

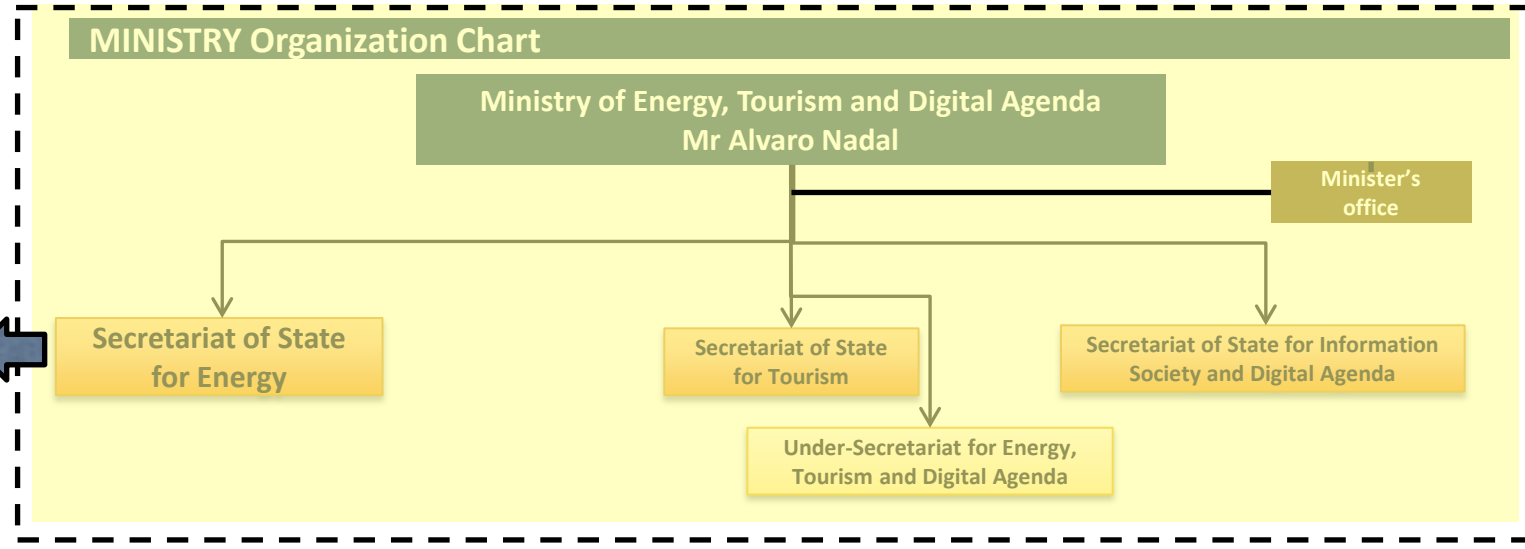
# Energy Statistics in Spain

**Budapest, November 7 2016**

## Solid Biofuels Statistics in Spain

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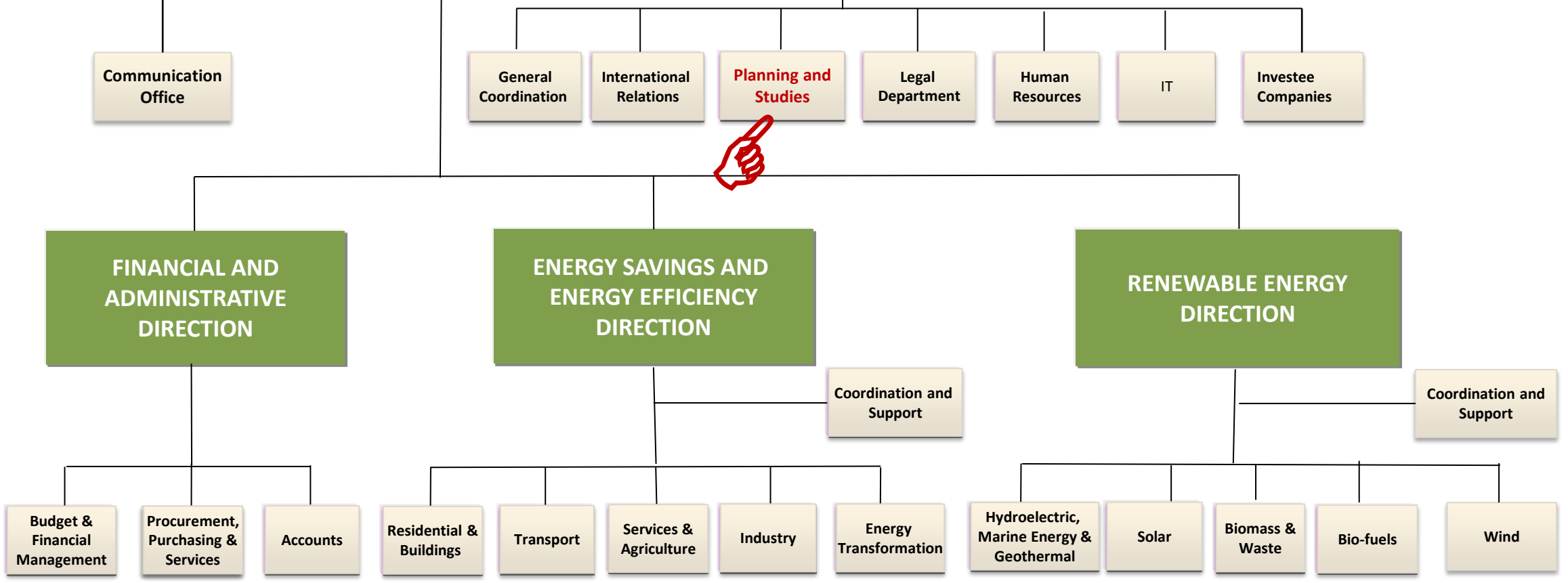
# IDAE Organization Chart



**PRESIDENT: Secretary of State for Energy**  
**Mr. Daniel Navia**

**GENERAL DIRECTOR**  
**Mr. Arturo Fernández**

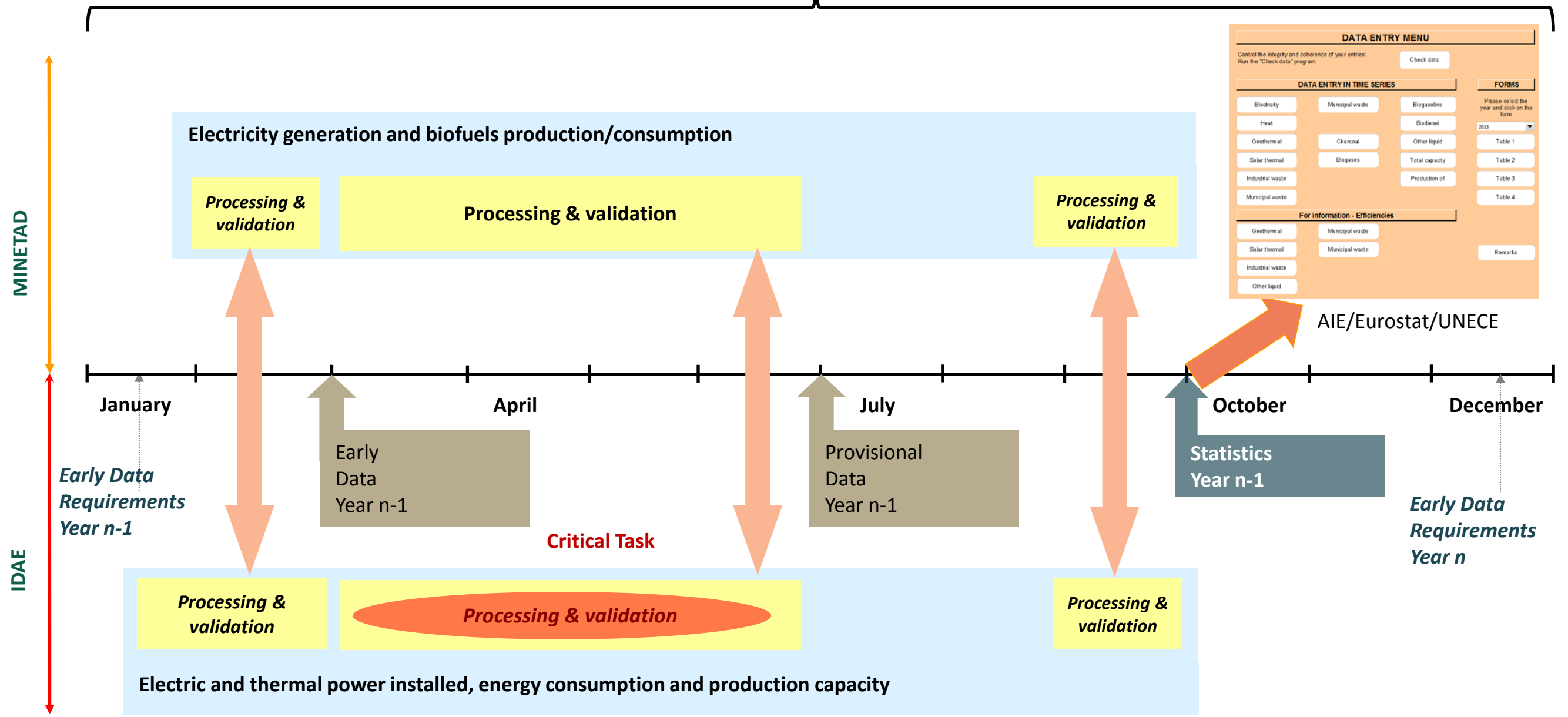
**GENERAL SECRETARIAT**



# Methodology for renewable energy statistics

## Annual IDAE calendar

Year n

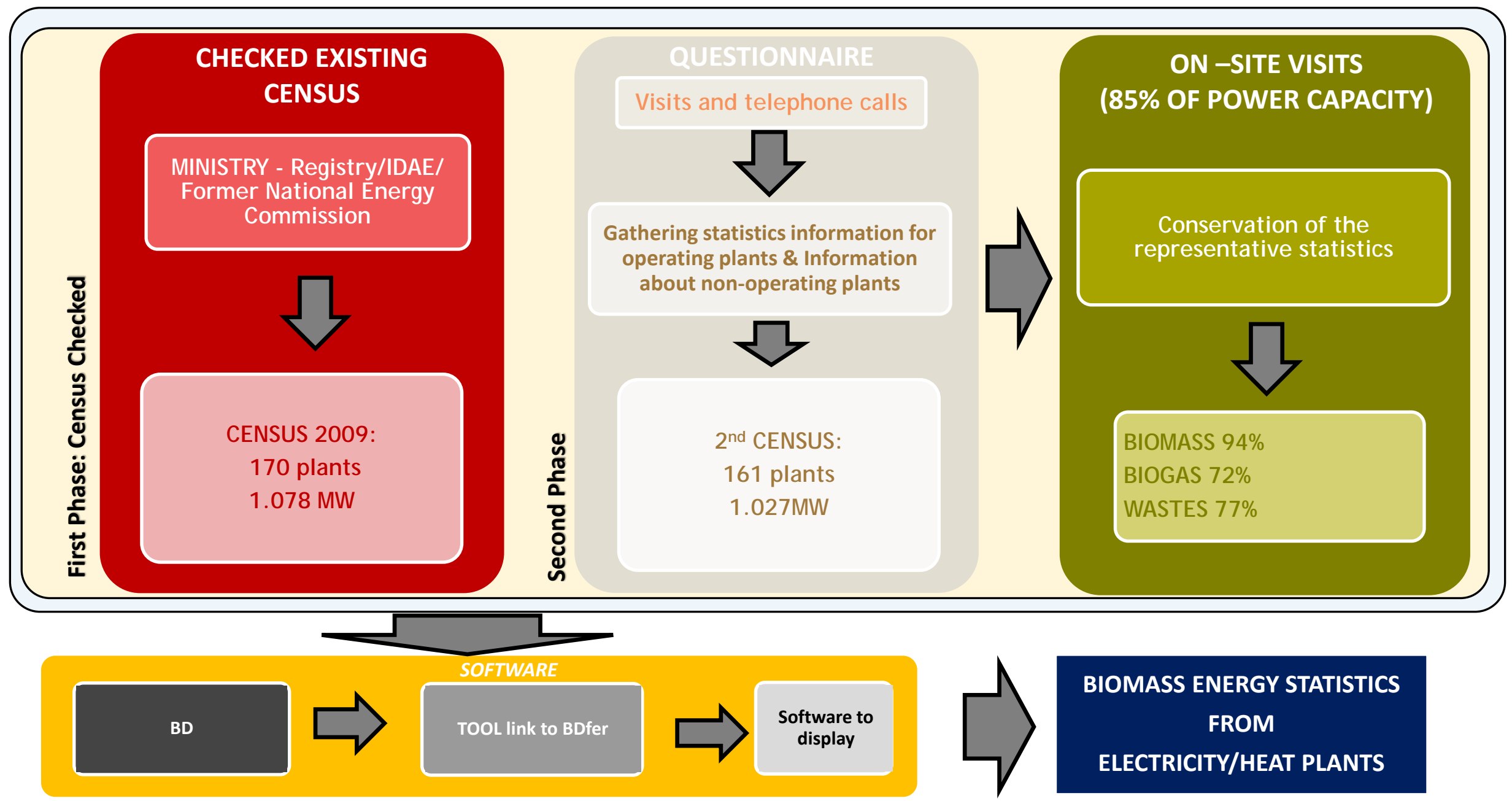


## Statistics of solid biofuels

- Biomass to electric & CHP plants
  - a) Methodology based in census plants
  
- Biomass to thermal uses
  - a) Methodology based on data matching between different administrative and non administrative sources
  - b) Surveys for several sectors, one of them residential sector

# Methodology for biomass to electric & CHP plants (I)

- One study every 10 years in order to update decommissioning plants and installations.
- Years between studies: annual update with new installations



## Methodology for biomass to electric & CHP plants (II)

- Information gathered:

- a) Annual installed power capacity (kW)
- b) Accumulated power capacity (kW)
- c) Annual electricity generation (kWh)
- d) Global efficiency of plant
- e) Type of biofuel, NVC; organic fraction, consumption (t, m<sup>3</sup>, ..)
- f) For heat production (CHP plants):
  - i. Heat production (toe)
  - ii. Global efficiency

- Information grouped by :

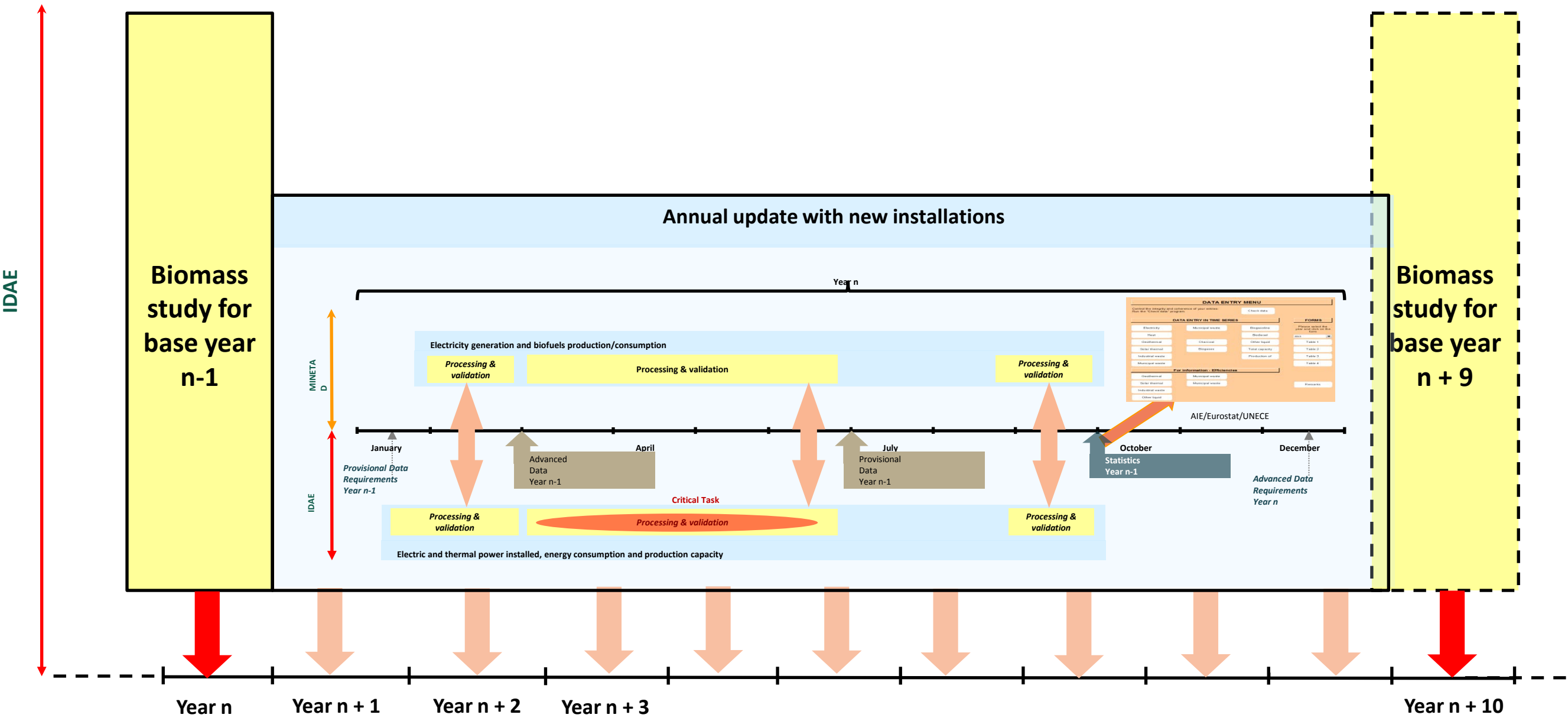
- a) Technologies
- b) Biomass type
- c) Years
- d) Regions
- e) Sectors

# Methodology for biomass to thermal uses (I)

- One study every 10 years in order to update decommissioning plants and installations. According to recommendations from Concerted Action of EC for Spain

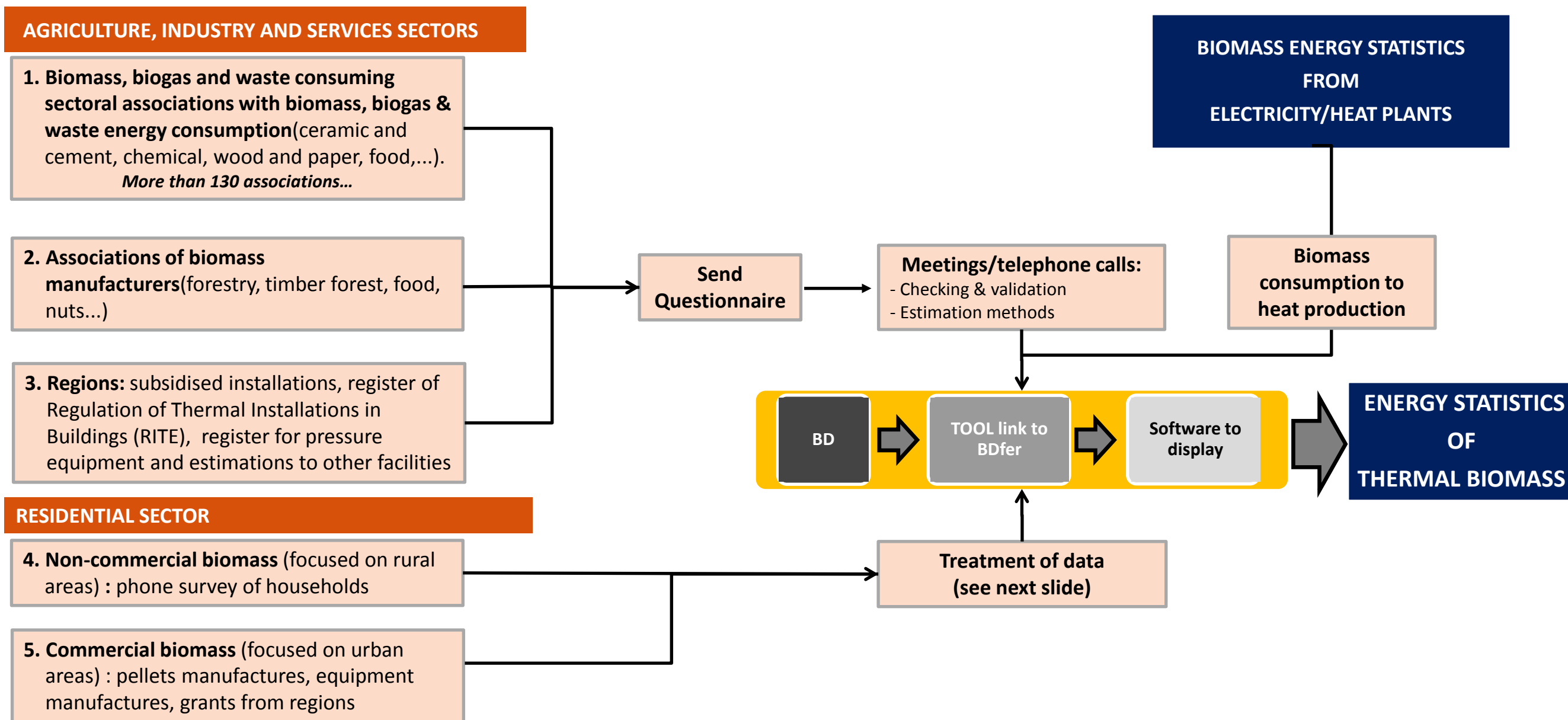
[http://www.ca-res.eu/fileadmin/cares/public/Reports/Quality\\_standard\\_for\\_statistics\\_-\\_CA-RES\\_I/Quality\\_Standard.pdf](http://www.ca-res.eu/fileadmin/cares/public/Reports/Quality_standard_for_statistics_-_CA-RES_I/Quality_Standard.pdf)

- Years between studies: annual update with new installations



# Methodology for biomass to thermal uses (II)

## 1. Sources of information used in production of the statistics





# Methodology for biomass to thermal uses (III)

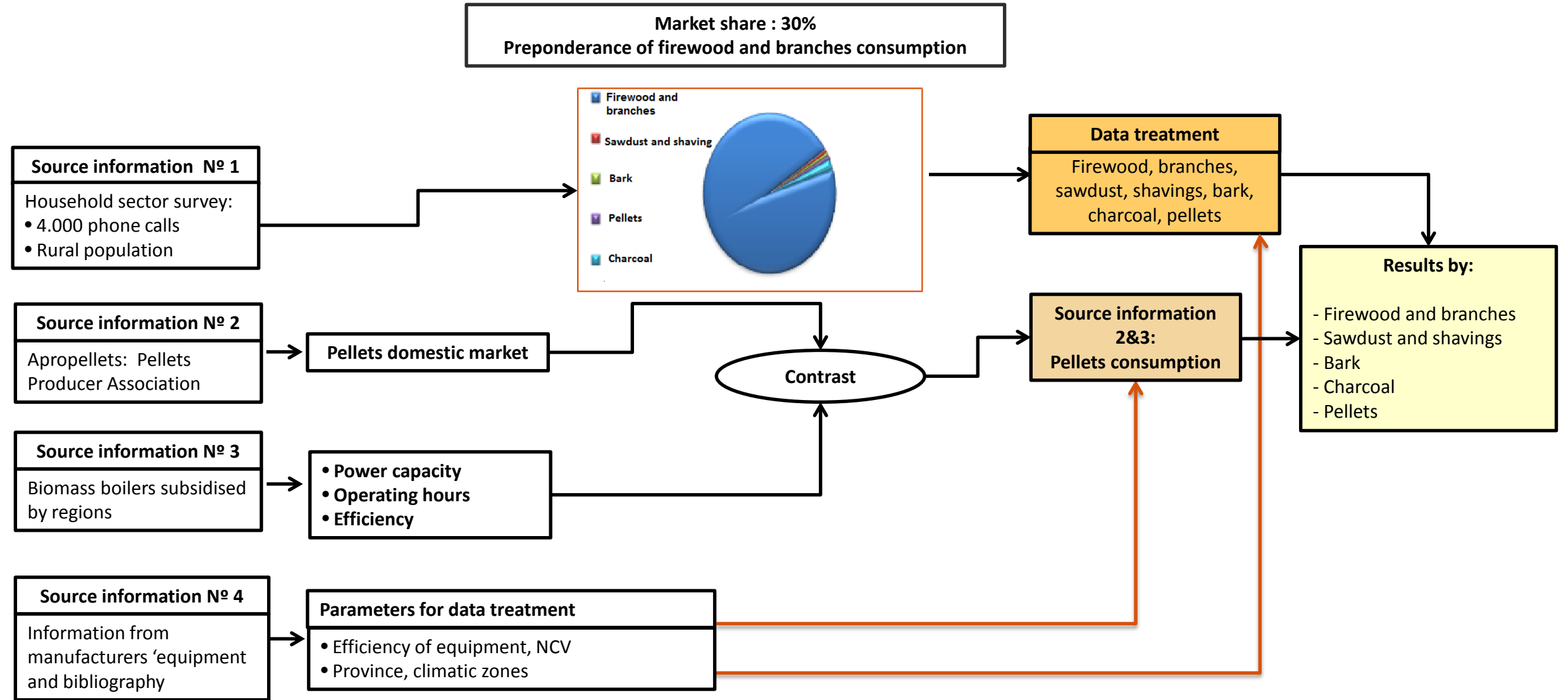
## 2. Phone survey of households

- Objective: to identify the biomass energy consumption in the residential sector with a confidence level of 95% and a sample error  $\pm 5\%$ .
- Sample design:
  - 4,000 phone interviews in rural areas
  - Rural areas = municipalities with inhabitants < 10,000
- Gathering information:
  - Obtained directly from questionnaire: basically, if exist or no biomass energy consumption in the dwelling, type of biomass, equipment where biomass is used, age of equipment, dimensions of the warehouse for storing the biomass, times to the year that renews the biomass of the warehouse.
  - Obtained through statistical treatment of the data: annual and accumulated thermal power capacity (kW), annual thermal production (toe), biomass energy consumption (t) and NCV of biomass.

	Total población	Número municipios < 10.000 hab	% sobre total	Distribución proporcional	MUESTRA (distr. apropiada)	Margen de error
<b>Andalucía</b>	<b>1.671.760</b>	<b>619</b>	<b>16,7%</b>	<b>667</b>	<b>450</b>	<b>4,7</b>
Almería	166.862	90	1,7%	67	50	14,1
Cádiz	91.992	22	0,9%	37	50	14,1
Córdoba	213.909	61	2,1%	85	50	14,1
Granada	309.381	148	3,1%	124	75	11,5
Huelva	155.479	66	1,6%	62	50	14,1
Jaén	244.668	82	2,4%	98	50	14,1
Málaga	190.759	81	1,9%	76	50	14,1
Sevilla	298.710	69	3,0%	119	75	11,5
<b>Aragón</b>	<b>420.684</b>	<b>718</b>	<b>4,2%</b>	<b>168</b>	<b>200</b>	<b>7,1</b>
Huesca	103.580	196	1,0%	41	50	14,1
Teruel	95.054	234	0,9%	38	50	14,1
Zaragoza	222.050	288	2,2%	89	100	10,0
<b>Asturias</b>	<b>147.785</b>	<b>57</b>	<b>1,5%</b>	<b>59</b>	<b>200</b>	<b>7,1</b>
<b>Balears (Illes)</b>	<b>174.566</b>	<b>45</b>	<b>1,7%</b>	<b>70</b>	<b>200</b>	<b>7,1</b>
<b>Canarias</b>	<b>230.691</b>	<b>47</b>	<b>2,3%</b>	<b>92</b>	<b>200</b>	<b>7,1</b>
Palmas (Las)	75.129	13	0,7%	30	70	11,9
Santa Cruz de Tenerife	155.562	34	1,6%	62	130	8,8
<b>Cantabria</b>	<b>189.226</b>	<b>91</b>	<b>1,9%</b>	<b>76</b>	<b>200</b>	<b>7,1</b>
<b>Castilla y León</b>	<b>1.122.343</b>	<b>2.223</b>	<b>11,2%</b>	<b>448</b>	<b>450</b>	<b>4,7</b>
Ávila	115.671	247	1,2%	46	50	14,1
Burgos	123.744	368	1,2%	49	50	14,1
León	206.824	203	2,1%	83	50	14,1
Palencia	90.828	190	0,9%	36	50	14,1
Salamanca	154.264	358	1,5%	62	50	14,1
Segovia	107.041	208	1,1%	43	50	14,1
Soria	55.568	182	0,6%	22	50	14,1
Valladolid	156.947	221	1,6%	63	50	14,1
Zamora	111.456	246	1,1%	44	50	14,1
<b>Castilla-La Mancha</b>	<b>954.119</b>	<b>884</b>	<b>9,5%</b>	<b>381</b>	<b>250</b>	<b>6,3</b>
Albacete	121.437	81	1,2%	48	50	14,1
Ciudad Real	181.459	89	1,8%	72	50	14,1
Cuenca	145.712	236	1,5%	58	50	14,1
Guadalajara	125.772	286	1,3%	50	50	14,1
Toledo	379.739	192	3,8%	152	50	14,1
<b>Cataluña</b>	<b>1.370.889</b>	<b>827</b>	<b>13,7%</b>	<b>547</b>	<b>250</b>	<b>6,3</b>
Barcelona	601.390	231	6,0%	240	100	10,0
Girona	280.814	203	2,8%	112	50	14,1
Lleida	235.990	226	2,4%	94	50	14,1
Tarragona	252.695	167	2,5%	101	50	14,1
<b>Comunitat Valenciana</b>	<b>875.199</b>	<b>442</b>	<b>8,7%</b>	<b>349</b>	<b>200</b>	<b>7,1</b>
Alicante/Alacant	250.980	103	2,5%	100	50	14,1
Castellón/Castelló	142.466	123	1,4%	57	50	14,1
Valencia/València	481.753	216	4,8%	192	100	10,0
<b>Extremadura</b>	<b>561.370</b>	<b>368</b>	<b>5,6%</b>	<b>224</b>	<b>200</b>	<b>7,1</b>
Badajoz	321.376	154	3,2%	128	100	10,0
Cáceres	239.994	214	2,4%	96	100	10,0
<b>Galicia</b>	<b>891.652</b>	<b>259</b>	<b>8,9%</b>	<b>356</b>	<b>200</b>	<b>7,1</b>
Coruña (A)	341.992	72	3,4%	137	50	14,1
Lugo	195.713	62	2,0%	78	50	14,1
Ourense	176.749	87	1,8%	71	50	14,1
Pontevedra	177.198	38	1,8%	71	50	14,1
<b>Madrid</b>	<b>356.874</b>	<b>132</b>	<b>3,6%</b>	<b>142</b>	<b>200</b>	<b>7,1</b>
<b>Murcia</b>	<b>74.511</b>	<b>16</b>	<b>0,7%</b>	<b>30</b>	<b>200</b>	<b>7,1</b>
<b>Navarra</b>	<b>289.036</b>	<b>263</b>	<b>2,9%</b>	<b>115</b>	<b>200</b>	<b>7,1</b>
<b>País Vasco</b>	<b>423.182</b>	<b>210</b>	<b>4,2%</b>	<b>169</b>	<b>200</b>	<b>7,1</b>
Álava	48.855	48	0,5%	20	50	14,1
Guipúzcoa	158.466	69	1,6%	63	60	12,9
Vizcaya	215.861	93	2,2%	86	90	10,5
<b>Rioja (La)</b>	<b>116.600</b>	<b>170</b>	<b>1,2%</b>	<b>47</b>	<b>200</b>	<b>7,1</b>
<b>Ceuta</b>	<b>77.389</b>	<b>1</b>	<b>0,8%</b>	<b>31</b>	<b>0</b>	<b>0</b>
<b>Melilla</b>	<b>71.448</b>	<b>1</b>	<b>0,7%</b>	<b>29</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>10.019.324</b>	<b>7.373</b>	<b>100,0%</b>	<b>4000</b>	<b>4.000</b>	<b>1,6</b>

# Methodology biomass to thermal uses (IV)

## 3. Phone survey of households: data treatment





*Thank you very much for your attention*

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