7	33.25	5,320.00	186.20	4.55	21.83
Total		**454**	**17,59,077**	**1,759.08**	**2,81,452.32**	**240.65**	**1,155.11**

Source: List of Sugar Mills in India, 2019-20, Indian Sugar Mills Association
Note: For waste calculation purpose 2019-20 data for cane crushing in the factories has been referred.

Figure 2- 21 : Value chain of sugar industry



Waste stream from sugar industry (press mud)

Manufacturing of sugar generates large quantity of by-products or biomass wastage such as bagasse and

[24] Total 160 days has been considered for annual operational days of sugar mills
[25] 3.5% of generation of press mud is considered from crushed cane
[26] Biogas generated from Press Mud - 1 MT can generate 80 to 140m^3/day - assumed for calculation - 100m^3/day (http://www.iitmandi.ac.in/ireps/images/Presentation%20%20Waste%20to%20energy%20for%20IIT%20Mandi%2016th%20Ma y.pdf)

press mud. As per the general standard, 1000 kg of sugarcane can produce 100 kg of sugar and rest of the raw materials are converted into various types of by-products which are utilized for power generation, alcohol production, fertilizer production, fuel and biogas generation. Key by-products of sugarcane processing are bagasse, molasses, press mud and liquid waste (stillage or vinasse or dunder).

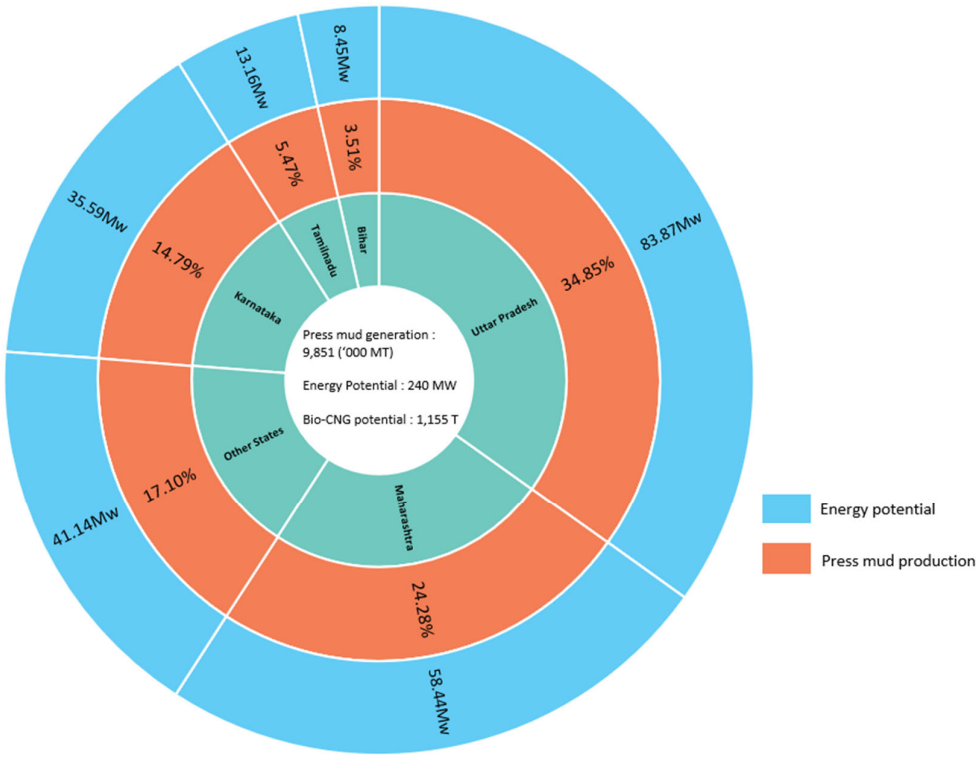
Press mud: Press mud or filter cake is produced in vacuum filters and press filters during sugar manufacture process. The approximate quantity of press mud ranges from 3-8 % of the crushed cane, depending on the nature of sugar manufacturing process. Press mud is a solid residue, obtained from sugarcane juice before crystallization of sugar.

Press mud usage – Press mud is a discarded solid waste from sugar industry and generally used as bio-fertilizer in agriculture fields. Press mud is bulky in nature and has wax content which is harmful for soil if applied directly. Press mud is also sold as fertilizer after adding minerals by fertilizer manufacturing companies. As of now, there is no proper mechanism to dispose press mud in India, various small scale sugar industries are dumping it as garbage also.

Press mud characteristics – It is a soft, spongy, lightweight, amorphous, dark brown to black colored stuff.

Press mud generation – As a general standard, 1000 kg of sugarcane crushed produces 30 kg of press mud i.e. 3% of the total sugarcane crushed. Currently India produces approximate 9.8 million ton of press mud annually. The detailed data is presented in Table 2-26 for the year 2019-20. Uttar Pradesh, Maharashtra, Karnataka and Bihar together produce 8.17 million ton of press mud (**Figure 2-22**).

Figure 2- 22 : Top 5 States Press Mud Production & Energy Potential



States and districts with maximum potential

Press mud, which is generally discarded as a solid waste from sugar mills and used as a manure or as a landfill, is a useful substrate for biogas production. Press mud is rich source of methane and can be used for generating biogas. The total energy potential and Bio-CNG generated from press mud is 240.65 MW and 1155.11 MT respectively; of which almost 199.52 MW (83%) can be generated from major five states namely Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu and Bihar. Details of major districts in the selected states contribution to high press mud availability and their share in total energy potential is shown in **Figure 2-23** and **Figure 2-24**

Districts having energy potential higher than the state's average energy potential are identified in all the five selected states. These identified key districts have 145.94 MW of energy potential contributing to 73.14% of the total potential for the selected 5 states.

The top 10 districts across India having the maximum potential for energy and Bio Compressed Natural Gas (Bio-CNG) from the press mud are shown in **Table 2-24**. These top 10 district contributes to 31.91% of total energy estimated to be generated from press mud.

Table 2- 24 : Top 10 district across India

S.No.	State	District	Energy potential (MW)	Bio-CNG (T)
1	Maharashtra	Kolhapur	11.40	54.70
2	Karnataka	Belagavi	9.10	43.67
3	Maharashtra	Solapur	8.82	42.35
4	Karnataka	Bagalkot	7.66	36.77
5	Uttar Pradesh	Bijnor	7.39	35.46
6	Maharashtra	Pune	6.91	33.16
7	Karnataka	Belgaum	6.84	32.83
8	Uttar Pradesh	Muzaffarnagar	6.66	31.98
9	Uttar Pradesh	Lakhimpur Kheri	6.09	29.22
10	Uttar Pradesh	Kushinagar	5.94	28.50
Total			**76.80**	**368.65**

Source: List of Sugar Mills in India, 2019-20, Indian Sugar Mills Association
Note: For waste calculation purpose 2019-20 data for cane crushing in the factories has been referred.

Figure 2- 23 : Location of top states generating press mud and energy potential

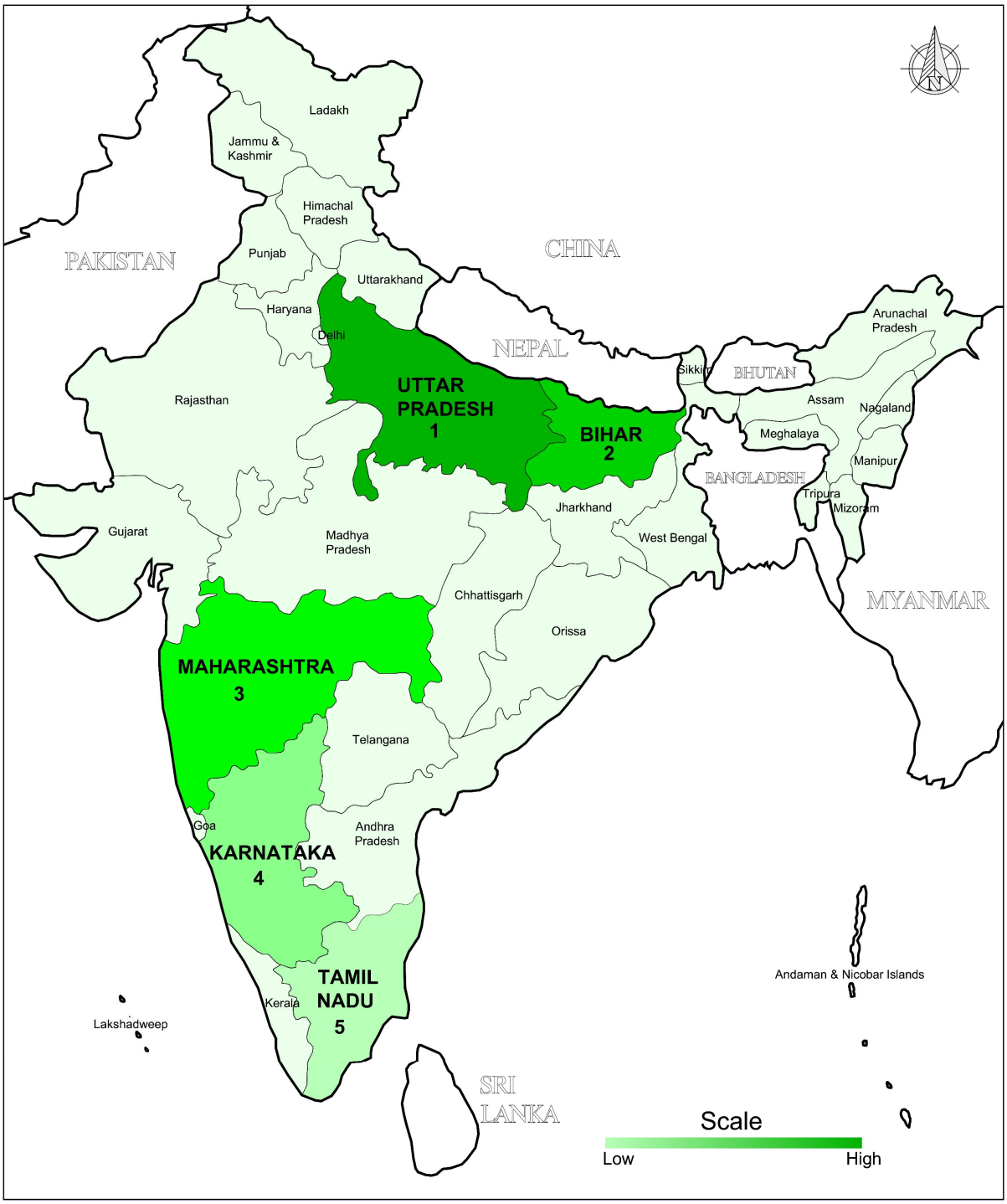
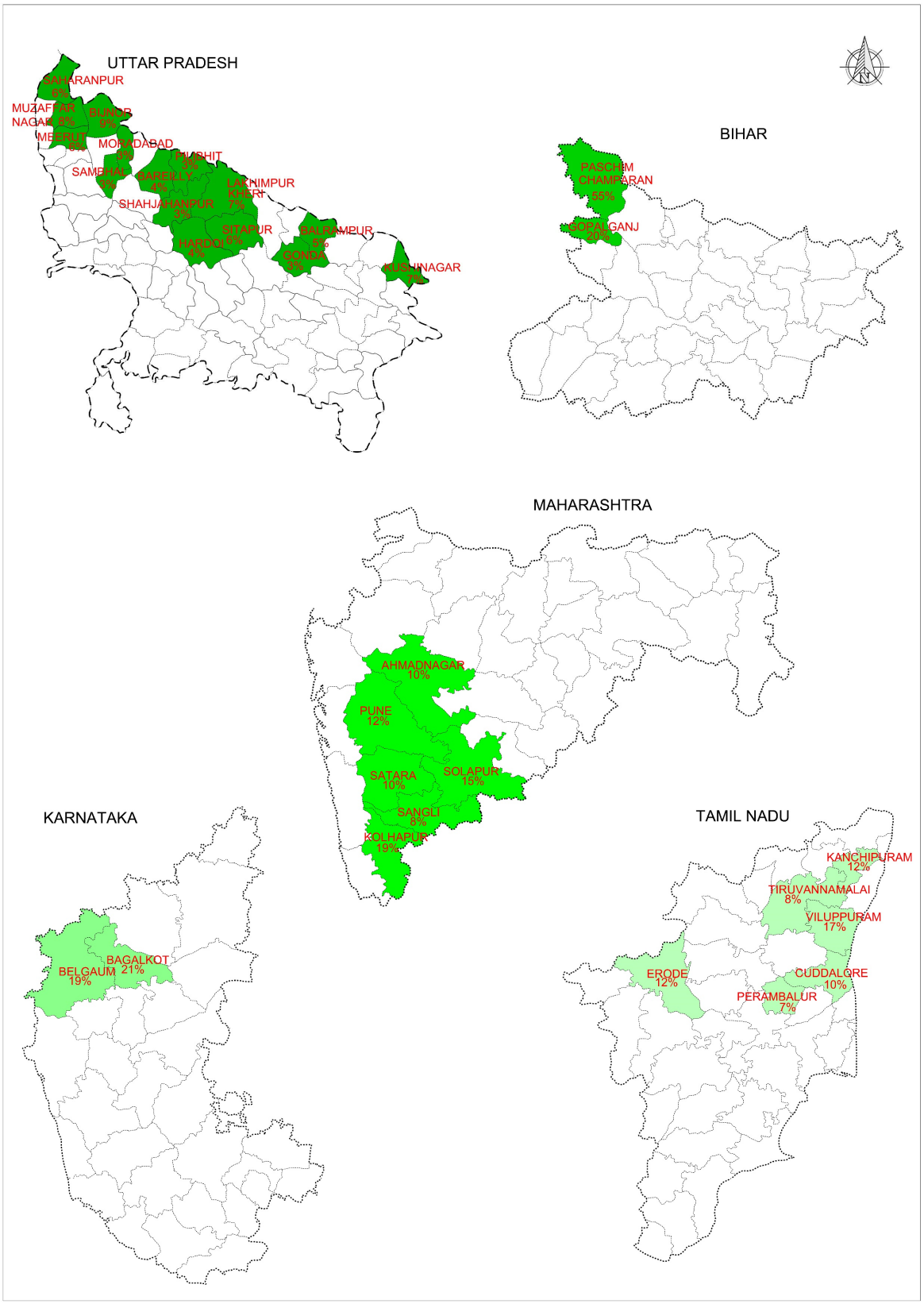


Figure 2- 24 : Identification of districts in the top 5 states for energy potential – Press Mud



2.5 Matrix on Energy Potential of Industrial Organic Waste

Energy potential matrix for cattle, sugar industry, poultry farm and F&V processing for different states is compiled based on data from earlier sections and presented in **Table 2-25**. Total energy potential in the selected sectors is 4281.06 MW in India. Eight states (Andhra Pradesh, Bihar, Gujarat, Karnataka, Maharashtra, Tamil Nadu, Telangana, Uttar Pradesh and Uttarakhand) have the potential across all the four sectors.

Table 2- 25 : Energy potential matrix for the four identified sectors (all in MW)

S. No	States/ UTs	Sugar - Press mud	Poultry	Cattle farm	F&V processing	Total
1	Andaman and Nicobar Islands		0.28	0.46		**0.74**
2	Andhra Pradesh	6.97	23.08	144.28	2.05	**177.33**
3	Arunachal Pradesh		0.34	3.15		**3.49**
4	Assam		10.00	124.10	0.06	**134.1**
5	Bihar	8.45	3.54	332.41	0.02	**344.5**
6	Chandigarh		0.01	0.35		**0.36**
7	Chhattisgarh	0.86	4.00	92.97		**97.83**
8	Dadra and Nagar Haveli		0.02	0.21		**0.23**
9	Daman and Diu		0.00	0.03		**0.03**
10	Delhi		0.01			**0.01**
11	Goa	0.17	0.07	1.08		**1.32**
12	Gujarat	7.75	4.66	275.52	5.31	**288.93**
13	Haryana	4.46	9.91	86.57	0.01	**100.94**
14	Himachal Pradesh		0.29	30.84	0.06	**31.43**
15	Jammu and Kashmir		1.58	42.10	0.02	**43.68**
16	Jharkhand		5.31	116.09		**121.4**
17	Karnataka	35.59	12.73	146.90	0.84	**195.42**
18	Kerala		6.37	19.29	0.09	**25.66**
19	Lakshadweep		0.05	0.03		**0.08**
20	Madhya Pradesh	4.50	3.57	342.63	0.13	**350.7**
21	Maharashtra	58.44	15.90	222.98	2.97	**299.32**
22	Manipur		1.26	2.78		**4.04**
23	Meghalaya		1.15	8.83		**9.98**
24	Mizoram		0.44	0.53		**0.97**
25	Nagaland		0.61	0.75		**1.36**
26	Odisha	0.68	5.87	95.12	0.01	**101.67**
27	Puducherry		0.05	1.09		**1.14**
28	Punjab	7.67	3.78	96.74	0.09	**108.19**
29	Rajasthan	0.14	3.13	384.25		**387.52**
30	Sikkim		0.12	1.80		**1.92**
31	Tamil Nadu	13.16	25.85	143.91	3.45	**185.92**
32	Telangana	3.38	17.12	102.20	0.00	**122.9**
33	Tripura		0.89	9.70		**10.59**
34	Uttar Pradesh	83.87	2.68	740.95	0.04	**827.6**
35	Uttarakhand	4.55	1.07	33.83	0.03	**40.15**
36	West Bengal		16.55	238.33	0.02	**254.88**
Total		**240.64**	**182.29**	**3842.80**	**15.33**	**4281.06**

Annexure

Annexure 1 : Poultry sector- State and district wise energy production

Assumptions

- Approximately 40 gm per bird of poultry litter is generated per day.
- Biogas potential has been assumed considering 0.058m^3 of biogas from 1 kg of waste. *(Source: http://urpjournals.com/tocjnls/38_13v3i1_3.pdf)*

Union Territory - Andaman and Nicobar Islands

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Nicobars	82,702	3,308	1,207	0.02	0.08
North and Middle Andaman	49,3,083	19,723	7,199	0.11	0.51
South Andamans	7,13,375	28,535	10,415	0.15	0.73
Total	**12,89,160**	**51,566**	**18,822**	**0.28**	**1.32**

State - Andhra Pradesh

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
East Godavari	2,81,17,464	11,24,699	4,10,515	6.02	28.88
West Godavari	1,82,74,444	7,30,978	2,66,807	3.91	18.77
Krishna	1,57,83,526	6,31,341	2,30,439	3.38	16.21
Chittoor	1,44,77,677	5,79,107	2,11,374	3.10	14.87
Guntur	85,38,782	3,41,551	1,24,666	1.83	8.77
Visakhapatanam	59,60,859	2,38,434	87,029	1.28	6.12
Vizianagaram	54,92,310	2,19,692	80,188	1.18	5.64
Anantapur	25,23,575	1,00,943	36,844	0.54	2.59
Spsr Nellore	21,49,482	85,979	31,382	0.46	2.21
Srikakulam	20,75,366	83,015	30,300	0.44	2.13
Y.S.R.	18,53,797	74,152	27,065	0.40	1.90
Prakasam	13,27,666	53,107	19,384	0.28	1.36
Kurnool	12,88,204	51,528	18,808	0.28	1.32
Total	**10,78,63,152**	**43,14,526**	**15,74,802**	**23.08**	**110.80**

State - Arunachal Pradesh

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Tawang	17,916	717	262	0.00	0.02
West Kameng	30,797	1,232	450	0.01	0.03
East Kameng	1,67,698	6,708	2,448	0.04	0.17
Papum Pare	1,71,771	6,871	2,508	0.04	0.18
Upper Subansiri	77,884	3,115	1,137	0.02	0.08
West Siang	57,314	2,293	837	0.01	0.06
East Siang	1,11,823	4,473	1,633	0.02	0.11
Upper Siang	1,01,358	4,054	1,480	0.02	0.10
Changlang	1,27,426	5,097	1,860	0.03	0.13
Tirap	33,373	1,335	487	0.01	0.03
Lower Subansiri	1,44,371	5,775	2,108	0.03	0.15
Kurung Kumey	89,550	3,582	1,307	0.02	0.09
Dibang Valley	23,073	923	337	0.00	0.02
Lower Dibang Valley	92,078	3,683	1,344	0.02	0.09

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Lohit	1,58,630	6,345	2,316	0.03	0.16
Anjaw	14,655	586	214	0.00	0.02
Longding	11,065	443	162	0.00	0.01
NAMSAI	33,097	1,324	483	0.01	0.03
Kra Daadi	83,276	3,331	1,216	0.02	0.09
SIANG	52,420	2,097	765	0.01	0.05
Total	**15,99,575**	**63,983**	**23,354**	**0.34**	**1.64**

State - Assam

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Barpeta	30,97,705	1,23,908	45,226	0.66	3.18
Bongaigaon	12,03,076	48,123	17,565	0.26	1.24
Cachar	12,57,160	50,286	18,355	0.27	1.29
Dhemaji	20,23,598	80,944	29,545	0.43	2.08
Dhubri	14,26,853	57,074	20,832	0.31	1.47
Dibrugarh	20,57,567	82,303	30,040	0.44	2.11
Goalpara	18,85,216	75,409	27,524	0.40	1.94
Golaghat	26,00,339	1,04,014	37,965	0.56	2.67
Hailakandi	7,73,556	30,942	11,294	0.17	0.79
Jorhat	20,35,327	81,413	29,716	0.44	2.09
Kamrup	18,31,405	73,256	26,739	0.39	1.88
Karbi anglong	13,98,605	55,944	20,420	0.30	1.44
Karimganj	12,80,905	51,236	18,701	0.27	1.32
Kokrajhar	11,46,890	45,876	16,745	0.25	1.18
Lakhimpur	19,16,948	76,678	27,987	0.41	1.97
Morigaon	13,67,583	54,703	19,967	0.29	1.40
Nagaon	29,21,646	1,16,866	42,656	0.63	3.00
Nalbari	10,98,023	43,921	16,031	0.23	1.13
Dima hasao	3,97,436	15,897	5,803	0.09	0.41
Sibsagar	12,93,545	51,742	18,886	0.28	1.33
Sonitpur	19,96,112	79,844	29,143	0.43	2.05
Tinsukia	18,26,842	73,074	26,672	0.39	1.88
Chirang	7,34,235	29,369	10,720	0.16	0.75
Baksa	12,41,620	49,665	18,128	0.27	1.28
Udalguri	15,37,621	61,505	22,449	0.33	1.58
Kamrup (M)	2,50,531	10,021	3,658	0.05	0.26
Biswanath	10,25,334	41,013	14,970	0.22	1.05
Majuli	1,65,631	6,625	2,418	0.04	0.17
South Salmara	10,22,372	40,895	14,927	0.22	1.05
Soraideu	6,45,446	25,818	9,424	0.14	0.66
Hojai	11,53,734	46,149	16,845	0.25	1.19
West Karbi Anglong	6,89,126	27,565	10,061	0.15	0.71
Darrang	14,10,354	56,414	20,591	0.30	1.45
Total	**4,67,12,341**	**18,68,494**	**6,82,000**	**10.00**	**47.98**

State - Bihar

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Pashchim champaran	4,18,559	16,742	6,111	0.09	0.43

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Purbi champaran	9,62,075	38,483	14,046	0.21	0.99
Sheohar	1,81,236	7,249	2,646	0.04	0.19
Sitamarhi	3,89,471	15,579	5,686	0.08	0.40
Madhubani	2,70,389	10,816	3,948	0.06	0.28
Supaul	2,60,701	10,428	3,806	0.06	0.27
Araria	7,54,883	30,195	11,021	0.16	0.78
Kishanganj	11,81,509	47,260	17,250	0.25	1.21
Purnia	12,48,908	49,956	18,234	0.27	1.28
Katihar	7,92,656	31,706	11,573	0.17	0.81
Madhepura	1,54,771	6,191	2,260	0.03	0.16
Saharsa	89,988	3,600	1,314	0.02	0.09
Darbhanga	3,53,147	14,126	5,156	0.08	0.36
Muzaffarpur	8,87,235	35,489	12,954	0.19	0.91
Gopalganj	8,40,655	33,626	12,274	0.18	0.86
Siwan	5,90,331	23,613	8,619	0.13	0.61
Saran	3,51,056	14,042	5,125	0.08	0.36
Vaishali	6,41,495	25,660	9,366	0.14	0.66
Samastipur	5,97,047	23,882	8,717	0.13	0.61
Begusarai	2,03,960	8,158	2,978	0.04	0.21
Khagaria	79,844	3,194	1,166	0.02	0.08
Bhagalpur	2,70,710	10,828	3,952	0.06	0.28
Banka	2,25,931	9,037	3,299	0.05	0.23
Munger	79,032	3,161	1,154	0.02	0.08
Lakhisarai	1,18,634	4,745	1,732	0.03	0.12
Sheikhpura	91,949	3,678	1,342	0.02	0.09
Nalanda	6,84,687	27,387	9,996	0.15	0.70
Patna	3,98,922	15,957	5,824	0.09	0.41
Bhojpur	3,42,402	13,696	4,999	0.07	0.35
Buxar	1,24,386	4,975	1,816	0.03	0.13
Kaimur (bhabua)	2,44,217	9,769	3,566	0.05	0.25
Rohtas	4,04,511	16,180	5,906	0.09	0.42
Aurangabad	6,84,176	27,367	9,989	0.15	0.70
Gaya	7,75,991	31,040	11,329	0.17	0.80
Nawada	3,30,251	13,210	4,822	0.07	0.34
Jamui	1,69,744	6,790	2,478	0.04	0.17
Jehanabad	2,36,846	9,474	3,458	0.05	0.24
Arwal	93,044	3,722	1,358	0.02	0.10
Total	**1,65,25,349**	**6,61,014**	**2,41,270**	**3.54**	**16.97**

Union Territory - Chandigarh

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Chandigarh	48,883	1,955	714	0.01	0.05
Total	**48,883**	**1,955**	**714**	**0.01**	**0.05**

State - Chhattisgarh

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Korea	4,39,310	17,572	6,414	0.09	0.45

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Surguja	4,19,622	16,785	6,126	0.09	0.43
Jashpur	5,25,189	21,008	7,668	0.11	0.54
Raigarh	3,48,050	13,922	5,082	0.07	0.36
Korba	3,09,661	12,386	4,521	0.07	0.32
Janjgir-Champa	4,28,564	17,143	6,257	0.09	0.44
Bilaspur	7,24,891	28,996	10,583	0.16	0.74
Kabirdham (Kawardha)	1,47,719	5,909	2,157	0.03	0.15
Rajnandgaon	21,01,990	84,080	30,689	0.45	2.16
Durg	16,61,112	66,444	24,252	0.36	1.71
Raipur	25,06,337	1,00,253	36,593	0.54	2.57
Mahasamund	11,17,442	44,698	16,315	0.24	1.15
Dhamtari	3,45,763	13,831	5,048	0.07	0.36
Kanker	8,98,114	35,925	13,112	0.19	0.92
Bastar	10,96,465	43,859	16,008	0.23	1.13
Narayanpur	2,48,627	9,945	3,630	0.05	0.26
Dantewada	4,28,905	17,156	6,262	0.09	0.44
Bijapur	6,04,788	24,192	8,830	0.13	0.62
Balod	11,17,074	44,683	16,309	0.24	1.15
Baloda Bazar	6,64,778	26,591	9,706	0.14	0.68
Balrampur	3,98,343	15,934	5,816	0.09	0.41
Bemetara	40,940	1,638	598	0.01	0.04
Gariyaband	3,11,750	12,470	4,552	0.07	0.32
Kondagaon	7,73,743	30,950	11,297	0.17	0.79
Mungeli	46,615	1,865	681	0.01	0.05
Sukma	7,00,658	28,026	10,230	0.15	0.72
Surajpur	3,05,374	12,215	4,458	0.07	0.31
Total	**1,87,11,824**	**7,48,473**	**2,73,193**	**4.00**	**19.22**

Union Territory - Dadra and Nagar Haveli

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dadra and Nagar Haveli	89,671	3,587	1,309	0.02	0.09
Total	**89,671**	**3,587**	**1,309**	**0.02**	**0.09**

Union Territory - Daman and Diu

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Diu	5,074	203	74	0.00	0.01
Daman	13,190	528	193	0.00	0.01
Total	**18264**	**731**	**267**	**0.00**	**0.02**

Union Territory - Delhi

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Delhi	43,831	1,753	640	0.01	0.05
Total	**43,831**	**1,753**	**640**	**0.01**	**0.05**

State - Goa

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
North Goa	95,618	3,825	1,396	0.02	0.10

South Goa	2,53,925	10,157	3,707	0.05	0.26
Total	**3,495,43**	**13,982**	**5,103**	**0.07**	**0.36**

State - Gujarat

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ahmadabad	4,19,107	16,764	6,119	0.09	0.43
Amreli	1,609	64	23	0.00	0.00
Anand	72,61,627	2,90,465	1,06,020	1.55	7.46
Banas kantha	9,99,755	39,990	14,596	0.21	1.03
Bharuch	3,44,399	13,776	5,028	0.07	0.35
Bhavnagar	14,90,774	59,631	21,765	0.32	1.53
Dang	2,34,182	9,367	3,419	0.05	0.24
Dohad	5,51,838	22,074	8,057	0.12	0.57
Gandhinagar	1,82,857	7,314	2,670	0.04	0.19
Jamnagar	1,43,480	5,739	2,095	0.03	0.15
Junagadh	1,70,895	6,836	2,495	0.04	0.18
Kachchh	1,71,629	6,865	2,506	0.04	0.18
Kheda	16,44,991	65,800	24,017	0.35	1.69
Mahesana	1,57,290	6,292	2,296	0.03	0.16
Narmada	1,42,442	5,698	2,080	0.03	0.15
Navsari	18,22,239	72,890	26,605	0.39	1.87
Panch mahals	2,07,032	8,281	3,023	0.04	0.21
Patan	80,751	3,230	1,179	0.02	0.08
Porbandar	22,007	880	321	0.00	0.02
Rajkot	23,644	946	345	0.01	0.02
Sabar kantha	3,34,270	13,371	4,880	0.07	0.34
Surat	1,37,213	5,489	2,003	0.03	0.14
Surendranagar	1,198	48	17	0.00	0.00
Vadodara	3,70,478	14,819	5,409	0.08	0.38
Valsad	17,26,075	69,043	25,201	0.37	1.77
Tapi	6,01,471	24,059	8,781	0.13	0.62
Chhotaudepur	3,35,932	13,437	4,905	0.07	0.35
Mahisagar	2,44,150	9,766	3,565	0.05	0.25
Arvalli	2,76,935	11,077	4,043	0.06	0.28
Morbi	16,30,273	65,211	23,802	0.35	1.67
Devbhumi dwarka	12,610	504	184	0.00	0.01
Gir somnath	29,990	1,200	438	0.01	0.03
Botad	249	10	4	0.00	0.00
Total	**2,17,73,392**	**8,70,936**	**3,17,892**	**4.66**	**22.37**

State - Haryana

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ambala	28,73,416	1,14,937	41,952	0.61	2.95
Bhiwani	7,77,234	31,089	11,348	0.17	0.80
Charki dadri	11,51,986	46,079	16,819	0.25	1.18
Faridabad	69,867	2,795	1,020	0.01	0.07
Fatehabad	3,57,178	14,287	5,215	0.08	0.37
Gurugram	4,94,424	19,777	7,219	0.11	0.51

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Hisar	28,20,364	1,12,815	41,177	0.60	2.90
Jhajjar	4,03,395	16,136	5,890	0.09	0.41
Jind	56,27,554	2,25,102	82,162	1.20	5.78
Kaithal	24,06,042	96,242	35,128	0.51	2.47
Karnal	95,65,575	3,82,623	1,39,657	2.05	9.83
Kurukshetra	35,09,236	1,40,369	51,235	0.75	3.60
Mahendragarh	9,88,045	39,522	14,425	0.21	1.01
Mewat	23,989	960	350	0.01	0.02
Palwal	18,743	750	274	0.00	0.02
Panchkula	65,55,878	2,62,235	95,716	1.40	6.73
Panipat	51,39,088	2,05,564	75,031	1.10	5.28
Rewari	4,41,638	17,666	6,448	0.09	0.45
Rohtak	3,64,313	14,573	5,319	0.08	0.37
Sirsa	3,40,358	13,614	4,969	0.07	0.35
Sonipat	9,55,218	38,209	13,946	0.20	0.98
Yamunanagar	14,11,424	56,457	20,607	0.30	1.45
Total	**4,62,94,965**	**18,51,799**	**6,75,906**	**9.91**	**47.55**

State - Himachal Pradesh

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Chamba	41,404	1,656	604	0.01	0.04
Kangra	4,68,479	18,739	6,840	0.10	0.48
Lahul And Spiti	1,763	71	26	0.00	0.00
Kullu	11,542	462	169	0.00	0.01
Mandi	31,847	1,274	465	0.01	0.03
Hamirpur	27,748	1,110	405	0.01	0.03
Una	4,08,000	16,320	5,957	0.09	0.42
Bilaspur	45,121	1,805	659	0.01	0.05
Solan	2,26,624	9,065	3,309	0.05	0.23
Sirmaur	32,586	1,303	476	0.01	0.03
Shimla	27,321	1,093	399	0.01	0.03
Kinnaur	19,516	781	285	0.00	0.02
Total	**13,41,951**	**53,678**	**19,592**	**0.29**	**1.38**

Union Territory - Jammu And Kashmir

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Kupwara	3,74,179	14,967	5,463	0.08	0.38
Badgam	7,63,606	30,544	11,149	0.16	0.78
Leh Ladakh	12,795	512	187	0.00	0.01
Kargil	53,961	2,158	788	0.01	0.06
Poonch	2,67,560	10,702	3,906	0.06	0.27
Rajauri	2,64,325	10,573	3,859	0.06	0.27
Kathua	7,72,217	30,889	11,274	0.17	0.79
Baramulla	8,06,242	32,250	11,771	0.17	0.83
Bandipora	2,55,555	10,222	3,731	0.05	0.26
Srinagar	3,90,967	15,639	5,708	0.08	0.40
Ganderbal	6,92,270	27,691	10,107	0.15	0.71

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Pulwama	11,35,949	45,438	16,585	0.24	1.17
Shopian	86,625	3,465	1,265	0.02	0.09
Anantnag	2,91,153	11,646	4,251	0.06	0.30
Kulgam	1,32,949	5,318	1,941	0.03	0.14
Doda	1,71,195	6,848	2,499	0.04	0.18
Ramban	87,101	3,484	1,272	0.02	0.09
Kishtwar	35,071	1,403	512	0.01	0.04
Udhampur	66,314	2,653	968	0.01	0.07
Reasi	1,25,458	5,018	1,832	0.03	0.13
Jammu	2,82,251	11,290	4,121	0.06	0.29
Samba	2,98,565	11,943	4,359	0.06	0.31
Total	**73,66,308**	**2,94,652**	**1,07,548**	**1.58**	**7.57**

State - Jharkhand

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Garhwa	3,79,207	15,168	5,536	0.08	0.39
Chatra	6,91,061	27,642	10,089	0.15	0.71
Koderma	1,44,502	5,780	2,110	0.03	0.15
Giridih	10,11,059	40,442	14,761	0.22	1.04
Deoghar	4,86,755	19,470	7,107	0.10	0.50
Godda	4,84,890	19,396	7,079	0.10	0.50
Sahebganj	5,78,693	23,148	8,449	0.12	0.59
Pakur	7,75,126	31,005	11,317	0.17	0.80
Dhanbad	9,78,104	39,124	14,280	0.21	1.00
Bokaro	16,42,424	65,697	23,979	0.35	1.69
Lohardaga	4,09,691	16,388	5,981	0.09	0.42
East Singhbum	17,86,890	71,476	26,089	0.38	1.84
Palamu	5,96,930	23,877	8,715	0.13	0.61
Latehar	5,18,676	20,747	7,573	0.11	0.53
Hazaribagh	25,47,094	1,01,884	37,188	0.55	2.62
Ramgarh	4,26,147	17,046	6,222	0.09	0.44
Dumka	8,28,974	33,159	12,103	0.18	0.85
Jamtara	4,95,548	19,822	7,235	0.11	0.51
Ranchi	23,76,524	95,061	34,697	0.51	2.44
Khunti	9,32,483	37,299	13,614	0.20	0.96
Gumla	13,59,659	54,386	19,851	0.29	1.40
Simdega	9,97,947	39,918	14,570	0.21	1.03
West Singhbhum	24,75,360	99,014	36,140	0.53	2.54
Saraikela Kharsawan	19,09,162	76,366	27,874	0.41	1.96
Total	**2,48,32,906**	**9,93,316**	**3,62,560**	**5.31**	**25.51**

State - Karnataka

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Belgaum	26,48,732	1,05,949	38,671	0.57	2.72
Bagalkot	17,03,285	68,131	24,868	0.36	1.75
Bijapur	2,73,409	10,936	3,992	0.06	0.28
Bidar	7,34,095	29,364	10,718	0.16	0.75

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Raichur	3,97,976	15,919	5,810	0.09	0.41
Koppal	40,08,826	1,60,353	58,529	0.86	4.12
Gadag	4,16,130	16,645	6,075	0.09	0.43
Dharwad	14,60,262	58,410	21,320	0.31	1.50
Uttar Kannad	5,57,455	22,298	8,139	0.12	0.57
Haveri	3,84,290	15,372	5,611	0.08	0.39
Bellary	17,21,528	68,861	25,134	0.37	1.77
Chitradurga	17,41,574	69,663	25,427	0.37	1.79
Davangere	26,28,413	1,05,137	38,375	0.56	2.70
Shimoga	20,66,027	82,641	30,164	0.44	2.12
Udupi	11,43,010	45,720	16,688	0.24	1.17
Chikmagalur	23,36,685	93,467	34,116	0.50	2.40
Tumkur	16,28,178	65,127	23,771	0.35	1.67
Bengaluru Urban	13,02,173	52,087	19,012	0.28	1.34
Mandya	21,85,469	87,419	31,908	0.47	2.24
Hassan	23,53,284	94,131	34,358	0.50	2.42
Dakshin Kannad	25,95,523	1,03,821	37,895	0.56	2.67
Kodagu	1,84,597	7,384	2,695	0.04	0.19
Mysore	30,95,800	1,23,832	45,199	0.66	3.18
Chamarajanagar	7,26,104	29,044	10,601	0.16	0.75
Gulbarga	3,82,911	15,316	5,591	0.08	0.39
Yadgir	3,26,132	13,045	4,762	0.07	0.34
Kolar	86,07,729	3,44,309	1,25,673	1.84	8.84
Chikballapur	23,82,658	95,306	34,787	0.51	2.45
Bangalore Rural	71,45,341	2,85,814	1,04,322	1.53	7.34
Ramanagara	23,56,885	94,275	34,411	0.50	2.42
Total	**5,94,94,481**	**23,79,779**	**8,68,619**	**12.73**	**61.11**

State - Kerala

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Kasaragod	6,15,472	24,619	8,986	0.13	0.63
Kannur	13,25,481	53,019	19,352	0.28	1.36
Wayanad	8,89,246	35,570	12,983	0.19	0.91
Kozhikode	17,60,401	70,416	25,702	0.38	1.81
Malappuram	61,37,460	2,45,498	89,607	1.31	6.30
Palakkad	20,28,591	81,144	29,617	0.43	2.08
Thrissur	33,99,382	1,35,975	49,631	0.73	3.49
Ernakulam	40,33,870	1,61,355	58,895	0.86	4.14
Idukki	7,46,356	29,854	10,897	0.16	0.77
Kottayam	22,12,169	88,487	32,298	0.47	2.27
Alappuzha	17,79,061	71,162	25,974	0.38	1.83
Pathanamthitta	7,98,872	31,955	11,664	0.17	0.82
Kollam	15,22,105	60,884	22,223	0.33	1.56
Thiruvananthapuram	25,23,439	1,00,938	36,842	0.54	2.59
Total	**29771905**	**1190876**	**434670**	**6.37**	**30.58**

Union Territory - Lakshadweep

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Lakshadweep District	2,26,025	9,041	3,300	0.05	0.23
Total	**2,26,025**	**9,041**	**3,300**	**0.05**	**0.23**

State - Madhya Pradesh

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Hoshangabad	4,09,967	16,399	5,986	0.09	0.42
Sagar	3,04,600	12,184	4,447	0.07	0.31
Narsinghpur	44,586	1,783	651	0.01	0.05
Ashoknagar	15,705	628	229	0.00	0.02
Sehore	4,23,470	16,939	6,183	0.09	0.43
Shivpuri	1,29,462	5,178	1,890	0.03	0.13
Jhabua	6,28,382	25,135	9,174	0.13	0.65
Morena	1,64,252	6,570	2,398	0.04	0.17
Neemuch	46,746	1,870	682	0.01	0.05
Dhar	6,77,395	27,096	9,890	0.14	0.70
Bhind	15,742	630	230	0.00	0.02
Khargone	4,53,412	18,136	6,620	0.10	0.47
Alirajpur	13,51,543	54,062	19,733	0.29	1.39
Guna	49,192	1,968	718	0.01	0.05
Ujjain	1,73,307	6,932	2,530	0.04	0.18
Dindori	2,19,140	8,766	3,199	0.05	0.23
Burhanpur	99,746	3,990	1,456	0.02	0.10
Balaghat	6,57,195	26,288	9,595	0.14	0.68
Vidisha	67,653	2,706	988	0.01	0.07
Sheopur	94,587	3,783	1,381	0.02	0.10
Chhindwara	6,67,474	26,699	9,745	0.14	0.69
Ratlam	3,47,617	13,905	5,075	0.07	0.36
Bhopal	11,74,428	46,977	17,147	0.25	1.21
Gwalior	1,29,798	5,192	1,895	0.03	0.13
Satna	39,245	1,570	573	0.01	0.04
Sidhi	3,33,337	13,333	4,867	0.07	0.34
Tikamgarh	2,36,332	9,453	3,450	0.05	0.24
Dewas	1,85,062	7,402	2,702	0.04	0.19
Umaria	44,668	1,787	652	0.01	0.05
Mandla	3,62,429	14,497	5,291	0.08	0.37
Singrauli	1,67,494	6,700	2,445	0.04	0.17
Rewa	1,99,650	7,986	2,915	0.04	0.21
Anuppur	3,67,497	14,700	5,365	0.08	0.38
Betul	5,25,215	21,009	7,668	0.11	0.54
Harda	34,276	1,371	500	0.01	0.04
Datia	37,947	1,518	554	0.01	0.04
Rajgarh	2,44,739	9,790	3,573	0.05	0.25
Chhatarpur	1,68,596	6,744	2,462	0.04	0.17
Damoh	30,653	1,226	448	0.01	0.03
Agar malwa	96,469	3,859	1,408	0.02	0.10
Seoni	2,73,245	10,930	3,989	0.06	0.28
East nimar	1,18,692	4,748	1,733	0.03	0.12

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Shajapur	1,16,701	4,668	1,704	0.02	0.12
Barwani	8,26,926	33,077	12,073	0.18	0.85
Raisen	1,25,327	5,013	1,830	0.03	0.13
Jabalpur	26,58,848	1,06,354	38,819	0.57	2.73
Shahdol	1,44,981	5,799	2,117	0.03	0.15
Panna	42,042	1,682	614	0.01	0.04
Katni	88,380	3,535	1,290	0.02	0.09
Indore	6,79,528	27,181	9,921	0.15	0.70
Mandsaur	1,66,220	6,649	2,427	0.04	0.17
Total	**1,66,59,898**	**6,66,396**	**2,43,235**	**3.57**	**17.11**

State - Maharashtra

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Pune	1,64,06,458	6,56,258	2,39,534	3.51	16.85
Ahmednagar	89,71,487	3,58,859	1,30,984	1.92	9.22
Nashik	80,13,261	3,20,530	1,16,994	1.71	8.23
Raigad	40,44,852	1,61,794	59,055	0.87	4.15
Satara	39,95,976	1,59,839	58,341	0.86	4.10
Sangli	37,44,287	1,49,771	54,667	0.80	3.85
Kolhapur	33,80,613	1,35,225	49,357	0.72	3.47
Solapur	30,99,062	1,23,962	45,246	0.66	3.18
Thane	29,76,468	1,19,059	43,456	0.64	3.06
Dhule	20,39,025	81,561	29,770	0.44	2.09
Palghar	19,73,499	78,940	28,813	0.42	2.03
Beed	15,40,090	61,604	22,485	0.33	1.58
Amravati	13,89,783	55,591	20,291	0.30	1.43
Nagpur	13,65,358	54,614	19,934	0.29	1.40
Jalgaon	10,30,660	41,226	15,048	0.22	1.06
Gadchiroli	10,18,969	40,759	14,877	0.22	1.05
Nandurbar	9,40,194	37,608	13,727	0.20	0.97
Sindhudurg	9,19,101	36,764	13,419	0.20	0.94
Yavatmal	8,86,784	35,471	12,947	0.19	0.91
Ratnagiri	8,59,984	34,399	12,556	0.18	0.88
Osmanabad	7,59,610	30,384	11,090	0.16	0.78
Chandrapur	6,72,089	26,884	9,812	0.14	0.69
Gondia	6,41,543	25,662	9,367	0.14	0.66
Aurangabad	6,02,141	24,086	8,791	0.13	0.62
Nanded	5,57,371	22,295	8,138	0.12	0.57
Latur	5,04,048	20,162	7,359	0.11	0.52
Buldhana	4,00,121	16,005	5,842	0.09	0.41
Bhandara	3,15,774	12,631	4,610	0.07	0.32
Jalna	2,94,119	11,765	4,294	0.06	0.30
Wardha	2,74,733	10,989	4,011	0.06	0.28
Akola	1,88,029	7,521	2,745	0.04	0.19
Parbhani	1,73,237	6,929	2,529	0.04	0.18
Hingoli	1,71,869	6,875	2,509	0.04	0.18
Washim	1,27,107	5,084	1,856	0.03	0.13

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Mumbai	20,063	803	293	0.00	0.02
Total	**7,42,97,765**	**29,71,911**	**10,84,747**	**15.91**	**76.30**

State - Mizoram

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Aizawl	6,94,430	27,777	10,139	0.15	0.71
Champhai	2,80,715	11,229	4,098	0.06	0.29
Kolasib	1,69,507	6,780	2,475	0.04	0.17
Lawngtlai	2,07,120	8,285	3,024	0.04	0.21
Lunglei	2,81,721	11,269	4,113	0.06	0.29
Mamit	1,33,590	5,344	1,950	0.03	0.14
Siaha	1,22,163	4,887	1,784	0.03	0.13
Serchhip	1,58,564	6,343	2,315	0.03	0.16
Total	**20,47,810**	**81,912**	**29,898**	**0.44**	**2.10**

State - Manipur

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Senapati	4,77,638	19,106	6,974	0.10	0.49
Tamenglong	2,28,476	9,139	3,336	0.05	0.23
Churachandpur	1,59,717	6,389	2,332	0.03	0.16
Bishnupur	14,14,731	56,589	20,655	0.30	1.45
Thoubal	9,31,460	37,258	13,599	0.20	0.96
Imphal West	10,75,519	43,021	15,703	0.23	1.10
Imphal East	7,82,453	31,298	11,424	0.17	0.80
Ukhrul	6,41,464	25,659	9,365	0.14	0.66
Chandel	1,86,179	7,447	2,718	0.04	0.19
Total	**58,97,637**	**2,35,905**	**86,106**	**1.26**	**6.06**

State - Meghalaya

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
West Garo Hills	10,71,760	42,870	15,648	0.23	1.1
East Garo Hills	4,09,399	16,376	5,977	0.09	0.42
South Garo Hills	5,59,243	22,370	8,165	0.12	0.57
West Khasi Hills	6,23,516	24,941	9,103	0.13	0.64
Ri Bhoi	5,38,527	21,541	7,862	0.12	0.55
East Khasi Hills	6,53,304	26,132	9,538	0.14	0.67
West Jaintia Hills	2,66,985	10,679	3,898	0.06	0.27
East Jaintia Hills	1,31,351	5,254	1,918	0.03	0.13
North Garo Hills	6,16,068	24,643	8,995	0.13	0.63
South West Garo Hills	3,27,417	13,097	4,780	0.07	0.34
South West Khasi Hills	1,81,962	7,278	2,657	0.04	0.19
Total	**53,79,532**	**2,15,181**	**78,541**	**1.16**	**5.51**

State - Nagaland

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Mon	2,87,651	11,506	4,200	0.06	0.30
Mokokchung	2,24,619	8,985	3,279	0.05	0.23

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Zunheboto	2,75,182	11,007	4,018	0.06	0.28
Wokha	1,74,013	6,961	2,541	0.04	0.18
Dimapur	4,34,302	17,372	6,341	0.09	0.45
Phek	4,20,778	16,831	6,143	0.09	0.43
Tuensang	2,53,195	10,128	3,697	0.05	0.26
Longleng	69,994	2,800	1,022	0.01	0.07
Kiphire	1,21,226	4,849	1,770	0.03	0.12
Kohima	3,06,140	12,246	4,470	0.07	0.31
Peren	2,71,844	10,874	3,969	0.06	0.28
Total	**28,38,944**	**1,13,558**	**41,449**	**0.61**	**2.92**

State - Odisha

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bargarh	5,93,170	23,727	8,660	0.13	0.61
Jharsuguda	1,42,920	5,717	2,087	0.03	0.15
Sambalpur	5,19,190	20,768	7,580	0.11	0.53
Deogarh	1,79,909	7,196	2,627	0.04	0.18
Sundargarh	14,49,266	57,971	21,159	0.31	1.49
Kendujhar	20,23,721	80,949	29,546	0.43	2.08
Mayurbhanj	37,61,128	1,50,445	54,912	0.80	3.86
Baleshwar	16,52,494	66,100	24,126	0.35	1.70
Bhadrak	3,45,067	13,803	5,038	0.07	0.35
Kendrapara	4,45,595	17,824	6,506	0.10	0.46
Jagatsinghapur	4,94,937	19,797	7,226	0.11	0.51
Cuttack	14,03,204	56,128	20,487	0.30	1.44
Jajapur	3,28,773	13,151	4,800	0.07	0.34
Dhenkanal	7,95,049	31,802	11,608	0.17	0.82
Anugul	2,21,122	8,845	3,228	0.05	0.23
Nayagarh	6,70,909	26,836	9,795	0.14	0.69
Khordha	15,75,988	63,040	23,009	0.34	1.62
Puri	5,97,382	23,895	8,722	0.13	0.61
Ganjam	29,39,024	1,17,561	42,910	0.63	3.02
Gajapati	3,64,483	14,579	5,321	0.08	0.37
Kandhamal	4,73,199	18,928	6,909	0.10	0.49
Boudh	1,06,865	4,275	1,560	0.02	0.11
Sonepur	3,54,398	14,176	5,174	0.08	0.36
Balangir	21,47,654	85,906	31,356	0.46	2.21
Nuapada	3,01,749	12,070	4,406	0.06	0.31
Kalahandi	8,12,278	32,491	11,859	0.17	0.83
Rayagada	4,66,503	18,660	6,811	0.10	0.48
Nabarangpur	6,64,686	26,587	9,704	0.14	0.68
Koraput	10,09,944	40,398	14,745	0.22	1.04
Malkangiri	5,98,650	23,946	8,740	0.13	0.61
Total	**2,74,39,257**	**10,97,570**	**4,00,613**	**5.87**	**28.19**

Union Territory - Puducherry

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Yanam	9,381	375	137	0.00	0.01
Pondicherry	1,44,426	5,777	2,109	0.03	0.15
Mahe	1,233	49	18	0.00	0.00
Karaikal	80,959	3,238	1,182	0.02	0.08
Total	**2,35,999**	**9,440**	**3,446**	**0.05**	**0.24**

State - Punjab

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Gurdaspur	8,77,576	35,103	12,813	0.19	0.90
Kapurthala	1,68,716	6,749	2,463	0.04	0.17
Jalandhar	1,35,285	5,411	1,975	0.03	0.14
Hoshiarpur	11,17,623	44,705	16,317	0.24	1.15
Nawanshahr (Sbs Nagar)	1,27,581	5,103	1,863	0.03	0.13
Fatehgarh Sahib	4,02,641	16,106	5,879	0.09	0.41
Ludhiana	27,53,613	1,10,145	40,203	0.59	2.83
Moga	1,36,744	5,470	1,996	0.03	0.14
Firozepur	4,83,159	19,326	7,054	0.10	0.50
Muktsar	1,66,055	6,642	2,424	0.04	0.17
Faridkot	56,161	2,246	820	0.01	0.06
Bathinda	3,36,392	13,456	4,911	0.07	0.35
Mansa	3,41,416	13,657	4,985	0.07	0.35
Patiala	19,09,462	76,378	27,878	0.41	1.96
Amritsar	4,69,795	18,792	6,859	0.10	0.48
Tarn Taran	1,75,308	7,012	2,559	0.04	0.18
Rupnagar	1,86,114	7,445	2,717	0.04	0.19
S.A.S Nagar	18,35,237	73,409	26,794	0.39	1.89
Sangrur	25,98,279	1,03,931	37,935	0.56	2.67
Barnala	23,58,341	94,334	34,432	0.50	2.42
Fazilka	62,966	2,519	919	0.01	0.06
Pathankot	9,51,520	38,061	13,892	0.20	0.98
Total	**1,76,49,984**	**7,05,999**	**2,57,690**	**3.78**	**18.13**

State - Rajasthan

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ganganagar	72,345	2,894	1,056	0.02	0.07
Hanumangarh	1,74,059	6,962	2,541	0.04	0.18
Bikaner	8,161	326	119	0.00	0.01
Churu	1,84,844	7,394	2,699	0.04	0.19
Jhunjhunu	21,27,197	85,088	31,057	0.46	2.19
Alwar	4,33,069	17,323	6,323	0.09	0.44
Bharatpur	1,96,778	7,871	2,873	0.04	0.20
Dholpur	3,583	143	52	0.00	0.00
Karauli	10,778	431	157	0.00	0.01
Sawai Madhopur	6,454	258	94	0.00	0.01
Dausa	18,601	744	272	0.00	0.02
Jaipur	9,13,212	36,528	13,333	0.20	0.94

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Sikar	3,69,701	14,788	5,398	0.08	0.38
Nagaur	83,558	3,342	1,220	0.02	0.09
Jodhpur	32,753	1,310	478	0.01	0.03
Jaisalmer	3,160	126	46	0.00	0.00
Barmer	10,636	425	155	0.00	0.01
Jalore	7,247	290	106	0.00	0.01
Sirohi	52,819	2,113	771	0.01	0.05
Pali	85,584	3,423	1,250	0.02	0.09
Ajmer	81,83,545	3,27,342	1,19,480	1.75	8.41
Tonk	50,258	2,010	734	0.01	0.05
Bundi	17,492	700	255	0.00	0.02
Bhilwara	4,14,746	16,590	6,055	0.09	0.43
Rajsamand	28,837	1,153	421	0.01	0.03
Dungarpur	1,36,557	5,462	1,994	0.03	0.14
Banswara	3,95,045	15,802	5,768	0.08	0.41
Chittorgarh	62,627	2,505	914	0.01	0.06
Kota	33,365	1,335	487	0.01	0.03
Baran	46,749	1,870	683	0.01	0.05
Jhalawar	16,811	672	245	0.00	0.02
Udaipur	3,44,163	13,767	5,025	0.07	0.35
Pratapgarh	98,241	3,930	1,434	0.02	0.10
Total	**1,46,22,975**	**5,84,919**	**2,13,495**	**3.13**	**15.02**

State - Sikkim

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
North District	38,566	1,543	563	0.01	0.04
West District	1,37,801	5,512	2,012	0.03	0.14
South District	2,44,516	9,781	3,570	0.05	0.25
East District	1,59,981	6,399	2,336	0.03	0.16
Total	**5,80,864**	**23,235**	**8,481**	**0.12**	**0.60**

State - Tamil Nadu

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Namakkal	4,83,75,945	19,35,038	7,06,289	10.35	49.69
Tiruppur	1,67,27,394	6,69,096	2,44,220	3.58	17.18
Coimbatore	83,82,014	3,35,281	1,22,377	1.79	8.61
Erode	61,85,870	2,47,435	90,314	1.32	6.35
Krishnagiri	59,74,000	2,38,960	87,220	1.28	6.14
Salem	51,17,756	2,04,710	74,719	1.10	5.26
Dharmapuri	45,52,310	1,82,092	66,464	0.97	4.68
Dindigul	41,22,258	1,64,890	60,185	0.88	4.23
Pudukkottai	21,99,888	87,996	32,118	0.47	2.26
Vellore	18,66,187	74,647	27,246	0.40	1.92
Tirunelveli	17,85,777	71,431	26,072	0.38	1.83
Tiruchirappalli	16,83,616	67,345	24,581	0.36	1.73
Villupuram	16,15,305	64,612	23,583	0.35	1.66
Sivaganga	11,74,770	46,991	17,152	0.25	1.21

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Cuddalore	10,54,647	42,186	15,398	0.23	1.08
Karur	10,39,118	41,565	15,171	0.22	1.07
Virudhunagar	9,71,527	38,861	14,184	0.21	1.00
Kanniyakumari	9,33,352	37,334	13,627	0.20	0.96
Thanjavur	8,15,455	32,618	11,906	0.17	0.84
Madurai	7,68,019	30,721	11,213	0.16	0.79
Thiruvallur	7,56,033	30,241	11,038	0.16	0.78
Tuticorin	7,03,948	28,158	10,278	0.15	0.72
Theni	6,18,897	24,756	9,036	0.13	0.64
Ramanathapuram	6,18,806	24,752	9,035	0.13	0.64
Nagapattinam	5,64,913	22,597	8,248	0.12	0.58
Perambalur	5,25,684	21,027	7,675	0.11	0.54
Tiruvannamalai	4,53,915	18,157	6,627	0.10	0.47
Kanchipuram	3,92,043	15,682	5,724	0.08	0.40
Thiruvarur	3,70,702	14,828	5,412	0.08	0.38
Ariyalur	2,86,423	11,457	4,182	0.06	0.29
Chennai	72,694	2,908	1,061	0.02	0.07
The Nilgiris	71,834	2,873	1,049	0.02	0.07
Total	**12,07,81,100**	**48,31,244**	**17,63,404**	**25.85**	**124.07**

State - Telangana

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Rangareddi	2,40,69,700	9,62,788	3,51,418	5.15	24.72
Siddipet	91,37,424	3,65,497	1,33,406	1.96	9.39
Nalgonda	44,35,232	1,77,409	64,754	0.95	4.56
Yadadri bhuvanagiri	43,89,080	1,75,563	64,081	0.94	4.51
Medchal malkajgiri	39,58,098	1,58,324	57,788	0.85	4.07
Mahbubnagar	28,24,158	1,12,966	41,233	0.60	2.90
Nagarkurnool	27,69,677	1,10,787	40,437	0.59	2.85
Medak	24,58,380	98,335	35,892	0.53	2.53
Karimnagar	21,68,420	86,737	31,659	0.46	2.23
Khammam	21,59,090	86,364	31,523	0.46	2.22
Warangal rural	20,45,503	81,820	29,864	0.44	2.10
Suryapet	20,02,987	80,119	29,244	0.43	2.06
Nizamabad	17,19,699	68,788	25,108	0.37	1.77
Bhadradri kothagudem	16,10,547	64,422	23,514	0.34	1.65
Jogulamba gadwal	14,80,149	59,206	21,610	0.32	1.52
Kamareddy	13,74,712	54,988	20,071	0.29	1.41
Sangareddy	12,40,991	49,640	18,118	0.27	1.27
Mahabubabad	11,08,991	44,360	16,191	0.24	1.14
Peddapalli	10,69,946	42,798	15,621	0.23	1.10
Jayashankar bhupalapally	9,35,847	37,434	13,663	0.20	0.96
Jangoan	8,72,562	34,902	12,739	0.19	0.90
Mancherial	8,68,144	34,726	12,675	0.19	0.89
Jagitial	8,66,795	34,672	12,655	0.19	0.89
Warangal urban	8,54,260	34,170	12,472	0.18	0.88
Wanaparthy	7,65,609	30,624	11,178	0.16	0.79

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Rajanna sircilla	7,43,767	29,751	10,859	0.16	0.76
Adilabad	5,54,199	22,168	8,091	0.12	0.57
Vikarabad	5,33,667	21,347	7,792	0.11	0.55
Nirmal	5,01,264	20,051	7,318	0.11	0.51
Kumuram bheem asifabad	4,55,807	18,232	6,655	0.10	0.47
Hyderabad	24,699	988	361	0.01	0.03
Total	**7,99,99,404**	**31,99,976**	**11,67,991**	**17.12**	**82.18**

State - Tripura

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
West Tripura	6,03,293	24,132	8,808	0.13	0.62
South Tripura	6,57,751	26,310	9,603	0.14	0.68
Dhalai	4,87,262	19,490	7,114	0.10	0.50
North Tripura	3,05,288	12,212	4,457	0.07	0.31
Gomati	6,33,662	25,346	9,251	0.14	0.65
Khowai	3,84,523	15,381	5,614	0.08	0.39
Sepahijala	8,20,307	32,812	11,976	0.18	0.84
Unakoti	2,76,160	11,046	4,032	0.06	0.28
Total	**41,68,246**	**1,66,730**	**60,856**	**0.89**	**4.28**

State - Uttar Pradesh

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Saharanpur	5,26,121	21,045	7,681	0.11	0.54
Muzaffarnagar	22,316	893	326	0.00	0.02
Bijnor	3,42,997	13,720	5,008	0.07	0.35
Moradabad	1,13,771	4,551	1,661	0.02	0.12
Rampur	85,648	3,426	1,250	0.02	0.09
Amroha	25,752	1,030	376	0.01	0.03
Meerut	3,91,369	15,655	5,714	0.08	0.40
Baghpat	73,995	2,960	1,080	0.02	0.08
Ghaziabad	1,59,515	6,381	2,329	0.03	0.16
Gautam Buddha Nagar	91,657	3,666	1,338	0.02	0.09
Bulandshahr	34,890	1,396	509	0.01	0.04
Aligarh	2,10,949	8,438	3,080	0.05	0.22
Hathras	78,121	3,125	1,141	0.02	0.08
Mathura	12,612	504	184	0.00	0.01
Agra	91,453	3,658	1,335	0.02	0.09
Firozabad	37,831	1,513	552	0.01	0.04
Mainpuri	41,666	1,667	608	0.01	0.04
Budaun	2,61,876	10,475	3,823	0.06	0.27
Bareilly	1,75,359	7,014	2,560	0.04	0.18
Pilibhit	23,760	950	347	0.01	0.02
Shahjahanpur	90,381	3,615	1,320	0.02	0.09
Kheri	5,54,985	22,199	8,103	0.12	0.57
Sitapur	2,85,081	11,403	4,162	0.06	0.29
Hardoi	71,207	2,848	1,040	0.02	0.07
Unnao	39,660	1,586	579	0.01	0.04
Lucknow	89,021	3,561	1,300	0.02	0.09
Rae Bareli	60,257	2,410	880	0.01	0.06

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Farrukhabad	8,593	344	125	0.00	0.01
Kannauj	3,563	143	52	0.00	0.00
Etawah	61,157	2,446	893	0.01	0.06
Auraiya	32,121	1,285	469	0.01	0.03
Kanpur Dehat	24,450	978	357	0.01	0.03
Kanpur Nagar	5,64,501	22,580	8,242	0.12	0.58
Jalaun	12,462	498	182	0.00	0.01
Jhansi	27,154	1,086	396	0.01	0.03
Lalitpur	23,435	937	342	0.01	0.02
Hamirpur	27,505	1,100	402	0.01	0.03
Mahoba	22,039	882	322	0.00	0.02
Banda	18,488	740	270	0.00	0.02
Chitrakoot	83,176	3,327	1,214	0.02	0.09
Fatehpur	4,52,302	18,092	6,604	0.10	0.46
Pratapgarh	1,22,829	4,913	1,793	0.03	0.13
Kaushambi	48,028	1,921	701	0.01	0.05
Allahabad	2,76,347	11,054	4,035	0.06	0.28
Barabanki	8,76,003	35,040	12,790	0.19	0.90
Faizabad	5,19,963	20,799	7,591	0.11	0.53
Ambedkar Nagar	2,66,404	10,656	3,889	0.06	0.27
Sultanpur	71,997	2,880	1,051	0.02	0.07
Bahraich	1,76,047	7,042	2,570	0.04	0.18
Shravasti	11,446	458	167	0.00	0.01
Balrampur	1,01,015	4,041	1,475	0.02	0.10
Gonda	1,78,460	7,138	2,606	0.04	0.18
Siddharth Nagar	26,601	1,064	388	0.01	0.03
Basti	59,826	2,393	873	0.01	0.06
Sant Kabeer Nagar	89,727	3,589	1,310	0.02	0.09
Maharajganj	78,913	3,157	1,152	0.02	0.08
Gorakhpur	3,67,832	14,713	5,370	0.08	0.38
Kushi Nagar	4,03,843	16,154	5,896	0.09	0.41
Deoria	2,16,289	8,652	3,158	0.05	0.22
Azamgarh	9,09,676	36,387	13,281	0.19	0.93
Mau	1,29,400	5,176	1,889	0.03	0.13
Ballia	1,56,693	6,268	2,288	0.03	0.16
Jaunpur	1,04,083	4,163	1,520	0.02	0.11
Ghazipur	72,684	2,907	1,061	0.02	0.07
Chandauli	2,76,404	11,056	4,035	0.06	0.28
Varanasi	1,21,652	4,866	1,776	0.03	0.12
Sant Ravidas Nagar	30,495	1,220	445	0.01	0.03
Mirzapur	2,65,251	10,610	3,873	0.06	0.27
Sonbhadra	1,53,025	6,121	2,234	0.03	0.16
Etah	37,439	1,498	547	0.01	0.04
Kasganj	5,892	236	86	0.00	0.01
Amethi	6,73,731	26,949	9,836	0.14	0.69
Hapur	11,239	450	164	0.00	0.01
Sambhal	26,848	1,074	392	0.01	0.03
Shamli	2,96,426	11,857	4,328	0.06	0.30
Total	**1,25,15,704**	**5,00,628**	**1,82,729**	**2.68**	**12.86**

State - Uttarakhand

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Almora	72,309	2,892	1,056	0.02	0.07
Bageshwar	17,986	719	263	0.00	0.02
chamoli	34,875	1,395	509	0.01	0.04
Champawat	1,21,577	4,863	1,775	0.03	0.12
Dehradun	5,83,703	23,348	8,522	0.12	0.60
Haridwar	2,74,851	10,994	4,013	0.06	0.28
Nainital	6,39,479	25,579	9,336	0.14	0.66
Pauri Garhwal	64,070	2,563	935	0.01	0.07
Pithoragarh	95,814	3,833	1,399	0.02	0.10
Rudraprayag	25,877	1,035	378	0.01	0.03
Tehri Garhwal	59,815	2,393	873	0.01	0.06
Udham Singh Nagar	29,97,991	1,19,920	43,771	0.64	3.08
Uttarkashi	30,337	1,213	443	0.01	0.03
Total	**50,18,684**	**2,00,747**	**73,273**	**1.07**	**5.16**

State - West Bengal

District	Total poultry	Production Per Day (KG)	Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
24 Paraganas South	92,71,700	3,70,868	1,35,367	1.98	9.52
Bardhaman	75,08,347	3,00,334	1,09,622	1.61	7.71
24 Paraganas North	65,96,548	2,63,862	96,310	1.41	6.78
Bankura	53,72,542	2,14,902	78,439	1.15	5.52
Medinipur West	52,22,355	2,08,894	76,246	1.12	5.36
Murshidabad	48,64,786	1,94,591	71,026	1.04	5.00
Birbhum	46,14,872	1,84,595	67,377	0.99	4.74
Medinipur East	42,95,172	1,71,807	62,710	0.92	4.41
Purulia	41,01,529	1,64,061	59,882	0.88	4.21
Hooghly	35,97,064	1,43,883	52,517	0.77	3.69
Nadia	33,89,479	1,35,579	49,486	0.73	3.48
Jhargram	32,80,996	1,31,240	47,903	0.70	3.37
Maldah	29,82,438	1,19,298	43,544	0.64	3.06
Dinajpur Uttar	25,97,607	1,03,904	37,925	0.56	2.67
Coochbehar	19,17,542	76,702	27,996	0.41	1.97
Dinajpur Dakshin	18,80,668	75,227	27,458	0.40	1.93
Howrah	13,76,937	55,077	20,103	0.29	1.41
Alipurduar	13,07,902	52,316	19,095	0.28	1.34
Jalpaiguri	12,90,753	51,630	18,845	0.28	1.33
Darjeeling	8,48,610	33,944	12,390	0.18	0.87
Paschim bardhaman	6,53,934	26,157	9,547	0.14	0.67
Kalimpong	3,21,093	12,844	4,688	0.07	0.33
Kolkata	29,728	1,189	434	0.01	0.03
Total	**7,73,22,602**	**30,92,904**	**11,28,910**	**16.55**	**79.43**

Annexure 2 : Details of existing poultry litter-based energy plants

S.No.	WTE plant location	Plant installed capacity	Year of installation	State
Poultry Litter based Plants (Combustion)				
1	M/s Mor Bio Energy Private Limited at village Morkhi of district Jind, Haryana	1.2 MW	2019-20	Haryana
2	M/s Redan Infrastructure Pvt. Ltd., , Hyderabad at Village & Mandal Gangavaram , Chittoor Dist., A. P.	7.50 MW	2014-15	Andhra Pradesh
3	M/s PSR Green Power Projects Pvt. Ltd., Marikal Village, Danwada Mandal, Mahabubnagar Dist., Telangana.	7.50 MW	2013-14	Telangana
4	M/s Shravana Power Projects Pvt. Ltd. Takkalapalli Vill. Yacharam Mandal, Ranga Reddy District, Telangana.	7.5 MW	2010-11	Telangana
5	Poultry litter based power generation project by M/s Raus Power Ltd., Dupalapudi, East Godavari Distt., A.P.	3.66 MW	2008-09	Andhra Pradesh
6	Poultry litter based power generation project by M/s SLT Power & Infrastructure Projects Pvt. Ltd., Pocham Pally Village & Mandal, Nalgonda Dist., A.P.	3.50 MW	2007-08	Telangana
7	Power generation from poultry droppings by M/s G.K. Bio-energy Pvt. Ltd., Namakkal, T.N.	1.50 MW	2005-06	Tamil Nadu
Poultry Litter (Bio-methanation)				
8	M/s. Synergy Biorefineries Private Limited, at Samalkot, East Godavari Dist., A.P.	0.75 MW	2014-15	Andhra Pradesh
9	M/s IOT Mabagas Ltd., at Puduchatram, Namakkal, T. N.	2.40MW	2012-13	Tamil Nadu
10	Poultry litter based power generation project by M/s Subhashri Bio-energies Pvt. Ltd. Namakkal, T.N.	2.50 MW	2006-07	Tamil Nadu

Source: Secondary Research

Annexure 3 : Cattle Farm - State and District wise energy production

Assumptions

- For the waste calculation, we have assumed that 50 % of the cattle would form part of cattle farm, therefore 50% of the cattle dung generated has been considered to estimate the energy potential.
- Approximately 10 Kg cattle dung per cattle is generated per day
- 0.034m^3 of biogas can be generated from 1 kg of cattle waste as referred from secondary source *http://urpjournals.com/tocjnls/38_13v3i1_3.pdf*

Union Territory - Andaman and Nicobar Island

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Nicobars (E)	40	20	200	73	0.00	0.00
Nicobars (I)	1,498	749	7,490	2,734	0.02	0.11
North and Middle Andaman (E)	5,899	2,950	29,495	10,766	0.09	0.44
North and Middle Andaman (I)	4,776	2,388	23,880	8,716	0.07	0.36
South Andamans (E)	7,742	3,871	38,710	14,129	0.12	0.58
South Andamans (I)	7,506	3,753	37,530	13,698	0.12	0.56
Total	**27,461**	**13,731**	**1,37,305**	**50,116**	**0.43**	**2.06**

State - Andhra Pradesh

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Anantapur (E)	2,11,053	1,05,527	10,55,265	3,85,172	3.29	15.81
Anantapur (I)	1,73,017	86,509	8,65,085	3,15,756	2.70	12.96
Chittoor(E)	7,88,402	3,94,201	39,42,010	14,38,834	12.30	59.05
Chittoor(I)	93,086	46,543	4,65,430	1,69,882	1.45	6.97
East Godavari (E)	85,515	42,758	4,27,575	1,56,065	1.33	6.41
East Godavari (I)	2,05,781	1,02,891	10,28,905	3,75,550	3.21	15.41
Guntur (E)	10,231	5,116	51,155	18,672	0.16	0.77
Guntur (I)	42,306	21,153	2,11,530	77,208	0.66	3.17
Krishna (E)	8,683	4,342	43,415	15,846	0.14	0.65
Krishna (I)	50,519	25,260	2,52,595	92,197	0.79	3.78
Kurnool (E)	12,404	6,202	62,020	22,637	0.19	0.93
Kurnool (I)	1,58,020	79,010	7,90,100	2,88,387	2.47	11.84
Prakasam (E)	9,210	4,605	46,050	16,808	0.14	0.69
Prakasam (I)	29,940	14,970	1,49,700	54,641	0.47	2.24
Spsr Nellore (E)	15,409	7,705	77,045	28,121	0.24	1.15
Spsr Nellore (I)	74,593	37,297	3,72,965	1,36,132	1.16	5.59
Srikakulam (E)	3,49,235	1,74,618	17,46,175	6,37,354	5.45	26.16
Srikakulam (I)	1,17,960	58,980	5,89,800	2,15,277	1.84	8.84
Visakhapatanam (E)	1,75,809	87,905	8,79,045	3,20,851	2.74	13.17
Visakhapatanam (I)	1,96,153	98,077	9,80,765	3,57,979	3.06	14.69
Vizianagaram (E)	3,05,317	1,52,659	15,26,585	5,57,204	4.76	22.87
Vizianagaram (I)	1,01,355	50,678	5,06,775	1,84,973	1.58	7.59
West Godavari (E)	46,671	23,336	2,33,355	85,175	0.73	3.50
West Godavari (I)	1,17,884	58,942	5,89,420	2,15,138	1.84	8.83
Y.S.R. (E)	56,121	28,061	2,80,605	1,02,421	0.88	4.20

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Y.S.R. (I)	55,046	27,523	2,75,230	1,00,459	0.86	4.12
Total	**3489720**	**17,44,860**	**1,74,48,600**	**63,68,739**	**54.45**	**261.38**

State - Arunachal Pradesh

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Anjaw (I)	891	446	4,455	1,626	0.01	0.07
Changlang (E)	34	17	170	62	0.00	0.00
Changlang (I)	12,847	6,424	64,235	23,446	0.20	0.96
Dibang valley (E)	69	35	345	126	0.00	0.01
Dibang valley (I)	66	33	330	120	0.00	0.00
East kameng (E)	64	32	320	117	0.00	0.00
East kameng (I)	14,321	7,161	71,605	26,136	0.22	1.07
East siang (E)	221	111	1,105	403	0.00	0.02
East siang (I)	18,093	9,047	90,465	33,020	0.28	1.36
Kra daadi (I)	7,216	3,608	36,080	13,169	0.11	0.54
Kurung kumey (I)	966	483	4,830	1,763	0.02	0.07
Lohit (E)	2,406	1,203	12,030	4,391	0.04	0.18
Lohit (I)	34,911	17,456	1,74,555	63,713	0.54	2.61
Longding (I)	1,692	846	8,460	3,088	0.03	0.13
Lower dibang valley (E)	27	14	135	49	0.00	0.00
Lower dibang valley (I)	8,333	4,167	41,665	15,208	0.13	0.62
Lower subansiri (I)	23,133	11,567	1,15,665	42,218	0.36	1.73
Namsai (E)	321	161	1,605	586	0.01	0.02
Namsai (I)	4,236	2,118	21,180	7,731	0.07	0.32
Papum pare (E)	1,068	534	5,340	1,949	0.02	0.08
Papum pare	15,070	7,535	75,350	27,503	0.24	1.13
Siang (E)	-	-	-	-	0.00	0.00
Siang (I)	6,600	3,300	33,000	12,045	0.10	0.49
Tawang (E)	604	302	3,020	1,102	0.01	0.05
Tawang (I)	12,198	6,099	60,990	22,261	0.19	0.91
Tirap (E)	-	-	-	-	0.00	0.00
Tirap (I)	1,038	519	5,190	1,894	0.02	0.08
Upper siang (E)	99	50	495	181	0.00	0.01
Upper siang (I)	3,849	1,925	19,245	7,024	0.06	0.29
Upper subansiri (E)	199	100	995	363	0.00	0.01
Upper subansiri (I)	10,555	5,278	52,775	19,263	0.16	0.79
West kameng (E)	237	119	1,185	433	0.00	0.02
West kameng (I)	9,642	4,821	48,210	17,597	0.15	0.72
West siang (E)	47	24	235	86	0.00	0.00
West siang (I)	7,074	3,537	35,370	12,910	0.11	0.53

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Total	**198127**	**99,064**	**9,90,635**	**3,61,582**	**3.09**	**14.84**

State - Assam

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Baksa (E)	14,551	7,276	72,755	26,556	0.23	1.09
Baksa (I)	2,53,071	1,26,536	12,65,355	4,61,855	3.95	18.96
Bongaigaon (E)	25,617	12,809	1,28,085	46,751	0.40	1.92
Bongaigaon (I)	1,63,647	81,824	8,18,235	2,98,656	2.55	12.26
Barpeta (E)	65,497	32,749	3,27,485	1,19,532	1.02	4.91
Barpeta (I)	3,25,035	1,62,518	16,25,175	5,93,189	5.07	24.35
Biswanath (E)	9,231	4,616	46,155	16,847	0.14	0.69
Biswanath (I)	2,24,476	1,12,238	11,22,380	4,09,669	3.50	16.81
Cachar (E)	22,968	11,484	1,14,840	41,917	0.36	1.72
Cachar (I)	2,59,503	1,29,752	12,97,515	4,73,593	4.05	19.44
Chirang (E)	7,626	3,813	38,130	13,917	0.12	0.57
Chirang (I)	1,27,262	63,631	6,36,310	2,32,253	1.99	9.53
Darrang (E)	18,907	9,454	94,535	34,505	0.30	1.42
Darrang (I)	3,39,022	1,69,511	16,95,110	6,18,715	5.29	25.39
Dhemaji (E)	707	354	3,535	1,290	0.01	0.05
Dhemaji (I)	2,38,266	1,19,133	11,91,330	4,34,835	3.72	17.85
Dhubri (E)	11,496	5,748	57,480	20,980	0.18	0.86
Dhubri (I)	2,51,405	1,25,703	12,57,025	4,58,814	3.92	18.83
Dibrugarh (E)	15,375	7,688	76,875	28,059	0.24	1.15
Dibrugarh (I)	1,66,763	83,382	8,33,815	3,04,342	2.60	12.49
Dima hasao (E)	1,458	729	7,290	2,661	0.02	0.11
Dima hasao (I)	9,785	4,893	48,925	17,858	0.15	0.73
Goalpara (E)	8,302	4,151	41,510	15,151	0.13	0.62
Goalpara (I)	2,17,307	1,08,654	10,86,535	3,96,585	3.39	16.28
Golaghat (E)	38,455	19,228	1,92,275	70,180	0.60	2.88
Golaghat (I)	4,69,005	2,34,503	23,45,025	8,55,934	7.32	35.13
Hailakandi (E)	9,529	4,765	47,645	17,390	0.15	0.71
Hailakandi (I)	96,267	48,134	4,81,335	1,75,687	1.50	7.21
Hojai (E)	54,914	27,457	2,74,570	1,00,218	0.86	4.11
Hojai (I)	1,82,256	91,128	9,11,280	3,32,617	2.84	13.65
Jorhat (E)	18,442	9,221	92,210	33,657	0.29	1.38
Jorhat (I)	3,23,590	1,61,795	16,17,950	5,90,552	5.05	24.24
Kamrup (E)	28,806	14,403	1,44,030	52,571	0.45	2.16
Kamrup (I)	3,71,252	1,85,626	18,56,260	6,77,535	5.79	27.81
Kamrup (m) (E)	33,035	16,518	1,65,175	60,289	0.52	2.47
Kamrup (m) (I)	69,063	34,532	3,45,315	1,26,040	1.08	5.17
Karbi anglong (E)	22,402	11,201	1,12,010	40,884	0.35	1.68
Karbi anglong (I)	1,39,966	69,983	6,99,830	2,55,438	2.18	10.48

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Karimganj (E)	19,516	9,758	97,580	35,617	0.30	1.46
Karimganj (I)	1,94,542	97,271	9,72,710	3,55,039	3.04	14.57
Kokrajhar (E)	5,444	2,722	27,220	9,935	0.08	0.41
Kokrajhar (I)	1,92,292	96,146	9,61,460	3,50,933	3.00	14.40
Lakhimpur (E)	12,046	6,023	60,230	21,984	0.19	0.90
Lakhimpur (I)	3,18,788	1,59,394	15,93,940	5,81,788	4.97	23.88
Majuli (E)	165	83	825	301	0.00	0.01
Majuli (I)	73,578	36,789	3,67,890	1,34,280	1.15	5.51
Morigaon (E)	24,054	12,027	1,20,270	43,899	0.38	1.80
Morigaon (I)	2,44,328	1,22,164	12,21,640	4,45,899	3.81	18.30
Nagaon (E)	71,395	35,698	3,56,975	1,30,296	1.11	5.35
Nagaon (I)	4,26,590	2,13,295	21,32,950	7,78,527	6.66	31.95
Nalbari (E)	28,376	14,188	1,41,880	51,786	0.44	2.13
Nalbari (I)	1,84,408	92,204	9,22,040	3,36,545	2.88	13.81
Sibsagar (E)	6,863	3,432	34,315	12,525	0.11	0.51
Sibsagar (I)	1,91,090	95,545	9,55,450	3,48,739	2.98	14.31
Sonitpur (E)	30,455	15,228	1,52,275	55,580	0.48	2.28
Sonitpur (I)	3,31,818	1,65,909	16,59,090	6,05,568	5.18	24.85
Soraideu (E)	1,692	846	8,460	3,088	0.03	0.13
Soraideu (I)	50,431	25,216	2,52,155	92,037	0.79	3.78
South salmara (E)	3,239	1,620	16,195	5,911	0.05	0.24
South salmara (I)	93,847	46,924	4,69,235	1,71,271	1.46	7.03
Tinsukia (E)	23,036	11,518	1,15,180	42,041	0.36	1.73
Tinsukia (I)	2,02,919	1,01,460	10,14,595	3,70,327	3.17	15.20
Udalguri (E)	8,273	4,137	41,365	15,098	0.13	0.62
Udalguri (I)	2,37,026	1,18,513	11,85,130	4,32,572	3.70	17.75
West karbi anglong (E)	6,027	3,014	30,135	10,999	0.09	0.45
West karbi anglong (I)	64,393	32,197	3,21,965	1,17,517	1.00	4.82
Total	**76,80,890**	**38,40,445**	**3,84,04,450**	**1,40,17,624**	**119.85**	**575.30**

State - Bihar

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Purnia (I)	7,09,557	3,54,779	35,47,785	12,94,942	11.07	53.15
Gaya (I)	6,55,935	3,27,968	32,79,675	11,97,081	10.24	49.13
Araria (I)	6,35,485	3,17,743	31,77,425	11,59,760	9.92	47.60
Katihar (I)	6,13,782	3,06,891	30,68,910	11,20,152	9.58	45.97
Supaul (I)	5,62,818	2,81,409	28,14,090	10,27,143	8.78	42.16
Banka (I)	5,21,324	2,60,662	26,06,620	9,51,416	8.13	39.05
Jamui (I)	5,09,541	2,54,771	25,47,705	9,29,912	7.95	38.16
Madhubani (I)	4,81,947	2,40,974	24,09,735	8,79,553	7.52	36.10
Samastipur (E)	4,69,708	2,34,854	23,48,540	8,57,217	7.33	35.18
Kishanganj (I)	4,67,372	2,33,686	23,36,860	8,52,954	7.29	35.01

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Begusarai (E)	4,34,665	2,17,333	21,73,325	7,93,264	6.78	32.56
Aurangabad (I)	4,06,411	2,03,206	20,32,055	7,41,700	6.34	30.44
Madhepura (I)	3,69,100	1,84,550	18,45,500	6,73,608	5.76	27.65
Bhagalpur (I)	3,53,549	1,76,775	17,67,745	6,45,227	5.52	26.48
Saharsa (I)	3,43,134	1,71,567	17,15,670	6,26,220	5.35	25.70
Patna (E)	3,11,679	1,55,840	15,58,395	5,68,814	4.86	23.34
Nawada (I)	3,11,032	1,55,516	15,55,160	5,67,633	4.85	23.30
Purbi Champaran (I)	3,07,755	1,53,878	15,38,775	5,61,653	4.80	23.05
Pashchim Champaran (I)	2,93,717	1,46,859	14,68,585	5,36,034	4.58	22.00
Siwan (I)	2,45,626	1,22,813	12,28,130	4,48,267	3.83	18.40
Bhagalpur (E)	2,44,647	1,22,324	12,23,235	4,46,481	3.82	18.32
Darbhanga (I)	2,38,237	1,19,119	11,91,185	4,34,783	3.72	17.84
Rohtas (I)	2,35,137	1,17,569	11,75,685	4,29,125	3.67	17.61
Saran (E)	2,21,434	1,10,717	11,07,170	4,04,117	3.46	16.59
Muzaffarpur (E)	2,16,679	1,08,340	10,83,395	3,95,439	3.38	16.23
Vaishali (E)	2,09,225	1,04,613	10,46,125	3,81,836	3.26	15.67
Saran (I)	1,91,239	95,620	9,56,195	3,49,011	2.98	14.32
Muzaffarpur (I)	1,87,060	93,530	9,35,300	3,41,385	2.92	14.01
Khagaria (I)	1,86,087	93,044	9,30,435	3,39,609	2.90	13.94
Bhojpur (I)	1,57,911	78,956	7,89,555	2,88,188	2.46	11.83
Kaimur (Bhabua) (I)	1,56,287	78,144	7,81,435	2,85,224	2.44	11.71
Gopalganj (I)	1,55,514	77,757	7,77,570	2,83,813	2.43	11.65
Munger (I)	1,40,495	70,248	7,02,475	2,56,403	2.19	10.52
Patna (I)	1,32,532	66,266	6,62,660	2,41,871	2.07	9.93
Nalanda (I)	1,27,087	63,544	6,35,435	2,31,934	1.98	9.52
Buxar (E)	1,19,195	59,598	5,95,975	2,17,531	1.86	8.93
Bhojpur (E)	1,11,789	55,895	5,58,945	2,04,015	1.74	8.37
Sitamarhi	1,11,503	55,752	5,57,515	2,03,493	1.74	8.35
Siwan (E)	1,03,678	51,839	5,18,390	1,89,212	1.62	7.77
Rohtas (E)	1,00,131	50,066	5,00,655	1,82,739	1.56	7.50
Khagaria (I)	98,506	49,253	4,92,530	1,79,773	1.54	7.38
Lakhisarai (E)	88,911	44,456	4,44,555	1,62,263	1.39	6.66
Gopalganj (E)	81,179	40,590	4,05,895	1,48,152	1.27	6.08
Darbhanga (E)	80,292	40,146	4,01,460	1,46,533	1.25	6.01
Buxar (I)	77,936	38,968	3,89,680	1,42,233	1.22	5.84
Kaimur (Bhabua) (E)	72,306	36,153	3,61,530	1,31,958	1.13	5.42
Madhepura (E)	69,265	34,633	3,46,325	1,26,409	1.08	5.19
Nalanda (E)	68,943	34,472	3,44,715	1,25,821	1.08	5.16
Pashchim Champaran (E)	67,981	33,991	3,39,905	1,24,065	1.06	5.09
Banka (E)	67,882	33,941	3,39,410	1,23,885	1.06	5.08
Purbi Champaran (E)	65,075	32,538	3,25,375	1,18,762	1.02	4.87
Arwal (I)	61,440	30,720	3,07,200	1,12,128	0.96	4.6
Sheikhpura (E)	59,240	29,620	2,96,200	1,08,113	0.92	4.44

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Vaishali (I)	56,702	28,351	2,83,510	1,03,481	0.88	4.25
Saharsa (E)	55,012	27,506	2,75,060	1,00,397	0.86	4.12
Samastipur (I)	49,857	24,929	2,49,285	90,989	0.78	3.73
Gaya (E)	49,626	24,813	2,48,130	90,567	0.77	3.72
Munger (E)	48,828	24,414	2,44,140	89,111	0.76	3.66
Lakhisarai (I)	46,183	23,092	2,30,915	84,284	0.72	3.46
Sitamarhi (E)	44,347	22,174	2,21,735	80,933	0.69	3.32
Jehanabad (I)	42,835	21,418	2,14,175	78,174	0.67	3.21
Jehanabad (E)	42,150	21,075	2,10,750	76,924	0.66	3.16
Katihar (E)	41,314	20,657	2,06,570	75,398	0.64	3.09
Madhubani (E)	32,762	16,381	1,63,810	59,791	0.51	2.45
Aurangabad (E)	25,773	12,887	1,28,865	47,036	0.4	1.93
Nawada (E)	25,087	12,544	1,25,435	45,784	0.39	1.88
Araria (E)	25,062	12,531	1,25,310	45,738	0.39	1.88
Purnia (E)	24,200	12,100	1,21,000	44,165	0.38	1.81
Supaul (E)	22,336	11,168	1,11,680	40,763	0.35	1.67
Jamui (E)	21,592	10,796	1,07,960	39,405	0.34	1.62
Sheohar (I)	21,540	10,770	1,07,700	39,311	0.34	1.61
Sheikhpura (I)	17,957	8,979	89,785	32,772	0.28	1.34
Sheohar (E)	17,390	8,695	86,950	31,737	0.27	1.3
Begusarai (I)	14,375	7,188	71,875	26,234	0.22	1.08
Arwal (E)	6,983	3,492	34,915	12,744	0.11	0.52
Kishanganj (E)	5,100	2,550	25,500	9,308	0.08	0.38
Total	**1,40,45,971**	**70,22,986**	**7,02,29,855**	**2,56,33,897**	**219.18**	**1052.04**

Union Territory - Chandigarh

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Chandigarh (E)	8,000	4,000	40,000	14,600	0.12	0.60
Chandigarh (I)	2,789	1,395	13,945	5,090	0.04	0.21
Total	**10,789**	**5,395**	**53,945**	**19,690**	**0.17**	**0.81**

State - Chhattisgarh

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Balod (E)	3,894	1,947	19,470	7,107	0.06	0.29
Balod (I)	2,10,219	1,05,110	10,51,095	3,83,650	3.28	15.75
Baloda Bazar (E)	5,015	2,508	25,075	9,152	0.08	0.38
Baloda Bazar (I)	3,20,666	1,60,333	16,03,330	5,85,215	5	24.02
Balrampur (E)	4,663	2,332	23,315	8,510	0.07	0.35
Balrampur (I)	1,91,451	95,726	9,57,255	3,49,398	2.99	14.34

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bastar (E)	5,692	2,846	28,460	10,388	0.09	0.43
Bastar (I)	1,06,118	53,059	5,30,590	1,93,665	1.66	7.95
Bemetara (E)	1,044	522	5,220	1,905	0.02	0.08
Bemetara (I)	2,97,813	1,48,907	14,89,065	5,43,509	4.65	22.31
Bijapur (E)	331	166	1,655	604	0.01	0.02
Bijapur (I)	1,41,028	70,514	7,05,140	2,57,376	2.2	10.56
Bilaspur (E)	12,724	6,362	63,620	23,221	0.2	0.95
Bilaspur (I)	3,44,444	1,72,222	17,22,220	6,28,610	5.37	25.8
Dantewada (E)	2,023	1,012	10,115	3,692	0.03	0.15
Dantewada (I)	80,394	40,197	4,01,970	1,46,719	1.25	6.02
Dhamtari (E)	6,799	3,400	33,995	12,408	0.11	0.51
Dhamtari (I)	1,58,147	79,074	7,90,735	2,88,618	2.47	11.85
Durg (E)	9,819	4,910	49,095	17,920	0.15	0.74
Durg (I)	2,08,591	1,04,296	10,42,955	3,80,679	3.25	15.62
Gariyaband (E)	2,557	1,279	12,785	4,667	0.04	0.19
Gariyaband (I)	1,34,757	67,379	6,73,785	2,45,932	2.1	10.09
Janjgir-Champa (E)	10,575	5,288	52,875	19,299	0.17	0.79
Janjgir-Champa (I)	3,60,018	1,80,009	18,00,090	6,57,033	5.62	26.97
Jashpur (E)	5,744	2,872	28,720	10,483	0.09	0.43
Jashpur (I)	1,34,500	67,250	6,72,500	2,45,463	2.1	10.07
Kabirdham (Kawardha) (E)	450	225	2,250	821	0.01	0.03
Kabirdham (Kawardha) (I)	2,38,694	1,19,347	11,93,470	4,35,617	3.72	17.88
Kanker (E)	14,285	7,143	71,425	26,070	0.22	1.07
Kanker (I)	1,41,035	70,518	7,05,175	2,57,389	2.2	10.56
Kondagaon (E)	2,670	1,335	13,350	4,873	0.04	0.2
Kondagaon (I)	1,06,650	53,325	5,33,250	1,94,636	1.66	7.99
Korba (E)	5,591	2,796	27,955	10,204	0.09	0.42
Korba (I)	1,67,195	83,598	8,35,975	3,05,131	2.61	12.52
Korea (E)	7,935	3,968	39,675	14,481	0.12	0.59
Korea (I)	1,67,548	83,774	8,37,740	3,05,775	2.61	12.55
Mahasamund (E)	22,060	11,030	1,10,300	40,260	0.34	1.65
Mahasamund (I)	1,53,999	77,000	7,69,995	2,81,048	2.4	11.53
Mungeli (E)	2,059	1,030	10,295	3,758	0.03	0.15
Mungeli (I)	1,82,199	91,100	9,10,995	3,32,513	2.84	13.65
Narayanpur (E)	549	275	2,745	1,002	0.01	0.04
Narayanpur (I)	1,07,372	53,686	5,36,860	1,95,954	1.68	8.04
Raigarh (E)	37,343	18,672	1,86,715	68,151	0.58	2.8
Raigarh (I)	1,57,924	78,962	7,89,620	2,88,211	2.46	11.83
Raipur (E)	12,381	6,191	61,905	22,595	0.19	0.93
Raipur (I)	2,27,793	1,13,897	11,38,965	4,15,722	3.55	17.06
Rajnandgaon (E)	4,771	2,386	23,855	8,707	0.07	0.36
Rajnandgaon (I)	4,05,421	2,02,711	20,27,105	7,39,893	6.33	30.37
Sukma (E)	261	131	1,305	476	0	0.02
Sukma (I)	1,86,164	93,082	9,30,820	3,39,749	2.9	13.94
Surajpur (E)	11,457	5,729	57,285	20,909	0.18	0.86

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Surajpur (I)	1,19,019	59,510	5,95,095	2,17,210	1.86	8.91
Surguja (E)	16,967	8,484	84,835	30,965	0.26	1.27
Surguja (I)	93,128	46,564	4,65,640	1,69,959	1.45	6.98
Total	**53,51,946**	**26,75,973**	**2,67,59,730**	**97,67,301**	**83.51**	**400.86**

Union Territory - Dadra and Nagar Haveli

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dadra and Nagar Haveli (E)	745	373	3,725	1,360	0.01	0.06
Dadra and Nagar Haveli (I)	12,199	6,100	60,995	22,263	0.19	0.91
Total	**12,944**	**6,472**	**64,720**	**23,623**	**0.20**	**0.97**

Union Territory - Daman and Diu

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Daman (E)	202	101	1,010	369	0.00	0.02
Daman (I)	359	180	1,795	655	0.01	0.03
Diu (I)	746	373	3,730	1361	0.01	0.06
Total	**1307**	**654**	**6,535**	**2,385**	**0.02**	**0.10**

State - Goa

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
North Goa (E)	13,512	6,756	67,560	24,659	0.21	1.01
North Goa (I)	9,434	4,717	47,170	17,217	0.15	0.71
South Goa (E)	12,380	6,190	61,900	22,594	0.19	0.93
South Goa (I)	11,701	5,851	58,505	21,354	0.18	0.88
Total	**47,027**	**23,514**	**2,35,135**	**85,824**	**0.73**	**3.52**

State - Gujarat

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Banas kantha (E)	8,78,934	4,39,467	43,94,670	16,04,055	13.72	65.83
Kachchh (I)	4,80,307	2,40,154	24,01,535	8,76,560	7.49	35.97
Banas kantha (I)	3,91,486	1,95,743	19,57,430	7,14,462	6.11	29.32
Surendranagar (I)	2,82,807	1,41,404	14,14,035	5,16,123	4.41	21.18
Sabar kantha (E)	2,79,131	1,39,566	13,95,655	5,09,414	4.36	20.91
Dohad (I)	2,77,592	1,38,796	13,87,960	5,06,605	4.33	20.79
Arvalli (E)	2,69,055	1,34,528	13,45,275	4,91,025	4.20	20.15

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Rajkot (I)	2,35,705	1,17,853	11,78,525	4,30,162	3.68	17.65
Navsari (E)	2,02,619	1,01,310	10,13,095	3,69,780	3.16	15.18
Mahesana (E)	1,92,335	96,168	9,61,675	3,51,011	3.00	14.41
Anand (E)	1,81,179	90,590	9,05,895	3,30,652	2.83	13.57
Ahmadabad (I)	1,79,889	89,945	8,99,445	3,28,297	2.81	13.47
Bhavnagar (I)	1,75,498	87,749	8,77,490	3,20,284	2.74	13.14
Mahisagar (E)	1,75,010	87,505	8,75,050	3,19,393	2.73	13.11
Kheda (E)	1,64,998	82,499	8,24,990	3,01,121	2.57	12.36
Gir somnath (I)	1,63,963	81,982	8,19,815	2,99,232	2.56	12.28
Panch mahals (I)	1,62,784	81,392	8,13,920	2,97,081	2.54	12.19
Amreli (I)	1,56,142	78,071	7,80,710	2,84,959	2.44	11.70
Surat (E)	1,51,811	75,906	7,59,055	2,77,055	2.37	11.37
Botad (I)	1,48,699	74,350	7,43,495	2,71,376	2.32	11.14
Tapi (E)	1,46,221	73,111	7,31,105	2,66,853	2.28	10.95
Valsad (E)	1,43,302	71,651	7,16,510	2,61,526	2.24	10.73
Morbi (I)	1,22,956	61,478	6,14,780	2,24,395	1.92	9.21
Sabar kantha (I)	1,11,537	55,769	5,57,685	2,03,555	1.74	8.35
Junagadh (I)	1,08,776	54,388	5,43,880	1,98,516	1.70	8.15
Patan (I)	1,07,332	53,666	5,36,660	1,95,881	1.67	8.04
Mahesana (I)	1,06,891	53,446	5,34,455	1,95,076	1.67	8.01
Chhotaudepur (I)	1,03,142	51,571	5,15,710	1,88,234	1.61	7.73
Gandhinagar (E)	1,03,027	51,514	5,15,135	1,88,024	1.61	7.72
Devbhumi dwarka	96,834	48,417	4,84,170	1,76,722	1.51	7.25
Vadodara (I)	96,316	48,158	4,81,580	1,75,777	1.50	7.21
Surat (I)	89,644	44,822	4,48,220	1,63,600	1.40	6.71
Jamnagar (I)	83,382	41,691	4,16,910	1,52,172	1.30	6.25
Anand (I)	80,737	40,369	4,03,685	1,47,345	1.26	6.05
Arvalli (I)	80,001	40,001	4,00,005	1,46,002	1.25	5.99
Kheda (I)	79,769	39,885	3,98,845	1,45,578	1.24	5.97
Bharuch (I)	74,825	37,413	3,74,125	1,36,556	1.17	5.60
Valsad (I)	71,386	35,693	3,56,930	1,30,279	1.11	5.35
Narmada (I)	71,002	35,501	3,55,010	1,29,579	1.11	5.32
Mahisagar (I)	68,488	34,244	3,42,440	1,24,991	1.07	5.13
Gandhinagar (I)	66,049	33,025	3,30,245	1,20,539	1.03	4.95
Rajkot (E)	50,465	25,233	2,52,325	92,099	0.79	3.78
Porbandar (I)	48,480	24,240	2,42,400	88,476	0.76	3.63
Patan (E)	47,899	23,950	2,39,495	87,416	0.75	3.59
Panch mahals (E)	47,447	23,724	2,37,235	86,591	0.74	3.55
Chhotaudepur (E)	44,837	22,419	2,24,185	81,828	0.70	3.36
Vadodara (E)	38,015	19,008	1,90,075	69,377	0.59	2.85
Bharuch (E)	29,648	14,824	1,48,240	54,108	0.46	2.22
Tapi (I)	25,929	12,965	1,29,645	47,320	0.40	1.94
Kachchh (E)	20,273	10,137	1,01,365	36,998	0.32	1.52
Ahmadabad (E)	20,208	10,104	1,01,040	36,880	0.32	1.51
Dang (E)	17,610	8,805	88,050	32,138	0.27	1.32

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dang (I)	17,488	8,744	87,440	31,916	0.27	1.31
Gir somnath (E)	13,341	6,671	66,705	24,347	0.21	1.00
Narmada (E)	11,256	5,628	56,280	20,542	0.18	0.84
Navsari (I)	10,808	5,404	54,040	19,725	0.17	0.81
Botad (E)	8,681	4,341	43,405	15,843	0.14	0.65
Dohad (E)	7,710	3,855	38,550	14,071	0.12	0.58
Surendranagar (I)	6,787	3,394	33,935	12,386	0.11	0.51
Bhavnagar (E)	5,442	2,721	27,210	9,932	0.08	0.41
Morbi (E)	4,921	2,461	24,605	8,981	0.08	0.37
Porbandar (E)	3,466	1,733	17,330	6,325	0.05	0.26
Junagadh (E)	1,612	806	8,060	2,942	0.03	0.12
Amreli (E)	1,445	723	7,225	2,637	0.02	0.11
Devbhumi Dwarka (E)	807	404	4,035	1,473	0.01	0.06
Jamnagar (E)	760	380	3,800	1,387	0.01	0.06
Total	**76,46,896**	**38,23,448**	**3,82,34,480**	**1,39,55,585**	**119.32**	**572.75**

State - Haryana

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ambala (E)	51,049	25,525	2,55,245	93,164	0.80	3.82
Ambala (I)	12,492	6,246	62,460	22,798	0.19	0.94
Bhiwani (E)	30,856	15,428	1,54,280	56,312	0.48	2.31
Bhiwani (I)	52,868	26,434	2,64,340	96,484	0.82	3.96
Charki dadri (E)	17,139	8,570	85,695	31,279	0.27	1.28
Charki dadri (I)	15,388	7,694	76,940	28,083	0.24	1.15
Faridabad (E)	17,104	8,552	85,520	31,215	0.27	1.28
Faridabad (I)	22,670	11,335	1,13,350	41,373	0.35	1.70
Fatehabad (E)	41,462	20,731	2,07,310	75,668	0.65	3.11
Fatehabad (I)	43,108	21,554	2,15,540	78,672	0.67	3.23
Gurugram (E)	34,849	17,425	1,74,245	63,599	0.54	2.61
Gurugram (I)	21,269	10,635	1,06,345	38,816	0.33	1.59
Hisar (E)	47,941	23,971	2,39,705	87,492	0.75	3.59
Hisar (I)	73,173	36,587	3,65,865	1,33,541	1.14	5.48
Jhajjar (E)	23,787	11,894	1,18,935	43,411	0.37	1.78
Jhajjar (I)	27,539	13,770	1,37,695	50,259	0.43	2.06
Jind (E)	19,455	9,728	97,275	35,505	0.30	1.46
Jind (I)	50,536	25,268	2,52,680	92,228	0.79	3.79
Kaithal (E)	33,628	16,814	1,68,140	61,371	0.52	2.52
Kaithal (I)	36,819	18,410	1,84,095	67,195	0.57	2.76
Karnal (E)	1,07,477	53,739	5,37,385	1,96,146	1.68	8.05
Karnal (I)	32,260	16,130	1,61,300	58,875	0.50	2.42
Kurukshetra (E)	76,901	38,451	3,84,505	1,40,344	1.20	5.76
Kurukshetra (I)	16,420	8,210	82,100	29,967	0.26	1.23
Mahendragarh (E)	19,337	9,669	96,685	35,290	0.30	1.45

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Mahendragarh (I)	24,152	12,076	1,20,760	44,077	0.38	1.81
Mewat (E)	8,952	4,476	44,760	16,337	0.14	0.67
Mewat (I)	17,172	8,586	85,860	31,339	0.27	1.29
Palwal (E)	21,076	10,538	1,05,380	38,464	0.33	1.58
Palwal (I)	22,079	11,040	1,10,395	40,294	0.34	1.65
Panchkula (E)	11,732	5,866	58,660	21,411	0.18	0.88
Panchkula (I)	12,641	6,321	63,205	23,070	0.20	0.95
Panipat (E)	35,667	17,834	1,78,335	65,092	0.56	2.67
Panipat (I)	27,209	13,605	1,36,045	49,656	0.42	2.04
Rewari (E)	21,118	10,559	1,05,590	38,540	0.33	1.58
Rewari (I)	18,008	9,004	90,040	32,865	0.28	1.35
Rohtak (E)	15,951	7,976	79,755	29,111	0.25	1.19
Rohtak (I)	29,344	14,672	1,46,720	53,553	0.46	2.20
Sirsa (E)	1,05,929	52,965	5,29,645	1,93,320	1.65	7.93
Sirsa (I)	87,683	43,842	4,38,415	1,60,021	1.37	6.57
Sonipat (E)	50,868	25,434	2,54,340	92,834	0.79	3.81
Sonipat (I)	41,137	20,569	2,05,685	75,075	0.64	3.08
Yamunanagar (E)	88,793	44,397	4,43,965	1,62,047	1.39	6.65
Yamunanagar (I)	14,108	7,054	70,540	25,747	0.22	1.06
Total	**15,79,146**	**7,89,573**	**78,95,730**	**28,81,941**	**24.64**	**118.28**

State - Himachal Pradesh

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bilaspur (E)	29,142	14,571	1,45,710	53,184	0.45	2.18
Bilaspur (I)	2,371	1,186	11,855	4,327	0.04	0.18
Chamba (E)	49,757	24,879	2,48,785	90,807	0.78	3.73
Chamba (I)	1,06,271	53,136	5,31,355	1,93,945	1.66	7.96
Hamirpur (E)	15,934	7,967	79,670	29,080	0.25	1.19
Hamirpur (I)	660	330	3,300	1,205	0.01	0.05
Kangra (E)	2,02,795	1,01,398	10,13,975	3,70,101	3.16	15.19
Kangra (I)	26,137	13,069	1,30,685	47,700	0.41	1.96
Kinnaur (E)	14,474	7,237	72,370	26,415	0.23	1.08
Kinnaur (I)	5,845	2,923	29,225	10,667	0.09	0.44
Kullu (E)	1,04,273	52,137	5,21,365	1,90,298	1.63	7.81
Kullu (I)	24,870	12,435	1,24,350	45,388	0.39	1.86
Lahul and Spiti (E)	7,135	3,568	35,675	13,021	0.11	0.53
Lahul And Spiti (I)	3,104	1,552	15,520	5,665	0.05	0.23
Mandi (E)	2,09,117	1,04,559	10,45,585	3,81,639	3.26	15.66
Mandi (I)	61,359	30,680	3,06,795	1,11,980	0.96	4.6
Shimla (E)	1,32,077	66,039	6,60,385	2,41,041	2.06	9.89
Shimla (I)	50,443	25,222	2,52,215	92,058	0.79	3.78
Sirmaur (E)	72,410	36,205	3,62,050	1,32,148	1.13	5.42
Sirmaur (I)	1,03,122	51,561	5,15,610	1,88,198	1.61	7.72
Solan (E)	74,689	37,345	3,73,445	1,36,307	1.17	5.59

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Solan (I)	22,281	11,141	1,11,405	40,663	0.35	1.67
Una (E)	49,756	24,878	2,48,780	90,805	0.78	3.73
Una (I)	3,407	1,704	17,035	6,218	0.05	0.26
Total	**13,71,429**	**6,85,715**	**68,57,145**	**25,02,858**	**21.40**	**102.72**

Union Territory - Jammu and Kashmir

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Anantnag (E)	1,37,610	68,805	6,88,050	2,51,138	2.15	10.31
Anantnag (I)	19,466	9,733	97,330	35,525	0.30	1.46
Badgam (E)	1,21,565	60,783	6,07,825	2,21,856	1.90	9.11
Badgam (I)	5,474	2,737	27,370	9,990	0.09	0.41
Bandipora (E)	45,911	22,956	2,29,555	83,788	0.72	3.44
Bandipora (I)	17,932	8,966	89,660	32,726	0.28	1.34
Baramulla (E)	1,03,317	51,659	5,16,585	1,88,554	1.61	7.74
Baramulla (I)	24,906	12,453	1,24,530	45,453	0.39	1.87
Doda (E)	33,894	16,947	1,69,470	61,857	0.53	2.54
Doda (I)	94,094	47,047	4,70,470	1,71,722	1.47	7.05
Ganderbal (E)	36,191	18,096	1,80,955	66,049	0.56	2.71
Ganderbal (I)	14,888	7,444	74,440	27,171	0.23	1.12
Jammu (E)	1,31,309	65,655	6,56,545	2,39,639	2.05	9.84
Jammu (I)	42,727	21,364	2,13,635	77,977	0.67	3.20
Kargil (E)	23,811	11,906	1,19,055	43,455	0.37	1.78
Kargil (I)	21,584	10,792	1,07,920	39,391	0.34	1.62
Kathua (E)	64,550	32,275	3,22,750	1,17,804	1.01	4.83
Kathua (I)	84,270	42,135	4,21,350	1,53,793	1.31	6.31
Kishtwar (E)	11,607	5,804	58,035	21,183	0.18	0.87
Kishtwar (I)	58,427	29,214	2,92,135	1,06,629	0.91	4.38
Kulgam (E)	80,427	40,214	4,02,135	1,46,779	1.25	6.02
Kulgam (I)	4,713	2,357	23,565	8,601	0.07	0.35
Kupwara (E)	80,514	40,257	4,02,570	1,46,938	1.26	6.03
Kupwara (I)	66,916	33,458	3,34,580	1,22,122	1.04	5.01
Leh Ladakh (E)	12,718	6,359	63,590	23,210	0.20	0.95
Leh Ladakh (I)	17,291	8,646	86,455	31,556	0.27	1.30
Poonch (E)	13,981	6,991	69,905	25,515	0.22	1.05
Poonch (I)	31,158	15,579	1,55,790	56,863	0.49	2.33
Pulwama (E)	79,642	39,821	3,98,210	1,45,347	1.24	5.97
Pulwama (I)	379	190	1,895	692	0.01	0.03
Rajauri (E)	42,668	21,334	2,13,340	77,869	0.67	3.20
Rajauri (I)	42,373	21,187	2,11,865	77,331	0.66	3.17
Ramban (E)	20,824	10,412	1,04,120	38,004	0.32	1.56
Ramban (I)	95,697	47,849	4,78,485	1,74,647	1.49	7.17
Reasi (E)	9,041	4,521	45,205	16,500	0.14	0.68
Reasi (I)	69,644	34,822	3,48,220	1,27,100	1.09	5.22

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Samba (E)	49,993	24,997	2,49,965	91,237	0.78	3.74
Samba (I)	12,250	6,125	61,250	22,356	0.19	0.92
Shopian (E)	58,705	29,353	2,93,525	1,07,137	0.92	4.40
Shopian (I)	726	363	3,630	1,325	0.01	0.05
Srinagar (E)	31,866	15,933	1,59,330	58,155	0.50	2.39
Srinagar (I)	331	166	1,655	604	0.01	0.02
Udhampur (E)	49,292	24,646	2,46,460	89,958	0.77	3.69
Udhampur (I)	84,892	42,446	4,24,460	1,54,928	1.32	6.36
Total	**20,49,574**	**10,24,787**	**1,02,47,870**	**37,40,473**	**31.98**	**153.51**

State - Jharkhand

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bokaro (E)	23,481	11,741	1,17,405	42,853	0.37	1.76
Bokaro (I)	2,00,322	1,00,161	10,01,610	3,65,588	3.13	15.00
Chatra (E)	22,899	11,450	1,14,495	41,791	0.36	1.72
Chatra (I)	2,90,079	1,45,040	14,50,395	5,29,394	4.53	21.73
Deoghar (E)	33,192	16,596	1,65,960	60,575	0.52	2.49
Deoghar (I)	4,20,009	2,10,005	21,00,045	7,66,516	6.55	31.46
Dhanbad (E)	46,206	23,103	2,31,030	84,326	0.72	3.46
Dhanbad (I)	1,83,122	91,561	9,15,610	3,34,198	2.86	13.72
Dumka (E)	15,058	7,529	75,290	27,481	0.23	1.13
Dumka (I)	4,24,616	2,12,308	21,23,080	7,74,924	6.63	31.80
East Singhbum (E)	39,344	19,672	1,96,720	71,803	0.61	2.95
East Singhbum (I)	1,56,626	78,313	7,83,130	2,85,842	2.44	11.73
Garhwa (E)	62,881	31,441	3,14,405	1,14,758	0.98	4.71
Garhwa (I)	4,30,731	2,15,366	21,53,655	7,86,084	6.72	32.26
Giridih (E)	27,607	13,804	1,38,035	50,383	0.43	2.07
Giridih (I)	5,42,062	2,71,031	27,10,310	9,89,263	8.46	40.60
Godda (E)	11,416	5,708	57,080	20,834	0.18	0.86
Godda (I)	6,00,751	3,00,376	30,03,755	10,96,371	9.37	45.00
Gumla (E)	8,547	4,274	42,735	15,598	0.13	0.64
Gumla (I)	2,46,367	1,23,184	12,31,835	4,49,620	3.84	18.45
Hazaribagh (E)	24,505	12,253	1,22,525	44,722	0.38	1.84
Hazaribagh (I)	2,98,998	1,49,499	14,94,990	5,45,671	4.67	22.39
Jamtara (E)	6,499	3,250	32,495	11,861	0.10	0.49
Jamtara (I)	2,39,652	1,19,826	11,98,260	4,37,365	3.74	17.95
Khunti (E)	5,011	2,506	25,055	9,145	0.08	0.38
Khunti (I)	1,27,598	63,799	6,37,990	2,32,866	1.99	9.56
Koderma (E)	17,443	8,722	87,215	31,833	0.27	1.31
Koderma (I)	90,132	45,066	4,50,660	1,64,491	1.41	6.75
Latehar (E)	9,574	4,787	47,870	17,473	0.15	0.72
Latehar (I)	1,56,024	78,012	7,80,120	2,84,744	2.43	11.69
Lohardaga (E)	18,449	9,225	92,245	33,669	0.29	1.38

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Lohardaga (I)	54,709	27,355	2,73,545	99,844	0.85	4.10
Pakur (E)	8,202	4,101	41,010	14,969	0.13	0.61
Pakur (I)	2,30,755	1,15,378	11,53,775	4,21,128	3.60	17.28
Palamu (E)	14,867	7,434	74,335	27,132	0.23	1.11
Palamu (I)	4,54,702	2,27,351	22,73,510	8,29,831	7.10	34.06
Ramgarh (E)	12,418	6,209	62,090	22,663	0.19	0.93
Ramgarh (I)	46,833	23,417	2,34,165	85,470	0.73	3.51
Ranchi (E)	1,07,842	53,921	5,39,210	1,96,812	1.68	8.08
Ranchi (I)	2,58,186	1,29,093	12,90,930	4,71,189	4.03	19.34
Sahebganj (E)	15,800	7,900	79,000	28,835	0.25	1.18
Sahebganj (I)	1,69,927	84,964	8,49,635	3,10,117	2.65	12.73
Saraikela Kharsawan (E)	6,105	3,053	30,525	11,142	0.10	0.46
Saraikela Kharsawan (I)	1,19,506	59,753	5,97,530	2,18,098	1.86	8.95
Simdega (E)	3,901	1,951	19,505	7,119	0.06	0.29
Simdega (I)	1,76,200	88,100	8,81,000	3,21,565	2.75	13.20
West Singhbhum (E)	4,579	2,290	22,895	8,357	0.07	0.34
West Singhbhum (I)	1,68,165	84,083	8,40,825	3,06,901	2.62	12.60
Total	**66,31,898**	**33,15,949**	**3,31,59,490**	**1,21,03,214**	**103.49**	**496.73**

State - Karnataka

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bagalkot (E)	62,798	31,399	3,13,990	1,14,606	0.98	4.70
Bagalkot (I)	96,066	48,033	4,80,330	1,75,320	1.50	7.20
Bangalore Rural (E)	1,50,909	75,455	7,54,545	2,75,409	2.35	11.30
Bangalore Rural (I)	13,740	6,870	68,700	25,076	0.21	1.03
Belgaum (E)	2,37,441	1,18,721	11,87,205	4,33,330	3.71	17.78
Belgaum (I)	1,60,427	80,214	8,02,135	2,92,779	2.50	12.02
Bellary (E)	52,115	26,058	2,60,575	95,110	0.81	3.90
Bellary (I)	1,26,331	63,166	6,31,655	2,30,554	1.97	9.46
Bengaluru Urban (E)	1,31,175	65,588	6,55,875	2,39,394	2.05	9.83
Bengaluru Urban (I)	15,578	7,789	77,890	28,430	0.24	1.17
Bidar (E)	18,478	9,239	92,390	33,722	0.29	1.38
Bidar (I)	93,199	46,600	4,65,995	1,70,088	1.45	6.98
Bijapur (E)	13,229	6,615	66,145	24,143	0.21	0.99
Bijapur (I)	1,13,410	56,705	5,67,050	2,06,973	1.77	8.49
Chamarajanagar (E)	1,63,336	81,668	8,16,680	2,98,088	2.55	12.23
Chamarajanagar (I)	55,154	27,577	2,75,770	1,00,656	0.86	4.13
Chikballapur (E)	1,69,522	84,761	8,47,610	3,09,378	2.65	12.70
Chikballapur (I)	27,372	13,686	1,36,860	49,954	0.43	2.05
Chikmagalur (E)	1,08,642	54,321	5,43,210	1,98,272	1.70	8.14
Chikmagalur (I)	1,22,975	61,488	6,14,875	2,24,429	1.92	9.21
Chitradurga (E)	70,674	35,337	3,53,370	1,28,980	1.10	5.29
Chitradurga (I)	87,213	43,607	4,36,065	1,59,164	1.36	6.53

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dakshin Kannad (E)	1,74,794	87,397	8,73,970	3,18,999	2.73	13.09
Dakshin Kannad (I)	62,046	31,023	3,10,230	1,13,234	0.97	4.65
Davangere (E)	1,71,464	85,732	8,57,320	3,12,922	2.68	12.84
Davangere (I)	52,164	26,082	2,60,820	95,199	0.81	3.91
Dharwad (E)	71,101	35,551	3,55,505	1,29,759	1.11	5.33
Dharwad (I)	36,901	18,451	1,84,505	67,344	0.58	2.76
Gadag (E)	52,501	26,251	2,62,505	95,814	0.82	3.93
Gadag (I)	35,438	17,719	1,77,190	64,674	0.55	2.65
Gulbarga (E)	13,229	6,615	66,145	24,143	0.21	0.99
Gulbarga (I)	2,08,885	1,04,443	10,44,425	3,81,215	3.26	15.65
Hassan (E)	3,43,681	1,71,841	17,18,405	6,27,218	5.36	25.74
Hassan (I)	1,23,198	61,599	6,15,990	2,24,836	1.92	9.23
Haveri (E)	97,986	48,993	4,89,930	1,78,824	1.53	7.34
Haveri (I)	44,718	22,359	2,23,590	81,610	0.70	3.35
Kodagu (E)	33,913	16,957	1,69,565	61,891	0.53	2.54
Kodagu (I)	22,322	11,161	1,11,610	40,738	0.35	1.67
Kolar (E)	1,85,169	92,585	9,25,845	3,37,933	2.89	13.87
Kolar (I)	14,021	7,011	70,105	25,588	0.22	1.05
Koppal (E)	52,832	26,416	2,64,160	96,418	0.82	3.96
Koppal (I)	1,08,155	54,078	5,40,775	1,97,383	1.69	8.10
Mandya (E)	2,90,304	1,45,152	14,51,520	5,29,805	4.53	21.74
Mandya (I)	49,017	24,509	2,45,085	89,456	0.76	3.67
Mysore (E)	3,04,792	1,52,396	15,23,960	5,56,245	4.76	22.83
Mysore (I)	1,17,736	58,868	5,88,680	2,14,868	1.84	8.82
Raichur (E)	18,076	9,038	90,380	32,989	0.28	1.35
Raichur (I)	1,35,429	67,715	6,77,145	2,47,158	2.11	10.14
Ramanagara (E)	2,04,775	1,02,388	10,23,875	3,73,714	3.20	15.34
Ramanagara (I)	70,805	35,403	3,54,025	1,29,219	1.10	5.30
Shimoga (E)	1,29,021	64,511	6,45,105	2,35,463	2.01	9.66
Shimoga (I)	2,63,253	1,31,627	13,16,265	4,80,437	4.11	19.72
Tumkur (E)	2,70,042	1,35,021	13,50,210	4,92,827	4.21	20.23
Tumkur (I)	1,30,525	65,263	6,52,625	2,38,208	2.04	9.78
Udupi (E)	1,32,071	66,036	6,60,355	2,41,030	2.06	9.89
Udupi (I)	1,06,650	53,325	5,33,250	1,94,636	1.66	7.99
Uttar Kannad (E)	57,386	28,693	2,86,930	1,04,729	0.90	4.30
Uttar Kannad (I)	1,75,862	87,931	8,79,310	3,20,948	2.74	13.17
Yadgir (E)	1,060	530	5,300	1,935	0.02	0.08
Yadgir (I)	1,40,481	70,241	7,02,405	2,56,378	2.19	10.52
Total	**65,91,587**	**32,95,794**	**3,29,57,935**	**1,20,29,646**	**102.86**	**493.71**

State - Kerala

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Alappuzha (E)	71,617	35,809	3,58,085	1,30,701	1.12	5.36
Alappuzha (I)	2,197	1,099	10,985	4,010	0.03	0.16
Ernakulam (E)	96,469	48,235	4,82,345	1,76,056	1.51	7.23
Ernakulam (I)	4,333	2,167	21,665	7,908	0.07	0.32
Idukki (E)	85,342	42,671	4,26,710	1,55,749	1.33	6.39
Idukki (I)	4,517	2,259	22,585	8,244	0.07	0.34
Kannur (E)	78,887	39,444	3,94,435	1,43,969	1.23	5.91
Kannur (I)	3,172	1,586	15,860	5,789	0.05	0.24
Kasaragod (E)	47,468	23,734	2,37,340	86,629	0.74	3.56
Kasaragod (I)	18,273	9,137	91,365	33,348	0.29	1.37
Kollam (E)	98,885	49,443	4,94,425	1,80,465	1.54	7.41
Kollam (I)	2,289	1,145	11,445	4,177	0.04	0.17
Kottayam (E)	71,888	35,944	3,59,440	1,31,196	1.12	5.38
Kottayam (I)	2,971	1,486	14,855	5,422	0.05	0.22
Kozhikode (E)	79,445	39,723	3,97,225	1,44,987	1.24	5.95
Kozhikode (I)	5,371	2,686	26,855	9,802	0.08	0.4
Malappuram (E)	72,720	36,360	3,63,600	1,32,714	1.13	5.45
Malappuram (I)	1,798	899	8,990	3,281	0.03	0.13
Palakkad (E)	1,36,347	68,174	6,81,735	2,48,833	2.13	10.21
Palakkad (I)	11,054	5,527	55,270	20,174	0.17	0.83
Pathanamthitta (E)	52,553	26,277	2,62,765	95,909	0.82	3.94
Pathanamthitta (I)	3,184	1,592	15,920	5,811	0.05	0.24
Thiruvananthapuram (E)	90,084	45,042	4,50,420	1,64,403	1.41	6.75
Thiruvananthapuram (I)	2,100	1,050	10,500	3,833	0.03	0.16
Thrissur (E)	96,564	48,282	4,82,820	1,76,229	1.51	7.23
Thrissur (I)	6,053	3,027	30,265	11,047	0.09	0.45
Wayanad (E)	70,957	35,479	3,54,785	1,29,497	1.11	5.31
Wayanad (I)	2,240	1,120	11,200	4,088	0.03	0.17
Total	**12,18,778**	**6,09,389**	**60,93,890**	**22,24,270**	**19.02**	**91.29**

Union Territory - Lakshadweep

District name	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Lakshadweep district (E)	961	481	4,805	1,754	0.01	0.07
Lakshadweep district (I)	747	374	3,735	1,363	0.01	0.06
Total	**1,708**	**854**	**8,540**	**3,117**	**0.03**	**0.13**

State - Madhya Pradesh

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Sagar (I)	6,05,521	3,02,761	30,27,605	11,05,076	9.45	45.35

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Rewa (I)	4,91,740	2,45,870	24,58,700	8,97,426	7.67	36.83
Satna (I)	4,49,931	2,24,966	22,49,655	8,21,124	7.02	33.7
Damoh (I)	3,95,687	1,97,844	19,78,435	7,22,129	6.17	29.64
Dhar (I)	3,40,657	1,70,329	17,03,285	6,21,699	5.32	25.52
Chhindwara (I)	3,31,879	1,65,940	16,59,395	6,05,679	5.18	24.86
Khargone (I)	3,10,107	1,55,054	15,50,535	5,65,945	4.84	23.23
Guna (I)	2,87,274	1,43,637	14,36,370	5,24,275	4.48	21.52
Shivpuri (I)	2,76,759	1,38,380	13,83,795	5,05,085	4.32	20.73
Balaghat (I)	2,74,867	1,37,434	13,74,335	5,01,632	4.29	20.59
Raisen (I)	2,71,069	1,35,535	13,55,345	4,94,701	4.23	20.3
Vidisha (I)	2,68,000	1,34,000	13,40,000	4,89,100	4.18	20.07
Sidhi (I)	2,57,429	1,28,715	12,87,145	4,69,808	4.02	19.28
Panna (I)	2,57,263	1,28,632	12,86,315	4,69,505	4.01	19.27
Singrauli (I)	2,55,067	1,27,534	12,75,335	4,65,497	3.98	19.1
Hoshangabad (I)	2,52,891	1,26,446	12,64,455	4,61,526	3.95	18.94
Dewas (I)	2,49,153	1,24,577	12,45,765	4,54,704	3.89	18.66
Katni (I)	2,47,385	1,23,693	12,36,925	4,51,478	3.86	18.53
Betul (I)	2,34,462	1,17,231	11,72,310	4,27,893	3.66	17.56
Shahdol (I)	2,33,264	1,16,632	11,66,320	4,25,707	3.64	17.47
Tikamgarh (I)	2,30,996	1,15,498	11,54,980	4,21,568	3.6	17.3
Chhatarpur (I)	2,24,294	1,12,147	11,21,470	4,09,337	3.5	16.8
Sheopur (I)	2,13,325	1,06,663	10,66,625	3,89,318	3.33	15.98
Rajgarh (I)	2,12,819	1,06,410	10,64,095	3,88,395	3.32	15.94
East nimar (I)	2,05,987	1,02,994	10,29,935	3,75,926	3.21	15.43
Ashoknagar (I)	2,01,598	1,00,799	10,07,990	3,67,916	3.15	15.1
Seoni (I)	1,96,922	98,461	9,84,610	3,59,383	3.07	14.75
Sehore (I)	1,94,888	97,444	9,74,440	3,55,671	3.04	14.6
Mandla (I)	1,94,526	97,263	9,72,630	3,55,010	3.04	14.57
Barwani (I)	1,91,417	95,709	9,57,085	3,49,336	2.99	14.34
Jhabua (I)	1,82,957	91,479	9,14,785	3,33,897	2.85	13.7
Narsinghpur (I)	1,78,460	89,230	8,92,300	3,25,690	2.78	13.37
Ratlam (I)	1,78,417	89,209	8,92,085	3,25,611	2.78	13.36
Jabalpur (I)	1,74,630	87,315	8,73,150	3,18,700	2.72	13.08
Ujjain (I)	1,73,228	86,614	8,66,140	3,16,141	2.7	12.97
Umaria (I)	166456	83228	832280	303782	2.6	12.47
Mandsaur (I)	1,65,825	82,913	8,29,125	3,02,631	2.59	12.42
Dindori (I)	1,62,073	81,037	8,10,365	2,95,783	2.53	12.14
Neemuch (I)	1,58,880	79,440	7,94,400	2,89,956	2.48	11.9
Indore (E)	1,54,235	77,118	7,71,175	2,81,479	2.41	11.55
Anuppur (I)	1,40,342	70,171	7,01,710	2,56,124	2.19	10.51
Alirajpur (I)	1,36,883	68,442	6,84,415	2,49,811	2.14	10.25
Agar malwa (I)	1,36,514	68,257	6,82,570	2,49,138	2.13	10.22
Sehore (E)	1,30,014	65,007	6,50,070	2,37,276	2.03	9.74
Raisen (E)	1,18,047	59,024	5,90,235	2,15,436	1.84	8.84
Gwalior (I)	1,16,891	58,446	5,84,455	2,13,326	1.82	8.76

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Harda (I)	1,08,869	54,435	5,44,345	1,98,686	1.7	8.15
Shajapur (I)	1,03,723	51,862	5,18,615	1,89,294	1.62	7.77
Datia (I)	92,631	46,316	4,63,155	1,69,052	1.45	6.94
Bhind (I)	91,559	45,780	4,57,795	1,67,095	1.43	6.86
Burhanpur (I)	71,452	35,726	3,57,260	1,30,400	1.11	5.35
Ujjain (E)	70,512	35,256	3,52,560	1,28,684	1.1	5.28
Bhopal (I)	69,798	34,899	3,48,990	1,27,381	1.09	5.23
Morena (I)	69,068	34,534	3,45,340	1,26,049	1.08	5.17
Mandsaur (E)	63,985	31,993	3,19,925	1,16,773	1	4.79
Rewa (E)	63,416	31,708	3,17,080	1,15,734	0.99	4.75
Betul (E)	61,616	30,808	3,08,080	1,12,449	0.96	4.62
Dhar (E)	60,730	30,365	3,03,650	1,10,832	0.95	4.55
Indore (I)	58,415	29,208	2,92,075	1,06,607	0.91	4.38
Dewas (E)	51,528	25,764	2,57,640	94,039	0.8	3.86
Chhindwara (E)	50,169	25,085	2,50,845	91,558	0.78	3.76
Ratlam (E)	49,954	24,977	2,49,770	91,166	0.78	3.74
Jabalpur (E)	48,092	24,046	2,40,460	87,768	0.75	3.6
Bhopal (E)	42,039	21,020	2,10,195	76,721	0.66	3.15
Shajapur (E)	38,953	19,477	1,94,765	71,089	0.61	2.92
Neemuch (E)	38,446	19,223	1,92,230	70,164	0.6	2.88
Hoshangabad (E)	36,639	18,320	1,83,195	66,866	0.57	2.74
Satna (E)	36,489	18,245	1,82,445	66,592	0.57	2.73
Seoni (E)	34,820	17,410	1,74,100	63,547	0.54	2.61
Sidhi (E)	33,614	16,807	1,68,070	61,346	0.52	2.52
Jhabua (E)	31,003	15,502	1,55,015	56,580	0.48	2.32
Narsinghpur (E)	29,265	14,633	1,46,325	53,409	0.46	2.19
Morena (E)	28,346	14,173	1,41,730	51,731	0.44	2.12
Bhind (E)	26,468	13,234	1,32,340	48,304	0.41	1.98
Sagar (E)	24,370	12,185	1,21,850	44,475	0.38	1.83
Anuppur (E)	19,465	9,733	97,325	35,524	0.3	1.46
Balaghat (E)	17,541	8,771	87,705	32,012	0.27	1.31
Rajgarh (E)	16,453	8,227	82,265	30,027	0.26	1.23
Tikamgarh (E)	14,999	7,500	74,995	27,373	0.23	1.12
Shahdol (E)	14,250	7,125	71,250	26,006	0.22	1.07
Guna (E)	13,671	6,836	68,355	24,950	0.21	1.02
Datia (E)	12,522	6,261	62,610	22,853	0.2	0.94
Gwalior (E)	12,488	6,244	62,440	22,791	0.19	0.94
Mandla (E)	10,707	5,354	53,535	19,540	0.17	0.8
Harda (E)	9,499	4,750	47,495	17,336	0.15	0.71
Chhatarpur (E)	9,410	4,705	47,050	17,173	0.15	0.7
Damoh (E)	8,130	4,065	40,650	14,837	0.13	0.61
Vidisha (E)	7,884	3,942	39,420	14,388	0.12	0.59
Ashoknagar (E)	7,564	3,782	37,820	13,804	0.12	0.57
Shivpuri (E)	7,413	3,707	37,065	13,529	0.12	0.56
Singrauli (E)	5,246	2,623	26,230	9,574	0.08	0.39

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Katni (E)	5,010	2,505	25,050	9,143	0.08	0.38
Umaria (E)	3,890	1,945	19,450	7,099	0.06	0.29
Sheopur (E)	3,241	1,621	16,205	5,915	0.05	0.24
Panna (E)	2,700	1,350	13,500	4,928	0.04	0.2
Khargone (E)	2,696	1,348	13,480	4,920	0.04	0.2
Burhanpur (E)	2,416	1,208	12,080	4,409	0.04	0.18
East nimar (E)	2,101	1,051	10,505	3,834	0.03	0.16
Dindori (E)	1,580	790	7,900	2,884	0.02	0.12
Agar malwa (E)	819	410	4,095	1,495	0.01	0.06
Barwani (E)	785	393	3,925	1,433	0.01	0.06
Alirajpur (E)	228	114	1,140	416	0	0.02
Total	**1,26,29,706**	**63,14,853**	**6,31,48,530**	**2,30,49,213**	**197.08**	**945.96**

State - Maharashtra

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ahmednagar (E)	9,61,781	4,80,891	48,08,905	17,55,250	15.01	72.04
Ahmednagar (I)	2,43,792	1,21,896	12,18,960	4,44,920	3.80	18.26
Akola (E)	9,362	4,681	46,810	17,086	0.15	0.70
Akola (I)	1,25,249	62,625	6,26,245	2,28,579	1.95	9.38
Amravati (E)	31,700	15,850	1,58,500	57,853	0.49	2.37
Amravati (I)	2,53,106	1,26,553	12,65,530	4,61,918	3.95	18.96
Aurangabad (E)	1,75,439	87,720	8,77,195	3,20,176	2.74	13.14
Aurangabad (I)	1,40,389	70,195	7,01,945	2,56,210	2.19	10.52
Beed (E)	1,22,660	61,330	6,13,300	2,23,855	1.91	9.19
Beed (I)	1,40,049	70,025	7,00,245	2,55,589	2.19	10.49
Bhandara (E)	1,10,050	55,025	5,50,250	2,00,841	1.72	8.24
Bhandara (I)	46,637	23,319	2,33,185	85,113	0.73	3.49
Buldhana (E)	45,076	22,538	2,25,380	82,264	0.70	3.38
Buldhana (I)	2,07,163	1,03,582	10,35,815	3,78,072	3.23	15.52
Chandrapur (E)	25,723	12,862	1,28,615	46,944	0.40	1.93
Chandrapur (I)	1,46,220	73,110	7,31,100	2,66,852	2.28	10.95
Dhule (E)	58,144	29,072	2,90,720	1,06,113	0.91	4.35
Dhule (I)	1,15,386	57,693	5,76,930	2,10,579	1.80	8.64
Gadchiroli (E)	7,690	3,845	38,450	14,034	0.12	0.58
Gadchiroli (I)	1,95,070	97,535	9,75,350	3,56,003	3.04	14.61
Gondia (E)	30,750	15,375	1,53,750	56,119	0.48	2.30
Gondia (I)	1,28,539	64,270	6,42,695	2,34,584	2.01	9.63
Hingoli (E)	12,297	6,149	61,485	22,442	0.19	0.92
Hingoli (I)	98,770	49,385	4,93,850	1,80,255	1.54	7.40
Jalgaon (E)	1,40,331	70,166	7,01,655	2,56,104	2.19	10.51
Jalgaon (I)	1,85,292	92,646	9,26,460	3,38,158	2.89	13.88
Jalna (E)	48,488	24,244	2,42,440	88,491	0.76	3.63

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Jalna (I)	1,45,916	72,958	7,29,580	2,66,297	2.28	10.93
Kolhapur (E)	2,07,608	1,03,804	10,38,040	3,78,885	3.24	15.55
Kolhapur (I)	36,568	18,284	1,82,840	66,737	0.57	2.74
Latur (E)	23,317	11,659	1,16,585	42,554	0.36	1.75
Latur (I)	1,20,765	60,383	6,03,825	2,20,396	1.88	9.05
Mumbai (E)	1,128	564	5,640	2,059	0.02	0.08
Mumbai (I)	1,490	745	7,450	2,719	0.02	0.11
Nagpur (E)	1,05,840	52,920	5,29,200	1,93,158	1.65	7.93
Nagpur (I)	1,51,244	75,622	7,56,220	2,76,020	2.36	11.33
Nanded (E)	14,735	7,368	73,675	26,891	0.23	1.10
Nanded (I)	2,65,783	1,32,892	13,28,915	4,85,054	4.15	19.91
Nandurbar (E)	15,428	7,714	77,140	28,156	0.24	1.16
Nandurbar (I)	1,12,067	56,034	5,60,335	2,04,522	1.75	8.39
Nashik (E)	3,22,826	1,61,413	16,14,130	5,89,157	5.04	24.18
Nashik (I)	2,67,375	1,33,688	13,36,875	4,87,959	4.17	20.03
Osmanabad (E)	1,99,783	99,892	9,98,915	3,64,604	3.12	14.96
Osmanabad (I)	63,623	31,812	3,18,115	1,16,112	0.99	4.77
Palghar (E)	6,582	3,291	32,910	12,012	0.10	0.49
Palghar (I)	83,758	41,879	4,18,790	1,52,858	1.31	6.27
Parbhani (E)	7,473	3,737	37,365	13,638	0.12	0.56
Parbhani (I)	1,29,677	64,839	6,48,385	2,36,661	2.02	9.71
Pune (E)	6,30,660	3,15,330	31,53,300	11,50,955	9.84	47.24
Pune (I)	1,22,288	61,144	6,11,440	2,23,176	1.91	9.16
Raigad (E)	14,059	7,030	70,295	25,658	0.22	1.05
Raigad (I)	82,769	41,385	4,13,845	1,51,053	1.29	6.20
Ratnagiri (E)	19,992	9,996	99,960	36,485	0.31	1.50
Ratnagiri (I)	84,879	42,440	4,24,395	1,54,904	1.32	6.36
Sangli (E)	2,22,188	1,11,094	11,10,940	4,05,493	3.47	16.64
Sangli (I)	69,818	34,909	3,49,090	1,27,418	1.09	5.23
Satara (E)	2,46,661	1,23,331	12,33,305	4,50,156	3.85	18.47
Satara (I)	65,106	32,553	3,25,530	1,18,818	1.02	4.88
Sindhudurg (E)	10,666	5,333	53,330	19,465	0.17	0.80
Sindhudurg (I)	38,347	19,174	1,91,735	69,983	0.60	2.87
Solapur (E)	5,05,622	2,52,811	25,28,110	9,22,760	7.89	37.87
Solapur (I)	1,67,180	83,590	8,35,900	3,05,104	2.61	12.52
Thane (E)	4,257	2,129	21,285	7,769	0.07	0.32
Thane (I)	42,274	21,137	2,11,370	77,150	0.66	3.17
Wardha (E)	43,166	21,583	2,15,830	78,778	0.67	3.23
Wardha (I)	1,19,649	59,825	5,98,245	2,18,359	1.87	8.96
Washim (E)	3,869	1,935	19,345	7,061	0.06	0.29
Washim (I)	95,233	47,617	4,76,165	1,73,800	1.49	7.13
Yavatmal (E)	15,468	7,734	77,340	28,229	0.24	1.16
Yavatmal (I)	3,22,161	1,61,081	16,10,805	5,87,944	5.03	24.13
Total	**90,14,451**	**45,07,226**	**4,50,72,255**	**1,64,51,373**	**140.66**	**675.18**

State - Manipur

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bishnupur (E)	8,478	4,239	42,390	15,472	0.13	0.64
Bishnupur (I)	26,002	13,001	1,30,010	47,454	0.41	1.95
Chandel (E)	8	4	40	15	0	0
Chandel (I)	8,710	4,355	43,550	15,896	0.14	0.65
Churachandpur (E)	275	138	1,375	502	0	0.02
Churachandpur (I)	14,825	7,413	74,125	27,056	0.23	1.11
Imphal East (E)	1,959	980	9,795	3,575	0.03	0.15
Imphal East (I)	26,762	13,381	1,33,810	48,841	0.42	2
Imphal West (E)	3,297	1,649	16,485	6,017	0.05	0.25
Imphal West (I)	16,243	8,122	81,215	29,643	0.25	1.22
Senapati (E)	1,081	541	5,405	1,973	0.02	0.08
Senapati (I)	17,451	8,726	87,255	31,848	0.27	1.31
Tamenglong (E)	3	2	15	5	0	0
Tamenglong (I)	6,441	3,221	32,205	11,755	0.1	0.48
Thoubal (E)	1,552	776	7,760	2,832	0.02	0.12
Thoubal (I)	19,658	9,829	98,290	35,876	0.31	1.47
Ukhrul (E)	31	16	155	57	0	0
Ukhrul (I)	4,707	2,354	23,535	8,590	0.07	0.35
Total	**1,57,483**	**78,742**	**7,87,415**	**2,87,406**	**2.46**	**11.8**

State - Meghalaya

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
East Garo Hills (E)	37	19	185	68	0	0
East Garo Hills (I)	44,522	22,261	2,22,610	81,253	0.69	3.33
East Jaintia Hills (E)	596	298	2,980	1,088	0.01	0.04
East Jaintia Hills (I)	33,452	16,726	1,67,260	61,050	0.52	2.51
East Khasi Hills (E)	12,936	6,468	64,680	23,608	0.2	0.97
East Khasi Hills (I)	37,832	18,916	1,89,160	69,043	0.59	2.83
North Garo Hills (E)	10	5	50	18	0	0
North Garo Hills (I)	37,663	18,832	1,88,315	68,735	0.59	2.82
Ri Bhoi (E)	15,360	7,680	76,800	28,032	0.24	1.15
Ri Bhoi (I)	21,563	10,782	1,07,815	39,352	0.34	1.62
South Garo Hills (I)	50,497	25,249	2,52,485	92,157	0.79	3.78
South West Garo Hills (E)	14	7	70	26	0	0
South West Garo Hills (I)	67,997	33,999	3,39,985	1,24,095	1.06	5.09
South West Khasi Hills (I)	20,879	10,440	1,04,395	38,104	0.33	1.56
West Garo Hills (E)	630	315	3,150	1,150	0.01	0.05
West Garo Hills (I)	1,37,600	68,800	6,88,000	2,51,120	2.15	10.31
West Jaintia Hills (E)	142	71	710	259	0	0.01
West Jaintia Hills (I)	25,883	12,942	1,29,415	47,236	0.4	1.94

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
West Khasi Hills (E)	136	68	680	248	0	0.01
West Khasi Hills (I)	52,512	26,256	2,62,560	95,834	0.82	3.93
Total	**560261**	**2,80,131**	**28,01,305**	**10,22,476**	**8.74**	**41.96**

State - Mizoram

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Aizawl (E)	7,801	3,901	39,005	14,237	0.12	0.58
Aizawl (I)	1,015	508	5,075	1,852	0.02	0.08
Champhai (E)	2,279	1,140	11,395	4,159	0.04	0.17
Champhai (I)	4,013	2,007	20,065	7,324	0.06	0.30
Kolasib (E)	3,098	1,549	15,490	5,654	0.05	0.23
Kolasib (I)	1,285	643	6,425	2,345	0.02	0.10
Lawngtlai (E)	670	335	3,350	1,223	0.01	0.05
Lawngtlai (I)	2,642	1,321	13,210	4,822	0.04	0.20
Lunglei (E)	1,259	630	6,295	2,298	0.02	0.09
Lunglei (I)	2,622	1,311	13,110	4,785	0.04	0.20
Mamit (E)	718	359	3,590	1,310	0.01	0.05
Mamit (I)	1,358	679	6,790	2,478	0.02	0.10
Serchhip (E)	1,008	504	5,040	1,840	0.02	0.08
Serchhip (I)	1,047	524	5,235	1,911	0.02	0.08
Siaha (E)	526	263	2,630	960	0.01	0.04
Siaha (I)	1,166	583	5,830	2,128	0.02	0.09
Total	**32,507**	**16,254**	**1,62,535**	**59,325**	**0.51**	**2.43**

State - Nagaland

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dimapur (E)	3,305	1,653	16,525	6,032	0.05	0.25
Dimapur (I)	5,698	2,849	28,490	10,399	0.09	0.43
Kiphire (E)	6	3	30	11	0	0
Kiphire (I)	592	296	2,960	1,080	0.01	0.04
Kohima (E)	5,056	2,528	25,280	9,227	0.08	0.38
Kohima (I)	1,005	503	5,025	1,834	0.02	0.08
Longleng (E)	1,430	715	7,150	2,610	0.02	0.11
Longleng (I)	4,734	2,367	23,670	8,640	0.07	0.35
Mokokchung (E)	552	276	2,760	1,007	0.01	0.04
Mokokchung (I)	345	173	1,725	630	0.01	0.03
Mon (E)	16	8	80	29	0	0
Mon (I)	4,432	2,216	22,160	8,088	0.07	0.33
Peren (E)	300	150	1,500	548	0	0.02

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Peren (I)	5,075	2,538	25,375	9,262	0.08	0.38
Phek (E)	664	332	3,320	1,212	0.01	0.05
Phek (I)	1,322	661	6,610	2,413	0.02	0.1
Tuensang (E)	1,222	611	6,110	2,230	0.02	0.09
Tuensang (I)	1,270	635	6,350	2,318	0.02	0.1
Wokha (E)	132	66	660	241	0	0.01
Wokha (I)	985	493	4,925	1,798	0.02	0.07
Zunheboto (E)	642	321	3,210	1,172	0.01	0.05
Zunheboto (I)	3,524	1,762	17,620	6,431	0.05	0.26
Total	**42,307**	**21,154**	**2,11,535**	**77,210**	**0.66**	**3.17**

State - Odisha

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Anugul (E)	28,647	14,324	1,43,235	52,281	0.45	2.15
Anugul (I)	1,48,977	74,489	7,44,885	2,71,883	2.32	11.16
Balangir (E)	75,892	37,946	3,79,460	1,38,503	1.18	5.68
Balangir (I)	66,518	33,259	3,32,590	1,21,395	1.04	4.98
Baleshwar (E)	34,694	17,347	1,73,470	63,317	0.54	2.6
Baleshwar (I)	4,55,252	2,27,626	22,76,260	8,30,835	7.1	34.1
Bargarh (E)	97,774	48,887	4,88,870	1,78,438	1.53	7.32
Bargarh (I)	34,950	17,475	1,74,750	63,784	0.55	2.62
Bhadrak (E)	35,919	17,960	1,79,595	65,552	0.56	2.69
Bhadrak (I)	3,60,368	1,80,184	18,01,840	6,57,672	5.62	26.99
Boudh (E)	11,413	5,707	57,065	20,829	0.18	0.85
Boudh (I)	46,135	23,068	2,30,675	84,196	0.72	3.46
Cuttack (E)	2,70,728	1,35,364	13,53,640	4,94,079	4.22	20.28
Cuttack (I)	2,06,531	1,03,266	10,32,655	3,76,919	3.22	15.47
Deogarh (E)	1,842	921	9,210	3,362	0.03	0.14
Deogarh (I)	45,965	22,983	2,29,825	83,886	0.72	3.44
Dhenkanal (E)	8,114	4,057	40,570	14,808	0.13	0.61
Dhenkanal (I)	2,68,195	1,34,098	13,40,975	4,89,456	4.18	20.09
Gajapati (E)	8,329	4,165	41,645	15,200	0.13	0.62
Gajapati (I)	47,398	23,699	2,36,990	86,501	0.74	3.55
Ganjam (E)	23,579	11,790	1,17,895	43,032	0.37	1.77
Ganjam (I)	2,77,995	1,38,998	13,89,975	5,07,341	4.34	20.82
Jagatsinghapur (E)	1,69,733	84,867	8,48,665	3,09,763	2.65	12.71
Jagatsinghapur (I)	28,554	14,277	1,42,770	52,111	0.45	2.14
Jajapur (E)	29,670	14,835	1,48,350	54,148	0.46	2.22
Jajapur (I)	3,72,116	1,86,058	18,60,580	6,79,112	5.81	27.87
Jharsuguda (E)	15,794	7,897	78,970	28,824	0.25	1.18
Jharsuguda (I)	32,702	16,351	1,63,510	59,681	0.51	2.45

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Kalahandi (E)	34,986	17,493	1,74,930	63,849	0.55	2.62
Kalahandi (I)	88,242	44,121	4,41,210	1,61,042	1.38	6.61
Kandhamal (E)	1,122	561	5,610	2,048	0.02	0.08
Kandhamal (I)	61,716	30,858	3,08,580	1,12,632	0.96	4.62
Kendrapara (E)	95,147	47,574	4,75,735	1,73,643	1.48	7.13
Kendrapara (I)	1,99,417	99,709	9,97,085	3,63,936	3.11	14.94
Kendujhar (E)	25,676	12,838	1,28,380	46,859	0.4	1.92
Kendujhar (I)	2,51,339	1,25,670	12,56,695	4,58,694	3.92	18.83
Khordha (E)	57,968	28,984	2,89,840	1,05,792	0.9	4.34
Khordha (I)	1,55,369	77,685	7,76,845	2,83,548	2.42	11.64
Koraput (E)	11,833	5,917	59,165	21,595	0.18	0.89
Koraput (I)	1,78,887	89,444	8,94,435	3,26,469	2.79	13.4
Malkangiri (E)	4,002	2,001	20,010	7,304	0.06	0.3
Malkangiri (I)	1,48,965	74,483	7,44,825	2,71,861	2.32	11.16
Mayurbhanj (E)	24,558	12,279	1,22,790	44,818	0.38	1.84
Mayurbhanj (I)	2,74,602	1,37,301	13,73,010	5,01,149	4.28	20.57
Nabarangpur (E)	14,808	7,404	74,040	27,025	0.23	1.11
Nabarangpur (I)	83,625	41,813	4,18,125	1,52,616	1.3	6.26
Nayagarh (E)	5,289	2,645	26,445	9,652	0.08	0.4
Nayagarh (I)	1,25,040	62,520	6,25,200	2,28,198	1.95	9.37
Nuapada (E)	5,951	2,976	29,755	10,861	0.09	0.45
Nuapada (I)	42,442	21,221	2,12,210	77,457	0.66	3.18
Puri (E)	1,61,871	80,936	8,09,355	2,95,415	2.53	12.12
Puri (I)	1,61,066	80,533	8,05,330	2,93,945	2.51	12.06
Rayagada (E)	6,151	3,076	30,755	11,226	0.1	0.46
Rayagada (I)	94,846	47,423	4,74,230	1,73,094	1.48	7.1
Sambalpur (E)	29,116	14,558	1,45,580	53,137	0.45	2.18
Sambalpur (I)	73,367	36,684	3,66,835	1,33,895	1.14	5.5
Sonepur (E)	33,930	16,965	1,69,650	61,922	0.53	2.54
Sonepur (I)	29,134	14,567	1,45,670	53,170	0.45	2.18
Sundargarh (E)	19,316	9,658	96,580	35,252	0.3	1.45
Sundargarh (I)	1,36,849	68,425	6,84,245	2,49,749	2.14	10.25
Total	**58,40,414**	**29,20,207**	**2,92,02,070**	**1,06,58,756**	**91.13**	**437.45**

Union Territory - Puducherry

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Karaikal (E)	15,006	7,503	75,030	27,386	0.23	1.12
Karaikal (I)	2,069	1,035	10,345	3,776	0.03	0.15
Mahe (E)	185	93	925	338	0.00	0.01
Mahe (I)	111	56	555	203	0.00	0.01
Pondicherry (E)	47,945	23,973	2,39,725	87,500	0.75	3.59
Pondicherry (I)	1,290	645	6,450	2,354	0.02	0.10

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Yanam (E)	148	74	740	270	0.00	0.01
Yanam (I)	610	305	3,050	1,113	0.01	0.05
Total	**67,364**	**33,682**	**3,36,820**	**1,22,939**	**1.05**	**5.05**

State - Punjab

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Amritsar (E)	1,71,543	85,772	8,57,715	3,13,066	2.68	12.85
Amritsar (I)	13,193	6,597	65,965	24,077	0.21	0.99
Barnala (E)	46,968	23,484	2,34,840	85,717	0.73	3.52
Barnala (I)	9,800	4,900	49,000	17,885	0.15	0.73
Bathinda (E)	1,16,524	58,262	5,82,620	2,12,656	1.82	8.73
Bathinda (I)	25,862	12,931	1,29,310	47,198	0.4	1.94
Faridkot (E)	58,401	29,201	2,92,005	1,06,582	0.91	4.37
Faridkot (I)	8,002	4,001	40,010	14,604	0.12	0.6
Fatehgarh Sahib (E)	57,503	28,752	2,87,515	1,04,943	0.9	4.31
Fatehgarh Sahib (I)	6,775	3,388	33,875	12,364	0.11	0.51
Fazilka (E)	82,505	41,253	4,12,525	1,50,572	1.29	6.18
Fazilka (I)	58,746	29,373	2,93,730	1,07,211	0.92	4.4
Firozepur (E)	80,847	40,424	4,04,235	1,47,546	1.26	6.06
Firozepur (I)	8,157	4,079	40,785	14,887	0.13	0.61
Gurdaspur (E)	1,62,188	81,094	8,10,940	2,95,993	2.53	12.15
Gurdaspur (I)	15,814	7,907	79,070	28,861	0.25	1.18
Hoshiarpur (E)	1,24,248	62,124	6,21,240	2,26,753	1.94	9.31
Hoshiarpur (I)	19,724	9,862	98,620	35,996	0.31	1.48
Jalandhar (E)	1,40,598	70,299	7,02,990	2,56,591	2.19	10.53
Jalandhar (I)	4,518	2,259	22,590	8,245	0.07	0.34
Kapurthala (E)	66,475	33,238	3,32,375	1,21,317	1.04	4.98
Kapurthala (I)	3,519	1,760	17,595	6,422	0.05	0.26
Ludhiana (E)	1,97,070	98,535	9,85,350	3,59,653	3.08	14.76
Ludhiana (I)	11,997	5,999	59,985	21,895	0.19	0.9
Mansa (E)	47,299	23,650	2,36,495	86,321	0.74	3.54
Mansa (I)	23,725	11,863	1,18,625	43,298	0.37	1.78
Moga (E)	90,508	45,254	4,52,540	1,65,177	1.41	6.78
Moga (I)	12,660	6,330	63,300	23,105	0.2	0.95
Muktsar (E)	85,541	42,771	4,27,705	1,56,112	1.33	6.41
Muktsar (I)	21,072	10,536	1,05,360	38,456	0.33	1.58
Nawanshahr (Sbs Nagar) (E)	58,658	29,329	2,93,290	1,07,051	0.92	4.39
Nawanshahr (Sbs Nagar) (I)	1,757	879	8,785	3,207	0.03	0.13
Pathankot (E)	54,137	27,069	2,70,685	98,800	0.84	4.05
Pathankot (I)	16,345	8,173	81,725	29,830	0.26	1.22
Patiala (E)	99,393	49,697	4,96,965	1,81,392	1.55	7.44
Patiala (I)	14,710	7,355	73,550	26,846	0.23	1.1
Rupnagar (E)	65,733	32,867	3,28,665	1,19,963	1.03	4.92
Rupnagar (I)	3,003	1,502	15,015	5,480	0.05	0.22

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
S.A.S Nagar (E)	33,375	16,688	1,66,875	60,909	0.52	2.5
S.A.S Nagar (I)	4,128	2,064	20,640	7,534	0.06	0.31
Sangrur (E)	1,05,164	52,582	5,25,820	1,91,924	1.64	7.88
Sangrur (I)	30,975	15,488	1,54,875	56,529	0.48	2.32
Tarn Taran (E)	87,999	44,000	4,39,995	1,60,598	1.37	6.59
Tarn Taran (I)	14,363	7,182	71,815	26,212	0.22	1.08
Total	**23,61,522**	**11,80,761**	**1,18,07,610**	**43,09,778**	**36.85**	**176.88**

State - Rajasthan

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bikaner (I)	9,64,229	4,82,115	48,21,145	17,59,718	15.05	72.22
Jodhpur (I)	8,89,659	4,44,830	44,48,295	16,23,628	13.88	66.64
Barmer (I)	8,37,232	4,18,616	41,86,160	15,27,948	13.06	62.71
Bhilwara (I)	4,84,598	2,42,299	24,22,990	8,84,391	7.56	36.3
Nagaur (I)	4,39,221	2,19,611	21,96,105	8,01,578	6.85	32.9
Udaipur (I)	4,38,701	2,19,351	21,93,505	8,00,629	6.85	32.86
Ganganagar (I)	3,99,999	2,00,000	19,99,995	7,29,998	6.24	29.96
Jaipur (E)	3,62,354	1,81,177	18,11,770	6,61,296	5.65	27.14
Jaisalmer (I)	3,56,517	1,78,259	17,82,585	6,50,644	5.56	26.7
Churu (I)	3,44,336	1,72,168	17,21,680	6,28,413	5.37	25.79
Hanumangarh (I)	3,36,093	1,68,047	16,80,465	6,13,370	5.24	25.17
Banswara (I)	3,09,730	1,54,865	15,48,650	5,65,257	4.83	23.2
Pali (I)	2,99,364	1,49,682	14,96,820	5,46,339	4.67	22.42
Jaipur (I)	2,92,454	1,46,227	14,62,270	5,33,729	4.56	21.9
Chittorgarh (I)	2,74,126	1,37,063	13,70,630	5,00,280	4.28	20.53
Ajmer (I)	2,71,793	1,35,897	13,58,965	4,96,022	4.24	20.36
Baran (I)	2,52,809	1,26,405	12,64,045	4,61,376	3.94	18.94
Jalore (I)	2,49,370	1,24,685	12,46,850	4,55,100	3.89	18.68
Sikar (E)	2,36,766	1,18,383	11,83,830	4,32,098	3.69	17.73
Dungarpur (I)	2,15,704	1,07,852	10,78,520	3,93,660	3.37	16.16
Pratapgarh (I)	2,11,788	1,05,894	10,58,940	3,86,513	3.3	15.86
Jhalawar (I)	2,10,668	1,05,334	10,53,340	3,84,469	3.29	15.78
Jhunjhunu (E)	1,89,163	94,582	9,45,815	3,45,222	2.95	14.17
Kota (I)	1,81,561	90,781	9,07,805	3,31,349	2.83	13.6
Rajsamand (I)	1,71,101	85,551	8,55,505	3,12,259	2.67	12.82
Ganganagar (E)	1,71,078	85,539	8,55,390	3,12,217	2.67	12.81
Bundi (I)	1,56,735	78,368	7,83,675	2,86,041	2.45	11.74
Sirohi (I)	1,55,323	77,662	7,76,615	2,83,464	2.42	11.63
Tonk (I)	1,50,049	75,025	7,50,245	2,73,839	2.34	11.24
Hanumangarh	1,37,962	68,981	6,89,810	2,51,781	2.15	10.33
Alwar (I)	1,30,002	65,001	6,50,010	2,37,254	2.03	9.74
Bhilwara (E)	1,29,035	64,518	6,45,175	2,35,489	2.01	9.66

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Sikar (I)	1,26,066	63,033	6,30,330	2,30,070	1.97	9.44
Bikaner (E)	1,22,497	61,249	6,12,485	2,23,557	1.91	9.18
Bharatpur (I)	1,16,845	58,423	5,84,225	2,13,242	1.82	8.75
Dausa (I)	96,848	48,424	4,84,240	1,76,748	1.51	7.25
Alwar (E)	94,321	47,161	4,71,605	1,72,136	1.47	7.06
Nagaur (E)	84,887	42,444	4,24,435	1,54,919	1.32	6.36
Jodhpur (E)	81,369	40,685	4,06,845	1,48,498	1.27	6.09
Udaipur (E)	75,926	37,963	3,79,630	1,38,565	1.18	5.69
Ajmer (E)	74,134	37,067	3,70,670	1,35,295	1.16	5.55
Bharatpur (E)	70,527	35,264	3,52,635	1,28,712	1.1	5.28
Jhunjhunu (I)	69,880	34,940	3,49,400	1,27,531	1.09	5.23
Sawai Madhopur (I)	65,799	32,900	3,28,995	1,20,083	1.03	4.93
Karauli (E)	57,644	28,822	2,88,220	1,05,200	0.9	4.32
Churu (E)	56,506	28,253	2,82,530	1,03,123	0.88	4.23
Dausa (E)	48,592	24,296	2,42,960	88,680	0.76	3.64
Dholpur (E)	46,346	23,173	2,31,730	84,581	0.72	3.47
Rajsamand (E)	33,897	16,949	1,69,485	61,862	0.53	2.54
Chittorgarh (E)	31,483	15,742	1,57,415	57,456	0.49	2.36
Banswara (E)	22,526	11,263	1,12,630	41,110	0.35	1.69
Pratapgarh (E)	21,446	10,723	1,07,230	39,139	0.33	1.61
Dholpur (I)	19,723	9,862	98,615	35,994	0.31	1.48
Bundi (E)	17,949	8,975	89,745	32,757	0.28	1.34
Pali (E)	14,816	7,408	74,080	27,039	0.23	1.11
Karauli (E)	10,014	5,007	50,070	18,276	0.16	0.75
Sirohi (E)	8,668	4,334	43,340	15,819	0.14	0.65
Jalore (E)	8,635	4,318	43,175	15,759	0.13	0.65
Tonk (E)	8,385	4,193	41,925	15,303	0.13	0.63
Jaisalmer (E)	8,372	4,186	41,860	15,279	0.13	0.63
Jhalawar (E)	7,880	3,940	39,400	14,381	0.12	0.59
Kota (E)	7,437	3,719	37,185	13,573	0.12	0.56
Dungarpur (E)	5,865	2,933	29,325	10,704	0.09	0.44
Sawai Madhopur (E)	5,765	2,883	28,825	10,521	0.09	0.43
Baran (E)	2,582	1,291	12,910	4,712	0.04	0.19
Barmer (E)	1,450	725	7,250	2,646	0.02	0.11
Total	**1,17,74,600**	**58,87,300**	**5,88,73,000**	**2,14,88,645**	**183.73**	**881.92**

State - Sikkim

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
East District (E)	34,546	17,273	1,72,730	63,046	0.54	2.59
East District (I)	2,121	1,061	10,605	3,871	0.03	0.16
North District (E)	6,841	3,421	34,205	12,485	0.11	0.51
North District (I)	1,719	860	8,595	3,137	0.03	0.13

South District (E)	28,054	14,027	1,40,270	51,199	0.44	2.1
South District (I)	7,915	3,958	39,575	14,445	0.12	0.59
West District (E)	23,300	11,650	1,16,500	42,523	0.36	1.75
West District (I)	10,207	5,104	51,035	18,628	0.16	0.76
Total	**114703**	**57,352**	**5,73,515**	**2,09,333**	**1.79**	**8.59**

State - Tamil Nadu

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ariyalur (E)	1,10,075	55,038	5,50,375	2,00,887	1.72	8.24
Ariyalur (I)	35,391	17,696	1,76,955	64,589	0.55	2.65
Chennai (E)	14,413	7,207	72,065	26,304	0.22	1.08
Chennai (I)	8,115	4,058	40,575	14,810	0.13	0.61
Coimbatore (E)	2,28,351	1,14,176	11,41,755	4,16,741	3.56	17.1
Coimbatore (I)	21,604	10,802	1,08,020	39,427	0.34	1.62
Cuddalore (E)	2,76,954	1,38,477	13,84,770	5,05,441	4.32	20.74
Cuddalore (I)	56,195	28,098	2,80,975	1,02,556	0.88	4.21
Dharmapuri (E)	3,27,135	1,63,568	16,35,675	5,97,021	5.1	24.5
Dharmapuri (I)	18,861	9,431	94,305	34,421	0.29	1.41
Dindigul (E)	2,59,793	1,29,897	12,98,965	4,74,122	4.05	19.46
Dindigul (I)	22,574	11,287	1,12,870	41,198	0.35	1.69
Erode (E)	2,55,722	1,27,861	12,78,610	4,66,693	3.99	19.15
Erode (I)	60,639	30,320	3,03,195	1,10,666	0.95	4.54
Kanchipuram (E)	1,74,499	87,250	8,72,495	3,18,461	2.72	13.07
Kanchipuram (I)	2,09,778	1,04,889	10,48,890	3,82,845	3.27	15.71
Kanniyakumari (E)	62,501	31,251	3,12,505	1,14,064	0.98	4.68
Kanniyakumari (I)	3,076	1,538	15,380	5,614	0.05	0.23
Karur (E)	1,36,663	68,332	6,83,315	2,49,410	2.13	10.24
Karur (I)	16,466	8,233	82,330	30,050	0.26	1.23
Krishnagiri (E)	3,04,642	1,52,321	15,23,210	5,55,972	4.75	22.82
Krishnagiri (I)	65,452	32,726	3,27,260	1,19,450	1.02	4.9
Madurai (E)	2,02,173	1,01,087	10,10,865	3,68,966	3.15	15.14
Madurai (I) (E)	28,401	14,201	1,42,005	51,832	0.44	2.13
Nagapattinam (E)	1,71,576	85,788	8,57,880	3,13,126	2.68	12.85
Nagapattinam (I)	64,790	32,395	3,23,950	1,18,242	1.01	4.85
Namakkal (E)	2,35,558	1,17,779	11,77,790	4,29,893	3.68	17.64
Namakkal (I)	20,039	10,020	1,00,195	36,571	0.31	1.5
Perambalur (E)	1,19,797	59,899	5,98,985	2,18,630	1.87	8.97
Perambalur (I)	3,796	1,898	18,980	6,928	0.06	0.28
Pudukkottai (E)	1,93,796	96,898	9,68,980	3,53,678	3.02	14.52
Pudukkottai (I)	1,16,020	58,010	5,80,100	2,11,737	1.81	8.69
Ramanathapuram (E)	53,353	26,677	2,66,765	97,369	0.83	4
Ramanathapuram (I)	27,742	13,871	1,38,710	50,629	0.43	2.08
Salem (E)	5,63,092	2,81,546	28,15,460	10,27,643	8.79	42.18
Salem (I)	42,445	21,223	2,12,225	77,462	0.66	3.18
Sivaganga (E)	96,498	48,249	4,82,490	1,76,109	1.51	7.23

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Sivaganga (I)	1,11,598	55,799	5,57,990	2,03,666	1.74	8.36
Thanjavur (E)	2,33,104	1,16,552	11,65,520	4,25,415	3.64	17.46
Thanjavur (I)	78,249	39,125	3,91,245	1,42,804	1.22	5.86
The Nilgiris (E)	12,630	6,315	63,150	23,050	0.2	0.95
The Nilgiris (I)	11,475	5,738	57,375	20,942	0.18	0.86
Theni (E)	91,622	45,811	4,58,110	1,67,210	1.43	6.86
Theni (I)	9,327	4,664	46,635	17,022	0.15	0.7
Thiruvallur (E)	1,63,592	81,796	8,17,960	2,98,555	2.55	12.25
Thiruvallur (I)	83,882	41,941	4,19,410	1,53,085	1.31	6.28
Thiruvarur (E)	1,42,235	71,118	7,11,175	2,59,579	2.22	10.65
Thiruvarur (I)	42,249	21,125	2,11,245	77,104	0.66	3.16
Tiruchirappalli (E)	2,87,812	1,43,906	14,39,060	5,25,257	4.49	21.56
Tiruchirappalli (I)	23,044	11,522	1,15,220	42,055	0.36	1.73
Tirunelveli (E)	2,50,886	1,25,443	12,54,430	4,57,867	3.91	18.79
Tirunelveli (I)	24,753	12,377	1,23,765	45,174	0.39	1.85
Tiruppur (E)	2,54,483	1,27,242	12,72,415	4,64,431	3.97	19.06
Tiruppur (I)	26,899	13,450	1,34,495	49,091	0.42	2.01
Tiruvannamalai (E)	6,36,614	3,18,307	31,83,070	11,61,821	9.93	47.68
Tiruvannamalai (I)	32,611	16,306	1,63,055	59,515	0.51	2.44
Tuticorin (E)	91,098	45,549	4,55,490	1,66,254	1.42	6.82
Tuticorin (I)	13,576	6,788	67,880	24,776	0.21	1.02
Vellore (E)	4,79,880	2,39,940	23,99,400	8,75,781	7.49	35.94
Vellore (I)	59,586	29,793	2,97,930	1,08,744	0.93	4.46
Villupuram (E)	6,86,290	3,43,145	34,31,450	12,52,479	10.71	51.4
Villupuram (I)	1,03,936	51,968	5,19,680	1,89,683	1.62	7.78
Virudhunagar (E)	1,78,367	89,184	8,91,835	3,25,520	2.78	13.36
Virudhunagar (I)	13,658	6,829	68,290	24,926	0.21	1.02
Total	**87,51,431**	**43,75,716**	**4,37,57,155**	**1,59,71,362**	**136.56**	**655.48**

State – Telangana

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Adilabad (E)	3,660	1,830	18,300	6,680	0.06	0.27
Adilabad (I)	1,76,289	88,145	8,81,445	3,21,727	2.75	13.2
Bhadradri kothagudem (E)	1,293	647	6,465	2,360	0.02	0.1
Bhadradri kothagudem (I)	1,65,967	82,984	8,29,835	3,02,890	2.59	12.43
Hyderabad (E)	5,890	2,945	29,450	10,749	0.09	0.44
Hyderabad (I)	7,657	3,829	38,285	13,974	0.12	0.57
Jangoan (E)	31,479	15,740	1,57,395	57,449	0.49	2.36
Jangoan (I)	28,293	14,147	1,41,465	51,635	0.44	2.12
Jayashankar bhupalapall (E)	445	223	2,225	812	0.01	0.03
Jayashankar bhupalapall (I)	75,650	37,825	3,78,250	1,38,061	1.18	5.67

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Jogulamba gadwal (E)	1,063	532	5,315	1,940	0.02	0.08
Jogulamba gadwal (I)	36,162	18,081	1,80,810	65,996	0.56	2.71
Jagitial (E)	3,878	1,939	19,390	7,077	0.06	0.29
Jagitial (I)	23,827	11,914	1,19,135	43,484	0.37	1.78
Kamareddy (E)	7,676	3,838	38,380	14,009	0.12	0.57
Kamareddy (I)	83,284	41,642	4,16,420	1,51,993	1.3	6.24
Kumuram bheem asifabad (E)	818	409	4,090	1,493	0.01	0.06
Kumuram bheem asifabad (I)	1,08,617	54,309	5,43,085	1,98,226	1.69	8.14
Karimnagar (E)	39,881	19,941	1,99,405	72,783	0.62	2.99
Karimnagar (I)	22,762	11,381	1,13,810	41,541	0.36	1.7
Khammam (E)	3,526	1,763	17,630	6,435	0.06	0.26
Khammam (I)	98,841	49,421	4,94,205	1,80,385	1.54	7.4
Mahabubabad (E)	711	356	3,555	1,298	0.01	0.05
Mahabubabad (I)	86,721	43,361	4,33,605	1,58,266	1.35	6.5
Mancherial (E)	2,486	1,243	12,430	4,537	0.04	0.19
Mancherial (I)	91,110	45,555	4,55,550	1,66,276	1.42	6.82
Medchal malkajgiri (E)	17,040	8,520	85,200	31,098	0.27	1.28
Medchal malkajgiri (I)	6,285	3,143	31,425	11,470	0.1	0.47
Mahbubnagar (E)	42,390	21,195	2,11,950	77,362	0.66	3.18
Mahbubnagar (I)	1,17,530	58,765	5,87,650	2,14,492	1.83	8.8
Medak (E)	4,557	2,279	22,785	8,317	0.07	0.34
Medak (I)	60,687	30,344	3,03,435	1,10,754	0.95	4.55
Nagarkurnool (E)	42,978	21,489	2,14,890	78,435	0.67	3.22
Nagarkurnool (I)	1,07,597	53,799	5,37,985	1,96,365	1.68	8.06
Nalgonda (E)	6,295	3,148	31,475	11,488	0.1	0.47
Nalgonda (I)	1,26,642	63,321	6,33,210	2,31,122	1.98	9.49
Nirmal (E)	2,013	1,007	10,065	3,674	0.03	0.15
Nirmal (I)	1,19,757	59,879	5,98,785	2,18,557	1.87	8.97
Nizamabad (E)	7,959	3,980	39,795	14,525	0.12	0.6
Nizamabad (I)	74,923	37,462	3,74,615	1,36,734	1.17	5.61
Peddapalli (E)	10,920	5,460	54,600	19,929	0.17	0.82
Peddapalli (I)	19,999	10,000	99,995	36,498	0.31	1.5
Rajanna sircilla (E)	10,306	5,153	51,530	18,808	0.16	0.77
Rajanna sircilla (I)	15,578	7,789	77,890	28,430	0.24	1.17
Rangareddi (E)	1,50,160	75,080	7,50,800	2,74,042	2.34	11.25
Rangareddi (I)	53,069	26,535	2,65,345	96,851	0.83	3.97
Sangareddy (E)	10,476	5,238	52,380	19,119	0.16	0.78
Sangareddy (I)	1,03,976	51,988	5,19,880	1,89,756	1.62	7.79
Siddipet (E)	40,710	20,355	2,03,550	74,296	0.64	3.05
Siddipet (I)	38,348	19,174	1,91,740	69,985	0.6	2.87
Suryapet (E)	1,220	610	6,100	2,227	0.02	0.09
Suryapet (I)	56,917	28,459	2,84,585	1,03,874	0.89	4.26
Vikarabad (E)	21,230	10,615	1,06,150	38,745	0.33	1.59

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Vikarabad (I)	87,391	43,696	4,36,955	1,59,489	1.36	6.55
Wanaparthy (E)	3,316	1,658	16,580	6,052	0.05	0.25
Wanaparthy (I)	44,390	22,195	2,21,950	81,012	0.69	3.32
Warangal urban (E)	13,190	6,595	65,950	24,072	0.21	0.99
Warangal urban (I)	9,735	4,868	48,675	17,766	0.15	0.73
Warangal rural (E)	1,961	981	9,805	3,579	0.03	0.15
Warangal rural (I)	21,820	10,910	1,09,100	39,822	0.34	1.63
Yadadri bhuvanagiri (E)	53,162	26,581	2,65,810	97,021	0.83	3.98
Yadadri bhuvanagiri (I)	25,198	12,599	1,25,990	45,986	0.39	1.89
Total	**26,37,711**	**13,18,856**	**1,31,88,555**	**48,13,823**	**41.16**	**197.56**

State – Tripura

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dhalai (E)	12,403	6,202	62,015	22,635	0.19	0.93
Dhalai (I)	60,819	30,410	3,04,095	1,10,995	0.95	4.56
Gomati (E)	19,142	9,571	95,710	34,934	0.3	1.43
Gomati (I)	65,761	32,881	3,28,805	1,20,014	1.03	4.93
Khowai (E)	11,995	5,998	59,975	21,891	0.19	0.9
Khowai (I)	40,674	20,337	2,03,370	74,230	0.63	3.05
North Tripura (E)	7,054	3,527	35,270	12,874	0.11	0.53
North Tripura (I)	54,082	27,041	2,70,410	98,700	0.84	4.05
Sepahijala (E)	21,190	10,595	1,05,950	38,672	0.33	1.59
Sepahijala (I)	83,297	41,649	4,16,485	1,52,017	1.3	6.24
South Tripura (E)	9,959	4,980	49,795	18,175	0.16	0.75
South Tripura (I)	99,371	49,686	4,96,855	1,81,352	1.55	7.44
Unakoti (E)	3,810	1,905	19,050	6,953	0.06	0.29
Unakoti (I)	46,871	23,436	2,34,355	85,540	0.73	3.51
West Tripura	33,265	16,633	1,66,325	60,709	0.52	2.49
West Tripura (I)	46,561	23,281	2,32,805	84,974	0.73	3.49
Total	**6,16,254**	**3,08,127**	**30,81,270**	**11,24,664**	**9.62**	**46.16**

State – Uttar Pradesh

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Pratapgarh (I)	4,59,935	2,29,968	22,99,675	8,39,381	7.18	34.45
Sitapur (I)	3,55,264	1,77,632	17,76,320	6,48,357	5.54	26.61
Sonbhadra (I)	3,54,459	1,77,230	17,72,295	6,46,888	5.53	26.55
Allahabad (I)	3,52,053	1,76,027	17,60,265	6,42,497	5.49	26.37
Jaunpur (I)	3,23,427	1,61,714	16,17,135	5,90,254	5.05	24.22

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Lalitpur (I)	3,16,175	1,58,088	15,80,875	5,77,019	4.93	23.68
Kheri (I)	3,04,045	1,52,023	15,20,225	5,54,882	4.74	22.77
Hardoi (I)	2,94,010	1,47,005	14,70,050	5,36,568	4.59	22.02
Mirzapur (I)	2,81,705	1,40,853	14,08,525	5,14,112	4.4	21.1
Bahraich (I)	2,70,585	1,35,293	13,52,925	4,93,818	4.22	20.27
Ghazipur (I)	2,67,132	1,33,566	13,35,660	4,87,516	4.17	20.01
Rae Bareli (I)	2,64,283	1,32,142	13,21,415	4,82,316	4.12	19.79
Barabanki (I)	2,40,392	1,20,196	12,01,960	4,38,715	3.75	18.01
Gonda (I)	2,38,963	1,19,482	11,94,815	4,36,107	3.73	17.9
Amethi (I)	2,37,420	1,18,710	11,87,100	4,33,292	3.7	17.78
Azamgarh (I)	2,28,392	1,14,196	11,41,960	4,16,815	3.56	17.11
Muzaffarnagar (E)	2,21,290	1,10,645	11,06,450	4,03,854	3.45	16.57
Unnao (I)	2,20,734	1,10,367	11,03,670	4,02,840	3.44	16.53
Sultanpur (I)	2,18,265	1,09,133	10,91,325	3,98,334	3.41	16.35
Azamgarh (E)	2,13,087	1,06,544	10,65,435	3,88,884	3.33	15.96
Ballia (I)	2,12,892	1,06,446	10,64,460	3,88,528	3.32	15.95
Ballia (E)	2,11,932	1,05,966	10,59,660	3,86,776	3.31	15.87
Shahjahanpur (I)	2,11,206	1,05,603	10,56,030	3,85,451	3.3	15.82
Chitrakoot (I)	2,10,035	1,05,018	10,50,175	3,83,314	3.28	15.73
Faizabad (I)	1,98,773	99,387	9,93,865	3,62,761	3.1	14.89
Jhansi (I)	1,98,618	99,309	9,93,090	3,62,478	3.1	14.88
Kannauj (I)	1,87,227	93,614	9,36,135	3,41,689	2.92	14.02
Gorakhpur (E)	1,87,183	93,592	9,35,915	3,41,609	2.92	14.02
Meerut (E)	1,85,321	92,661	9,26,605	3,38,211	2.89	13.88
Mirzapur (E)	1,85,106	92,553	9,25,530	3,37,818	2.89	13.86
Jaunpur (E)	1,83,785	91,893	9,18,925	3,35,408	2.87	13.77
Deoria (E)	1,82,526	91,263	9,12,630	3,33,110	2.85	13.67
Allahabad (E)	1,74,955	87,478	8,74,775	3,19,293	2.73	13.1
Jalaun (I)	1,74,772	87,386	8,73,860	3,18,959	2.73	13.09
Bijnor (E)	1,74,143	87,072	8,70,715	3,17,811	2.72	13.04
Chandauli (I)	1,72,046	86,023	8,60,230	3,13,984	2.68	12.89
Varanasi (E)	1,70,965	85,483	8,54,825	3,12,011	2.67	12.81
Agra (I)	1,65,415	82,708	8,27,075	3,01,882	2.58	12.39
Bareilly (I)	1,65,055	82,528	8,25,275	3,01,225	2.58	12.36
Banda (I)	1,63,964	81,982	8,19,820	2,99,234	2.56	12.28
Budaun (I)	1,62,069	81,035	8,10,345	2,95,776	2.53	12.14
Saharanpur (E)	1,59,748	79,874	7,98,740	2,91,540	2.49	11.97
Sant Ravidas Nagar (I)	1,58,368	79,184	7,91,840	2,89,022	2.47	11.86
Chandauli (E)	1,56,859	78,430	7,84,295	2,86,268	2.45	11.75
Bulandshahr (E)	1,50,403	75,202	7,52,015	2,74,485	2.35	11.27
Mathura (I)	1,45,240	72,620	7,26,200	2,65,063	2.27	10.88
Aligarh (E)	1,39,675	69,838	6,98,375	2,54,907	2.18	10.46
Lucknow (I)	1,38,149	69,075	6,90,745	2,52,122	2.16	10.35

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Balrampur (I)	1,36,920	68,460	6,84,600	2,49,879	2.14	10.26
Bijnor (I)	1,33,534	66,767	6,67,670	2,43,700	2.08	10
Aligarh (I)	1,32,948	66,474	6,64,740	2,42,630	2.07	9.96
Varanasi (I)	1,27,463	63,732	6,37,315	2,32,620	1.99	9.55
Ambedkar Nagar (I)	1,25,882	62,941	6,29,410	2,29,735	1.96	9.43
Kanpur Dehat (I)	1,23,063	61,532	6,15,315	2,24,590	1.92	9.22
Kaushambi (I)	1,22,322	61,161	6,11,610	2,23,238	1.91	9.16
Sultanpur (E)	1,19,126	59,563	5,95,630	2,17,405	1.86	8.92
Ambedkar Nagar (E)	1,18,169	59,085	5,90,845	2,15,658	1.84	8.85
Pratapgarh (E)	1,17,225	58,613	5,86,125	2,13,936	1.83	8.78
Hamirpur (I)	1,15,863	57,932	5,79,315	2,11,450	1.81	8.68
Kanpur Nagar (I)	1,13,707	56,854	5,68,535	2,07,515	1.77	8.52
Bulandshahr (I)	1,13,297	56,649	5,66,485	2,06,767	1.77	8.49
Mahoba (I)	1,13,255	56,628	5,66,275	2,06,690	1.77	8.48
Gonda (E)	1,13,006	56,503	5,65,030	2,06,236	1.76	8.46
Mau (I)	1,11,883	55,942	5,59,415	2,04,186	1.75	8.38
Agra (E)	1,10,531	55,266	5,52,655	2,01,719	1.72	8.28
Ghazipur (E)	1,08,508	54,254	5,42,540	1,98,027	1.69	8.13
Pilibhit (I)	1,08,221	54,111	5,41,105	1,97,503	1.69	8.11
Shravasti (I)	1,06,785	53,393	5,33,925	1,94,883	1.67	8
Kushi Nagar (E)	1,04,160	52,080	5,20,800	1,90,092	1.63	7.8
Sambhal (I)	1,03,297	51,649	5,16,485	1,88,517	1.61	7.74
Fatehpur (I)	96,424	48,212	4,82,120	1,75,974	1.5	7.22
Baghpat (E)	95,581	47,791	4,77,905	1,74,435	1.49	7.16
Amroha (I)	93,113	46,557	4,65,565	1,69,931	1.45	6.97
Deoria (I)	92,995	46,498	4,64,975	1,69,716	1.45	6.97
Shamli (E)	90,784	45,392	4,53,920	1,65,681	1.42	6.8
Firozabad (E)	89,571	44,786	4,47,855	1,63,467	1.4	6.71
Gorakhpur (I)	89,426	44,713	4,47,130	1,63,202	1.4	6.7
Amroha (E)	87,761	43,881	4,38,805	1,60,164	1.37	6.57
Saharanpur (I)	87,406	43,703	4,37,030	1,59,516	1.36	6.55
Auraiya (I)	80,091	40,046	4,00,455	1,46,166	1.25	6
Siddharth Nagar (I)	77,418	38,709	3,87,090	1,41,288	1.21	5.8
Moradabad (I)	76,461	38,231	3,82,305	1,39,541	1.19	5.73
Kheri (E)	75,145	37,573	3,75,725	1,37,140	1.17	5.63
Ghaziabad (E)	74,913	37,457	3,74,565	1,36,716	1.17	5.61
Hathras (I)	69,885	34,943	3,49,425	1,27,540	1.09	5.23
Mainpuri (E)	68,672	34,336	3,43,360	1,25,326	1.07	5.14
Firozabad (I)	68,515	34,258	3,42,575	1,25,040	1.07	5.13
Farrukhabad (I)	66,846	33,423	3,34,230	1,21,994	1.04	5.01
Moradabad (E)	66,095	33,048	3,30,475	1,20,623	1.03	4.95
Hapur (E)	62,633	31,317	3,13,165	1,14,305	0.98	4.69
Rae Bareli (E)	61,838	30,919	3,09,190	1,12,854	0.96	4.63

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Mainpuri (I)	61,297	30,649	3,06,485	1,11,867	0.96	4.59
Basti (E)	60,437	30,219	3,02,185	1,10,298	0.94	4.53
Etawah (I)	60,279	30,140	3,01,395	1,10,009	0.94	4.51
Barabanki (E)	58,801	29,401	2,94,005	1,07,312	0.92	4.4
Basti (E)	58,495	29,248	2,92,475	1,06,753	0.91	4.38
Rampur (I)	58,309	29,155	2,91,545	1,06,414	0.91	4.37
Mau (E)	54,977	27,489	2,74,885	1,00,333	0.86	4.12
Lucknow (E)	54,387	27,194	2,71,935	99,256	0.85	4.07
Amethi (E)	52,559	26,280	2,62,795	95,920	0.82	3.94
Budaun (E)	52,349	26,175	2,61,745	95,537	0.82	3.92
Kushi Nagar (I)	51,534	25,767	2,57,670	94,050	0.8	3.86
Faizabad (E)	51,003	25,502	2,55,015	93,080	0.8	3.82
Mathura (E)	50,586	25,293	2,52,930	92,319	0.79	3.79
Kanpur Nagar (E)	50,506	25,253	2,52,530	92,173	0.79	3.78
Sant Kabeer Nagar (E)	49,523	24,762	2,47,615	90,379	0.77	3.71
Etah (E)	48,397	24,199	2,41,985	88,325	0.76	3.62
Sant Ravidas Nagar (E)	47,699	23,850	2,38,495	87,051	0.74	3.57
Kanpur Dehat (E)	47,648	23,824	2,38,240	86,958	0.74	3.57
Hathras (E)	47,521	23,761	2,37,605	86,726	0.74	3.56
Gautam Buddha Nagar (E)	47,134	23,567	2,35,670	86,020	0.74	3.53
Muzaffarnagar (I)	45,687	22,844	2,28,435	83,379	0.71	3.42
Kasganj (I)	45,572	22,786	2,27,860	83,169	0.71	3.41
Hardoi (E)	42,143	21,072	2,10,715	76,911	0.66	3.16
Meerut (I)	40,734	20,367	2,03,670	74,340	0.64	3.05
Etawah (E)	40,214	20,107	2,01,070	73,391	0.63	3.01
Farrukhabad (E)	38,979	19,490	1,94,895	71,137	0.61	2.92
Baghpat (I)	38,564	19,282	1,92,820	70,379	0.6	2.89
Maharajganj (E)	38,342	19,171	1,91,710	69,974	0.6	2.87
Sitapur (E)	38,181	19,091	1,90,905	69,680	0.6	2.86
Kannauj (E)	37,465	18,733	1,87,325	68,374	0.58	2.81
Bareilly (E)	36,837	18,419	1,84,185	67,228	0.57	2.76
Sambhal (E)	36,708	18,354	1,83,540	66,992	0.57	2.75
Unnao (E)	35,854	17,927	1,79,270	65,434	0.56	2.69
Rampur (E)	35,626	17,813	1,78,130	65,017	0.56	2.67
Etah (I)	35,393	17,697	1,76,965	64,592	0.55	2.65
Gautam Buddha Nagar (I)	34,996	17,498	1,74,980	63,868	0.55	2.62
Kaushambi (E)	33,540	16,770	1,67,700	61,211	0.52	2.51
Pilibhit (E)	31,608	15,804	1,58,040	57,685	0.49	2.37
Fatehpur (E)	29,848	14,924	1,49,240	54,473	0.47	2.24
Sonbhadra (E)	28,868	14,434	1,44,340	52,684	0.45	2.16
Auraiya (E)	28,865	14,433	1,44,325	52,679	0.45	2.16
Hapur (I)	28,673	14,337	1,43,365	52,328	0.45	2.15
Sant Kabeer Nagar (I)	26,725	13,363	1,33,625	48,773	0.42	2

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Maharajganj (I)	25,261	12,631	1,26,305	46,101	0.39	1.89
Bahraich (E)	21,125	10,563	1,05,625	38,553	0.33	1.58
Shamli (I)	19,638	9,819	98,190	35,839	0.31	1.47
Jalaun (E)	19,320	9,660	96,600	35,259	0.3	1.45
Ghaziabad (I)	18,020	9,010	90,100	32,887	0.28	1.35
Balrampur (E)	16,146	8,073	80,730	29,466	0.25	1.21
Shravasti (E)	16,086	8,043	80,430	29,357	0.25	1.2
Siddharth Nagar (E)	14,853	7,427	74,265	27,107	0.23	1.11
Shahjahanpur (E)	14,510	7,255	72,550	26,481	0.23	1.09
Kasganj (E)	14,423	7,212	72,115	26,322	0.23	1.08
Lalitpur (E)	13,007	6,504	65,035	23,738	0.2	0.97
Jhansi (E)	8,310	4,155	41,550	15,166	0.13	0.62
Hamirpur (E)	5,566	2,783	27,830	10,158	0.09	0.42
Chitrakoot (E)	4,489	2,245	22,445	8,192	0.07	0.34
Banda (E)	4,376	2,188	21,880	7,986	0.07	0.33
Mahoba (E)	1,896	948	9,480	3,460	0.03	0.14
Total	**1,69,48,673**	**84,74,337**	**8,47,43,365**	**3,09,31,328**	**264.47**	**1269.46**

State - Uttarakhand

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Almora (E)	15,905	7,953	79,525	29,027	0.25	1.19
Almora (I)	76,586	38,293	3,82,930	1,39,769	1.2	5.74
Bageshwar (E)	4,922	2,461	24,610	8,983	0.08	0.37
Bageshwar (I)	40,124	20,062	2,00,620	73,226	0.63	3.01
Champawat (E)	31,146	15,573	1,55,730	56,841	0.49	2.33
Champawat (I)	30,127	15,064	1,50,635	54,982	0.47	2.26
Dehradun (E)	99,172	49,586	4,95,860	1,80,989	1.55	7.43
Dehradun (I)	57,482	28,741	2,87,410	1,04,905	0.9	4.31
Haridwar (E)	1,04,013	52,007	5,20,065	1,89,824	1.62	7.79
Haridwar (I)	50,981	25,491	2,54,905	93,040	0.8	3.82
Nainital (E)	69,911	34,956	3,49,555	1,27,588	1.09	5.24
Nainital (I)	69,562	34,781	3,47,810	1,26,951	1.09	5.21
Pauri Garhwal (E)	19,345	9,673	96,725	35,305	0.3	1.45
Pauri Garhwal (I)	1,88,059	94,030	9,40,295	3,43,208	2.93	14.09
Pithoragarh (E)	50,692	25,346	2,53,460	92,513	0.79	3.8
Pithoragarh (I)	76,123	38,062	3,80,615	1,38,924	1.19	5.7
Rudraprayag (E)	2,653	1,327	13,265	4,842	0.04	0.2
Rudraprayag (I)	42,491	21,246	2,12,455	77,546	0.66	3.18
Tehri Garhwal (E)	4,262	2,131	21,310	7,778	0.07	0.32
Tehri Garhwal (I)	40,015	20,008	2,00,075	73,027	0.62	3
Udham Singh Nagar (E)	95,906	47,953	4,79,530	1,75,028	1.5	7.18
Udham Singh Nagar (I)	53,035	26,518	2,65,175	96,789	0.83	3.97

Uttarkashi (E)	20,129	10,065	1,00,645	36,735	0.31	1.51
Uttarkashi (I)	40,446	20,223	2,02,230	73,814	0.63	3.03
Chamoli (E)	12,407	6,204	62,035	22,643	0.19	0.93
Chamoli (I)	78,414	39,207	3,92,070	1,43,106	1.22	5.87
Total	**13,73,908**	**6,86,954**	**68,69,540**	**25,07,382**	**21.44**	**102.91**

State - West Bengal

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
24 Paraganas North (E)	2,07,944	1,03,972	10,39,720	3,79,498	3.24	15.58
24 Paraganas North (I)	3,44,772	1,72,386	17,23,860	6,29,209	5.38	25.82
24 Paraganas South (E)	77,123	38,562	3,85,615	1,40,749	1.2	5.78
24 Paraganas South (I)	7,70,111	3,85,056	38,50,555	14,05,453	12.02	57.68
Alipurduar (E)	37,346	18,673	1,86,730	68,156	0.58	2.8
Alipurduar (I)	4,07,014	2,03,507	20,35,070	7,42,801	6.35	30.49
Bankura (E)	2,14,955	1,07,478	10,74,775	3,92,293	3.35	16.1
Bankura (I)	8,40,910	4,20,455	42,04,550	15,34,661	13.12	62.98
Bardhaman (E)	3,56,537	1,78,269	17,82,685	6,50,680	5.56	26.7
Bardhaman (I)	9,74,652	4,87,326	48,73,260	17,78,740	15.21	73
Birbhum (E)	1,02,915	51,458	5,14,575	1,87,820	1.61	7.71
Birbhum (I)	7,41,832	3,70,916	37,09,160	13,53,843	11.58	55.56
Coochbehar (E)	1,03,242	51,621	5,16,210	1,88,417	1.61	7.73
Coochbehar (I)	9,19,055	4,59,528	45,95,275	16,77,275	14.34	68.84
Darjeeling (E)	50,543	25,272	2,52,715	92,241	0.79	3.79
Darjeeling (I)	1,14,931	57,466	5,74,655	2,09,749	1.79	8.61
Dinajpur Dakshin (E)	21,187	10,594	1,05,935	38,666	0.33	1.59
Dinajpur Dakshin (I)	3,88,707	1,94,354	19,43,535	7,09,390	6.07	29.11
Dinajpur Uttar (E)	62,900	31,450	3,14,500	1,14,793	0.98	4.71
Dinajpur Uttar (I)	8,11,181	4,05,591	40,55,905	14,80,405	12.66	60.76
Hooghly (E)	2,39,706	1,19,853	11,98,530	4,37,463	3.74	17.95
Hooghly (I)	5,01,094	2,50,547	25,05,470	9,14,497	7.82	37.53
Howrah (E)	57,389	28,695	2,86,945	1,04,735	0.9	4.3
Howrah (I)	1,50,691	75,346	7,53,455	2,75,011	2.35	11.29
Jalpaiguri (E)	50,725	25,363	2,53,625	92,573	0.79	3.8
Jalpaiguri (I)	5,05,632	2,52,816	25,28,160	9,22,778	7.89	37.87
Jhargram (E)	34,604	17,302	1,73,020	63,152	0.54	2.59
Jhargram (I)	3,34,191	1,67,096	16,70,955	6,09,899	5.21	25.03
Kalimpong (E)	36,886	18,443	1,84,430	67,317	0.58	2.76
Kalimpong (I)	1,392	696	6,960	2,540	0.02	0.1
Kolkata (E)	343	172	1,715	626	0.01	0.03
Kolkata (I)	470	235	2,350	858	0.01	0.04
Maldah (E)	1,02,709	51,355	5,13,545	1,87,444	1.6	7.69
Maldah (I)	7,02,117	3,51,059	35,10,585	12,81,364	10.96	52.59
Medinipur East (E)	2,02,823	1,01,412	10,14,115	3,70,152	3.16	15.19
Medinipur East (I)	7,89,204	3,94,602	39,46,020	14,40,297	12.31	59.11

District	No. of cattle	No. of cattle available in cattle farm	Cattle Dung Production Per Day (Kg)	Cattle Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Medinipur West (E)	3,41,036	1,70,518	17,05,180	6,22,391	5.32	25.54
Medinipur West (I)	10,92,037	5,46,019	54,60,185	19,92,968	17.04	81.79
Murshidabad (E)	3,37,249	1,68,625	16,86,245	6,15,479	5.26	25.26
Murshidabad (I)	6,04,015	3,02,008	30,20,075	11,02,327	9.43	45.24
Nadia (E)	3,22,887	1,61,444	16,14,435	5,89,269	5.04	24.18
Nadia (I)	3,66,608	1,83,304	18,33,040	6,69,060	5.72	27.46
Paschim bardhaman (E)	41,496	20,748	2,07,480	75,730	0.65	3.11
Paschim bardhaman (I)	1,84,779	92,390	9,23,895	3,37,222	2.88	13.84
Purulia (E)	14,905	7,453	74,525	27,202	0.23	1.12
Purulia (I)	3,95,597	1,97,799	19,77,985	7,21,965	6.17	29.63
Total	**1,49,58,442**	**74,79,221**	**7,47,92,210**	**2,72,99,157**	**233.41**	**1120.39**

Buffalo – population

Union Territory - Andaman and Nicobar Island

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Nicobars	27	14	135	49	0	0
North and Middle Andama	1,000	500	5,000	1,825	0.02	0.07
South Andamans	751	376	3,755	1,371	0.01	0.06
Total	**1,778**	**889**	**8,890**	**3,245**	**0.03**	**0.13**

State - Andhra Pradesh

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Anantapur	2,64,461	1,32,231	13,22,305	4,82,641	4.13	19.81
Chittoor	78,575	39,288	3,92,875	1,43,399	1.23	5.89
East Godavari	5,53,156	2,76,578	27,65,780	10,09,510	8.63	41.43
Guntur	8,24,455	4,12,228	41,22,275	15,04,630	12.86	61.75
Krishna	6,22,378	3,11,189	31,11,890	11,35,840	9.71	46.62
Kurnool	3,96,372	1,98,186	19,81,860	7,23,379	6.19	29.69
Prakasam	8,64,226	4,32,113	43,21,130	15,77,212	13.49	64.73
Spsr Nellore	6,87,725	3,43,863	34,38,625	12,55,098	10.73	51.51
Srikakulam	39,795	19,898	1,98,975	72,626	0.62	2.98
Visakhapatanam	2,78,927	1,39,464	13,94,635	5,09,042	4.35	20.89
Vizianagaram	1,17,009	58,505	5,85,045	2,13,541	1.83	8.76
West Godavari	5,86,386	2,93,193	29,31,930	10,70,154	9.15	43.92
Y.S.R.	4,42,812	2,21,406	22,14,060	8,08,132	6.91	33.17
Total	**57,56,277**	**28,78,139**	**2,87,81,385**	**1,05,05,206**	**89.82**	**431.15**

State - Arunachal Pradesh

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Changlang	371	186	1,855	677	0.01	0.03
East Kameng	43	22	215	78	0	0
East Siang	100	50	500	183	0	0.01
Lohit	843	422	4,215	1,538	0.01	0.06
Lower Dibang Valley	965	483	4,825	1,761	0.02	0.07
Lower Subansiri	54	27	270	99	0	0
Namsai	44	22	220	80	0	0
Papum Pare	744	372	3,720	1,358	0.01	0.06
Tawang	-	-	-	-	0	0
Upper Subansiri	396	198	1,980	723	0.01	0.03
West Kameng	6	3	30	11	0	0
Total	**3,566**	**1,783**	**17,830**	**6,508**	**0.06**	**0.27**

State - Assam

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Baksa	493	247	2,465	900	0.01	0.04
Bongaigaon	727	364	3,635	1,327	0.01	0.05
Barpeta	13,768	6,884	68,840	25,127	0.21	1.03
Biswanath	8,198	4,099	40,990	14,961	0.13	0.61
Cachar	34,248	17,124	1,71,240	62,503	0.53	2.57
Chirang	848	424	4,240	1,548	0.01	0.06
Darrang	21,506	10,753	1,07,530	39,248	0.34	1.61
Dhemaji	11,442	5,721	57,210	20,882	0.18	0.86
Dhubri	9,544	4,772	47,720	17,418	0.15	0.71
Dibrugarh	7,850	3,925	39,250	14,326	0.12	0.59
Dima hasao	18,194	9,097	90,970	33,204	0.28	1.36
Goalpara	4,775	2,388	23,875	8,714	0.07	0.36
Golaghat	20,100	10,050	1,00,500	36,683	0.31	1.51
Hailakandi	13,533	6,767	67,665	24,698	0.21	1.01
Hojai	929	465	4,645	1,695	0.01	0.07
Jorhat	15,262	7,631	76,310	27,853	0.24	1.14
Kamrup	4,435	2,218	22,175	8,094	0.07	0.33
Kamrup (m)	654	327	3,270	1,194	0.01	0.05
Karbi anglong	2,030	1,015	10,150	3,705	0.03	0.15
Karimganj	18,825	9,413	94,125	34,356	0.29	1.41
Kokrajhar	3,857	1,929	19,285	7,039	0.06	0.29
Lakhimpur	8,160	4,080	40,800	14,892	0.13	0.61
Majuli	4,729	2,365	23,645	8,630	0.07	0.35
Morigaon	2,818	1,409	14,090	5,143	0.04	0.21
Nagaon	9,045	4,523	45,225	16,507	0.14	0.68
Nalbari	3,503	1,752	17,515	6,393	0.05	0.26
Sibsagar	11,833	5,917	59,165	21,595	0.18	0.89

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Sonitpur	5,227	2,614	26,135	9,539	0.08	0.39
Soraideu	646	323	3,230	1,179	0.01	0.05
South salmara	2,475	1,238	12,375	4,517	0.04	0.19
Tinsukia	5,604	2,802	28,020	10,227	0.09	0.42
Udalguri	1,883	942	9,415	3,436	0.03	0.14
West karbi anglong	5,218	2,609	26,090	9,523	0.08	0.39
Total	**2,72,359**	**1,36,180**	**13,61,795**	**4,97,055**	**4.25**	**20.4**

State - Bihar

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Araria	1,94,168	97,084	9,70,840	3,54,357	3.03	14.54
Arwal	85,846	42,923	4,29,230	1,56,669	1.34	6.43
Aurangabad	1,88,212	94,106	9,41,060	3,43,487	2.94	14.1
Banka	1,01,498	50,749	5,07,490	1,85,234	1.58	7.6
Begusarai	84,551	42,276	4,22,755	1,54,306	1.32	6.33
Bhagalpur	2,34,203	1,17,102	11,71,015	4,27,420	3.65	17.54
Bhojpur	2,54,272	1,27,136	12,71,360	4,64,046	3.97	19.04
Buxar	1,69,266	84,633	8,46,330	3,08,910	2.64	12.68
Darbhanga	3,16,951	1,58,476	15,84,755	5,78,436	4.95	23.74
Gaya	2,94,895	1,47,448	14,74,475	5,38,183	4.6	22.09
Gopalganj	91,482	45,741	4,57,410	1,66,955	1.43	6.85
Jamui	1,05,767	52,884	5,28,835	1,93,025	1.65	7.92
Jehanabad	1,18,278	59,139	5,91,390	2,15,857	1.85	8.86
Kaimur (Bhabua)	2,34,803	1,17,402	11,74,015	4,28,515	3.66	17.59
Katihar	87,085	43,543	4,35,425	1,58,930	1.36	6.52
Khagaria	90,953	45,477	4,54,765	1,65,989	1.42	6.81
Kishanganj	40,854	20,427	2,04,270	74,559	0.64	3.06
Lakhisarai	55,509	27,755	2,77,545	1,01,304	0.87	4.16
Madhepura	2,28,067	1,14,034	11,40,335	4,16,222	3.56	17.08
Madhubani	4,66,942	2,33,471	23,34,710	8,52,169	7.29	34.97
Munger	40,407	20,204	2,02,035	73,743	0.63	3.03
Muzaffarpur	2,85,864	1,42,932	14,29,320	5,21,702	4.46	21.41
Nalanda	2,62,826	1,31,413	13,14,130	4,79,657	4.1	19.69
Nawada	1,19,931	59,966	5,99,655	2,18,874	1.87	8.98
Pashchim Champaran	2,28,614	1,14,307	11,43,070	4,17,221	3.57	17.12
Patna	3,13,111	1,56,556	15,65,555	5,71,428	4.89	23.45
Purbi Champaran	3,56,388	1,78,194	17,81,940	6,50,408	5.56	26.69
Purnia	2,09,977	1,04,989	10,49,885	3,83,208	3.28	15.73
Rohtas	3,25,285	1,62,643	16,26,425	5,93,645	5.08	24.36
Saharsa	1,87,746	93,873	9,38,730	3,42,636	2.93	14.06
Samastipur	1,89,961	94,981	9,49,805	3,46,679	2.96	14.23

Saran	1,91,184	95,592	9,55,920	3,48,911	2.98	14.32
Sheikhpura	52,879	26,440	2,64,395	96,504	0.83	3.96
Sheohar	60,647	30,324	3,03,235	1,10,681	0.95	4.54
Sitamarhi	3,55,089	1,77,545	17,75,445	6,48,037	5.54	26.6
Siwan	1,70,715	85,358	8,53,575	3,11,555	2.66	12.79
Supaul	3,05,138	1,52,569	15,25,690	5,56,877	4.76	22.85
Vaishali	1,57,020	78,510	7,85,100	2,86,562	2.45	11.76
Total	**72,56,384**	**36,28,192**	**3,62,81,920**	**1,32,42,901**	**113.23**	**543.5**

Union Territory - Chandigarh

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Chandigarh	11,458	5,729	57,290	20,911	0.18	0.86
Total	**11,458**	**5,729**	**57,290**	**20,911**	**0.18**	**0.86**

State - Chhattisgarh

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Balod	17,441	8,721	87,205	31,830	0.27	1.31
Baloda Bazar	37,934	18,967	1,89,670	69,230	0.59	2.84
Balrampur	30,285	15,143	1,51,425	55,270	0.47	2.27
Bastar	7,668	3,834	38,340	13,994	0.12	0.57
Bemetara	37,133	18,567	1,85,665	67,768	0.58	2.78
Bijapur	7,571	3,786	37,855	13,817	0.12	0.57
Bilaspur	49,535	24,768	2,47,675	90,401	0.77	3.71
Dantewada	6,836	3,418	34,180	12,476	0.11	0.51
Dhamtari	22,607	11,304	1,13,035	41,258	0.35	1.69
Durg	39,601	19,801	1,98,005	72,272	0.62	2.97
Gariyaband	16,273	8,137	81,365	29,698	0.25	1.22
Janjgir-Champa	16,147	8,074	80,735	29,468	0.25	1.21
Jashpur	17,851	8,926	89,255	32,578	0.28	1.34
Kabirdham (Kawardha)	21,729	10,865	1,08,645	39,655	0.34	1.63
Kanker	6,313	3,157	31,565	11,521	0.1	0.47
Kondagaon	7,897	3,949	39,485	14,412	0.12	0.59
Korba	25,066	12,533	1,25,330	45,745	0.39	1.88
Korea	38,719	19,360	1,93,595	70,662	0.6	2.9
Mahasamund	14,631	7,316	73,155	26,702	0.23	1.1
Mungeli	22,646	11,323	1,13,230	41,329	0.35	1.7
Narayanpur	7,099	3,550	35,495	12,956	0.11	0.53
Raigarh	8,094	4,047	40,470	14,772	0.13	0.61
Raipur	50,074	25,037	2,50,370	91,385	0.78	3.75
Rajnandgaon	28,394	14,197	1,41,970	51,819	0.44	2.13
Sukma	12,052	6,026	60,260	21,995	0.19	0.9
Surajpur	24,856	12,428	1,24,280	45,362	0.39	1.86
Surguja	31,834	15,917	1,59,170	58,097	0.5	2.38

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Total	**6,06,286**	**3,03,143**	**30,31,430**	**11,06,472**	**9.46**	**45.41**

Union Territory - Daman and Diu

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Daman	320	160	1,600	584	0	0.02
Total	**321**	**161**	**1,605**	**586**	**0.01**	**0.02**

Union Territory - Dadra and Nagar Haveli

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dadra and Nagar Haveli	774	387	3,870	1413	0.01	0.06
Total	**775**	**388**	**3,875**	**1414**	**0.01**	**0.06**

State - Goa

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
North Goa	10,293	5,147	51,465	18,785	0.16	0.77
South Goa	12,053	6,027	60,265	21,997	0.19	0.9
Total	**22,346**	**11,173**	**1,11,730**	**40,781**	**0.35**	**1.67**

State - Gujarat

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ahmadabad	3,67,777	1,83,889	18,38,885	6,71,193	5.74	27.55
Amreli	1,72,840	86,420	8,64,200	3,15,433	2.7	12.95
Anand	4,45,743	2,22,872	22,28,715	8,13,481	6.96	33.39
Arvalli	3,70,303	1,85,152	18,51,515	6,75,803	5.78	27.74
Banas kantha	14,13,586	7,06,793	70,67,930	25,79,794	22.06	105.88
Bharuch	1,51,561	75,781	7,57,805	2,76,599	2.36	11.35
Bhavnagar	2,83,429	1,41,715	14,17,145	5,17,258	4.42	21.23
Botad	70,572	35,286	3,52,860	1,28,794	1.1	5.29
Chhotaudepur	1,96,025	98,013	9,80,125	3,57,746	3.06	14.68
Dang	5,611	2,806	28,055	10,240	0.09	0.42
Devbhumi dwarka	2,81,559	1,40,780	14,07,795	5,13,845	4.39	21.09
Dohad	4,58,257	2,29,129	22,91,285	8,36,319	7.15	34.32
Gandhinagar	3,09,361	1,54,681	15,46,805	5,64,584	4.83	23.17
Gir somnath	1,88,424	94,212	9,42,120	3,43,874	2.94	14.11
Jamnagar	1,57,646	78,823	7,88,230	2,87,704	2.46	11.81

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Junagadh	2,03,804	1,01,902	10,19,020	3,71,942	3.18	15.26
Kachchh	4,36,287	2,18,144	21,81,435	7,96,224	6.81	32.68
Kheda	5,90,328	2,95,164	29,51,640	10,77,349	9.21	44.22
Mahesana	4,63,170	2,31,585	23,15,850	8,45,285	7.23	34.69
Morbi	1,67,991	83,996	8,39,955	3,06,584	2.62	12.58
Mahisagar	3,94,399	1,97,200	19,71,995	7,19,778	6.15	29.54
Narmada	68,277	34,139	3,41,385	1,24,606	1.07	5.11
Navsari	56,192	28,096	2,80,960	1,02,550	0.88	4.21
Panch mahals	4,20,491	2,10,246	21,02,455	7,67,396	6.56	31.49
Patan	4,11,397	2,05,699	20,56,985	7,50,800	6.42	30.81
Porbandar	1,40,060	70,030	7,00,300	2,55,610	2.19	10.49
Rajkot	2,60,619	1,30,310	13,03,095	4,75,630	4.07	19.52
Sabar kantha	4,02,878	2,01,439	20,14,390	7,35,252	6.29	30.18
Surat	2,41,054	1,20,527	12,05,270	4,39,924	3.76	18.05
Surendranagar	3,36,258	1,68,129	16,81,290	6,13,671	5.25	25.19
Tapi	1,73,197	86,599	8,65,985	3,16,085	2.7	12.97
Vadodara	3,23,600	1,61,800	16,18,000	5,90,570	5.05	24.24
Valsad	47,075	23,538	2,35,375	85,912	0.73	3.53
Total	**1,00,09,771**	**50,04,886**	**5,00,48,855**	**1,82,67,832**	**156.19**	**749.73**

State - Haryana

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ambala	1,27,918	63,959	6,39,590	2,33,450	2	9.58
Bhiwani	2,55,884	1,27,942	12,79,420	4,66,988	3.99	19.17
Charki dadri	1,41,002	70,501	7,05,010	2,57,329	2.2	10.56
Faridabad	1,08,560	54,280	5,42,800	1,98,122	1.69	8.13
Fatehabad	2,12,748	1,06,374	10,63,740	3,88,265	3.32	15.93
Gurugram	1,05,600	52,800	5,28,000	1,92,720	1.65	7.91
Hisar	3,88,282	1,94,141	19,41,410	7,08,615	6.06	29.08
Jhajjar	1,62,446	81,223	8,12,230	2,96,464	2.53	12.17
Jind	3,44,211	1,72,106	17,21,055	6,28,185	5.37	25.78
Kaithal	2,50,881	1,25,441	12,54,405	4,57,858	3.91	18.79
Karnal	1,75,651	87,826	8,78,255	3,20,563	2.74	13.16
Kurukshetra	1,23,473	61,737	6,17,365	2,25,338	1.93	9.25
Mahendragarh	1,73,901	86,951	8,69,505	3,17,369	2.71	13.03
Mewat	1,66,517	83,259	8,32,585	3,03,894	2.6	12.47
Palwal	1,83,005	91,503	9,15,025	3,33,984	2.86	13.71
Panchkula	53,578	26,789	2,67,890	97,780	0.84	4.01
Panipat	1,41,752	70,876	7,08,760	2,58,697	2.21	10.62
Rewari	1,48,585	74,293	7,42,925	2,71,168	2.32	11.13
Rohtak	1,55,367	77,684	7,76,835	2,83,545	2.42	11.64
Sirsa	2,30,221	1,15,111	11,51,105	4,20,153	3.59	17.24
Sonipat	2,00,642	1,00,321	10,03,210	3,66,172	3.13	15.03

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Yamunanagar	1,18,437	59,219	5,92,185	2,16,148	1.85	8.87
Total	**39,68,661**	**19,84,331**	**1,98,43,305**	**72,42,806**	**61.93**	**297.25**

State - Himachal Pradesh

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bilaspur	93,723	46,862	4,68,615	1,71,044	1.46	7.02
Chamba	23,332	11,666	1,16,660	42,581	0.36	1.75
Hamirpur	92,301	46,151	4,61,505	1,68,449	1.44	6.91
Kangra	1,22,899	61,450	6,14,495	2,24,291	1.92	9.21
Kullu	1,209	605	6,045	2,206	0.02	0.09
Mandi	60,590	30,295	3,02,950	1,10,577	0.95	4.54
Shimla	5,246	2,623	26,230	9,574	0.08	0.39
Sirmaur	33,794	16,897	1,68,970	61,674	0.53	2.53
Solan	67,483	33,742	3,37,415	1,23,156	1.05	5.05
Una	1,04,169	52,085	5,20,845	1,90,108	1.63	7.8
Total	**6,04,746**	**3,02,373**	**30,23,730**	**11,03,661**	**9.44**	**45.3**

Union Territory - Jammu and Kashmir

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Anantnag	2,182	1,091	10,910	3,982	0.03	0.16
Badgam	679	340	3,395	1,239	0.01	0.05
Bandipora	677	339	3,385	1,236	0.01	0.05
Baramulla	2,313	1,157	11,565	4,221	0.04	0.17
Doda	17,307	8,654	86,535	31,585	0.27	1.3
Ganderbal	259	130	1,295	473	0	0.02
Jammu	1,16,497	58,249	5,82,485	2,12,607	1.82	8.73
Kathua	60,735	30,368	3,03,675	1,10,841	0.95	4.55
Kishtwar	7,552	3,776	37,760	13,782	0.12	0.57
Kulgam	1,214	607	6,070	2,216	0.02	0.09
Kupwara	1,986	993	9,930	3,624	0.03	0.15
Leh Ladakh	-	-	-	-	0	0
Poonch	1,11,692	55,846	5,58,460	2,03,838	1.74	8.37
Pulwama	689	345	3,445	1,257	0.01	0.05
Rajauri	1,42,087	71,044	7,10,435	2,59,309	2.22	10.64
Ramban	17,562	8,781	87,810	32,051	0.27	1.32
Reasi	64,069	32,035	3,20,345	1,16,926	1	4.8
Samba	28,449	14,225	1,42,245	51,919	0.44	2.13
Shopian	2,093	1,047	10,465	3,820	0.03	0.16
Srinagar	125	63	625	228	0	0.01
Udhampur	70,079	35,040	3,50,395	1,27,894	1.09	5.25
Total	**6,48,246**	**3,24,123**	**32,41,230**	**11,83,049**	**10.12**	**48.55**

State - Jharkhand

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bokaro	12,346	6,173	61,730	22,531	0.19	0.92
Chatra	63,256	31,628	3,16,280	1,15,442	0.99	4.74
Deoghar	40,571	20,286	2,02,855	74,042	0.63	3.04
Dhanbad	27,267	13,634	1,36,335	49,762	0.43	2.04
Dumka	34,230	17,115	1,71,150	62,470	0.53	2.56
East Singhbum	22,751	11,376	1,13,755	41,521	0.36	1.7
Garhwa	63,928	31,964	3,19,640	1,16,669	1	4.79
Giridih	61,991	30,996	3,09,955	1,13,134	0.97	4.64
Godda	87,721	43,861	4,38,605	1,60,091	1.37	6.57
Gumla	45,836	22,918	2,29,180	83,651	0.72	3.43
Hazaribagh	25,922	12,961	1,29,610	47,308	0.4	1.94
Jamtara	10,489	5,245	52,445	19,142	0.16	0.79
Khunti	16,497	8,249	82,485	30,107	0.26	1.24
Koderma	9,463	4,732	47,315	17,270	0.15	0.71
Latehar	23,181	11,591	1,15,905	42,305	0.36	1.74
Lohardaga	9,450	4,725	47,250	17,246	0.15	0.71
Pakur	41,482	20,741	2,07,410	75,705	0.65	3.11
Palamu	82,803	41,402	4,14,015	1,51,115	1.29	6.2
Ramgarh	7,129	3,565	35,645	13,010	0.11	0.53
Ranchi	56,188	28,094	2,80,940	1,02,543	0.88	4.21
Sahebganj	32,353	16,177	1,61,765	59,044	0.5	2.42
Saraikela Kharsawan	9,440	4,720	47,200	17,228	0.15	0.71
Simdega	12,553	6,277	62,765	22,909	0.2	0.94
West Singhbhum	11,247	5,624	56,235	20,526	0.18	0.84
Total	**8,08,094**	**4,04,047**	**40,40,470**	**14,74,772**	**12.61**	**60.53**

State - Karnataka

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bagalkot	2,23,075	1,11,538	11,15,375	4,07,112	3.48	16.71
Bangalore Rural	16,358	8,179	81,790	29,853	0.26	1.23
Belgaum	8,18,518	4,09,259	40,92,590	14,93,795	12.77	61.31
Bellary	1,20,625	60,313	6,03,125	2,20,141	1.88	9.03
Bengaluru Urban	10,640	5,320	53,200	19,418	0.17	0.8
Bidar	1,17,941	58,971	5,89,705	2,15,242	1.84	8.83
Bijapur	1,71,645	85,823	8,58,225	3,13,252	2.68	12.86
Chamarajanagar	9,158	4,579	45,790	16,713	0.14	0.69
Chikballapur	25,495	12,748	1,27,475	46,528	0.4	1.91
Chikmagalur	30,619	15,310	1,53,095	55,880	0.48	2.29
Chitradurga	1,05,263	52,632	5,26,315	1,92,105	1.64	7.88
Dakshin Kannad	1,138	569	5,690	2,077	0.02	0.09
Davangere	1,11,962	55,981	5,59,810	2,04,331	1.75	8.39
Dharwad	57,157	28,579	2,85,785	1,04,312	0.89	4.28
Gadag	53,504	26,752	2,67,520	97,645	0.83	4.01

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Gulbarga	68,476	34,238	3,42,380	1,24,969	1.07	5.13
Hassan	1,02,332	51,166	5,11,660	1,86,756	1.6	7.66
Haveri	80,908	40,454	4,04,540	1,47,657	1.26	6.06
Kodagu	3,855	1,928	19,275	7,035	0.06	0.29
Kolar	25,952	12,976	1,29,760	47,362	0.4	1.94
Koppal	60,559	30,280	3,02,795	1,10,520	0.94	4.54
Mandya	1,07,374	53,687	5,36,870	1,95,958	1.68	8.04
Mysore	20,448	10,224	1,02,240	37,318	0.32	1.53
Raichur	1,07,569	53,785	5,37,845	1,96,313	1.68	8.06
Ramanagara	18,946	9,473	94,730	34,576	0.3	1.42
Shimoga	1,01,234	50,617	5,06,170	1,84,752	1.58	7.58
Tumkur	1,36,286	68,143	6,81,430	2,48,722	2.13	10.21
Udupi	1,162	581	5,810	2,121	0.02	0.09
Uttar Kannad	61,138	30,569	3,05,690	1,11,577	0.95	4.58
Yadgir	53,131	26,566	2,65,655	96,964	0.83	3.98
Total	**28,22,468**	**14,11,234**	**1,41,12,340**	**51,51,004**	**44.04**	**211.4**

State - Kerala

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Alappuzha	1,695	848	8,475	3,093	0.03	0.13
Ernakulam	1,525	763	7,625	2,783	0.02	0.11
Idukki	1,944	972	9,720	3,548	0.03	0.15
Kannur	472	236	2,360	861	0.01	0.04
Kasaragod	304	152	1,520	555	0	0.02
Kollam	873	437	4,365	1,593	0.01	0.07
Kottayam	1,547	774	7,735	2,823	0.02	0.12
Kozhikode	434	217	2,170	792	0.01	0.03
Malappuram	956	478	4,780	1,745	0.01	0.07
Palakkad	2,100	1,050	10,500	3,833	0.03	0.16
Pathanamthitta	584	292	2,920	1,066	0.01	0.04
Thiruvananthapuram	1,381	691	6,905	2,520	0.02	0.1
Thrissur	3,381	1,691	16,905	6,170	0.05	0.25
Wayanad	415	208	2,075	757	0.01	0.03
Total	**17,611**	**8,806**	**88,055**	**32,140**	**0.27**	**1.32**

Union Territory - Lakshadweep

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Lakshadweep	16	8	80	29	0	0
Total	**16**	**8**	**80**	**29**	**0**	**0**

State - Madhya Pradesh

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Agar malwa	1,48,599	74,300	7,42,995	2,71,193	2.32	11.13
Alirajpur	67,091	33,546	3,35,455	1,22,441	1.05	5.03
Anuppur	33,967	16,984	1,69,835	61,990	0.53	2.54
Ashoknagar	1,33,629	66,815	6,68,145	2,43,873	2.09	10.01
Balaghat	1,28,522	64,261	6,42,610	2,34,553	2.01	9.63
Barwani	1,34,540	67,270	6,72,700	2,45,536	2.1	10.08
Betul	1,57,406	78,703	7,87,030	2,87,266	2.46	11.79
Bhind	4,03,837	2,01,919	20,19,185	7,37,003	6.3	30.25
Bhopal	1,01,001	50,501	5,05,005	1,84,327	1.58	7.56
Burhanpur	48,857	24,429	2,44,285	89,164	0.76	3.66
Chhatarpur	3,61,289	1,80,645	18,06,445	6,59,352	5.64	27.06
Chhindwara	1,48,242	74,121	7,41,210	2,70,542	2.31	11.1
Damoh	1,25,215	62,608	6,26,075	2,28,517	1.95	9.38
Datia	2,81,635	1,40,818	14,08,175	5,13,984	4.39	21.09
Dewas	2,30,372	1,15,186	11,51,860	4,20,429	3.59	17.25
Dhar	2,56,870	1,28,435	12,84,350	4,68,788	4.01	19.24
Dindori	43,594	21,797	2,17,970	79,559	0.68	3.27
East nimar	1,58,716	79,358	7,93,580	2,89,657	2.48	11.89
Guna	2,71,091	1,35,546	13,55,455	4,94,741	4.23	20.3
Gwalior	2,47,438	1,23,719	12,37,190	4,51,574	3.86	18.53
Harda	76,956	38,478	3,84,780	1,40,445	1.2	5.76
Hoshangabad	1,03,781	51,891	5,18,905	1,89,400	1.62	7.77
Indore	1,59,611	79,806	7,98,055	2,91,290	2.49	11.95
Jabalpur	91,803	45,902	4,59,015	1,67,540	1.43	6.88
Jhabua	1,20,916	60,458	6,04,580	2,20,672	1.89	9.06
Katni	82,786	41,393	4,13,930	1,51,084	1.29	6.2
Khargone	2,59,216	1,29,608	12,96,080	4,73,069	4.04	19.42
Mandla	47,092	23,546	2,35,460	85,943	0.73	3.53
Morena	6,33,460	3,16,730	31,67,300	11,56,065	9.88	47.45
Mandsaur	2,36,968	1,18,484	11,84,840	4,32,467	3.7	17.75
Narsinghpur	1,06,830	53,415	5,34,150	1,94,965	1.67	8
Neemuch	1,53,038	76,519	7,65,190	2,79,294	2.39	11.46
Panna	1,75,816	87,908	8,79,080	3,20,864	2.74	13.17
Raisen	1,27,703	63,852	6,38,515	2,33,058	1.99	9.56
Rajgarh	4,60,424	2,30,212	23,02,120	8,40,274	7.18	34.49
Ratlam	1,72,249	86,125	8,61,245	3,14,354	2.69	12.9
Rewa	2,42,911	1,21,456	12,14,555	4,43,313	3.79	18.19
Sagar	2,08,281	1,04,141	10,41,405	3,80,113	3.25	15.6
Satna	2,21,130	1,10,565	11,05,650	4,03,562	3.45	16.56
Sehore	2,62,386	1,31,193	13,11,930	4,78,854	4.09	19.65
Seoni	94,020	47,010	4,70,100	1,71,587	1.47	7.04
Shahdol	76,163	38,082	3,80,815	1,38,997	1.19	5.7
Shajapur	1,98,321	99,161	9,91,605	3,61,936	3.09	14.85

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Sheopur	1,77,103	88,552	8,85,515	3,23,213	2.76	13.27
Shivpuri	3,76,637	1,88,319	18,83,185	6,87,363	5.88	28.21
Sidhi	94,586	47,293	4,72,930	1,72,619	1.48	7.08
Singrauli	72,567	36,284	3,62,835	1,32,435	1.13	5.44
Tikamgarh	2,97,710	1,48,855	14,88,550	5,43,321	4.65	22.3
Ujjain	3,28,658	1,64,329	16,43,290	5,99,801	5.13	24.62
Umaria	41,848	20,924	2,09,240	76,373	0.65	3.13
Vidisha	1,45,323	72,662	7,26,615	2,65,214	2.27	10.88
Total	**93,28,204**	**46,64,102**	**4,66,41,020**	**1,70,23,972**	**145.56**	**698.68**

State - Maharashtra

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ahmednagar	2,10,839	1,05,420	10,54,195	3,84,781	3.29	15.79
Akola	47,493	23,747	2,37,465	86,675	0.74	3.56
Amravati	1,19,487	59,744	5,97,435	2,18,064	1.86	8.95
Aurangabad	90,376	45,188	4,51,880	1,64,936	1.41	6.77
Beed	2,46,980	1,23,490	12,34,900	4,50,739	3.85	18.5
Bhandara	98,072	49,036	4,90,360	1,78,981	1.53	7.35
Buldhana	1,29,509	64,755	6,47,545	2,36,354	2.02	9.7
Chandrapur	56,116	28,058	2,80,580	1,02,412	0.88	4.2
Dhule	90,566	45,283	4,52,830	1,65,283	1.41	6.78
Gadchiroli	39,466	19,733	1,97,330	72,025	0.62	2.96
Gondia	72,921	36,461	3,64,605	1,33,081	1.14	5.46
Hingoli	70,835	35,418	3,54,175	1,29,274	1.11	5.31
Jalgaon	2,59,118	1,29,559	12,95,590	4,72,890	4.04	19.41
Jalna	74,541	37,271	3,72,705	1,36,037	1.16	5.58
Kolhapur	5,62,065	2,81,033	28,10,325	10,25,769	8.77	42.1
Latur	2,43,080	1,21,540	12,15,400	4,43,621	3.79	18.21
Mumbai	23,185	11,593	1,15,925	42,313	0.36	1.74
Nagpur	65,465	32,733	3,27,325	1,19,474	1.02	4.9
Nanded	2,23,650	1,11,825	11,18,250	4,08,161	3.49	16.75
Nandurbar	68,785	34,393	3,43,925	1,25,533	1.07	5.15
Nashik	1,79,858	89,929	8,99,290	3,28,241	2.81	13.47
Osmanabad	1,79,632	89,816	8,98,160	3,27,828	2.8	13.45
Palghar	58,701	29,351	2,93,505	1,07,129	0.92	4.4
Parbhani	94,812	47,406	4,74,060	1,73,032	1.48	7.1
Pune	2,90,563	1,45,282	14,52,815	5,30,277	4.53	21.76
Raigad	55,506	27,753	2,77,530	1,01,298	0.87	4.16
Ratnagiri	34,825	17,413	1,74,125	63,556	0.54	2.61
Sangli	4,86,935	2,43,468	24,34,675	8,88,656	7.6	36.47
Satara	3,20,027	1,60,014	16,00,135	5,84,049	4.99	23.97
Sindhudurg	40,378	20,189	2,01,890	73,690	0.63	3.02

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Solapur	4,82,309	2,41,155	24,11,545	8,80,214	7.53	36.12
Thane	84,339	42,170	4,21,695	1,53,919	1.32	6.32
Wardha	42,313	21,157	2,11,565	77,221	0.66	3.17
Washim	51,849	25,925	2,59,245	94,624	0.81	3.88
Yavatmal	80,652	40,326	4,03,260	1,47,190	1.26	6.04
Total	**52,75,248**	**26,37,624**	**2,63,76,240**	**96,27,328**	**82.32**	**395.12**

State - Manipur

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Bishnupur	594	297	2,970	1,084	0.01	0.04
Chandel	775	388	3,875	1,414	0.01	0.06
Churachandpur	5,375	2,688	26,875	9,809	0.08	0.4
Imphal East	351	176	1,755	641	0.01	0.03
Imphal West	429	215	2,145	783	0.01	0.03
Senapati	6,298	3,149	31,490	11,494	0.1	0.47
Tamenglong	2,097	1,049	10,485	3,827	0.03	0.16
Thoubal	337	169	1,685	615	0.01	0.03
Ukhrul	4,122	2,061	20,610	7,523	0.06	0.31
Total	**20,378**	**10,189**	**1,01,890**	**37,190**	**0.32**	**1.53**

State - Meghalaya

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
East Jaintia Hills	373	187	1,865	681	0.01	0.03
East Khasi Hills	283	142	1,415	516	0	0.02
North Garo Hills	7	4	35	13	0	0
Ri Bhoi	1,347	674	6,735	2,458	0.02	0.1
South Garo Hills	3	2	15	5	0	0
South West Garo Hills	707	354	3,535	1,290	0.01	0.05
South West Khasi Hills	999	500	4,995	1,823	0.02	0.07
West Garo Hills	515	258	2,575	940	0.01	0.04
West Jaintia Hills	184	92	920	336	0	0.01
West Khasi Hills	1,025	513	5,125	1,871	0.02	0.08
Total	**5,443**	**2,722**	**27,215**	**9,933**	**0.08**	**0.41**

State - Mizoram

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Aizawl	44	22	220	80	0	0
Champhai	501	251	2,505	914	0.01	0.04

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Kolasib	266	133	1,330	485	0	0.02
Lawngtlai	88	44	440	161	0	0.01
Lunglei	25	13	125	46	0	0
Mamit	7	4	35	13	0	0
Serchhip	115	58	575	210	0	0.01
Siaha	226	113	1,130	412	0	0.02
Total	**1,272**	**636**	**6,360**	**2,321**	**0.02**	**0.1**

State - Nagaland

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dimapur	1,154	577	5,770	2,106	0.02	0.09
Kiphire	12	6	60	22	0	0
Kohima	154	77	770	281	0	0.01
Mokokchung	2	1	10	4	0	0
Mon	328	164	1,640	599	0.01	0.02
Peren	3,200	1,600	16,000	5,840	0.05	0.24
Phek	742	371	3,710	1,354	0.01	0.06
Tuensang	24	12	120	44	0	0
Wokha	22	11	110	40	0	0
Zunheboto	6	3	30	11	0	0
Total	**5,644**	**2,822**	**28,220**	**10,300**	**0.09**	**0.42**

State - Odisha

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Anugul	3,294	1,647	16,470	6,012	0.05	0.25
Balangir	11,343	5,672	56,715	20,701	0.18	0.85
Baleshwar	671	336	3,355	1,225	0.01	0.05
Bargarh	2,936	1,468	14,680	5,358	0.05	0.22
Bhadrak	3,147	1,574	15,735	5,743	0.05	0.24
Boudh	3,341	1,671	16,705	6,097	0.05	0.25
Cuttack	11,306	5,653	56,530	20,633	0.18	0.85
Deogarh	642	321	3,210	1,172	0.01	0.05
Dhenkanal	10,073	5,037	50,365	18,383	0.16	0.75
Gajapati	3,227	1,614	16,135	5,889	0.05	0.24
Ganjam	34,938	17,469	1,74,690	63,762	0.55	2.62
Jagatsinghapur	9,861	4,931	49,305	17,996	0.15	0.74
Jajapur	3,068	1,534	15,340	5,599	0.05	0.23
Jharsuguda	1,051	526	5,255	1,918	0.02	0.08
Kalahandi	10,164	5,082	50,820	18,549	0.16	0.76
Kandhamal	14,939	7,470	74,695	27,264	0.23	1.12

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Productio n Per Day (Kg)	Buffalo Dung Productio n Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Kendrapara	13,213	6,607	66,065	24,114	0.21	0.99
Kendujhar	2,694	1,347	13,470	4,917	0.04	0.2
Khordha	6,200	3,100	31,000	11,315	0.1	0.46
Koraput	26,479	13,240	1,32,395	48,324	0.41	1.98
Malkangiri	3,258	1,629	16,290	5,946	0.05	0.24
Mayurbhanj	3,412	1,706	17,060	6,227	0.05	0.26
Nabarangpur	13,538	6,769	67,690	24,707	0.21	1.01
Nayagarh	5,449	2,725	27,245	9,944	0.09	0.41
Nuapada	5,948	2,974	29,740	10,855	0.09	0.45
Puri	11,069	5,535	55,345	20,201	0.17	0.83
Rayagada	27,557	13,779	1,37,785	50,292	0.43	2.06
Sambalpur	3,273	1,637	16,365	5,973	0.05	0.25
Sonepur	1,182	591	5,910	2,157	0.02	0.09
Sundargarh	7,887	3,944	39,435	14,394	0.12	0.59
Total	**2,55,160**	**1,27,580**	**12,75,800**	**4,65,667**	**3.98**	**19.11**

Union Territory - Puducherry

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Karaikal	431	216	2,155	787	0.01	0.03
Pondicherry	412	206	2,060	752	0.01	0.03
Yanam	1,477	739	7,385	2,696	0.02	0.11
Total	**2,320**	**1,160**	**11,600**	**4,234**	**0.04**	**0.17**

State - Punjab

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Amritsar	2,51,142	1,25,571	12,55,710	4,58,334	3.92	18.81
Barnala	1,37,163	68,582	6,85,815	2,50,322	2.14	10.27
Bathinda	2,21,062	1,10,531	11,05,310	4,03,438	3.45	16.56
Faridkot	89,378	44,689	4,46,890	1,63,115	1.39	6.69
Fatehgarh Sahib	1,10,294	55,147	5,51,470	2,01,287	1.72	8.26
Fazilka	1,54,520	77,260	7,72,600	2,81,999	2.41	11.57
Firozepur	1,63,981	81,991	8,19,905	2,99,265	2.56	12.28
Gurdaspur	2,00,871	1,00,436	10,04,355	3,66,590	3.13	15.05
Hoshiarpur	1,61,773	80,887	8,08,865	2,95,236	2.52	12.12
Jalandhar	1,78,678	89,339	8,93,390	3,26,087	2.79	13.38
Kapurthala	98,187	49,094	4,90,935	1,79,191	1.53	7.35
Ludhiana	3,56,935	1,78,468	17,84,675	6,51,406	5.57	26.73
Mansa	2,07,025	1,03,513	10,35,125	3,77,821	3.23	15.51
Moga	1,59,648	79,824	7,98,240	2,91,358	2.49	11.96
Muktsar	1,11,367	55,684	5,56,835	2,03,245	1.74	8.34

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Nawanshahr (Sbs Nagar)	85,632	42,816	4,28,160	1,56,278	1.34	6.41
Pathankot	27,170	13,585	1,35,850	49,585	0.42	2.04
Patiala	2,67,863	1,33,932	13,39,315	4,88,850	4.18	20.06
Rupnagar	1,30,582	65,291	6,52,910	2,38,312	2.04	9.78
S.A.S Nagar	1,13,179	56,590	5,65,895	2,06,552	1.77	8.48
Sangrur	3,85,130	1,92,565	19,25,650	7,02,862	6.01	28.85
Tarn Taran	2,26,733	1,13,367	11,33,665	4,13,788	3.54	16.98
Total	**38,38,313**	**19,19,157**	**1,91,91,565**	**70,04,921**	**59.89**	**287.49**

State - Rajasthan

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ajmer	4,67,596	2,33,798	23,37,980	8,53,363	7.3	35.02
Alwar	10,77,402	5,38,701	53,87,010	19,66,259	16.81	80.7
Banswara	3,42,226	1,71,113	17,11,130	6,24,562	5.34	25.63
Baran	2,38,981	1,19,491	11,94,905	4,36,140	3.73	17.9
Barmer	2,10,367	1,05,184	10,51,835	3,83,920	3.28	15.76
Bharatpur	7,02,700	3,51,350	35,13,500	12,82,428	10.97	52.63
Bhilwara	4,40,333	2,20,167	22,01,665	8,03,608	6.87	32.98
Bikaner	1,92,301	96,151	9,61,505	3,50,949	3	14.4
Bundi	2,97,212	1,48,606	14,86,060	5,42,412	4.64	22.26
Chittorgarh	4,35,896	2,17,948	21,79,480	7,95,510	6.8	32.65
Churu	2,62,953	1,31,477	13,14,765	4,79,889	4.1	19.7
Dausa	5,07,947	2,53,974	25,39,735	9,27,003	7.93	38.05
Dholpur	3,55,926	1,77,963	17,79,630	6,49,565	5.55	26.66
Dungarpur	3,08,360	1,54,180	15,41,800	5,62,757	4.81	23.1
Ganganagar	1,87,286	93,643	9,36,430	3,41,797	2.92	14.03
Hanumangarh	2,85,224	1,42,612	14,26,120	5,20,534	4.45	21.36
Jaipur	11,59,027	5,79,514	57,95,135	21,15,224	18.09	86.81
Jaisalmer	4,104	2,052	20,520	7,490	0.06	0.31
Jalore	5,62,417	2,81,209	28,12,085	10,26,411	8.78	42.13
Jhalawar	3,26,917	1,63,459	16,34,585	5,96,624	5.1	24.49
Jhunjhunu	3,37,880	1,68,940	16,89,400	6,16,631	5.27	25.31
Jodhpur	2,97,237	1,48,619	14,86,185	5,42,458	4.64	22.26
Karauli	4,89,174	2,44,587	24,45,870	8,92,743	7.63	36.64
Kota	2,17,212	1,08,606	10,86,060	3,96,412	3.39	16.27
Nagaur	5,13,006	2,56,503	25,65,030	9,36,236	8.01	38.42
Pali	3,06,271	1,53,136	15,31,355	5,58,945	4.78	22.94
Pratapgarh	1,90,530	95,265	9,52,650	3,47,717	2.97	14.27
Rajsamand	2,17,170	1,08,585	10,85,850	3,96,335	3.39	16.27
Sawai Madhopur	2,82,258	1,41,129	14,11,290	5,15,121	4.4	21.14
Sikar	4,64,190	2,32,095	23,20,950	8,47,147	7.24	34.77
Sirohi	1,99,427	99,714	9,97,135	3,63,954	3.11	14.94

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Tonk	4,02,675	2,01,338	20,13,375	7,34,882	6.28	30.16
Udaipur	5,67,856	2,83,928	28,39,280	10,36,337	8.86	42.53
Total	**1,28,50,061**	**64,25,031**	**6,42,50,305**	**2,34,51,361**	**200.51**	**962.47**

State - Sikkim

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
East District	80	40	400	146	0	0.01
North District	38	19	190	69	0	0
South District	92	46	460	168	0	0.01
West District	671	336	3,355	1,225	0.01	0.05
Total	**881**	**441**	**4,405**	**1,608**	**0.01**	**0.07**

State - Tamil Nadu

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ariyalur	1,623	812	8,115	2,962	0.03	0.12
Chennai	7,105	3,553	35,525	12,967	0.11	0.53
Coimbatore	2,121	1,061	10,605	3,871	0.03	0.16
Cuddalore	5,389	2,695	26,945	9,835	0.08	0.4
Dharmapuri	24,254	12,127	1,21,270	44,264	0.38	1.82
Dindigul	25,616	12,808	1,28,080	46,749	0.4	1.92
Erode	81,201	40,601	4,06,005	1,48,192	1.27	6.08
Kanchipuram	35,930	17,965	1,79,650	65,572	0.56	2.69
Kanniyakumari	1,147	574	5,735	2,093	0.02	0.09
Karur	24,074	12,037	1,20,370	43,935	0.38	1.8
Krishnagiri	8,466	4,233	42,330	15,450	0.13	0.63
Madurai	3,138	1,569	15,690	5,727	0.05	0.24
Nagapattinam	6,339	3,170	31,695	11,569	0.1	0.47
Namakkal	60,481	30,241	3,02,405	1,10,378	0.94	4.53
Perambalur	847	424	4,235	1,546	0.01	0.06
Pudukkottai	2,954	1,477	14,770	5,391	0.05	0.22
Ramanathapuram	456	228	2,280	832	0.01	0.03
Salem	46,908	23,454	2,34,540	85,607	0.73	3.51
Sivaganga	771	386	3,855	1,407	0.01	0.06
Thanjavur	3,044	1,522	15,220	5,555	0.05	0.23
The Nilgiris	1,962	981	9,810	3,581	0.03	0.15
Theni	944	472	4,720	1,723	0.01	0.07
Thiruvallur	44,004	22,002	2,20,020	80,307	0.69	3.3
Thiruvarur	1,041	521	5,205	1,900	0.02	0.08
Tiruchirappalli	7,781	3,891	38,905	14,200	0.12	0.58
Tirunelveli	12,981	6,491	64,905	23,690	0.2	0.97

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Tiruppur	25,151	12,576	1,25,755	45,901	0.39	1.88
Tiruvannamalai	4,455	2,228	22,275	8,130	0.07	0.33
Tuticorin	4,177	2,089	20,885	7,623	0.07	0.31
Vellore	13,298	6,649	66,490	24,269	0.21	1
Villupuram	7,849	3,925	39,245	14,324	0.12	0.59
Virudhunagar	5,521	2,761	27,605	10,076	0.09	0.41
Total	**4,71,028**	**2,35,514**	**23,55,140**	**8,59,626**	**7.35**	**35.28**

State – Telangana

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Adilabad	44,527	22,264	2,22,635	81,262	0.69	3.34
Bhadradri kothagudem	1,52,651	76,326	7,63,255	2,78,588	2.38	11.43
Hyderabad	21,685	10,843	1,08,425	39,575	0.34	1.62
Jangoan	1,19,719	59,860	5,98,595	2,18,487	1.87	8.97
Jayashankar bhupalap	1,14,984	57,492	5,74,920	2,09,846	1.79	8.61
Jogulamba gadwal	56,250	28,125	2,81,250	1,02,656	0.88	4.21
Jagitial	1,17,479	58,740	5,87,395	2,14,399	1.83	8.8
Kamareddy	1,73,465	86,733	8,67,325	3,16,574	2.71	12.99
Kumuram bheem asifab	43,620	21,810	2,18,100	79,607	0.68	3.27
Karimnagar	88,402	44,201	4,42,010	1,61,334	1.38	6.62
Khammam	3,50,840	1,75,420	17,54,200	6,40,283	5.47	26.28
Mahabubabad	1,18,241	59,121	5,91,205	2,15,790	1.85	8.86
Mancherial	97,893	48,947	4,89,465	1,78,655	1.53	7.33
Medchal malkajgiri	53,046	26,523	2,65,230	96,809	0.83	3.97
Mahbubnagar	1,39,085	69,543	6,95,425	2,53,830	2.17	10.42
Medak	1,73,492	86,746	8,67,460	3,16,623	2.71	12.99
Nagarkurnool	1,06,024	53,012	5,30,120	1,93,494	1.65	7.94
Nalgonda	2,86,799	1,43,400	14,33,995	5,23,408	4.48	21.48
Nirmal	1,12,197	56,099	5,60,985	2,04,760	1.75	8.4
Nizamabad	1,98,727	99,364	9,93,635	3,62,677	3.1	14.88
Peddapalli	86,672	43,336	4,33,360	1,58,176	1.35	6.49
Rajanna sircilla	68,538	34,269	3,42,690	1,25,082	1.07	5.13
Rangareddi	1,50,359	75,180	7,51,795	2,74,405	2.35	11.26
Sangareddy	1,52,076	76,038	7,60,380	2,77,539	2.37	11.39
Siddipet	1,65,021	82,511	8,25,105	3,01,163	2.58	12.36
Suryapet	2,71,436	1,35,718	13,57,180	4,95,371	4.24	20.33
Vikarabad	72,652	36,326	3,63,260	1,32,590	1.13	5.44
Wanaparthy	65,629	32,815	3,28,145	1,19,773	1.02	4.92
Warangal urban	61,713	30,857	3,08,565	1,12,626	0.96	4.62
Warangal rural	1,12,114	56,057	5,60,570	2,04,608	1.75	8.4
Yadadri bhuvanagiri	1,36,764	68,382	6,83,820	2,49,594	2.13	10.24
Total	**39,12,100**	**19,56,050**	**1,95,60,500**	**71,39,583**	**61.05**	**293.02**

State – Tripura

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Dhalai	592	296	2,960	1,080	0.01	0.04
Gomati	484	242	2,420	883	0.01	0.04
Khowai	33	17	165	60	0	0
North Tripura	844	422	4,220	1,540	0.01	0.06
Sepahijala	66	33	330	120	0	0
South Tripura	118	59	590	215	0	0.01
Unakoti	3,099	1,550	15,495	5,656	0.05	0.23
West Tripura	167	84	835	305	0	0.01
Total	**5,403**	**2,702**	**27,015**	**9,860**	**0.08**	**0.4**

State – Uttar Pradesh

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Agra	10,30,312	5,15,156	51,51,560	18,80,319	16.08	77.17
Aligarh	8,55,574	4,27,787	42,77,870	15,61,423	13.35	64.08
Allahabad	7,82,751	3,91,376	39,13,755	14,28,521	12.21	58.63
Ambedkar Nagar	3,25,227	1,62,614	16,26,135	5,93,539	5.07	24.36
Amethi	3,20,675	1,60,338	16,03,375	5,85,232	5	24.02
Amroha	4,38,795	2,19,398	21,93,975	8,00,801	6.85	32.87
Auraiya	3,59,552	1,79,776	17,97,760	6,56,182	5.61	26.93
Azamgarh	4,62,409	2,31,205	23,12,045	8,43,896	7.22	34.63
Baghpat	2,81,637	1,40,819	14,08,185	5,13,988	4.39	21.09
Bahraich	3,80,187	1,90,094	19,00,935	6,93,841	5.93	28.48
Ballia	2,44,700	1,22,350	12,23,500	4,46,578	3.82	18.33
Balrampur	2,08,890	1,04,445	10,44,450	3,81,224	3.26	15.65
Banda	3,84,337	1,92,169	19,21,685	7,01,415	6	28.79
Barabanki	4,72,446	2,36,223	23,62,230	8,62,214	7.37	35.39
Bareilly	6,27,856	3,13,928	31,39,280	11,45,837	9.8	47.03
Basti	3,07,504	1,53,752	15,37,520	5,61,195	4.8	23.03
Bijnor	5,37,199	2,68,600	26,85,995	9,80,388	8.38	40.24
Budaun	10,03,342	5,01,671	50,16,710	18,31,099	15.66	75.15
Bulandshahr	8,64,316	4,32,158	43,21,580	15,77,377	13.49	64.74
Chandauli	3,17,111	1,58,556	15,85,555	5,78,728	4.95	23.75
Chitrakoot	2,34,354	1,17,177	11,71,770	4,27,696	3.66	17.55
Deoria	1,84,503	92,252	9,22,515	3,36,718	2.88	13.82
Etah	5,74,541	2,87,271	28,72,705	10,48,537	8.97	43.03
Etawah	3,60,960	1,80,480	18,04,800	6,58,752	5.63	27.04
Faizabad	3,31,720	1,65,860	16,58,600	6,05,389	5.18	24.85
Farrukhabad	4,23,478	2,11,739	21,17,390	7,72,847	6.61	31.72
Fatehpur	5,94,542	2,97,271	29,72,710	10,85,039	9.28	44.53
Firozabad	6,22,876	3,11,438	31,14,380	11,36,749	9.72	46.65
Gautam Buddha Nagar	2,38,468	1,19,234	11,92,340	4,35,204	3.72	17.86

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Ghaziabad	1,90,128	95,064	9,50,640	3,46,984	2.97	14.24
Ghazipur	4,95,772	2,47,886	24,78,860	9,04,784	7.74	37.13
Gonda	4,21,760	2,10,880	21,08,800	7,69,712	6.58	31.59
Gorakhpur	2,40,977	1,20,489	12,04,885	4,39,783	3.76	18.05
Hamirpur	2,25,928	1,12,964	11,29,640	4,12,319	3.53	16.92
Hapur	2,03,237	1,01,619	10,16,185	3,70,908	3.17	15.22
Hardoi	7,70,990	3,85,495	38,54,950	14,07,057	12.03	57.75
Hathras	4,02,080	2,01,040	20,10,400	7,33,796	6.27	30.12
Jalaun	3,41,903	1,70,952	17,09,515	6,23,973	5.34	25.61
Jaunpur	5,58,955	2,79,478	27,94,775	10,20,093	8.72	41.87
Jhansi	2,99,012	1,49,506	14,95,060	5,45,697	4.67	22.4
Kannauj	3,98,737	1,99,369	19,93,685	7,27,695	6.22	29.87
Kanpur Dehat	5,65,967	2,82,984	28,29,835	10,32,890	8.83	42.39
Kanpur Nagar	4,69,956	2,34,978	23,49,780	8,57,670	7.33	35.2
Kasganj	5,03,080	2,51,540	25,15,400	9,18,121	7.85	37.68
Kaushambi	3,32,769	1,66,385	16,63,845	6,07,303	5.19	24.92
Kheri	7,34,071	3,67,036	36,70,355	13,39,680	11.45	54.98
Kushi Nagar	1,62,942	81,471	8,14,710	2,97,369	2.54	12.2
Lalitpur	2,68,634	1,34,317	13,43,170	4,90,257	4.19	20.12
Lucknow	2,67,083	1,33,542	13,35,415	4,87,426	4.17	20
Maharajganj	1,72,295	86,148	8,61,475	3,14,438	2.69	12.9
Mahoba	1,29,811	64,906	6,49,055	2,36,905	2.03	9.72
Mainpuri	5,52,616	2,76,308	27,63,080	10,08,524	8.62	41.39
Mathura	5,41,170	2,70,585	27,05,850	9,87,635	8.44	40.53
Mau	1,86,414	93,207	9,32,070	3,40,206	2.91	13.96
Meerut	4,35,002	2,17,501	21,75,010	7,93,879	6.79	32.58
Mirzapur	2,74,613	1,37,307	13,73,065	5,01,169	4.29	20.57
Moradabad	3,47,125	1,73,563	17,35,625	6,33,503	5.42	26
Muzaffarnagar	3,80,582	1,90,291	19,02,910	6,94,562	5.94	28.51
Pilibhit	1,92,177	96,089	9,60,885	3,50,723	3	14.39
Pratapgarh	5,69,264	2,84,632	28,46,320	10,38,907	8.88	42.64
Rae Bareli	4,19,747	2,09,874	20,98,735	7,66,038	6.55	31.44
Rampur	3,20,600	1,60,300	16,03,000	5,85,095	5	24.01
Saharanpur	4,30,335	2,15,168	21,51,675	7,85,361	6.72	32.23
Sambhal	6,49,504	3,24,752	32,47,520	11,85,345	10.13	48.65
Sant Kabeer Nagar	1,34,693	67,347	6,73,465	2,45,815	2.1	10.09
Sant Ravidas Nagar	1,51,271	75,636	7,56,355	2,76,070	2.36	11.33
Shahjahanpur	5,63,337	2,81,669	28,16,685	10,28,090	8.79	42.19
Shamli	2,22,643	1,11,322	11,13,215	4,06,323	3.47	16.68
Shravasti	1,63,379	81,690	8,16,895	2,98,167	2.55	12.24
Siddharth Nagar	1,76,156	88,078	8,80,780	3,21,485	2.75	13.19
Sitapur	6,32,660	3,16,330	31,63,300	11,54,605	9.87	47.39
Sonbhadra	1,36,763	68,382	6,83,815	2,49,592	2.13	10.24
Sultanpur	3,02,701	1,51,351	15,13,505	5,52,429	4.72	22.67

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Unnao	5,87,517	2,93,759	29,37,585	10,72,219	9.17	44.01
Varanasi	2,38,536	1,19,268	11,92,680	4,35,328	3.72	17.87
Total	**3,05,35,154**	**1,52,67,577**	**15,26,75,770**	**5,57,26,656**	**476.48**	**2287.08**

State - Uttarakhand

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Almora	73,980	36,990	3,69,900	1,35,014	1.15	5.54
Bageshwar	30,878	15,439	1,54,390	56,352	0.48	2.31
Champawat	17,759	8,880	88,795	32,410	0.28	1.33
Dehradun	48,354	24,177	2,41,770	88,246	0.75	3.62
Haridwar	1,81,912	90,956	9,09,560	3,31,989	2.84	13.63
Nainital	71,055	35,528	3,55,275	1,29,675	1.11	5.32
Pauri garhwal	28,553	14,277	1,42,765	52,109	0.45	2.14
Pithoragarh	35,743	17,872	1,78,715	65,231	0.56	2.68
Rudraprayag	30,685	15,343	1,53,425	56,000	0.48	2.3
Tehri garhwal	76,795	38,398	3,83,975	1,40,151	1.2	5.75
Udham singh nagar	1,35,796	67,898	6,78,980	2,47,828	2.12	10.17
Uttarkashi	25,213	12,607	1,26,065	46,014	0.39	1.89
Chamoli	37,237	18,619	1,86,185	67,958	0.58	2.79
Total	**7,93,960**	**3,96,980**	**39,69,800**	**14,48,977**	**12.39**	**59.47**

State - West Bengal

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
24 Paraganas north	32,667	16,334	1,63,335	59,617	0.51	2.45
24 Paraganas south	10,147	5,074	50,735	18,518	0.16	0.76
Alipurduar	1,644	822	8,220	3,000	0.03	0.12
Bankura	21,254	10,627	1,06,270	38,789	0.33	1.59
Bardhaman	36,898	18,449	1,84,490	67,339	0.58	2.76
Birbhum	39,013	19,507	1,95,065	71,199	0.61	2.92
Coochbehar	3,659	1,830	18,295	6,678	0.06	0.27
Darjeeling	2,507	1,254	12,535	4,575	0.04	0.19
Dinajpur dakshin	303	152	1,515	553	0	0.02
Dinajpur uttar	8,064	4,032	40,320	14,717	0.13	0.6
Hooghly	27,707	13,854	1,38,535	50,565	0.43	2.08
Howrah	5,565	2,783	27,825	10,156	0.09	0.42
Jalpaiguri	3,634	1,817	18,170	6,632	0.06	0.27
Jhargram	7,380	3,690	36,900	13,469	0.12	0.55
Kalimpong	89	45	445	162	0	0.01
Kolkata	439	220	2,195	801	0.01	0.03
Maldah	21,294	10,647	1,06,470	38,862	0.33	1.59
Medinipur east	217	109	1,085	396	0	0.02

District	No. of cattle	No. of buffalo available in buffalo farm	Buffalo Dung Production Per Day (Kg)	Buffalo Dung Production Per Year (MT)	Energy Potential (MW)	Bio-CNG (T)
Medinipur west	15,225	7,613	76,125	27,786	0.24	1.14
Murshidabad	37,989	18,995	1,89,945	69,330	0.59	2.85
Nadia	8,207	4,104	41,035	14,978	0.13	0.61
Paschim bardhaman	17,343	8,672	86,715	31,651	0.27	1.3
Purulia	13,869	6,935	69,345	25,311	0.22	1.04
Total	**3,15,114**	**1,57,557**	**15,75,570**	**5,75,083**	**4.92**	**23.6**

Annexure 4 : Details of existing cattle dung based WTE plants

SN	WTE plant location	Plant installed capacity	Year of installation	State
1	M/s. Hargoind Bio Energy, village Dakounda, Tehsil: Nabha, Distt. Patiala.	0.50MW	2016-17	Punjab
2	M/s. SAB Industries Ltd., Moonak, Distt. Sangrur	1.5MW	-	Punjab
3	M/s. Pharose Remedies Limited, Jamsher Dairy Complex, Jalandhar.	1 MW	2015-16	Punjab
4	M/s. Bharat Bio-Gas Energy Limited, Navarangpura, Ahmedabad, Gujarat (Bio-CNG)	1.16 MW	2014-15	Gujarat
5	M/s. Patanjali Bio Research Institute, Village Padartha, Laksar Road, Haridwar, Uttarakhand	0.50 MW.	2014-15	Uttarakhand
6	M/s. RDM Care Pvt. Ltd., Pariyat, Jabalpur, Madhya Pradesh	1.2 MW	2011-12	Madhya Pradesh
7	Power generation from Cattle dung through bio-methanation (by PEDA) Haebowal, Ludhiana, Punjab	1 MW	2004-05	Punjab

Source: Secondary research

Annexure 5 : Press mud - State and district wise energy production

Assumptions

- Total 160 days has been considered for annual operational days of sugar mills.
- 3.5% of generation of press mud is considered from crushed sugarcane.
- Biogas generated from Press Mud - 1 MT can generate 80 to 140m^3/day - assumed for calculation - 100m^3/day.

State - Andhra Pradesh

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Chittoor	2	7,84,000	27,440	0.67	3.22
Chittoor		6,40,000	22,400	0.55	2.63
East Godaveri	1	6,40,000	22,400	0.55	2.63
Krishna	1	12,00,000	42,000	1.03	4.92
Srikakulam	1	8,00,000	28,000	0.68	3.28
Visakha patnam	4	2,88,000	10,080	0.25	1.18
Visakha patnam		1,60,000	5,600	0.14	0.66
Visakha patnam		2,56,000	8,960	0.22	1.05
Visakha patnam		6,40,000	22,400	0.55	2.63
Viziana-garam	2	2,00,000	7,000	0.17	0.82
Viziana-garam		7,84,000	27,440	0.67	3.22
West Godavari	2	8,80,000	30,800	0.75	3.61
West Godavari		8,80,000	30,800	0.75	3.61
Total	**13**	**81,52,000**	**2,85,320**	**6.97**	**33.46**

State - Bihar

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Samastipur	2	4,80,000	16,800	0.41	1.97
Samastipur		8,00,000	28,000	0.68	3.28
Champaran East	7	5,60,000	19,600	0.48	2.30
Champaran East		4,00,000	14,000	0.34	1.64
Champaran West		8,00,000	28,000	0.68	3.28
Champaran West		2,56,000	8,960	0.22	1.05
Champaran West		13,04,000	45,640	1.11	5.35
Champaran West		18,40,000	64,400	1.57	7.55
Champaran West		12,80,000	44,800	1.09	5.25
Saran	1	1,76,000	6,160	0.15	0.72
Gopalganj	3	3,92,000	13,720	0.34	1.61
Gopalganj		8,00,000	28,000	0.68	3.28
Gopalganj		8,00,000	28,000	0.68	3.28
Total	**13**	**98,88,000**	**3,46,080**	**8.45**	**40.58**

State - Chattishgarh

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Kabirdham	1	4,00,000	14,000	0.34	1.64
Durg	1	2,00,000	7,000	0.17	0.82
Surajpur	1	4,00,000	14,000	0.34	1.64
Total	**3**	**10,00,000**	**35,000**	**0.86**	**4.10**

State - Goa

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
South Goa	1	2,00,000	7,000	0.17	0.82

Total	**1**	**2,00,000**	**7,000**	**0.17**	**0.82**

State - Gujarat

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Bharuch	2	6,40,000	22,400	0.55	2.63
Bharuch		4,00,000	14,000	0.34	1.64
Junagadh	1	2,00,000	7,000	0.17	0.82
Narmada	1	4,00,000	14,000	0.34	1.64
Navsari	1	8,00,000	28,000	0.68	3.28
Surat	6	16,00,000	56,000	1.37	6.57
Surat		11,20,000	39,200	0.96	4.60
Surat		8,00,000	28,000	0.68	3.28
Surat		8,00,000	28,000	0.68	3.28
Surat		5,60,000	19,600	0.48	2.30
Surat		4,00,000	14,000	0.34	1.64
Tapi	2	4,00,000	14,000	0.34	1.64
Tapi		3,20,000	11,200	0.27	1.31
Valsad	1	5,60,000	19,600	0.48	2.30
VyaraTapi	1	64,000	2,240	0.05	0.26
Total	**15**	**90,64,000**	**3,17,240**	**7.75**	**37.20**

State - Haryana

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Ambala	1	6,40,000	22,400	0.55	2.63
Bamnikhera	1	2,56,000	8,960	0.22	1.05
Jind	1	2,00,000	7,000	0.17	0.82
Kaithal	1	4,00,000	14,000	0.34	1.64
Kurukshetra	1	5,60,000	19,600	0.48	2.30
Rohtak	2	5,60,000	19,600	0.48	2.30
Rohtak		4,00,000	14,000	0.34	1.64
Sonipat	2	2,00,000	7,000	0.17	0.82
Sonipat		4,00,000	14,000	0.34	1.64
Yamuna Nagar	1	16,00,000	56,000	1.37	6.57
Total	**10**	**52,16,000**	**1,82,560**	**4.46**	**21.41**

State - Karnataka

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Bagalkot	10	24,00,000	84,000	2.05	9.85
Bagalkot		4,00,000	14,000	0.34	1.64
Bagalkot		13,60,000	47,600	1.16	5.58
Bagalkot		4,00,000	14,000	0.34	1.64
Bagalkot		8,00,000	28,000	0.68	3.28
Bagalkot		10,40,000	36,400	0.89	4.27
Bagalkot		4,00,000	14,000	0.34	1.64
Bagalkot		9,60,000	33,600	0.82	3.94
Bagalkot		8,00,000	28,000	0.68	3.28
Bagalkot		4,00,000	14,000	0.34	1.64

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Bangaluru	1	4,00,000	14,000	0.34	1.64
Belagavi	11	24,00,000	84,000	2.05	9.85
Belagavi		12,80,000	44,800	1.09	5.25
Belagavi		5,60,000	19,600	0.48	2.30
Belagavi		4,00,000	14,000	0.34	1.64
Belagavi		4,00,000	14,000	0.34	1.64
Belagavi		7,20,000	25,200	0.62	2.95
Belagavi		16,00,000	56,000	1.37	6.57
Belagavi		16,00,000	56,000	1.37	6.57
Belagavi		7,20,000	25,200	0.62	2.95
Belagavi		5,60,000	19,600	0.48	2.30
Belagavi		4,00,000	14,000	0.34	1.64
Belgaum	12	5,60,000	19,600	0.48	2.30
Belgaum		16,00,000	56,000	1.37	6.57
Belgaum		2,00,000	7,000	0.17	0.82
Belgaum		2,00,000	7,000	0.17	0.82
Belgaum		12,00,000	42,000	1.03	4.92
Belgaum		4,00,000	14,000	0.34	1.64
Belgaum		8,00,000	28,000	0.68	3.28
Belgaum		4,00,000	14,000	0.34	1.64
Belgaum		8,80,000	30,800	0.75	3.61
Belgaum		8,00,000	28,000	0.68	3.28
Belgaum		5,60,000	19,600	0.48	2.30
Belgaum		4,00,000	14,000	0.34	1.64
Bidar	2	4,00,000	14,000	0.34	1.64
Bidar		4,00,000	14,000	0.34	1.64
Bijapur	4	8,00,000	28,000	0.68	3.28
Bijapur		4,00,000	14,000	0.34	1.64
Bijapur		5,60,000	19,600	0.48	2.30
Bijapur		4,00,000	14,000	0.34	1.64
Chamarajanagar	1	5,76,000	20,160	0.49	2.36
Davangere	2	5,60,000	19,600	0.48	2.30
Davangere		4,00,000	14,000	0.34	1.64
Gadag	1	8,00,000	28,000	0.68	3.28
Gulbarga	1	11,20,000	39,200	0.96	4.60
Haveri	1	2,00,000	7,000	0.17	0.82
Kalaburagi	2	12,00,000	42,000	1.03	4.92
Kalaburagi		4,00,000	14,000	0.34	1.64
Mandya	3	6,40,000	22,400	0.55	2.63
Mandya		7,68,000	26,880	0.66	3.15
Mandya		8,00,000	28,000	0.68	3.28
Mysore	1	12,00,000	42,000	1.03	4.92
Uttara Kannada	1	12,00,000	42,000	1.03	4.92
Yadagiri	1	8,00,000	28,000	0.68	3.28
Total	**54**	**4,16,24,000**	**14,56,840**	**36**	**171**

State - Madhya Pradesh

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Barwani	2	5,60,000	19,600	0.48	2.30
Barwani		4,00,000	14,000	0.34	1.64
Betul	1	2,40,000	8,400	0.21	0.98
Burhanpur	1	4,00,000	14,000	0.34	1.64
Dhar	1	2,40,000	8,400	0.21	0.98
Gwalior	2	2,40,000	8,400	0.21	0.98
Gwalior		4,00,000	14,000	0.34	1.64
Hoshangabad	1	3,20,000	11,200	0.27	1.31
Jabalpur	1	2,00,000	7,000	0.17	0.82
Khargone	1	4,00,000	14,000	0.34	1.64
Narasinghpur	4	7,20,000	25,200	0.62	2.95
Narasinghpur		4,00,000	14,000	0.34	1.64
Narasinghpur		2,00,000	7,000	0.17	0.82
Narasinghpur		3,84,000	13,440	0.33	1.58
Ratlam	1	1,62,560	5,690	0.14	0.67
Total	**15**	**52,66,560**	**1,84,329**	**4.50**	**21.61**

State - Maharashtra

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Wattpad	1	4,00,000	14,000	0.34	1.64
Ahmed nagar	13	8,00,000	28,000	0.68	3.28
Ahmed nagar		4,16,000	14,560	0.36	1.71
Ahmed nagar		8,80,000	30,800	0.75	3.61
Ahmed nagar		6,40,000	22,400	0.55	2.63
Ahmed nagar		5,12,000	17,920	0.44	2.10
Ahmed nagar		9,60,000	33,600	0.82	3.94
Ahmed nagar		4,00,000	14,000	0.34	1.64
Ahmed nagar		1,28,000	4,480	0.11	0.53
Ahmed nagar		5,60,000	19,600	0.48	2.30
Ahmed nagar		2,00,000	7,000	0.17	0.82
Ahmed nagar		4,00,000	14,000	0.34	1.64
Ahmed nagar		4,00,000	14,000	0.34	1.64
Ahmed nagar		4,00,000	14,000	0.34	1.64
Aurangabad	5	7,20,000	25,200	0.62	2.95
Aurangabad		2,00,000	7,000	0.17	0.82
Aurangabad		2,00,000	7,000	0.17	0.82
Aurangabad		4,00,000	14,000	0.34	1.64
Aurangabad		4,00,000	14,000	0.34	1.64
Beed	4	4,00,000	14,000	0.34	1.64
Beed		4,00,000	14,000	0.34	1.64
Beed		11,20,000	39,200	0.96	4.60
Beed		4,00,000	14,000	0.34	1.64
Betul	1	4,00,000	14,000	0.34	1.64
Bhandara	1	3,20,000	11,200	0.27	1.31
Dhule	1	2,00,000	7,000	0.17	0.82
Hingoli	2	4,00,000	14,000	0.34	1.64

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Hingoli		2,00,000	7,000	0.17	0.82
Jalgaon	3	4,00,000	14,000	0.34	1.64
Jalgaon		4,00,000	14,000	0.34	1.64
Jalgaon		4,00,000	14,000	0.34	1.64
Jalna	4	4,00,000	14,000	0.34	1.64
Jalna		4,00,000	14,000	0.34	1.64
Jalna		4,00,000	14,000	0.34	1.64
Jalna		0	-	0.00	0.00
Kolhapur	21	3,52,000	12,320	0.30	1.44
Kolhapur		6,40,000	22,400	0.55	2.63
Kolhapur		8,00,000	28,000	0.68	3.28
Kolhapur		12,00,000	42,000	1.03	4.92
Kolhapur		5,60,000	19,600	0.48	2.30
Kolhapur		4,80,000	16,800	0.41	1.97
Kolhapur		12,00,000	42,000	1.03	4.92
Kolhapur		11,20,000	39,200	0.96	4.60
Kolhapur		5,60,000	19,600	0.48	2.30
Kolhapur		3,20,000	11,200	0.27	1.31
Kolhapur		5,60,000	19,600	0.48	2.30
Kolhapur		12,00,000	42,000	1.03	4.92
Kolhapur		4,00,000	14,000	0.34	1.64
Kolhapur		4,00,000	14,000	0.34	1.64
Kolhapur		4,00,000	14,000	0.34	1.64
Kolhapur		4,00,000	14,000	0.34	1.64
Kolhapur		4,00,000	14,000	0.34	1.64
Kolhapur		4,00,000	14,000	0.34	1.64
Kolhapur		4,00,000	14,000	0.34	1.64
Kolhapur		7,68,000	26,880	0.66	3.15
Kolhapur		7,68,000	26,880	0.66	3.15
Latur	3	2,00,000	7,000	0.17	0.82
Latur		6,40,000	22,400	0.55	2.63
Latur		4,00,000	14,000	0.34	1.64
Nagpur	1	2,00,000	7,000	0.17	0.82
Nanded	4	5,60,000	19,600	0.48	2.30
Nanded		4,00,000	14,000	0.34	1.64
Nanded		5,60,000	19,600	0.48	2.30
Nanded		2,88,000	10,080	0.25	1.18
Nandurbar	3	8,00,000	28,000	0.68	3.28
Nandurbar		4,00,000	14,000	0.34	1.64
Nandurbar		2,00,000	7,000	0.17	0.82
Nasik	2	2,00,000	7,000	0.17	0.82
Nasik		4,00,000	14,000	0.34	1.64
Osmanabad	8	4,00,000	14,000	0.34	1.64
Osmanabad		2,00,000	7,000	0.17	0.82
Osmanabad		80,000	2,800	0.07	0.33
Osmanabad		2,00,000	7,000	0.17	0.82
Osmanabad		2,00,000	7,000	0.17	0.82

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Osmanabad		4,00,000	14,000	0.34	1.64
Osmanabad		4,00,000	14,000	0.34	1.64
Osmanabad		5,60,000	19,600	0.48	2.30
Parbhani	2	4,00,000	14,000	0.34	1.64
Parbhani		1,60,000	5,600	0.14	0.66
Pathri	1	2,00,000	7,000	0.17	0.82
Pune		8,00,000	28,000	0.68	3.28
Pune		5,60,000	19,600	0.48	2.30
Pune		6,40,000	22,400	0.55	2.63
Pune		4,00,000	14,000	0.34	1.64
Pune		8,00,000	28,000	0.68	3.28
Pune		2,00,000	7,000	0.17	0.82
Pune		4,00,000	14,000	0.34	1.64
Pune	15	4,00,000	14,000	0.34	1.64
Pune		4,00,000	14,000	0.34	1.64
Pune		2,00,000	7,000	0.17	0.82
Pune		7,20,000	25,200	0.62	2.95
Pune		5,60,000	19,600	0.48	2.30
Pune		4,00,000	14,000	0.34	1.64
Pune		12,00,000	42,000	1.03	4.92
Pune		4,00,000	14,000	0.34	1.64
Sangli		8,00,000	28,000	0.68	3.28
Sangli		6,40,000	22,400	0.55	2.63
Sangli		2,00,000	7,000	0.17	0.82
Sangli		5,60,000	19,600	0.48	2.30
Sangli		4,00,000	14,000	0.34	1.64
Sangli	12	4,00,000	14,000	0.34	1.64
Sangli		2,00,000	7,000	0.17	0.82
Sangli		4,00,000	14,000	0.34	1.64
Sangli		4,00,000	14,000	0.34	1.64
Sangli		4,00,000	14,000	0.34	1.64
Sangli		4,00,000	14,000	0.34	1.64
Sangli		4,00,000	14,000	0.34	1.64
Satara		2,08,000	7,280	0.18	0.85
Satara		3,20,000	11,200	0.27	1.31
Satara		11,52,000	40,320	0.98	4.73
Satara		6,40,000	22,400	0.55	2.63
Satara		2,00,000	7,000	0.17	0.82
Satara		12,00,000	42,000	1.03	4.92
Satara	12	4,00,000	14,000	0.34	1.64
Satara		4,00,000	14,000	0.34	1.64
Satara		0	-	0.00	0.00
Satara		4,00,000	14,000	0.34	1.64
Satara		8,00,000	28,000	0.68	3.28
Satara		8,00,000	28,000	0.68	3.28
Solapur	19	7,20,000	25,200	0.62	2.95
Solapur		9,60,000	33,600	0.82	3.94

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Solapur		12,00,000	42,000	1.03	4.92
Solapur		8,00,000	28,000	0.68	3.28
Solapur		4,00,000	14,000	0.34	1.64
Solapur		4,00,000	14,000	0.34	1.64
Solapur		5,60,000	19,600	0.48	2.30
Solapur		5,60,000	19,600	0.48	2.30
Solapur		4,00,000	14,000	0.34	1.64
Solapur		4,00,000	14,000	0.34	1.64
Solapur		5,60,000	19,600	0.48	2.30
Solapur		4,00,000	14,000	0.34	1.64
Solapur		4,00,000	14,000	0.34	1.64
Solapur		4,00,000	14,000	0.34	1.64
Solapur		4,00,000	14,000	0.34	1.64
Solapur		4,00,000	14,000	0.34	1.64
Solapur		5,60,000	19,600	0.48	2.30
Solapur		4,00,000	14,000	0.34	1.64
Solapur		4,00,000	14,000	0.34	1.64
Wardha	1	4,00,000	14,000	0.34	1.64
Yavatmal	2	4,00,000	14,000	0.34	1.64
Yavatmal		4,00,000	14,000	0.34	1.64
Total	**141**	**6,83,52,000**	**23,92,320**	**58.44**	**280.52**

State - Odisha

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Ganjam	1	4,00,000	14,000	0.34	1.64
Dhenkanal	1	4,00,000	14,000	0.34	1.64
Total	**2**	**8,00,000**	**28,000**	**0.68**	**3.28**

State - Punjab

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Amritsar	2	4,00,000	14,000	0.34	1.64
Amritsar		8,00,000	28,000	0.68	3.28
Fatehgarh Sahib	1	6,40,000	22,400	0.55	2.63
Fazilka	1	2,00,000	7,000	0.17	0.82
Ferozepur	1	4,00,000	14,000	0.34	1.64
Gurdaspur	2	3,20,000	11,200	0.27	1.31
Gurdaspur		12,00,000	42,000	1.03	4.92
Hoshiarpur	2	8,00,000	28,000	0.68	3.28
Hoshiarpur		11,20,000	39,200	0.96	4.60
Jalandhar	2	1,76,000	6,160	0.15	0.72
Jalandhar		2,00,000	7,000	0.17	0.82
Kapurthala	1	7,20,000	25,200	0.62	2.95
Ludhiana	2	2,00,000	7,000	0.17	0.82
Ludhiana		4,00,000	14,000	0.34	1.64
Nawan Shahr	1	4,00,000	14,000	0.34	1.64
Patiala	1	2,00,000	7,000	0.17	0.82
Roopnagar	1	4,00,000	14,000	0.34	1.64
Sangrur	1	4,00,000	14,000	0.34	1.64

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Total	**18**	**8976000**	**3,14,160**	**7.67**	**36.84**

State - Rajasthan

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Sri Ganganagar	1	1,60,000	5,600	0.14	0.66
Total	**1**	**1,60,000**	**5,600**	**0.14**	**0.66**

State - Tamil Nadu

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Ariyalur	1	4,80,000	16,800	0.41	1.97
Coimbatore	1	2,00,000	7,000	0.17	0.82
Cuddalore	2	12,00,000	42,000	1.03	4.92
Cuddalore		4,00,000	14,000	0.34	1.64
Dharmapuri	1	4,00,000	14,000	0.34	1.64
Erode	2	6,40,000	22,400	0.55	2.63
Erode		12,00,000	42,000	1.03	4.92
Kanchee Puram	1	4,00,000	14,000	0.34	1.64
Kancheepuram	1	14,40,000	50,400	1.23	5.91
Karur	1	7,68,000	26,880	0.66	3.15
Madurai	1	2,00,000	7,000	0.17	0.82
Namakkal	2	1,60,000	5,600	0.14	0.66
Namakkal		5,60,000	19,600	0.48	2.30
Perambalur	2	4,80,000	16,800	0.41	1.97
Perambalur		5,60,000	19,600	0.48	2.30
Thanjavur	1	4,00,000	14,000	0.34	1.64
Theni	1	4,00,000	14,000	0.34	1.64
Tiruchirapalli	1	4,64,000	16,240	0.40	1.90
Tirunelveli	1	4,00,000	14,000	0.34	1.64
Tiruvallur	1	4,00,000	14,000	0.34	1.64
Tiruvannaimala	2	8,00,000	28,000	0.68	3.28
Tiruvannamalai		4,00,000	14,000	0.34	1.64
Vellore	1	4,00,000	14,000	0.34	1.64
Villupuram	6	4,00,000	14,000	0.34	1.64
Villupuram		4,00,000	14,000	0.34	1.64
Villupuram		8,00,000	28,000	0.68	3.28
Villupuram		4,80,000	16,800	0.41	1.97
Villupuram		5,60,000	19,600	0.48	2.30
Villupuram		0	0	0.00	0.00
Total	**29**	**1,53,92,000**	**5,38,720**	**13.16**	**63.17**

State - Uttar Pradesh

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Aligarh	1	2,00,000	7,000	0.17	0.82
Ambedkar Nagar	1	12,00,000	42,000	1.03	4.92
Amroha	3	9,60,000	33,600	0.82	3.94
Ayodhya		12,80,000	44,800	1.09	5.25

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Ayodhya		12,00,000	42,000	1.03	4.92
Azamgarh	1	2,00,000	7,000	0.17	0.82
Badun	1	0	0	0.00	0.00
Baghpat	7	12,80,000	44,800	1.09	5.25
Baghpat		4,00,000	14,000	0.34	1.64
Baghpat		4,40,000	15,400	0.38	1.81
Bahraich		4,00,000	14,000	0.34	1.64
Bahraich		4,00,000	14,000	0.34	1.64
Bahraich		9,60,000	33,600	0.82	3.94
Bahraich		5,60,000	19,600	0.48	2.30
Balrampur	3	19,20,000	67,200	1.64	7.88
Balrampur		19,20,000	67,200	1.64	7.88
Balrampur		11,20,000	39,200	0.96	4.60
Barabanki	2	1,60,000	5,600	0.14	0.66
Barabanki		8,00,000	28,000	0.68	3.28
Bareilly	5	4,00,000	14,000	0.34	1.64
Bareilly		11,52,000	40,320	0.98	4.73
Bareilly		8,00,000	28,000	0.68	3.28
Bareilly		5,60,000	19,600	0.48	2.30
Bareilly		12,00,000	42,000	1.03	4.92
Basti	2	1,13,760	3,982	0.10	0.47
Basti		0	0	0.00	0.00
Bijnor	9	16,00,000	56,000	1.37	6.57
Bijnor		4,00,000	14,000	0.34	1.64
Bijnor		24,00,000	84,000	2.05	9.85
Bijnor		4,00,000	14,000	0.34	1.64
Bijnor		4,80,000	16,800	0.41	1.97
Bijnor		10,40,000	36,400	0.89	4.27
Bijnor		12,00,000	42,000	1.03	4.92
Bijnor		0	0	0.00	0.00
Bijnor		11,20,000	39,200	0.96	4.60
Budaun	1	2,00,000	7,000	0.17	0.82
Bulandshahr	4	4,00,000	14,000	0.34	1.64
Bulandshahr		4,00,000	14,000	0.34	1.64
Bulandshahr		5,60,000	19,600	0.48	2.30
Bulandshahr		10,40,000	36,400	0.89	4.27
Deoria	1	0	0	0.00	0.00
Farrukhabad	1	2,00,000	7,000	0.17	0.82
Ghaziabad	1	8,00,000	28,000	0.68	3.28
Gonda	4	16,00,000	56,000	1.37	6.57
Gonda		5,12,000	17,920	0.44	2.10
Gonda		12,80,000	44,800	1.09	5.25
Gonda		0	0	0.00	0.00
Gorakhpur	1	1,28,000	4,480	0.11	0.53
Hapur	2	15,20,000	53,200	1.30	6.24
Hapur		6,40,000	22,400	0.55	2.63
Hardoi	3	10,40,000	36,400	0.89	4.27

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Hardoi		12,80,000	44,800	1.09	5.25
Hardoi		12,80,000	44,800	1.09	5.25
Jyotiba Phuley Nagar	2	4,00,000	14,000	0.34	1.64
Jyotiba Phuley Nagar		13,28,000	46,480	1.14	5.45
Kashiram Nagar	1	4,00,000	14,000	0.34	1.64
Kushinagar		12,80,000	44,800	1.09	5.25
Kushinagar		8,00,000	28,000	0.68	3.28
Kushinagar		2,56,000	8,960	0.22	1.05
Kushinagar		1,28,000	4,480	0.11	0.53
Kushinagar	10	1,44,000	5,040	0.12	0.59
Kushinagar		10,40,000	36,400	0.89	4.27
Kushinagar		9,60,000	33,600	0.82	3.94
Kushinagar		12,80,000	44,800	1.09	5.25
Kushinagar		8,00,000	28,000	0.68	3.28
Kushinagar		2,56,000	8,960	0.22	1.05
Lakhimpur Kheri		0	0	0.00	0.00
Lakhimpur Kheri		0	0	0.00	0.00
Lakhimpur Kheri		0	0	0.00	0.00
Lakhimpur Kheri		12,80,000	44,800	1.09	5.25
Lakhimpur Kheri	9	12,80,000	44,800	1.09	5.25
Lakhimpur Kheri		12,00,000	42,000	1.03	4.92
Lakhimpur Kheri		8,00,000	28,000	0.68	3.28
Lakhimpur Kheri		8,00,000	28,000	0.68	3.28
Lakhimpur Kheri		17,60,000	61,600	1.50	7.22
Maharajganj	1	4,00,000	14,000	0.34	1.64
Mau	1	4,00,000	14,000	0.34	1.64
Meerut		2,88,000	10,080	0.25	1.18
Meerut		20,00,000	70,000	1.71	8.21
Meerut		4,00,000	14,000	0.34	1.64
Meerut	6	20,80,000	72,800	1.78	8.54
Meerut		0	0	0.00	0.00
Meerut		9,60,000	33,600	0.82	3.94
Moradabad		4,80,000	16,800	0.41	1.97
Moradabad		5,60,000	19,600	0.48	2.30
Moradabad	5	6,72,000	23,520	0.57	2.76
Moradabad		8,80,000	30,800	0.75	3.61
Moradabad		8,00,000	28,000	0.68	3.28
Muzaffarnagar		12,80,000	44,800	1.09	5.25
Muzaffarnagar		25,60,000	89,600	2.19	10.51
Muzaffarnagar		3,52,000	12,320	0.30	1.44
Muzaffarnagar		4,00,000	14,000	0.34	1.64
Muzaffarnagar		16,80,000	58,800	1.44	6.89
Muzaffarnagar	10	8,00,000	28,000	0.68	3.28
Muzaffarnagar		0	0	0.00	0.00
Muzaffarnagar		0	0	0.00	0.00
Muzaffarnagar		0	0	0.00	0.00
Muzaffarnagar		7,20,000	25,200	0.62	2.95

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Pilibhit	4	18,40,000	64,400	1.57	7.55
Pilibhit		4,00,000	14,000	0.34	1.64
Pilibhit		4,40,000	15,400	0.38	1.81
Pilibhit		0	0	0.00	0.00
Rampur	3	3,20,000	11,200	0.27	1.31
Rampur		9,60,000	33,600	0.82	3.94
Rampur		8,00,000	28,000	0.68	3.28
Saharanpur	6	22,40,000	78,400	1.92	9.19
Saharanpur		4,40,000	15,400	0.38	1.81
Saharanpur		8,00,000	28,000	0.68	3.28
Saharanpur		8,00,000	28,000	0.68	3.28
Saharanpur		0	0	0.00	0.00
Saharanpur		11,20,000	39,200	0.96	4.60
Sambhal	2	14,40,000	50,400	1.23	5.91
Sambhal		13,60,000	47,600	1.16	5.58
Shahjahanpur	5	7,20,000	25,200	0.62	2.95
Shahjahanpur		4,00,000	14,000	0.34	1.64
Shahjahanpur		4,00,000	14,000	0.34	1.64
Shahjahanpur		14,40,000	50,400	1.23	5.91
Shahjahanpur		0	0	0.00	0.00
Shamli	1	11,20,000	39,200	0.96	4.60
Sitapur	5	13,60,000	47,600	1.16	5.58
Sitapur		4,40,000	15,400	0.38	1.81
Sitapur		16,00,000	56,000	1.37	6.57
Sitapur		12,00,000	42,000	1.03	4.92
Sitapur		12,00,000	42,000	1.03	4.92
Sultanpur	1	2,00,000	7,000	0.17	0.82
Total	**125**	**9,80,89,760**	**34,33,142**	**83.87**	**402.57**

State - Uttarakhand

District	No. of Units	Annual Cane crushed	Annual Press Mud available	Energy Potential (MW)	Bio-CNG (T)
Dehradun	1	4,00,000	14,000	0.34	1.64
Haridwar	3	16,00,000	56,000	1.37	6.57
Haridwar		7,20,000	25,200	0.62	2.95
Haridwar		10,00,000	35,000	0.86	4.10
Udham Singh Nagar	3	6,40,000	22,400	0.55	2.63
Udham Singh Nagar		6,40,000	22,400	0.55	2.63
Udham Singh Nagar		3,20,000	11,200	0.27	1.31
Total	**7**	**53,20,000**	**1,86,200**	**4.55**	**21.83**

Annexure 6 : Details of existing WTE plants-Press mud

Sl. No.	WTE plant location	Plant installed capacity	Year of installation	State
1	M/s. SAB Industries Ltd., Moonak, Distt. Sangrur	1.5MW	-	Punjab
2	M/s. Spetrum Renewable Energy Pvt. Ltd. Warana nagar, Kolhapur, Maharashtra	1.66 MW	2012-13	Maharashtra
3	M/s. Jain Irrigation Systems Ltd., Jalgaon	1.67 MW	2010-11	Maharashtra

Source: Secondary research

Annexure 7 : Minutes of Meeting

Minutes for the Inception Meeting

Project	**Extended Mapping the available urban and industrial organic waste in various locations in India**
Purpose	**Inception Meeting**
Date	**16 December 2020, 1030 hours (IST)**
Participants **UNIDO** **Consultant Team**	 **Anil Misra, Nikhil Khot** **Lalita Pant Joshi , Abhishek Ghosh, Rajnish Kumar, Sourabh Gupta**

Key Discussion Areas

- A presentation was made by the consultant team on the methodology, work plan and schedule of the project.
- Consultant team appraised UNIDO about the existing status of data available on the Urban organic solid waste, Urban organic liquid waste, Slaughterhouse, Distillery industry and Pulp & Paper industry
- Consultant team requested for a support letter for the new sectors.

Annexure 8 : Stakeholder Consultations

A) Summary of the discussion held with Central and State level stakeholders

Sector	Date of consultation	Department name and address	Representative	Remarks
Poultry Farm	12.02.2021	Department of Animal Husbandry (DAHD), Chanderlok Building, Janpath, New Delhi	Mr. Sumedh Nagrare, Advisor, DAHD	○ Currently DAHD is maintaining district wise data of poultry. ○ Poultry data has been extracted from 2019 livestock census, which was not available in the public domain. District wise information on poultry was collected from DAHD.
Fruit &Vegetable Processing Industry	13.04.2021	Data Informatics and Innovation Division (DIID), Ministry of Statistics and Programme Implementation (MoSPI)	Mr. Anil Yagnik, JSO, DIID	○ DIID, MoSPI is maintaining data of fruits and vegetable processing industries. ○ MoSPI conducts Annual survey of Industries (ASI) under the Collection of Statistics Act, 2008. ○ The latest data available with the department is from Annual Survey of Industries, 2016-17. ○ The data for fruits and vegetable is maintained in state wise format.
Cattle Farm	12.02.2021	Department of Animal Husbandry (DAHD), Chanderlok Building, Janpath, New Delhi	Mr. Sumedh Nagrare, Advisor, DAHD	○ DAHD conducted 20th livestock census survey in the year 2019. ○ District wise data of no. of cattle and buffalo is available on the website of DAHD under statistics division.
Press Mud	12.02.2021	Indian Sugar Mills Association (ISMA) Ansal Plaza, 'C' Block, 2nd Floor, August Kranti Marg, Hudco Place, Andrews Ganj, New Delhi, Delhi 110049	Mr. Bishan Singh Bangari	○ ISMA is maintaining data of Sugarcane mills in India. ○ Data on sugar mills in India is published annually in sugar mill directory – List of Sugar mills in India. ○ The latest publication for the year 2019-20 was procured from the Association.
Fruit &Vegetable Processing Industry	12.04.2021	Ministry of Fruit Processing Industry (MoFPI) Block A, Siri Fort Institutional Area, Siri Fort, New Delhi	Surya Kumar Singh, Deputy Director Shruti Pathak, Young Professional	○ MOFPI indicated that the data on the fruit and vegetable waste is not being maintained by the department.
Fruit and vegetable processing industry	12.04.2021	Food Safety and Standards Authority of India (FSSAI) 03rd & 04th Floor, FDA Bhawan, Kotla Road near Bal Bhawan New Delhi - 110002 India.	Sh. Arvinda Kumar, Assistant Director (Regulatory Compliance)	○ FSSAI indicated that the data on the fruit and vegetable waste is not being maintained by the department.
Poultry farm	12.02.2021	State Animal Husbandry Department of Maharashtra, Kerala and Goa	Director	○ AHD indicated that the data on the fruit and vegetable waste is not being maintained by the department.

B) Consultations with the Generators and Industrial Units

Sector	Fruit & Vegetable
Name of Industry	Srini Food Park Mega Food Park located at Mogili village, Chittoor district, Andhra Pradesh,
Date of Consultation	12.04.2021
Srini Food Park Representative	Mr. Veerendra.
Arcadis Representative	Mr. Rajnish Kumar, Senior Consultant

The key areas of discussions are highlighted in the following section:

- Mega Food Park located at Mogili village, Chittoor district, Andhra Pradesh.
- Mega Food Park is supported by the Ministry of Food Processing Industries and the Andhra Pradesh Infrastructure Investment Corporation).
- Availability of fruits depends on climate conditions, production and market Price. Sometimes mango will be more available while next year tomato or Papaya or Guava may be more.
- In general, Mango is the major fruit processed in the food park. Around 703,000 MT of Mango produced annually in the catchment area.
- Fruit & Vegetable processing capacity of the plant is 25,000 MT per year.
- The food park has facility for washing, drying, grading, packaging, etc. based on products requirement.
- Waste generation from Mango is around 40%, Tomato - 5%, Papaya - 45% and Guava - 12 to 15%.
- Mango seed is sent for power generation in nearby power plant. While seeds of Papaya are used for germination by department of horticulture.
- Mango, Papaya and Tomato Waste from the plant is given to the farmers and used as a Cattle Feed.

Sector	Fruit & Vegetable Processing Industry
Name of Fruit & Vegetable Processing Industry	Minchy's Food Products Solan, Himachal Pradesh 173215
Date of Consultation	24.06.2021
Minchy's Food Products Representative	Mr. Uday Minohtra, Operational Head Contact no. 098579 00002, 98162 10012
Arcadis Representative	Mr. Sourabh Gupta, Associate Consultant

The summary of the key points discussed during the meeting is provided in the following section:

- Year of establishment: 1993.
- Raw Material Processed
  - Apple – throughout the year.
  - Carrot, Cauliflower and Chillies – seasonal
- Waste generation:
  - Apple - 200-300- tons per annum
  - Other seasonal vegetable waste – 50-100 tons per annum
- Chemical characteristics: high pH of Apple – Acidic in nature.
- Current method of disposal of waste generated in the industry: Waste generated from processing is decomposed in open fields, which gets converted to manure and used by the local farmers. The manure is provided free of cost to the farmers.
- Transportation of organic waste is through own trucks. The waste is normally transported to any open land in the vicinity and dumped.
- The area has potential for setting up waste to energy plant owing to the availability of fruit and vegetable processing waste in the vicinity. The industries acknowledged that it may be e additional source of revenue for them.
- Apple has high pH, therefore it cannot be used as a proper manure or cattle feed.

Sector	Fruit & Vegetable Processing Industry
○ The industries in the region expected support from the Govt. for collection and treatment of waste and also in production of other by products from apple seeds, pomace, etc.	

Sector	Fruit & Vegetable Processing Industry
Name of Fruit & Vegetable Processing Industry	Jyothirmaya Fruit Processing Company, Annavaram, Krishna district, Andhra Pradesh 521201
Date of Consultation	24.06.2021
Jyothirmaya Fruit Processing Company Representative	Mr. Swarup kumar General Manager. Contact no. 9490366488
Arcadis Representative	Mr. Sourabh Gupta, Associate Consultant

The summary of the key points discussed during the meeting is provided in the following section:

- Year of establishment: 2011.
- Installed capacity: 2500 tons Guava pulp per annum and 1000 MT of Mango pulp per annum.
- Operational capacity: 3-4 MT Guava pulp per day and 4-5 MT of Mango pulp per day.
- Raw Material: Mango and guava
- Waste generation: 50% of raw material processed for mango; and 10% of raw material processed for Guava.
- Chemical characteristics: High in calorific value- mango kernel and guava seed.
- Transportation of the fruit processing waste from the industrial unit to the disposal land is done by the industrial units using in house transportation.
- Current method of disposal of waste:
  - Large tract of land has been earmarked by the industry for waste disposal. Waste is disposed in the pits especially dug out for the purpose and composted by pit composting mechanism. Manure composed from the waste is distributed free of cost to the local farmers.
  - Mango kernel is used by the industrial unit internally as a fuel for the boiler.
  - Guava waste is feeded to animals.

Sector	Poultry Farm
Name of Paper Industry	Nalanda Poultry Farm 2 Nirpur, Nalanda, Bihar.
Date of Consultation	24.06.2021
Poultry farm Representative	Mr. Sanjeet Kumar, Jalalpur, Nalanda,
Arcadis Representative	Mr. Rajnish Kumar, Senior Consultant

The key areas of discussions are highlighted in the following section:

- Total Number of Birds in the farm is around 18000 birds (broiler).
- Birds are kept in farm for 40 days and sold to the local market.
- Waste Generated: Poultry litter mixed with Rice husk and wood dust.
- Poultry litter is stored near by the poultry farm in open space.
- Total quantum of waste generation is around 13 tractor trolly (trolly size: 10'x6'x2.5') per year.
- Poultry litter is sold to farmers for Agri land and as feed for fisheries. It is sold to farmers twice in a year before starting of cropping season.
- Poultry litter is sold at Rs. 1000 per tractor trolly

- **Issues**
- Rice husk and wood dust do not decompose during bio methanation. This is experienced during operation of biogas plant based on cattle dung and poultry litter for domestic use by the local residents.

- Poultry farms in Bihar are operational on small-scale in comparison to other states.
- There is no big investment in the region due to high risk in the industry. The risk is primarily identified as occurrence of diseases in birds.
- The poultry industry is badly affected due to COVID-19.

Sector	Poultry Farm
Name of Paper Industry	Sandeep Poultry Farm, Biwai, Alwar - Bhiwadi Rd, Maharajpura, Rajasthan 301411
Date of Consultation	24.06.2021
Poultry farm Representative	Mr. Sandeep Yadav
Arcadis Representative	Mr. Rajnish Kumar, Senior Consultant

The key areas of discussions are highlighted in the following section:

- Total Number of Birds: 7000 (broiler).
- Total number days birds retained in the farm is around 35 to 40 days.
- Waste Generated: Poultry litter mixed with Rice husk.
- Poultry litter is stored in open area till the disposal.
- Total quantum of waste generated 5 tractor trolly (size: 10'x6'x1') per year.
- Use of waste: Sold to farmers for use in agriculture field.
- Rate of sale: Rs. 1200 per tractor trolley

Issues

- Due to lack of fund/capital most of the poultry farm in the region are operational on small-scale.
- No incentive or grant is provided either by state or central government.
- Commercial value of poultry litter is very less as there is minimum avenues for its utilisation in the region.
- Selling of poultry litter is primarily for removal of waste, rather than any associated commercial value.

Sector	Poultry Farm
Name of Paper Industry	Sundaramma Poultry Farm Badampudi, West Godawari, Andhra Pradesh 534411
Date of Consultation	24.06.2021
Poultry farm Representative	Mr. Kiran
Arcadis Representative	Mr. Rajnish Kumar, Senior Consultant

The key areas of discussions are highlighted in the following section:

- Total Number of Birds: Birds- 5,00,000 (Layer).
- Birds are retained for 6 months in the farm.
- Poultry litter is collected after 6 months when it is cleaned for new batch of poultry.
- Though they have not calculated the weight of litter, but it is estimated that around 12 to 15 kg/bird/annum is generated.
- Poultry litter is stored in covered store and sold to farmers for agriculture use.
- Rate of sale: Rs. 1000 per tractor trolly
- The litter is available for any upcoming WTE pant in the region.

Sector	Poultry Farm
Name of the Poultry Farm	National Poultry Farm Janti Kalan, Sonipat, Haryana 131028
Date of Consultation	25.06.2021
National Poultry Farm Representative	Mr. Gaurav Saini – owner – 9871983000 Mr. Rohit Panday- Incharge (representative)
Arcadis Representative	Mr. Sourabh Gupta, Associate Consultant

The summary of the key points discussed during the meeting is provided in the following section:

- Type of the poultry unit: Layers.
- Total no. of Poultry birds in the farm: 65,000
- Total quantum of waste generated: 700-800 Kg per day (approximate).
- Current method of disposal of waste generated: Waste is stored in the farm only for few days and later it is sold to the farmers.
- Total generated organic waste utilization: All the decomposed waste is sold to the farmers (100% takeaway).
- Transportation of organic waste within the poultry farm is done through internal tractor and trolleys.
- Cost of the manure sold: poultry litter is sold on trolley basis.
  - Cost: Rs. 5/- per sq.ft. (throughout the year).
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Poultry farm photographs

Sector	Poultry Farm
Name of the Poultry Farm	Mannat Poultry Farm Janti Kalan, Sonipat, Haryana 131028
Date of Consultation	25.06.2021
Mannat Poultry Farm Representative	Mr. Iuv Kumar – Owner Mr. Pawan Kumar- In charge – 7081436613 (representative)
Arcadis Representative	Mr. Sourabh Gupta, Associate Consultant

The summary of the key points discussed during the meeting is provided in the following section:

- Total no. of Poultry birds in the farm: 3000 layers
- Total quantum of waste generated: Collected approx. 200 tons of waste in last 3-4 months
- Current method of disposal of waste generated:
  - As per the requirement of cleaning the poultry farm, the waste is collected stored at a particular location.
  - Waste is used by the mushroom, potato and cauliflower producing farmers.
- Total generated organic waste utilization: All the decomposed poultry waste is sold to the farmers.
- Transportation of poultry litter and organic waste within the poultry farm is done through tractor and trolleys.
- Cost of the manure sold: poultry litter is sold on trolley basis.
  - Rs. 1500/- for trolleys

Poultry farm photographs




Sector	Poultry farm
Name of the Organisation	Perfect Biowaste Power Management Private Limited (PBPMPL) B-301, Block B, Okhla I, Okhla Industrial Area, New Delhi, Delhi 110020
Date of Consultation	01.04.2021
Perfect Biowaste Power Representative	Mr. A.K. Singh, Director
Arcadis Representative	Mr. Sourabh Gupta, Associate Consultant

The summary of the key points discussed during the meeting is presented in the following section.

- PBPMPL has set up plants for generating energy from poultry, fruit & vegetable waste and cattle waste.
- The organisation has supported more than 200 dairies in India for setting up biomethanation based plants from dairy waste. As per the estimate provided by the company during discussions and their website 15 -20 kg of dung is generated per cattle, 20 kg is cattle dung is required to produce one cubic metre of biogas (in our opinion this is reported higher than the average number obtained from other sources) and electricity generated from one cubic metre of biogas per day is 2 KW.
- The organization have supported generation of energy from poultry waste. The estimates provided by the company representatives (also highlighted by the company on their website) are on higher side than average values obtained from other primary and secondary sources, but have been indicated here for reference
    - Waste or dropping / bird per day- 120 gm
    - Poultry Litter required to produce 1 cubic meter of Bio Gas- 5 kg
    - Electricity Generated from one cubic meter Bio Gas per day- 2 KW
- Similarly the numbers presented by the organisation to generate one cubic m of biogas from fruit and vegetable waste are slightly on the higher side than the values obtained other from primary and secondary studies. The numbers however are listed here for ready reference.
    - PBPMPL provided an estimate that average 2kg of fruits and 4 kg of vegetable are required to generate one cubic meter of bio gas .
    - Electricity Generated from one cubic meter Biogas per day- 2 KW
- The list of the plants set up based on the support provided by the organisation includes:

- Biogas plant in Jhajjar (poultry waste based plant)
- MOR bio energy pvt. limited in Morkhi (poultry-based plant),
- SAB Industries Ltd., Moonak, Distt. Sangrur (press mud based plant)
- Hargoind Bio Energy, village Dakounda (cattle dung based plant).

Sector	Cattle Farm
Name of the Cattle Farm	Sudarshan Dairy Farm Janti Kalan, Sonipat, Haryana 131028
Date of Consultation	25.06.2021
Sudarshan Dairy Farm Representative	Mr. Naresh Jain, Owner Contact no. 9999428059
Arcadis Representative	Mr. Sourabh Gupta, Associate Consultant

The summary of the key points discussed during the meeting is provided in the following section:

- Year of establishment: 2016
- Total no. of cattle in the farm: 100 Cattles
- Breed of the cattle: HEF (mix).
- Total quantum of waste generated: 700-800Kg per day (approximate).
- Characteristics of organic waste generated: not known.
- Current method of disposal of waste generated: Decompose the cattle dung in open tract of land to use it as manure.
- Total generated organic waste utilization: Manure is sold to the farmers.
- Transportation of cattle dung within the farm is done through tractor and trolley.
- Cost of the manure sold: Cattle dung waste is sold on trolley basis.
  - In seasons – Rs. 2000/- per trolley (trolley size - 500 sq.ft)
  - In off-seasons – Rs. 1200/- per trolley (trolley size - 500 sq.ft)

Cattle farm photographs




Sector	Cattle Farm
Name of the Cattle Farm	Radhe Radhe Jasbir Pradhan Dairy Janti Kalan, Sonipat, Haryana 131028
Date of Consultation	25.06.2021
Radhe Radhe Jasbir Pradhan Dairy Representative	Mr. Jasbir Pradhan, Owner – 9050416923 Mr. Ranvijay Singh, Munshi – 9318388972 (representative)
Arcadis Representative	Mr. Sourabh Gupta, Associate Consultant

The summary of the key points discussed during the meeting is provided in the following section

- Total no. of cattle in the farm: 75 Cattles
- Breed of the cattle: HEF (mix).
- Total quantum of waste generated: 500-600Kg per day (approximate).
- Current method of disposal of waste generated:
  - Decompose the cattle dung in open tract of land to use it as manure.
  - Uses cattle dung for a small domestic biogas plant for cooking purpose (capacity and other technical information were not availble with the caretaker).
- Total generated organic waste utilization: All the generated quantity of waste is sold to the farmers, who use the manure as a organic fertilizer in their farms.
- Transportation of organic waste is through Internal tractor and trolley.
- Cost of the manure sold: Cattle dung waste is sold on trolley basis.
  - Fresh cattle dung – Rs. 1400/- per trolley (trolley size - 100 sq.ft)
  - Manure – Rs. 2500/- per trolley (trolley size - 500 sq.ft)

Cattle farm photographs

Domestic Bio-gas plant inlet

Sector	Cattle Farm
Name of the Cattle Farm	Om Dairy Farm Janti Kalan, Sonipat, Haryana 131028
Date of Consultation	25.06.2021
Om Dairy Farm Representative	Mr. Kuldip Tushir, Current owner - 8396030006
Arcadis Representative	Mr. Sourabh Gupta, Associate Consultant

The summary of the key points discussed during the meeting is provided in the following section:

- Total no. of cattle in the farm: 50 Cattles (at the time of visit)
- Breed of the cattle: HEF (mix).
- Total quantum of waste generated: 200-250Kg per day (approximate).
- Current method of disposal of waste generated:
  - Decompose the cattle dung in open tract of land to use it as manure.
- Total generated organic waste utilization: All the generated quantity of waste is sold to farmers, who use the manure as organic fertilizer in their farms.
- Transportation of organic waste is through Internal tractor and trolley.
- Cost of the manure sold: Cattle dung waste is sold on trolley basis.
  - In seasons manure – Rs. 1000-1100/- per trolley (trolley size - 500 sq.ft) (Prices may vary as per the supply and demand)

Cattle farm photographs




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