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Data Documentation

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Official Data on German Utilities (Energiestatistiken der amtlichen Statistik)

2003 – 2012

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IMPRESSUM

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1. Data Collection

The datasets *Energiestatistiken der amtlichen Statistik* contain information on German utilities. They belong to a larger set of official firm data covering various sector and employment statistics (cf. Malchin/Voshage 2009, Malchin/Höninger 2011). The data is collected by the statistical offices of German *Länder* and the German Federal Statistical Office on an annual term.
The dataset used in the KOMIED research project *(Kommunale Infarstrukturunternehmen zwischen Energiewende und demografischem Wandel)* merges different data sources from *Energiestatistiken der amtlichen Statistik*. It is an unbalanced panel which covers the years 2003 to 2012. For each year, it contains up to 3,000 firms in the German energy sector which perform at least one of the following tasks[2]

- delivering energy
- running a distribution/transmission network
- owning parts of a distribution/transmission network
- producing energy or having subsidiaries which produce energy.

Decentralized power plants are exempt from the last definition (*EEG-Anlagen-Einspeiser*). Likewise, firms with less than 10 employees are not part of the dataset. Furthermore, the dataset contains up to 7,000 firms in the field of water/sewerage/waste management. Only firms that treat more than $200,000 m^3$ water/sewage or whose revenue from waste treatment exceeds 1 million € are considered (Statistisches Bundesamt 2011).

1.1. Firm-level Data

The data is collected by the statistical offices in different surveys. Firms are legally obligated to respond. The KOMIED dataset merges the following surveys:

[2] cf. Statistisches Bundesamt 2011: *„Einbezogen werden [...] Unternehmen im Sinne des §2 des 2. Gesetzes zur Neuregelung des Energiewirtschaftsgesetzes sowie Energieversorgungsunternehmen, die in ihrem Unternehmen oder in ihrer Unternehmensgruppe auch über eigene Erzeugungsanlagen verfügen. Betreiber von Anlagen zur Erzeugung von Strom aus erneuerbaren Energien, die ihre Strommengen gemäß EEG in das Netz der allgemeinen Versorgung einspeisen und nicht unter die vorgenannte Definition fallen, werden [...] nicht einbezogen.“* and 2. Gesetz zur Neuregelung des Energiewirtschaftsrechts: *„Energieversorgungsunternehmen [sind] natürliche oder juristische Personen, die Energie an andere liefern, ein Energieversorgungsnetz betreiben oder an einem Energieversorgungsnetz als Eigentümer Verfügungsbefugnis besitzen.“*

- *Investitionserhebung EVAS No. 43211-077* (investments)
- *Kostentrukturerhebung EVAS No. 43221-081* (costs)
- *Stromabsatz und -erlöse EVAS No. 43331-083* (electricity sales)
- *Stromeinspeisung EVAS No. 43371-070* (electricity feed-in)
- *Elektrizitätsversorgung der Netzbetreiber EVAS No. 43312-066N* (electricity distribution)

The surveys on costs and investments build the core of the panel dataset. They are sent out to all firms in the sample.[3] Table 1 gives an overview on the main aspects covered in there. An extensive list with all variables is given in the appendix.

Table 1: Data on Costs and Investments

costs	
labour	number of workers, gender, hours worked, labour costs, costs for external services
intermediates	material, procurement costs for energy and water
other costs	depreciation, interests on borrowed capital, insurance, R&D, rents
taxes/subsidies	concession fees, electricity and gas taxes, VAT, subsidies
revenues	from energy/water resale, merchandise, services
investments	
	gross investments into fixed assets by category (generation, storage, networks, metering, buildings, equipment, software, patents, ...)

More detailed information is available for the electricity sector. Three firm-level surveys address electricity feed-in, distribution and retail (see table 2).

[3]Note that costs are reported at the firm-level. For multi-product utilities it is usually not possible to allocate costs across sectors nor to distinct steps of the supply chain.

Table 2: Data on Electricity Supply

installed capacity and load per distribution area	
by technology	conventional, renewables (wind, solar, ...)
by producer	manufacturing sector, others
electricity distribution	
by source	power plants, abroad, others
by destination	other utilities, abroad, end-consumers
network losses	
electricity supply/sales	
by customer group	households, business, manufacturing, other utilities
by voltage level	high, low

1.2. Plant-level Data

Firm-level data (*Unternehmen*) is matched with plant-level data (*Betriebe*). Plants are subordinate units of firms. Each plant has two IDs: a plant ID `bnr` (*Betriebsnummer*) and a firm ID `unr` (*Unternehmensnummer*), which identifies the corresponding parental company. Surveys at the plant-level include

- *Investitionserhebung EVAS No. 43211-076* (investments)
- *Erhebung Strom- und Wärmeerzeugung EVAS No. 43311-66K* (power plants)
- *Erhebung Wärmeversorgung EVAS No. 43411-064* (heat plants)
- *Monatsbericht Energie- und Wasserversorgung EVAS No. 43111-065* (labour)

Table 3 provides some detail on the content of the surveys. See again the appendix for a complete list of variables.

The distinction between plants and firms should be treated with caution. *Firms* are defined as the smallest legally independent unit. They may be part of a larger company, for example a holding company. Analyzing data at the holding level, however, is not straight forward. A first step could be to use consolidation information (*e.g. Organschaftsverhältnis, Steuernummer des Organträgers*) from the business register (*Unternehmensregister URS*).
Although a formal definition of *plant* is given in the questionnaires[4], it is not fully

[4] Statistisches Bundesamt 2015: *„Als Betriebe gelten in der Elektrizitätsversorgung:*

Table 3: Data on Electricity Generation and Heat Supply

electricity and heat generation	
general	available capacity, maximum capacity, duration time
by process technology	fuel use, electricity generated (gross/ net), heat generated (net), bottleneck capacity, ...
heat supply	
by source	manufacturing sector, other utilities, abroad
by customer groups	end-consumers, manufacturing, households, other utilities, abroad, ...
network losses	

clear to what a plant corresponds to in reality. Distinct steps in the supply chain (generation, distribution, retail) do not generally form separate plants. Rather, plants should be interpreted geographically. If a firm has two buildings with different addresses, the two buildings are likely to be counted as different plants even if their employees carry out the same activity. The operation of the distribution network is usually organized in the headquarters, hence it is no distinct plant.
The final structure of the dataset looks as follows:

`Jahr`	`unr`	`bnr`	`Var1[firm-level]`	`Var2[plant-level]`	`...`
2003	1	1	20	yes	...
2003	1	2	20	no	...
2004	2	3	30	NA	...

Wärmekraftwerke, Kernkraftwerke, Wasserkraftwerke, Wind-, Solar-, Geothermie- und Brennstoffzellen-Kraftwerke. Kleinere Kraftwerke in einem regional begrenzten Gebiet (z.B. Kraftwerksketten) können zu einem Betrieb zusammengefasst werden; in der Gasversorgung: Anlagen zur Erzeugung, Gewinnung, Umwandlung und Speicherung von Gasen; in der Wärmeversorgung: Heizwerke, Heizkraftwerke; in der Wasserversorgung: Anlagen zur Gewinnung, Aufbereitung und Speicherung von Wasser. Soweit das zugehörige Verteilnetz örtlich begrenzt ist, können die Angaben hierüber in die Betriebsmeldung einbezogen werden. Wird das Verteilnetz durch andere Organisationseinheiten (z.B. Betriebsverwaltungen, Bezirksverwaltungen, Werksgruppen) betreut, so haben diese als Betrieb zu melden. Unternehmen, die in einem örtlich begrenzten Gebiet eine 'nur verteilende' Tätigkeit ausüben (reine Netzbetriebe) brauchen nur eine Betriebsmeldung abzugeben. Dagegen ist von Netzbetreibern, die ein größeres Gebiet mittels verschiedener Organisationseinheiten [...] versorgen, für diese betreuenden Organisationseinheiten getrennt zu melden. [...]"

2. Data Access

The data is subject to strict privacy conditions. You may only access the data at the research data centres of the Federal Statistical Office and the statistical offices of the *Länder*.[5] The data is handled via remote access and anonymized. You may not report results for single firms. In general, the minimum group size is 3 firms. In the following, results that cannot be reported due to confidentiality are marked with an *x*.[6]

3. Sample Size

The dataset contains 76,466 observations in 382 variables. There are roughly 3,500 firms and 5,000 plants observed each year during 2003 to 2007 and as twice as much for the period 2008 to 2012.
Each year, a small number of plants is duplicated, i.e. two or more entries have the same plantID `bnr`. About 60% of them are power and heat plants. Most of the duplicated plants are probably plants that have been resold during the year. They have pairwise the same plantID but differ in their firmID. As a consequence, they are introduced as a new observation although it still the same plant. Only 48 plants are real duplicates in the sense that firmID and plantID are identical for the year observed. Table 4 gives the exact number of observations.
Table 5 describes the year in which firms and plants enter the panel. The massive entry in 2008 can be explained by a change in the setup of the surveys. From 2008 on, the sample population has been extended to firms that do waste treatment and sewerage. Since we observe 7,249 firms in 2012 while the total number of firms is 9,038, we may conclude that 20% of the firms drop out before the end. The exit rate for plants is within the same range.

[5] For more information see http://www.forschungsdatenzentrum.de/bestand/afid-panel_energieunternehmen/index.asp (in German).

[6] This does not necessarily mean that hidden results apply to less than 3 firms. To avoid that hidden results can be traced back by means of the remaining categories, at least two categories are cleared (*cf. Sperrpartner, Restkategorien*).

Table 4: Sample Size

Year	*firms*	*plants*	*duplicated plants*
2003	3,498	5,136	48
2004	3,526	5,255	54
2005	3,547	5,254	39
2006	3,532	5,283	56
2007	3,567	5,330	36
2008	6,405	9,116	54
2009	6,485	9,472	61
2010	6,560	9,855	55
2011	6,922	10,301	127
2012	7,249	10,757	174
sum	**51,291**	**75,759**	**704**
total			**76,463**

Notes: Full sample. Rows with missing values in `unr` eliminated.

Table 5: Year of Entry

Year of entry	*firms*	*plants*
2003	3,498	5,136
2004	178	314
2005	114	220
2006	89	200
2007	167	268
2008	3,244	4,399
2009	356	804
2010	260	683
2011	579	880
2012	553	843
sum	**9,038**	**13,747**

Notes: Full sample. Rows with missing values in `unr` eliminated.

Precise numbers for the duration of observations can be obtained in table 6. The majority of firms is observed over 5 and 10 years. The unexpected mode at '5 years' is explained by the exceptional entry of new firms in 2008. 83% of them stay until the end, i.e. 2012. Leaving the new entrants from 2008 aside, remain 395 firms and 522 plants that quit after 5 years. Hence, controling for the effect in 2008, there is no particular exit rate after 5 years.

Table 6: Duration

No. of years	*firms*	*plants*
1	1,003	1,613
2	809	1,392
3	497	1,048
4	515	1,066
5	3,086	3,949
6	199	303
7	119	209
8	160	259
9	118	224
10	2,532	3,684
Sum	**9,038**	**13,747**

Notes: Full sample. Rows with missing values in `unr` eliminated.

4. Firm Structure

4.1. Subunits

Firms can be composed of different plants. 85% of the firms have no subsidiary, i.e. they are a single-plant firms. As a consequence, the fraction of firms which have more than one subunit is rather low (11%). A very small group of 3% have plants in different *Länder* in Germany.

Table 7: Internal Structure of the Firms

single-plant firm (*Einbetriebsunternehmen*)	44,272
>1 plant (*Mehrbetriebsunternehmen*)	5,799
≥ 1 plant in different region (*Mehrländerunternehmen*)	1,366
<NA>	902
Sum	**52,339***

Notes: Pooled sample. Rows with missing values in `unr` eliminated. Analysis based on `art_u`. *969 plants between 2011 and 2012 are wrongly classified as single-plant firms according to `art_u` although they belong to multi-plant firms.

Table 8 shows how many plants a multi-plant firm actually has. The distribution is quite dispersed. It is positively skewed with the majority of firms having 1 to 5 subunits. There is a small fraction of firms with up to 48 subunits and some outliers at 76, 77, 143 and 146 subunits.

Table 8: Number of Subunits within Multi-plant Firms

	Number of Subunits within Multi-Plant Firms											
Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11-146*	**sum**
2003	34	181	71	56	30	9	5	13	4	5	12	**420**
2004	31	184	78	63	28	12	5	9	6	3	12	**431**
2005	38	181	72	61	31	9	8	8	4	4	11	**427**
2006	37	164	73	60	30	6	10	10	4	4	14	**412**
2007	42	151	85	58	26	10	8	10	3	4	17	**414**
2008	235	277	127	76	35	13	13	15	4	3	26	**824**
2009	195	290	132	67	47	11	11	13	10	6	28	**810**
2010	190	301	131	71	47	11	13	11	7	9	27	**818**
2011	197	181	95	63	31	10	9	8	5	5	21	**625**
2012	179	193	97	59	33	11	9	7	6	3	24	**618**
sum	**1,178**	**2,103**	**961**	**634**	**338**	**102**	**91**	**104**	**53**	**46**	**192**	**5,799**

Notes: Subsample of firms with `art_u==Mehrbetriebsunternehmen`. Rows with missing values in `unr` and `art_u` eliminated.

It is puzzling to see that 20 % of the multi-plant firms only have one subunit, which suggests that they were in fact single-plant firms. However, they might have further subunits which are not part of the panel, i.e. subunits outside of energy and water supply. The majority of multi-plant firms with one subunit enter in 2008 and are sewerage firms (64%). The internal structure of multi-region firms that have subunits in different *Länder* of Germany is considered in table 9.

Table 9: Number of Subunits within Multi-region Firms

	Number of Subunits within Multi-Region Firms											
Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11-116*	**sum**
2003	x	6	6	5	3	4	x	4	5	0	x	**53**
2004	x	x	9	4	x	4	x	4	x	x	x	**54**
2005	3	6	8	3	3	6	3	4	4	3	x	**60**
2006	x	x	7	5	x	6	4	x	5	3	x	**58**
2007	4	9	4	7	3	3	6	x	x	x	x	**60**
2008	22	49	27	17	9	15	13	6	5	3	25	**191**
2009	17	54	26	18	10	18	7	8	8	x	x	**197**
2010	23	59	29	18	10	18	6	x	8	5	x	**215**
2011	20	69	36	16	10	16	x	x	x	x	x	**230**
2012	21	69	38	21	10	15	x	x	x	x	x	**248**
sum	**115**	**329**	**190**	**114**	**67**	**105**	**x**	**x**	**x**	**x**	**x**	**1,366**

Notes: subsample of firms with `art_u==Mehrländerunternehmen`. Rows with missing values in `unr` and `art_u` eliminated. *x* cannot be reported due to privacy reasons.

There is a second variable `art_b` which describes the type of the plant. By construction, it is identical to `art_u` and only differs in the number of missing values.

4.2. Legal Status

The dataset contains information on the legal status of the firm (`Rechtsform`). It is summarized in table 10. The jump in 2008 across all types can be explained by the extension of the sample population.
The dominant form of legal organization is *GmbH*, *GmbH & Co KG* (43%), *Eigenbetrieb* (27%) and *Verband* (20%). About half of the firms are corporatized, i.e. they are organized as formal businesses under private law (48%).[7]

[7] AG bzw. KgA, Einzelfirma, GmbH, GmbH & Co KG, KG, OHG.

Table 10: Legal Status

Year	*AG bzw. KgA*	*Eigen-betrieb*	*Einzel-firma*	*Genossen-schaft*	*GmbH*	*GmbH & Co KG*	*KG*	*OHG*	*Verband/<NA> misc.*	
2003	121	1,218	23	44	1,056	94	8	14	674	246
2004	124	1,217	23	55	1,081	118	7	16	666	219
2005	122	1,206	22	46	1,097	135	7	18	662	232
2006	117	1,182	18	44	1,106	144	8	17	662	234
2007	117	1,153	19	44	1,194	148	8	13	658	213
2008	134	1,527	119	46	2,481	463	16	22	1,362	235
2009	130	1,563	128	44	2,566	483	19	21	1,312	219
2010	135	1,547	114	41	2,607	521	18	22	1,318	237
2011	140	1,558	150	41	2,810	582	17	27	1,350	247
2012	139	1,545	163	51	2,965	637	19	27	1,379	324
sum	**1,279**	**13,716**	**779**	**456**	**18,963**	**3,325**	**127**	**197**	**10,043**	**2,406**

5. Sectors

5.1. Horizontal Integration

Firms are asked to report the sectors in which they operate. They can tick more than one. Sectors are *electricity*, *heat*, *gas*, *water*, *sewerage*, *waste* and *miscellaneous*. Note that by definition firms must be involved in at least one of them. Nevertheless, 3% of the firms did not tick anything.[8] The total number of firms per sector is given in table 11.

[8] The variables asking for the sector are coded as binary variables (yes/no) and reported at the firm-level. In addition to the 3% of the firms that did not tick anything (i.e. 'no' everywhere), 1,430 firms in the current version of the dataset report <NA>. Also, between 100 and 600 firms (depending on the sector) gave inconsistent answers for the years 2011 and 2012, meaning that answers are not the same among subunit rows. They are not considered here.

Table 11: Number of Firms in Each Sector

	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	**sum**
electricity	1,089	1,132	1,146	1,160	1,232	1,372	1,458	1,510	1,494	1,605	**13,198**
heat	783	816	828	836	851	848	923	936	895	908	**8,624**
gas	776	795	808	812	876	880	936	948	866	908	**8,605**
water	2,497	2,503	2,498	2,474	2,461	2,388	2,359	2,348	2,155	2,151	**23,834**
sewerage	474	502	511	521	522	1,792	1,826	1,803	1,781	1,752	**11,484**
waste	0	0	0	0	0	1,680	1,711	1,723	1,863	1,996	**8,973**
miscellaneous	589	614	620	621	611	862	936	920	1,040	1,025	**7,838**

Full sample. Rows with missing values in `unr` and `UI_Code11_1`, `UI_Code11_2`, `UI_Code11_3`, `UI_Code11_4`, `UI_Code11_5`, `UI_Code11_6`, `UI_Code11_7` eliminated.

Table 12 informs about the degree of horizontal integration. More than half of the firms concentrate on one sector, 17% on two sectors, 13% operate in three to four sectors and less than 5% produce in more than 5 sectors. The second row in table 12 reports the figures for single-plant firms and illustrates that a single unit can carry out more than one activity. There is no rule such as 'one plant = one activity' (see section 1.2).

Table 12: Degree of Horizontal Integration

Number of sectors	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	**sum**
firms	1,625	31,184	8,357	3,649	2,863	1,896	281	6	**49,861**
single-plant firms	1,033	27,883	7,328	3,038	2,138	1,335	166	5	**42,926**

Notes: Pooled sample. Rows with missing values in `unr` and `UI_Code11_1`, `UI_Code11_2`, `UI_Code11_3`, `UI_Code11_4`, `UI_Code11_5`, `UI_Code11_6`, `UI_Code11_7` eliminated.

Since 34% of the firms are horizontally integrated, i.e. perform more than one activity, it is worthwhile to look into the type of combinations they do. Table 13 gives examples for the field of *gas*, *heat*, *electricity* and *water*. While it is very common to combine electricity with heat activities (e.g. in CHP plants) or to cover all 4 fields at once (e.g. in retail), firms perceive less synergies from joint heat and water supply.

Table 13: Horizontal Integration in Gas, Heat, Electricity and Water Supply

	g/h	*g/e*	*g/w*	*h/e*	*h/w*	e/w	*g/h/e*	*g/e/w*	*h/e/w*	g/h/w	*g/h/e/w*
firms	138	833	247	1,032	97	589	629	476	214	113	1,059

Notes: Pooled subsample with firms that do electricity, gas, heat or water supply but no sewerage nor waste treatment. Rows with missing values in `unr` and `UI_Code11_1`, `UI_Code11_2`, `UI_Code11_3`, `UI_Code11_4`, `UI_Code11_5`, `UI_Code11_6`, `UI_Code11_7` eliminated.

For comparison, 1,189 firms are single gas firms, 1,187 confine to heat supply, 12,301 to water supply and 3,107 purely provide electricity.

5.2. NACE Classification

Additionally, firms are sorted according to the classification system of economic activities NACE (*Wirtschaftszweige*). The classification is more detailed with respect to the stage of the supply chain at which the activity is carried out. On the other hand, it only reports the main activity, i.e. if a firm carries out more than activity, information gets lost.
The NACE system was revised in 2008. The ID for most categories changed and some of them were redefined. For example, in response to the unbundling reforms in the electricity and gas sector, an own category for 'distribution' and 'trade' was formed. From 2003 to 2007 firms are sorted according to NACE Rev.1 (ID starts with '4') and from 2008 to 2012 according to NACE Rev. 2 (ID starts with '3').
The first column of table 14 shows the total number of firms (pooled over all years) in the different categories `wz_u`. The second column adresses the plant-level.

Table 14: Classification According to NACE Rev. 1 and 2

		firms	*plants*
NACE ID	*activity*		
4010	*electricity*	x	88
4011, 3511	*electricity generation*	5,117	11,623
4012, 3512	*electricity transmission*	59	259
3513	*electricity distribution*	2,334	4,043
3514	*electricity trade*	1,598	2,443
4013	*electricity distribution + trade*	2,373	3,653
4020	*gas*	x	x
4021,3521	*gas generation*	96	187
3522	*gas distribution*	614	1,154
3523	*gas trade*	690	1,084
4022	*gas distribution + trade*	x	2,233

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NACE ID	*activity*	*firms*	*plants*
4030, 3530	*heat*	2,754	8,302
4100, 3600	*water*	17,725	19,939
9001, 3700	*sewerage*	6,713	9,184
3811	*collection of non-hazardous waste*	3,153	4,160
3812	*collection of hazardous waste*	198	232
3821	*treatment of non-hazardous waste*	2,316	3,683
3822	*treatment of hazardous waste*	315	493
3831	*dismantling of wrecks*	275	307
3832	*recovery of sorted material*	2,207	2,930
3900	*remediation*	283	405
6323	*airport*	x	0
6399	*miscellaneous IT*	x	x
8110	*facilities support*	x	0
8411	*public administration*	x	0
9000	*waste &sewerage*	x	0
9002	*waste*	x	x
9300	*sports & culture*	x	0
9311	*sports facilities*	x	0
9999	-	x	x
NA		1,097	0
sum		**51,291**	**76,463**

Notes: Pooled sample. Rows with missing values in `unr` eliminated. x cannot be reported due to privacy reasons.

To illustrate the change between the two revisions of the NACE system it is useful to have a look at the variation over time. Table 15 contains the number of firms for selected NACE IDs in each year.

Table 15: Changes in NACE Classification over Time[firm-level]

NACE ID		*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	2011	2012	**sum**
Rev.1	Rev.2											
electricity												
4011	*3511*	510	512	518	521	511	435	424	416	438	475	**4,760**
4012	*3512*	5	4	4	4	6	5	6	6	5	5	**50**
4013	3513	416	444	457	x	x	446	459	442	437	480	**6,176**
	3514						236	284	341	343	384	
gas												
4021	*3521*	7	5	5	x	x	3	6	6	15	17	**68**
4022	*3522*	252	261	262	254	268	126	116	115	114	117	**2,570**
	3523						118	138	141	138	150	
heat												
4030	*3530*	194	219	215	217	218	220	239	254	264	271	**2,311**

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water												
4100	*3600*	1,874	1,870	1,861	1,837	1,817	1,710	1,670	1,659	1,671	1,631	**17,600**
sewerage												
	3700	0	0	0	0	0	1,260	1,311	1,318	1,370	1,404	**6,663**

Notes: Reduced sample with firms that did respond to the cost and investment structure survey. Rows with missing values in `unr` and `wz_u` eliminated. x cannot be reported due to privacy reasons.

Finally, we did some cross-checks between the NACE classification and other variables. For example, we would expect from a firm which participates in survey No. 066N on electricity networks to have at least one plant in the main field of electricity distribution or transmission. This corresponds to a NACE code (`wz_b`) of 3512, 4012, 3513 or 4013. The results are given in table 16 and are rather discouraging. Roughly half of the network operators that participated in survey No. 066N could not be identified via the NACE code classification. All of their plants have NACE code classification other than 3512, 4012, 3513 or 4013.[9] By simply judging from the NACE code we would not identify them as network operators. We investigated that issue somewhat further and found that the majority of these firms (61%) focus on electricity generation instead (`wz_u` 3511 or 4011). This is not surprising since the survey setup allows firms with small distribution networks to make a joint declaration for the power plant and the related distribution network (see footnote 3). Another 20% report electricity trade as main activity (`wz_u` 3514).

Table 16: Reliability of the NACE Classification I

	Participants in survey No. 066N (electricity networks survey)										
	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	**sum**
NACE match failed	359	356	355	334	334	369	358	355	361	358	**3,547**
total participants	723	721	733	711	728	710	701	694	708	711	**7,150**

Notes: Full sample. 'NACE match failed' means that no plant of the firm has a NACE code classification (`wz_b`) of 3512, 4012, 3513 or 4013 nor the firm itself (`wz_u`).

A similar result is obtained for electricity traders (retail and wholesale, see table 17). More than half of them cannot be identified via the NACE code classification. The firms themselves and all of their plants have main activities other than electricity trade (`wz_b`/`wz_u` 3514 or 4013). 52% of them do electricity generation and 26% concentrate on electricity distribution instead.

[9] The same holds true for the firms themselves (`wz_u`).

Table 17: Reliability of the NACE Classification II

	Participants in survey No. 083 (electricity trade)										
	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	**sum**
NACE match failed	514	517	517	521	527	827	821	794	802	863	**6,712**
total participants	942	958	968	978	1,009	1,036	1,081	1,080	1,085	1,178	**10,326**

Notes: Full sample. 'NACE match failed' means that no plant of the firm has a NACE code classification (`wz_b`) of 3514 or 4013 nor the firm itself (`wz_u`).

5.3. Further Variables on Sector Activities

There are some more variables in the dataset which address the fields of activity. The first one is `BI_Code1100`, which reports the main activity at the plant-level. It is much more detailed than variable `UI_Code11_x`. Unfortunately, data is only available until 2007. Variable `BI_Code1100_neu` has a similar name and summarizes information of the latter. It covers the whole period and reports the main activity of each plant, albeit in the same general manner as `UI_Code11_x`. It merely says whether the plant is present in electricity or heat supply etc, without further specifying the stage of the supply chain. In contrast to `UI_Code11_x`, it only reports the *main* activity, hence no conclusion with respect to horizontal integration can be drawn. As such, it contains even less information than the classification of economic activities `wz_b`.
Furthermore, you will find the variables `taet_strom`, `taet_gas` and so on. They have no meaningful interpretation either as they are time-invariant. They simply report whether a firm has ever been present in the respective field of activity during 2003 to 2010. Finally there is `taetig`, another variable at the plant-level. It has been constructed based on the classification of economic activities (`wz_b`) and thus does not carry any additional information.

6. Survey Quality

6.1. Response Rates

The panel dataset combines different surveys. If a firm or plant did not respond to a certain survey, it will have a missing value `NA` in all variables which stem from that survey. Additionally, firms might have missing entries because they did not respond to a particular item although they took part in the survey (item non-response). To distinguish between both and get an idea about the relevance of certain variables in the dataset, we report participation rates below.

6.1.1. Firm-level Surveys

The two most important surveys are those which address costs and investments (*Kostenstrukturerhebung* and *Investitionserhebung der Unternehmen*). They build the core of the panel since all firms have to complete them. There is a binary variable called `TMEVU_u` which tells you whether the firm took part in them or not. `TMEVB_b` informs about participation at the plant-level (*Investitionserhebung der Betriebe*).

Table 18: Participation in Survey No. 081, 077 and 076

	TMEVU_u		*TMEVB_b*	
Year	*yes*	*no*	*yes*	*no*
2003	3,252	240	3,942	1,242
2004	3,307	211	4,001	1,308
2005	3,315	225	4,022	1,271
2006	3,298	227	4,032	1,307
2007	3,254	208	4,109	1,257
2008	6,170	229	8,036	1,134
2009	6,266	212	8,227	1,306
2010	6,223	229	8,506	1,404
2011	6,651	271	9,002	1,426
2012	6,924	325	9,429	1,502
sum	**48,860**	**2,377**	**63,306**	**13,157**

Notes: Full sample. Rows with missing values in `unr` eliminated. 54 firms report inconsistent participation behaviour at the plant-level for `TMEVU_u` (eliminated).

Almost all firms took part in the costs and investments survey (see table 18). A very small number of firms (54) report inconsistent participation behaviour, i.e. values for `TMEVU_u` are not the same among subunits, although the survey is carried out at the firm-level.

The interpretation of `TMEVB_b` (participation in *Investitionserhebung der Betriebe*) is not straightforward. Single-plant firms are eligible for both surveys. They may answer *Investitionserhebung der Unternehmen* at the firm-level and *Investitionserhebung der Betriebe* at the plant-level. Survey design is roughly the same except for the plant-level survey being less detailed. The advantage is that information is collected at the plant-level, i.e. investment is reported separately for each subunit. However, two out of three positive responses to the plant-level-survey stem from single-plant firms that responded to both. There is no additional gain in information, as these answers should be identical to those reported at the firm-level. It

would be more interesting to see answers from subunits of multi-plant firms. However, only 64% of them responded to the survey.
There are three more surveys at the firm-level (see also section 1.1). All of them are concerned with electricity supply: one is about electricity sales (083) and the remaining two about electricity feed-in and distribution (070, 066N). There is a steady increase in participation in the survey on sales while the number of network operators rises rather slowly over the years (table 19). Since the NACE classification only reports the main field of activity and since most firms are single-plant-firms, participation in one of these surveys might be a good indicator to decide whether a firm is present in electricity trade or electricity distribution.[10]

Table 19: Participation in Survey No. 083, 070 and 066N

	TM083_u		*TM070_u*		*TM066N_u*	
Year	*yes*	*no*	*yes*	*no*	*yes*	*no*
2003	946	2,548	631	2,866	727	2,767
2004	963	2,558	653	2,870	726	2,795
2005	968	2,576	656	2,890	733	2,812
2006	979	2,551	661	2,871	712	2,819
2007	1,009	2,555	648	2,919	728	2,838
2008	1,037	5,364	644	5,759	710	5,692
2009	1,081	5,401	671	5,812	701	5,782
2010	1,080	5,477	676	5,883	694	5,865
2011	1,085	5,837	688	6,234	708	6,214
2012	1,178	6,071	705	6,544	711	6,538
sum	**10,326**	**40,938**	**6,633**	**44,648**	**7,150**	**44,122**

Notes: Full sample. Rows with missing values in `unr` eliminated. 27 firms report inconsistent participation behaviour at the plant-level for `TM083_u`, 10 for `TM070_u` and 19 for `TM066N_u` (all eliminated).

6.1.2. Plant-level Surveys

Finally, three more surveys were conducted at the plant level (see section 1.2 for further information). They involve a general survey on labour input for a broader range of plants (065) and two specific surveys for power plants (066K) and heat plants (064).
The first column of table 20 displays participation rates for the survey on labour input. The survey is called *Monatsberichte bei Betrieben in der Energie- und Wasserversorgung* and sent out to 1,600 firms whose main activity lies in the field of energy

[10] Another idea to identify network operators and retailers would be to use the classification of economic activities NACE. However, this comes with some caveats, see section 5.2.

and water supply (Statistisches Bundesamt 2015). Additionally, plants present in energy and water supply are included whose parental companies pursue main activities outside of energy and water supply (e.g. sewerage, waste treatment). In general, only plants with more than 20 employees are considered. Table 20(1) shows that 3 out of 4 plants in the sample did not take part in the labour survey. Half of them, that is to say 28,168 plants, belong to firms which have less than 20 employees. The remaining half is difficult to explain. They might have more than 20 employees at the firm-level but less than that at the plant-level. Finally, although the survey claims to be comprehensive and to include all firms in the German energy and water sector, some firms might drop out due to the threshold at 1,600 (see also section 1).

Table 20: Participation in EVAS-065, EVAS-066K and EVAS-064

	TM065_b		*TM064_b*		*TM066K_b*	
Year	*yes*	*no*	*yes*	*no*	*yes*	*no*
2003	1,600	3,584	1,217	3,967	847	4,337
2004	1,760	3,549	1,260	4,049	866	4,443
2005	1,637	3,656	1,273	4,020	855	4,438
2006	1,765	3,574	1,281	4,058	884	4,455
2007	1,800	3,566	1,237	4,129	897	4,469
2008	1,808	7,362	1,231	7,939	912	8,258
2009	1,935	7,598	1,311	8,222	951	8,582
2010	2,055	7,855	1,361	8,549	982	8,928
2011	2,059	8,369	1,393	9,035	935	9,493
2012	2,096	8,835	1,410	9,521	968	9,963
sum	**18,515**	**57,948**	**12,974**	**63,489**	**9,097**	**67,366**

Notes: Full sample. Rows with missing values in `unr` eliminated.

6.1.3. Item Non-Response

As is the case for most survey-based data, item non-response can create problems. Answers in the data get less frequent the more detailed the questions are and it is not always plausible to conclude that firms were not concerned. A major difficulty is to distinguish between non-response and zero values since `NA` and `0` are sometimes used synonymously. Own plausibility checks across surveys are therefore strongly encouraged.

6.2. Representativity

The following section compares aggregate supply in the dataset with true energy and water supply in Germany for the years 2003 to 2012.

6.2.1. Generation

Table 21 summarizes coverage rates and time trends in the variables on electricity production. Gross electricity production (`B_kraftw_EF2201U2`) in the sample does not reflect the true trend in Germany. While we observe a steady increase in Geman production until the economic crisis in 2009, gross production in the sample remains stable or even decreases. At the beginning, 87% of German gross electricity production is represented in the sample, while it is only 74 % in 2012. An explanation could be that survey No. 066K focuses on generation from conventional energy sources, such such as black coal, lignite, fuel oil, gas or nuclear. However, an increasing share of German electricity is generated from renewable energy sources, which is not adequately represented in the survey.

Table 21: Coverage Electricity Production

	electricity production [TWh]					
	gross		*net*		*cogenerated (net)*	
Year	*sample*	*Germany*	*sample*	*Germany*	*sample*	*Germany*
2003	533.7	608.8	489.8	568.6	50.3	76.5
2004	533.2	617.5	498.8	576.8	52.4	78.4
2005	532.8	622.6	497.9	581.6	52.5	79.5
2006	540.6	639.6	505.2	597.4	54.0	85.4
2007	522.8	640.6	488.4	598.5	51.9	85.5
2008	522.7	640.7	488.6	599.0	53.8	90.4
2009	478.6	595.6	446.5	557.6	50.5	91.4
2010	501.4	633.0	468.7	591.4	53.4	99.2
2011	462.1	613.1	413.2	574.1	51.1	97.6
2012	467.5	629.8	435.7	590.5	51.2	102.0

Notes: Full sample. Rows with missing values in `unr`, `B_kraftw_EF2201U2`, `B_kraftw_EF2201U3` and `B_kraftw_EF2101U2` eliminated. Data for Germany taken from BMWi 2014.

Net production data in the sample (`B_kraftw_EF2201U3`) and data for cogenerated (net) power production (`B_kraftw_EF2101U2`) suffer from similar problems. At the beginning of the observation period, the sample represents 86% (65%) of total German production, while in the end numbers decrease to 74% (50%). In particular, the increasing share of cogenerated power in German electricity production is not reflected in the sample.
Table 22 and 23 compare electricity generation capacities in the sample to those actually installed in Germany. It distinguishes the type of generation technology. Representation is pretty good for conventional technologies. Over-representation of certain technologies for some years could be due to the duplicates mentioned at the

beginning of section 3. Renewable energy sources are less well represented. The data for solar power and geothermal energy cannot even be aggregated for lack of data points. The extraordinary decline in generation capacity for black coal, fuel oil, gas, nuclear and water in 2011 is probably an error and should be checked with the research data centres.

Table 22: Coverage Electricity Generation Capacities

	electricity generation capacities [GW]									
	black coal		*lignite*		*fuel oil*		*gas*		*nuclear*	
Year	*sample*	*Germany*	*sample*	*Germany*	*sample*	*Germany*	*sample*	*Germany*	*sample*	*Germany*
2003	26.5	30.5	21.6	22.2	4.5	5.1	17.3	19.5	22.0	22.1
2004	29.6	32.3	21.5	22.1	5.0	5.6	16.7	19.4	23.6	21.5
2005	26.5	29.4	21.3	22.0	4.9	5.5	17.2	20.6	21.7	21.4
2006	25.9	28.7	21.2	21.8	4.9	5.5	17.8	21.2	21.3	21.2
2007	26.7	29.3	21.7	22.5	4.8	5.4	17.9	21.3	21.3	21.3
2008	26.7	29.6	22.2	22.4	4.8	5.4	19.2	22.8	21.6	21.6
2009	27.0	29.0	21.8	22.4	4.8	5.2	19.3	23.1	21.6	21.5
2010	27.2	30.2	21.8	22.7	5.2	5.9	19.8	23.8	21.5	21.5
2011	22.0	30.2	21.9	24.9	2.8	6.4	15.0	23.9	6.8	12.7
2012	29.5	29.8	23.3	24.2	3.7	4.2	22.7	26.4	12.7	12.7
	water		*wind*		*biomass*		*solar*		*geothermical*	
Year	*sample*	*Germany*	*sample*	*Germany*	*sample*	*Germany*	*sample*	*Germany*	*sample*	*Germany*
2003	9.2	9.0	0.1	14.6	0.04	1.0	-	0.4	-	-
2004	9.7	9.8	0.1	16.6	0.1	1.5	-	1.1	-	0.0002
2005	10.1	10.2	0.2	18.4	0.2	2.4	-	2.1	-	0.0002
2006	10.1	10.1	0.2	20.6	0.2	3.1	-	2.9	-	0.0002
2007	10.1	10.1	0.2	22.2	0.3	3.6	-	4.2	-	0.003
2008	10.1	10.1	0.2	23.9	0.4	4.1	-	6.1	-	0.003
2009	10.3	10.3	0.2	25.8	0.4	4.7	-	9.9	-	0.008
2010	10.4	10.4	0.3	27.2	0.5	5.0	-	17.6	-	0.008
2011	4.8	10.6	-	29.1	0.4	5.7	-	25.0	-	0.008
2012	10.3	10.4	-	31.3	0.6	6.2	-	32.6	-	0.012

Notes: Full sample. Rows with missing values in `Jahr` and `B_kraftw_EF1101U2_mean` eliminated. Data for Germany taken from BMWi 2014.

Data on generation capacities from renewable energy sources (RES) is also available from the network operators' survey No. 070. The distribution system operators report installed capacities and the amount of electricity fed into their networks (`U_Stromein_EF10x`) for each type of renewable energy source. However, data is aggregated across each distribution area, i.e. no individual data for single renewable plants is available. Data quality is good for solar power, whereas the amount of installed hydropower can probably be better inferred from survey No. 066K. Data collection on wind capacities seems to have started only in 2010.

Table 23: Coverage Electricity Generation Capacities from RES

	electricity generation capacities from renewable energy sources					
	water		*wind onshore*		*solar*	
Year	*sample*	*Germany*	*sample*	*Germany*	*sample*	*Germany*
2003	0.6	9.0	-	14.6	0.4	0.4
2004	0.7	9.8	-	16.6	0.7	1.1
2005	0.8	10.2	-	18.4	1.9	2.1
2006	0.8	10.1	-	20.6	4.0	2.9
2007	0.8	10.1	-	22.2	3.7	4.2
2008	0.8	10.1	-	23.9	7.9	6.1
2009	0.8	10.3	-	25.8	9.8	9.9
2010	0.7	10.4	24.2	27.2	12.7	17.6
2011	0.7	10.6	22.9	29.1	16.5	25.0
2012	5.5	10.4	25.5	31.3	23.2	32.6

Notes: Full sample. Rows with missing values in `unr`, `U_Stromein_EF1032`, `U_Stromein_EF1042a`, and `U_Stromein_1052` eliminated. Data for Germany taken from BMWi (2014).

Table 24 turns towards heat production. Data on heat supply is collected in survey No. 064. The first part of the survey (section A) asks retailing firms for detailed information on the customer structure. The second part (section B) contains questions on generation characteristics and is reserved for single heat plants (*Fernheizwerke*). Information on cogenerated heat production must be taken from survey No. 066K. Among all types of energy production, coverage for cogenerated (net) heat production (*Netto-KWK-Wärme*) is worst. Less than 50% of German production is represented in the sample. This is in contrast to the important role that cogeneration plays in German heat production. About 85% of total German heat supply is produced in combined heat power plants (cf. column (2) and (4), AGFW 2011). In 2007, production in the sample declines much more than in reality and numbers do not increase at the same rate afterwards. In reality, we observe a steady increase in cogenerated heat production, which is not reflected in the data. Coverage rates for

single heat production fluctuate around 60%, with exceptionally good representation in the first and in the last year of the dataset.

Table 24: Coverage Heat Production

	(district) heat production [TWh]			
	cogenerated (net)		*single (net)*	
Year	*sample*	*Germany*	*sample*	*Germany*
2003	91.3	181.1	24.4	29.0
2004	98.8	185.4	24.1	37.4
2005	99.1	188.0	23.9	37.0
2006	100.3	191.3	23.4	35.5
2007	94.4	188.7	22.0	34.4
2008	97.0	194.7	22.2	35.2
2009	93.5	196.8	21.6	36.2
2010	99.1	212.1	25.6	43.6
2011	91.6	203.3	21.7	38.1
2012	94.4	212.5	34.5	39.7

Notes: Full sample. Rows with missing values in `unr`, `B_kraftw_EF701_sum` and `B_waerme_EF2301U4` eliminated. Data for Germany taken from BMWi 2014 and AG Energiebilanzen 2003-2012.

6.2.2. Distribution and Retail

The following section addresses the amount of energy supplied to end-consumers. Table 25 starts with the provision of electricity. The first column shows the numbers reported by the network operators (`netzb_EF203_sum`). The second one compares to the retailers (`U_ABS_EF1601`). Coverage in both cases is fairly good. At the beginning of the period, 89% of the electricity delivered to end-consumers in Germany is reflected in the network operators' data and 83% in the figures provided by the retailers. For the latter, accuracy increases with time and during 2007 and 2008, coverage exceeds 90%. The data for network operators is less consistent. There is a drop after 2007, which did not take place in reality. As a consequence, coverage rates drop for network operators and decrease to 73% at the end of 2012.
Table 26 addresses heat supply (`B_waerme_EF1011`). The data is again collected in survey No. 064. The data from the sample is quite in line with the 'real' data published for Germany. Over-representation for the years 2011 and 2012 is probably due to duplications (see section 3).

Table 25: Coverage Electricity Distribution and Retail

	electricity supply to end-consumers [TWh]		
	distributors	*retailers*	*domestic consumption*
Year	*sample*	*sample*	*Germany*
2003	468.7	436.1	525.0
2004	476.8	453.9	531.9
2005	495.8	469.0	534.2
2006	472.3	471.0	539.6
2007	477.5	505.4	541.2
2008	439.3	515.4	538.4
2009	371.0	458.2	509.3
2010	379.5	471.2	540.6
2011	387.2	459.8	535.2
2012	390.3	446.8	534.0

Notes: Full sample. Rows with missing values in `unr`, `U_netzb_EF203_sum` and `U_ABS_EF1601` eliminated. Data for Germany taken from BMWi 2014.

Table 26: Coverage Heat Retail

	heat supply to end-consumers [TWh]	
	retailers	*domestic consumption*
Year	*sample*	*Germany*
2003	97.1	119.0
2004	119.2	124.6
2005	123.6	125.1
2006	126.8	124.9
2007	118.9	118.7
2008	120.8	121.1
2009	124.6	118.8
2010	135.8	131.1
2011	122.9	116.7
2012	126.2	119.6

Notes: Subsample with `B_waerme_EF1011 > 0`. Rows with missing values in `unr`, `B_waerme_EF1011` eliminated. Data for Germany taken from BMWi 2014.

Table 27 summarizes water supply to end-consumers (`UK_Code8601`). Data is taken from survey No. 081 (*Kostenstrukturerhebung*) where firms are asked about their water supply to end-consumers, other utilities and exports. The annual amounts reported in the sample exceed those from official statistics for Germany.

Table 27: Coverage Water Retail

	water supply to end-consumers [million m3]	
	retailers	*domestic consumption*
Year	*sample*	*Germany*
2003	4,926	4,864
2004	5,460	4,730
2005	5,327	4,651
2006	5,264	4,660
2007	5,160	4,544
2008	5,726	4,488
2009	5,005	4,437
2010	5,101	4,473
2011	5,146	4,495
2012	5,900	4,491

Notes: Subsample with `UK_Code8601 > 0`. Rows with missing values in `Jahr`, `UK_Code8601` eliminated. Data for Germany taken from BDEW 2014 and confirmed by Statistisches Bundesamt 2014 for the years 2004, 2007 and 2010.

7. Example: Summary Statistics for Retail

The dataset contains more than 380 variables. It is impossible to give a complete overview on each topic covered in the dataset. The following analysis addresses energy and water retail in Germany and is an example of how variables can be used to describe German utilities based on simple summary statistics from the dataset.

7.1. Electricity

Electricity retailers are firms which sell electricity to end-consumers (`U_ABS_EF1061 > 0`).[11] The number of firms in the dataset grows from 854 in 2003 to 962 in 2012 (table 28). There is an exceptionally high wave of entry into the sample in 2012.[12] Table 29 gives an overview on the legal status. The dominant form of organization is *GmbH* and *GmbH & Co KG* (66%), followed by *Eigenbetrieb* (14%) and *AG* and *KGaA* (9%). 79% of the firms are corporatized under private law, which is well above the average in the German utility sector (cf. section 4.2).

[11] The definition is not exclusive. In the following section, electricity retailers may be horizontally or vertically integrated and pursue further activities other than electricity retail.

[12] A similar increase can be observed for district heat retailers in 2012 (see section 7.2). It suggests that the sampling method changed in 2011.

Table 28: Number of Electricity Retailers

Year	*firms*	*plants*
2003	854	1,701
2004	870	1,759
2005	879	1,777
2006	881	1,800
2007	875	1,769
2008	882	1,657
2009	901	1,797
2010	899	1,848
2011	908	1,857
2012	962	2,033

Notes: Subsample with `U_ABS_EF1061 > 0`. Rows with missing values in `unr` eliminated.

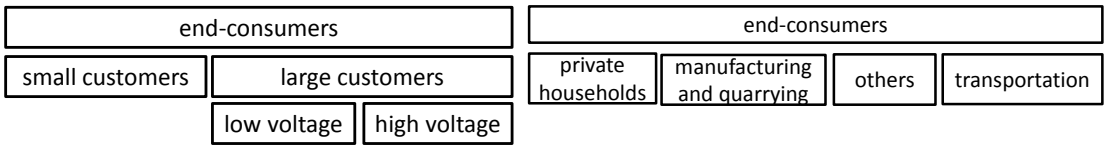
Table 29: Legal Status of Electricity Retailers

Year	*AG bzw. KgA*	*Eigen-betrieb*	*Einzel-firma*	*Genossen-schaft*	*GmbH*	*GmbH & Co KG*	*KG*	*OHG*	*Verband/ misc.*	*<NA>*
2003	85	144	20	36	486	40	5	8	3	15
2004	90	146	19	36	490	48	x	x	4	12
2005	89	143	17	36	502	56	x	x	4	9
2006	88	139	15	36	507	57	x	x	5	10
2007	85	134	15	36	508	61	x	x	4	11
2008	75	110	15	36	528	56	7	6	21	16
2009	74	108	14	36	550	63	6	4	28	12
2010	75	108	8	36	545	71	8	4	18	14
2011	76	102	11	35	531	71	8	4	22	26
2012	74	102	8	39	598	78	8	4	23	28
sum	**811**	**1,236**	**142**	**362**	**5,245**	**601**	**65**	**62**	**128**	**153**

Notes: *x* cannot be reported due to privacy reasons.

Most of the variables on electricity retail address the customer structure. The dataset offers two ways for classifying end-consumers (see figure 1).

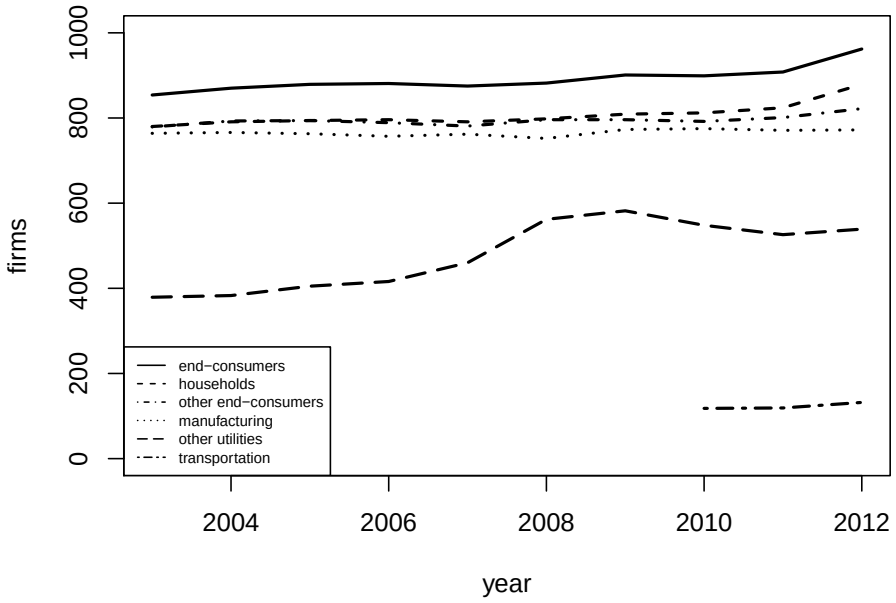
Figure 1: Customer Structure in Electricity Supply



(a) classification 1 (b) classification 2

The first way distinguishes small customers (*Tarifabnehmer*, `U_ABS_EF105x`) from large customers (*Sondervertragsabnehmer*, `U_ABS_EF104x`). Large customers are further subdivided into high voltage customers and low voltage customers (*Hochspannungssonderabnehmer*, `U_ABS_EF102x` and *Niederspannungssonderabnehmer*, `U_ABS_EF103x`).
The second classification differentiates between private households (*private Haushalte*, `U_ABS_EF108x`), the manufacturing and quarrying sector (*Verarbeitendes Gewerbe und Gewinnung von Steinen und Erden*, `U_ABS_EF107x`), other end-consumers (*Sonstige Letztverbraucher*, `U_ABS_EF109x`) and transportation (*Verkehr*, `U_ABS_EF114x`). In both cases, information is given on electricity sold to other utilities (*Energieversorgungsunternehmen*, `U_ABS_EF101x`).
Figure 2 shows the number of firms per customer group for classification 2. In each end-consumer segment more than 90% of the firms are present, which shows that most of the firms are 'all-rounders' and there is little specialization. An increasing number of firms sells to other utilities (about 50%). Only few firms serve the transportation sector.

Figure 2: Number of Firms in Each Customer Segment (Electricity)



Figures 3 and 4 compare the total amount of electricity sold to different customer groups with revenues obtained in these segments. Not surprisingly, the largest amounts are sold to other utilities, which illustrates the importance of intra-retailer trade in electricity (see figure 3). However, trade volume declines at the beginning of the period and there could be several reasons for it. Retailers might have gotten rid of long-term contracts and have started to buy electricity from specialized (wholesale) brokers. They could also have taken up own production, e.g. in the field of renewables, even if that seems quite ahead of their time. Note, however, that the same arguments could be used to justify the inverse trend after 2006 as some retailers turned into brokers themselves. The transportation sector is rather unimportant and it remains somewhat unclear what is actually meant by it. It could cover anything from e-mobility to railways, shipping and aviation. The remaining 400 TWh are equally distributed between households, other end-consumers and manufacturing.

Total sales in figure 4 follow a different time trend compared to quantities. Sales in all segments keep steadily increasing. Meaningful interpretation is not straight forward and requires at least adjustment for changes in consumer tax rates.

Figure 3: Total Electricity [TWh] Sold to Each Customer Segment per Year

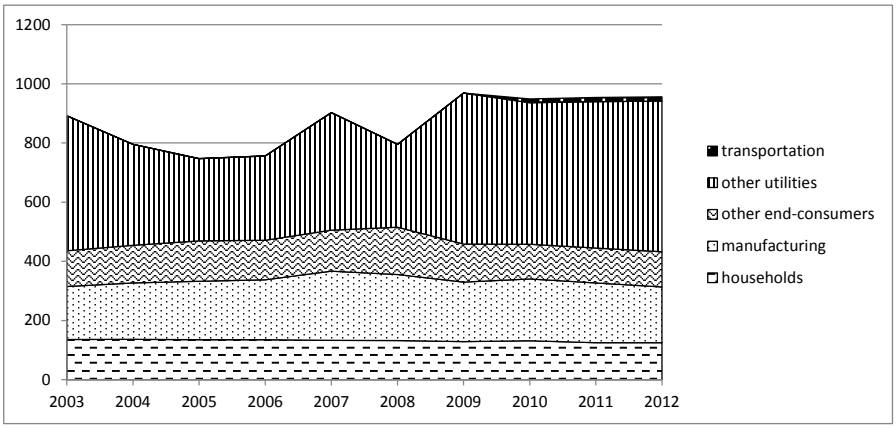
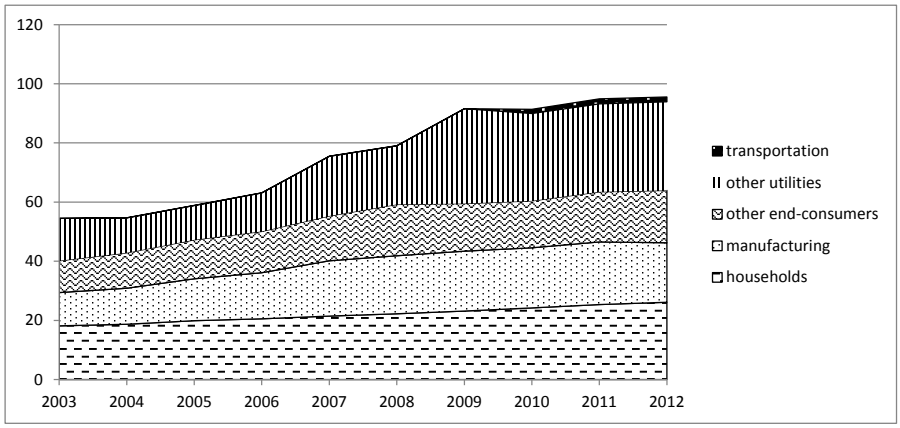
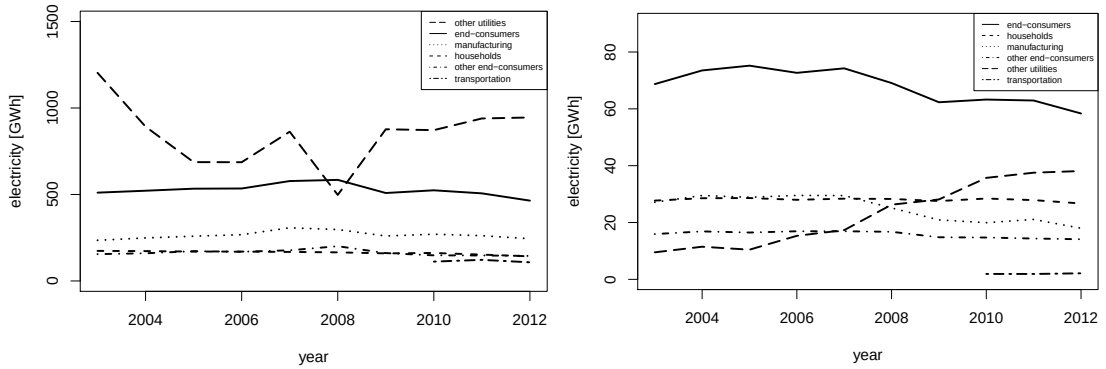


Figure 4: Total Sales [billion EUR] per Customer Segment and Year



The next figures give more insights on the importance of each segment in a standard firm's portfolio. Figure 5 concentrates on the mean and median amount of electricity per customer group. On average, firms sell 160GWh to private households and to other end-consumers and 260GWh to the manufacturing sector. Because of similar consumption patterns we may conclude that other end-consumers are mostly (service) businesses (*Gewerbekunden*).
Numbers are pretty different when median values are considered. The median firm sells ten times less, around 25GWh, to private households and the manufacturing sector. It reveals that the distribution is heavily skewed to the right and few large firms dominate electricity supply to end-consumers. For the median firm, supply to the manufacturing sector seems to be slightly less important than suggested by the mean values.

Figure 5: Average Electricity [GWh] Sold per Customer Segment and Year

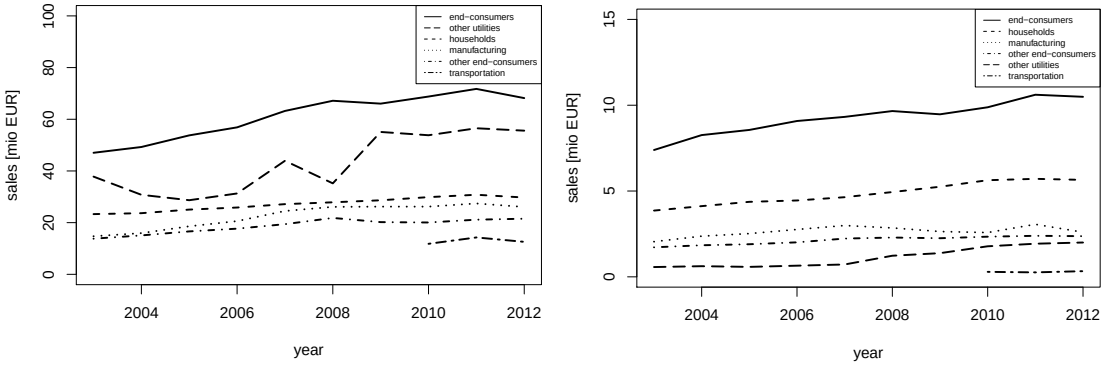


(a) mean (b) median

The median amount of electricity sold to other utilities grows over the years. Interesting enough, the opposite downward trend in mean supply stems from large retailers reducing their trading volume while all other firms increased their supply (see figure 7).

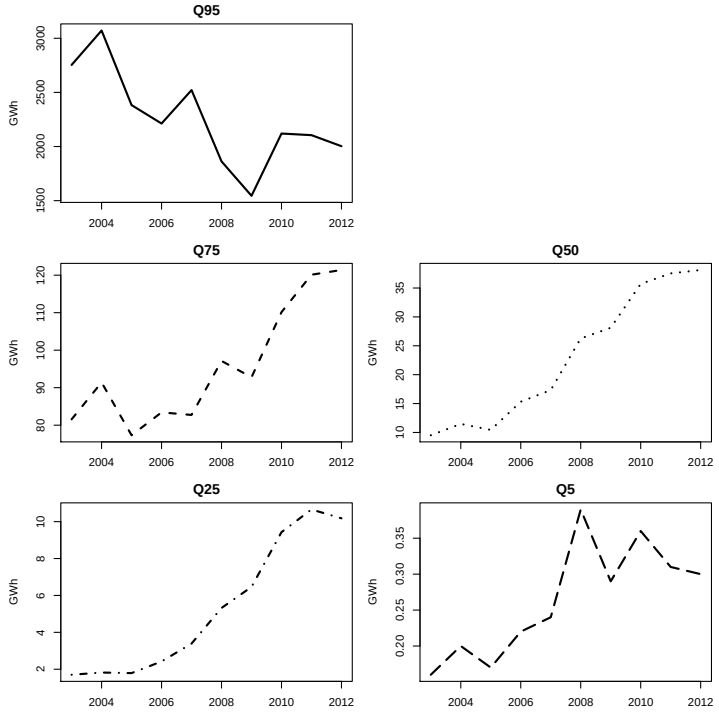
Figure 6 compares to sales. Among end-consumers, most of the sales are generated from households. Their consumption leads to 27 million EUR revenue for the average firm per year and 5 million EUR for the median firm. While the average firm generates up to 55 million EUR from selling to other utilities, it is only 2 million for the median firm in 2012. For the median firm, other utilities are the least important category after transportation. Nevertheless, numbers keep increasing and the median sales volume to other utilities tripled between 2003 and 2012.

Figure 6: Average Electricity Sales [million EUR] per Customer Segment and Year



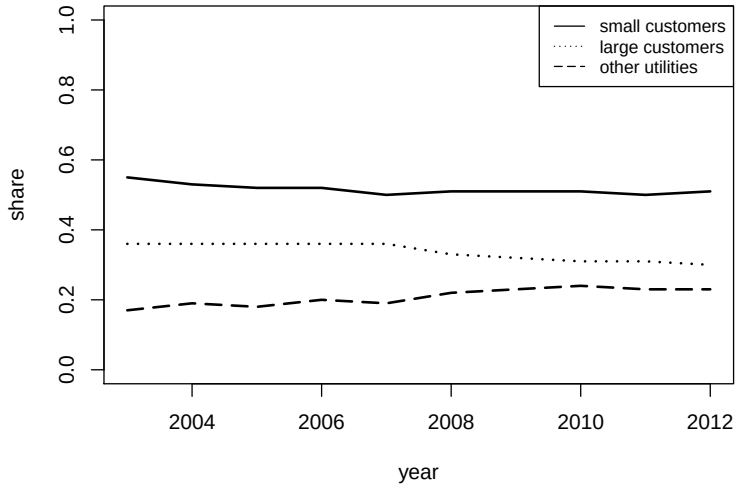
(a) mean (b) median

Figure 7: Quantiles of Electricity [GWh] Supplied to Other Retailers



Finally, figure 8 summarizes information on differences between small customers and large customers. It describes the share of each customer group in total sales over the years. On average, half of the sales stem from small customers, 1/3 from large customers and 1/5 from other utilities. Sales to large customers decline in favour of sales to other utilities. In terms of quantities, large customers are also slightly less important than small customers. The average share of large customer deliveries in total supply to end-consumers decreases from 45% in 2003 to 38% in 2012 (no figure).

Figure 8: Sales Shares per Customer Segment and Year



7.2. District Heat

The number of district heat retailers is slightly lower than the number of electricity retailers. When looking at the variation over time, you can see that the number of district heat retailers steadily increases until 2006 and then suddenly drops by more than 50 firms in 2007. It is not clear, whether this is an artefact of sample selection or whether there was true consolidation in Germany after 2006. Numbers increase again after 2010 and get back to the values before 2007.

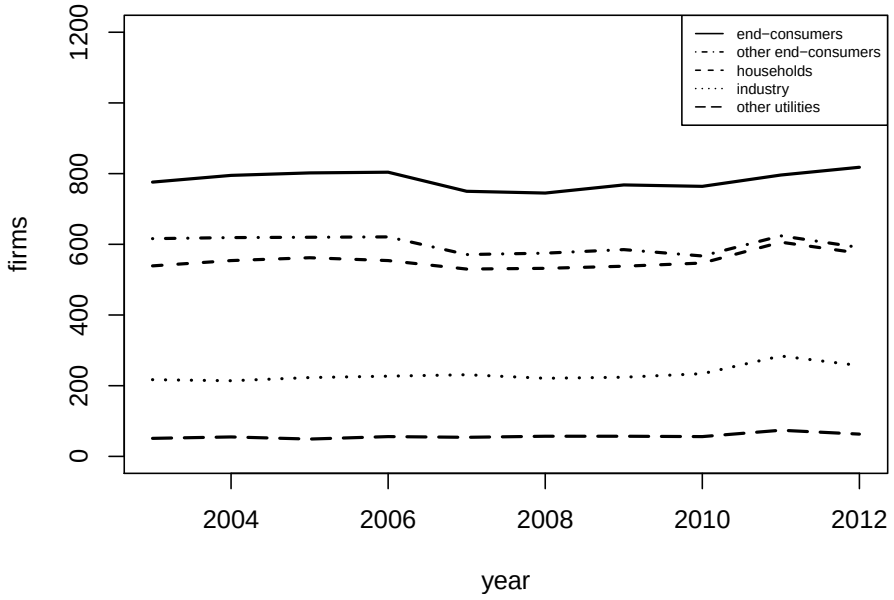
Table 30: Number of District Heat Retailers

Year	*firms*	*plants*
2003	776	1,073
2004	795	1,162
2005	802	1,160
2006	804	1,174
2007	750	1,124
2008	745	1,121
2009	768	1,200
2010	764	1,237
2011	769	1,271
2012	818	1,276

Notes: Subsample with `B_waerme_EF1011 > 0`. Rows with missing values in `Jahr` eliminated.

The following figures provide details on the customer structure in district heat. They are based on yearly summary statistics for the amount of district heat sold to private households and residential buildings (*private Haushalte und Wohngebäude*, `B_waerme_EF1011b`), to the manufacturing and quarrying sector (*Verarbeitendes Gewerbe und Gewinnung von Steinen und Erden*, `B_waerme_EF1011a`), to the transportation sector (*Verkehr*, `B_waerme_EF1011d`) and to other end-consumers (*Sonstige Letztverbraucher*, `B_waerme_EF1011c`). Some firms also sell to other utilities (*Energieversorgungsunternehmen*, `B_waerme_EF1010`).
Again, if missing values mean that firms do not serve that particular customer group, then number of firms in each customer segment is given in figure 9.

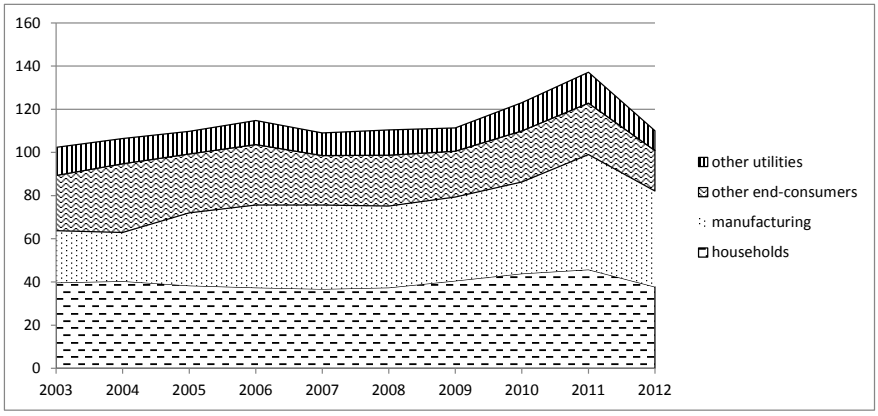
Figure 9: Number of Firms in Each Customer Segment (District Heat)



The upper line represents the total number of district heat retailers from table 30. About 550 of them serve private households, 230 supply the industry and 600 deliver to other end-consumers. Only 50 firms a year, i.e. 7%, sell to other utilities. Hence intra-retailer trade is rather unimportant in this sector. The number of firms serving the transportation segment is particularly low. It is therefore not considered in the above figure.
Figure 10 illustrates the amount of district heat sold to each customer group aggregated over all firms per year. The most important part (about 35%) is sold to households and residential buildings. A slightly lower, albeit increasing part is sold to the manufacturing and quarrying sector. Save for the economic crisis in 2009/2010, the latter exceeds the share to private households after 2006. A decreasing share goes to other end-consumers. As was already pointed out above,

the volume of intra-retailer trade is rather low. The trends are in line with official statistics published by BMWi 2014.

Figure 10: Total District Heat [TWh] Sold to Each Customer Segment per Year

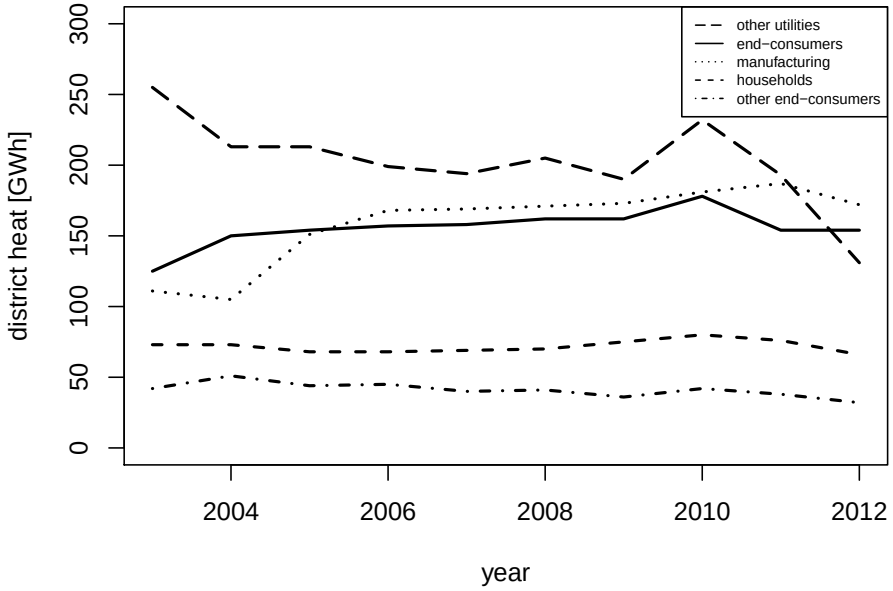


To get a better idea of the importance of the different segments in the firms' portfolio have a look at figure 11. It shows the average amount of district heat sold to each customer group per year.[13] As one would expect, those firms which sell to other utilities actually sell large amounts. On average, a volume of 200GWh is sold between retailers. It well exceeds the amount of district heat sold to end-consumers (160GWh). Likewise, the manufacturing sector is clearly more important in terms of volume (170GWh) than households and residential buildings (70GWh) when broken down to supply-per-firm. The amounts served to other end-consumers (40GWh) are in line with supply to households. It suggests that other end-consumers are in fact (service) businesses that have similar consumption patterns as households. They mainly use district heat to heat commercial or office buildings.

The overall distribution of output quantities in the respective segments is heavily skewed to the right, i.e. few large firms dominate. This is representative of district heat supply in Germany where many retailers are local monopolists and output correlates with the size of the municipality. It is thus quite useful to consider median results as well. They are given in figure 12.
Trends look slightly different. Overall numbers are much smaller, and the gap between supply to other utilities (50GWh) and those to end-consumers (20GWh) increased. Median supply to the manufacturing sector (12GWh) is now more in line with supply to households and residential buildings (10GWh).

[13]For each segment, only active firms are considered, i.e. the average is calculated among firms with positive output quantities in the respective field.

Figure 11: Mean District Heat [GWh] Sold to Each Customer Segment per Year



Finally, we also calculated ratios within each firm. For half of the firms (45%) the amount of district heat sold to private households and residential buildings exceeds the amount sold to all other end-consumers groups. The average share of households deliveries in total supply to end-consumers is 58%. However, only 9% of the firms exclusively sell to households. The vast majority of firms has a mixed portfolio.

7.3. Water

Each year, we observe around 2,200 firms that sell water to end-consumers (see table 31).[14] The number of water retailers is three to four times higher than the one in other sectors (electricity, district heat, gas) and indicates a highly fragmented market.

[14] In case you are interested in the water sector, further datasets are available at the Research Data Centres such as the *Wasserstatistik*. These datasets contain much more information and also include firms at other stages of the water supply chain.

Figure 12: Median District Heat [GWh] Sold to Each Customer Segment per Year

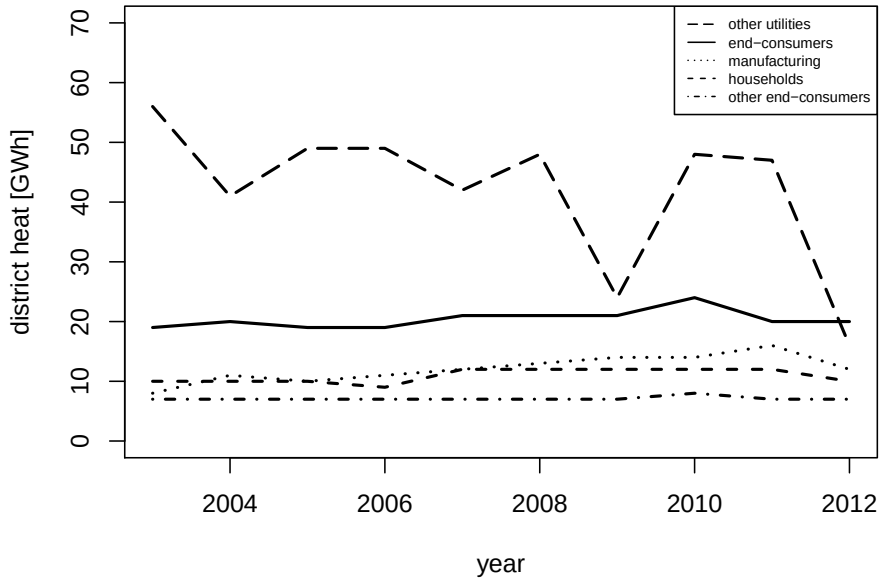


Table 31: Number of Water Retailers

Year	*firms*	*plants*
2003	2,285	3,095
2004	2,291	3,161
2005	2,282	3,051
2006	2,259	3,005
2007	2,237	2,959
2008	2,203	3,000
2009	2,168	2,959
2010	2,143	2,979
2011	2,139	2,993
2012	2,131	3,022

Notes: Subsample with `UK_Code8601>0 > 0`. Rows with missing values in `unr` eliminated.

Variables on the customer structure are less detailed when compared to the electricity and district heat sector. They only distinguish between the amount of water supplied to end-consumers (`UK_Code8601`) and water sold to other utilities (`UK_Code8501`). In addition, the dataset includes sales data on imports (`UK_Code8801`) and exports (`UK_Code8901`). The following figures compare the amounts sold to end-consumers with those sold to other utilities.

Figure 13 shows the total amount of water sold in each segment. Much like for district heat, intra-retailer trade does not seem to be important. More than 85% of the water is directly distributed to the end-consumer.

Figure 13: Yearly Total Water Supply [millions m3] Sold to Each Customer Segment

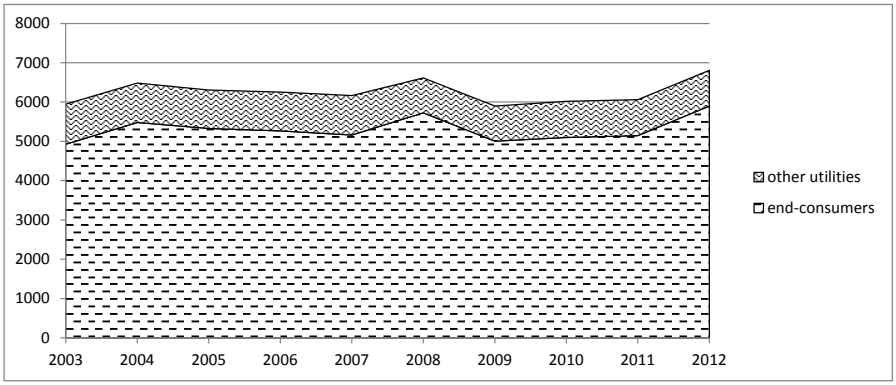
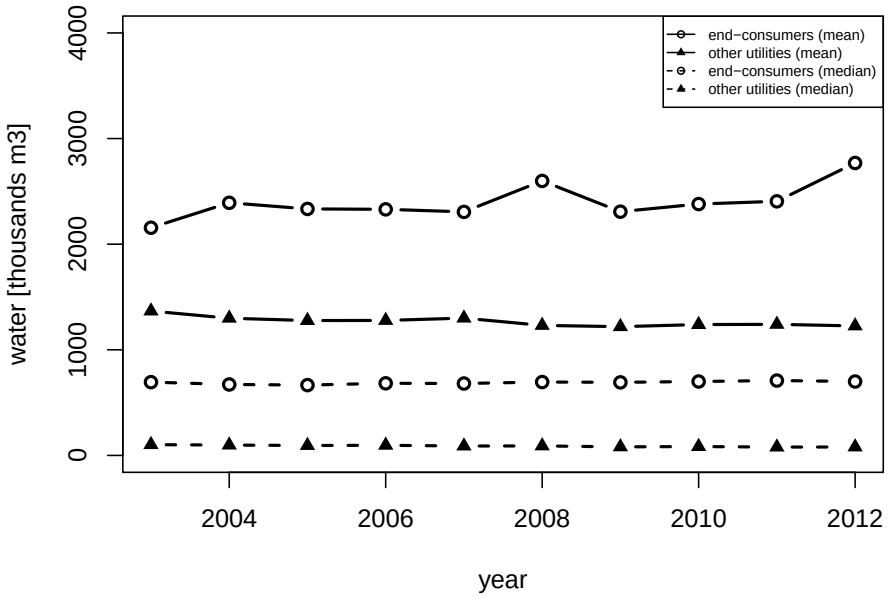


Figure 14 takes the number of firms into account. About one third of the retailers sell to other utilities. On average, a retailer sells 2.3 millions m3 of water to end-consumers per year and 1.2 millions m3 to other utilities. However, the distribution is again positively skewed. The median firm sells around 0.7 millions m3 of water to end-consumers and only 0.08 millions m3 of water to other utilities.

Figure 14: Yearly Average Water Supply [thousands m3] Sold to Each Customer Segment



7.4. Horizontal Integration

The last section investigates the product space of retailing firms, i.e. the degree of horizontal integration. Unfortunately, precise data is only available for electricity, heat and water (*Abgabe an Letztverbraucher*). We cannot exclude that firms are also present in gas supply, sewerage or waste treatment.
Table 32 compares the number of retailers and their product space. Altogether there are roughly 3,000 firms each year present in retail with the majority of them being water retailers (1,700). When offering joint products, it is most common to combine electricity and water retail and least common to combine water with heat provision. About 170 firms offer the standard multi-utility portfolio, i.e. all three products.

Table 32: Retail Combinations

	Combination of retail sectors (electricity, heat, water)										
	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	2011	2012	**sum**
none of them	578	613	635	640	723	3,584	3,666	3,758	4091	4327	**22,615**
water	1,765	1,750	1,740	1,714	1,697	1,680	1,642	1,625	1,627	1,598	**16,838**
electricity & water	310	309	318	316	313	306	302	310	307	327	**3,118**
electricity	293	297	289	293	299	305	330	333	335	384	**3,158**
heat	256	240	243	245	221	224	240	247	278	325	**2,519**
all of them	153	167	165	167	167	170	178	165	165	169	**1,666**
heat & electricity	86	86	98	96	87	89	81	79	79	82	**863**
heat & water	57	64	59	61	60	47	46	43	40	37	**514**
sum	**3,498**	**3,526**	**3,547**	**3,532**	**3,567**	**6,405**	**6,485**	**6,560**	**6,922**	**7,249**	**51,291**

Notes: Full sample. Rows with missing values in `unr` eliminated. Analysis based on `B_waerme_EF1011>0`, `U_ABS_EF1061>0`, `UK_Code8601`. We cannot control for other sectors, i.e. all firms might be additionally present in gas retail, waste treatment or sewerage.

Appendix

A. Variable List

The following table lists all variables from the dataset as of October 2015. Questionnaires are published by the Federal Statistical Office and can be found at the end of each survey description (in German) under https://www.destatis.de/DE/Publikationen/Qualitaetsberichte/Energie/EnergieWasserversorgung.html.

Table 33: Variable list

Variable name	Variable label
General Information	
bnr	Betriebsnummer
unr	Unternehmensnummer
Jahr	Berichtsjahr
Organ	Organschaftsverhältnis
Rechtsform	Rechtsform des Unternehmens
wz_b	Wirtschaftszweig Betrieb
wz_u	Wirtschaftszweig Unternehmen
ags_b	AGS des Betriebes
ags_u	AGS des Unternehmens
art_b	Betriebsart
art_u	Unternehmensart
bl_b	Bundesland des Betriebes
bl_u	Sitz des Unternehmens - Bundesland
energie	Teilnahme Energiestatistik
taet	Tätigkeitsschwerpunkt Betrieb nach WZ
taet_abfall	Abfallbeseitigung lt. Leitdatei Unternehmen
taet_abwasser	Abwasserbeseitigung lt. Leitdatei Unternehmen
taet_gas	Gasversorgung lt. Leitdatei Unternehmen
taet_sonst	sonstige Tätigkeit lt. Leitdatei Unternehmen
taet_strom	Elektrizitätsversorgung lt. Leitdatei Unternehmen
taet_waerme	Wärmeversorgung lt. Leitdatei Unternehmen
taet_wasser	Wasserversorgung lt. Leitdatei Unternehmen
Investitionserhebung bei Unternehmen der Energieversorgung, Wasserversorgung, Abwasser- und Abfallentsorgung, Beseitigung von Umweltverschmutzungen EVAS No. 43211-077	
TMEVU_u	Teilnahme Investitions- und Kostenstrukturerhebung Unternehmen
UI_Code11_1	Tätigkeit Elektrizitätsversorgung lt. Fragebogen IVE
UI_Code11_2	Tätigkeit Wärmeversorgung lt. Fragebogen IVE
UI_Code11_3	Tätigkeit Gasversorgung lt. Fragebogen IVE
UI_Code11_4	Tätigkeit Wasserversorgung lt. Fragebogen IVE
UI_Code11_5	Tätigkeit Abwasserbeseitigung lt. Fragebogen IVE
UI_Code11_6	Tätigkeit Abfallbeseitigung lt. Fragebogen IVE
UI_Code11_7	Tätigkeit sonstige lt. Fragebogen IVE

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UI_Code1500	Umweltschutzanlagen enthalten?
UI_Code2001	Bruttozugänge - Bestehende. Gebäude und Bauten
UI_Code2101	Bruttozugänge - Errichtung und Umbau von Gebäuden
UI_Code2201	Bruttozugänge - Grundstücke ohne Bauten
UI_Code3001	Bruttozugänge - Anlagen zur Erzeugung und Gewinnung
UI_Code3101	Bruttozugänge - Anlagen zur Speicherung
UI_Code3201	Bruttozugänge - Leitungs- und Rohrnetze
UI_Code3301	Bruttozugänge - Zähler und Messgeräte
UI_Code3401	Bruttozugänge - sonst. Anlagen zur Verteilung und Übertragung
UI_Code3501	Bruttozugänge - andere Anlagen
UI_Code3601	Bruttozugänge - Betriebsaustattung einschl. Werkzeuge, Fahrzeuge usw.
UI_Code4001	Bruttozugänge insgesamt - (Code 20-36)
UI_Code4101	Bruttozugänge insgesamt - darunter selbsterst. Anlagen zu Herstellungskosten
UI_Code4801	Wert neuer Sachanlagen - Grundstücke mit Bauten
UI_Code4901	Wert neuer Sachanlagen - neue Anlagen und Maschinen
UI_Code5001	Wert neuer Sachanlagen - insgesamt (Code 48-49)
UI_Code6001	Wert mit Leasing beschaffter Sachanlagen
UI_Code7001	Verkaufserlöse aus Sachanlagen
UI_Code7101	Verkaufserlöse aus Sachanlagen - darunter Grundstücke ohne Bauten
UI_Code8001	Investitionen in Konzessionen, Patente, Lizenzen, Warenzeichen u.ä.
UI_Code8101	Erworbene Software
Kostenstrukturerhebung bei Unternehmen der Energieversorgung, Wasserversorgung, Abwasser- und Abfallentsorgung, Beseitigung von Umweltverschmutzungen EVAS No. 43411-064	
UK_Code0501	A1 - Tätige (Mit) Inhaber (Anzahl)
UK_Code0601	A2 - Arbeitnehmer (Anzahl)
UK_Code0701	A22 - Teilzeit - Arbeitnehmer (Anzahl)
UK_Code0801	A23 - Teilzeit in Vollzeiteinheiten (Anzahl)
UK_Code0901	A11 - weibliche Tätige (Mit) Inhaber (Anzahl)
UK_Code1401	A21 - weibliche Arbeitnehmer (Anzahl)
UK_Code1501	A3 - Gesamtzahl tätige Personen A1+A2 (Anzahl)
UK_Code1601	B1 - geleistete Stunden
UK_Code2001	C11 - Umsatz aus eigenen Erzeugnissen & Weiterverkauf fremdbezogener Energie
UK_Code2101	C12 - Umsatz aus sonstiger Handelsware (Euro)
UK_Code2201	C13 - Umsatz aus Dienstleistungen & Nebengeschäften (Euro)
UK_Code2501	C14 - Gesamtumsatz C11+C12+C13 (Euro)
UK_Code2601	C21 - Bestände von Erzeugnissen eigener Produktion Jahresanfang (Euro)
UK_Code2701	C22 - Bestände von Erzeugnissen eigener Produktion Jahresende (Euro)
UK_Code2801	C3 - selbsterstellte Anlagen (Euro)
UK_Code3301	C31 - Gesamtleistung C14+C3+C22 - C21 (Euro)
UK_Code3401	D11 - Bestände fremdbezogenes Material Jahresanfang (Euro)
UK_Code3501	D12 - Bestände fremdbezogenes Material Jahresende (Euro)
UK_Code3601	D2 - Eingänge fremdbezogenes Material (Euro)
UK_Code3701	D3 - Verbrauch fremdbezogenes Material D2+D11 - D12 (Euro)
UK_Code4201	E11 - Bestände fremdbezogene Energie & Wasser Jahresanfang (Euro)
UK_Code4301	E12 - Bestände fremdbezogene Energie & Wasser Jahresende (Euro)

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UK_Code4401	E2 - Eingänge fremdbezogene Energie & Wasser (Euro)
UK_Code4501	E3 - Einsatz fremdbezogene Energie & Wasser E2+E11 - E12 (Euro)
UK_Code4601	F11 - Bestände sonstige Handelsware Jahresanfang (Euro)
UK_Code4701	F12 - Bestände sonstige Handelsware Jahresende (Euro)
UK_Code4801	F2 - Eingänge sonstige Handelsware (Euro)
UK_Code4901	F3 - Einsatz sonstige Handelsware F2+F11 - F12 (Euro)
UK_Code5001	G1 - bezahlte Entgelte (Brutto inkl. AN - Anteile Sozialkosten) (Euro)
UK_Code5201	G21 - gesetzliche Sozialkosten AG - Anteile (Euro)
UK_Code5301	G22 - sonstige Sozialkosten (Euro)
UK_Code5401	G3 - Kosten Leiharbeiter (Euro)
UK_Code5501	G41 - Kosten fremde Dienstleistungen (Euro)
UK_Code5701	G411 – darunter Zahlungen an Unterauftragnehmer (Euro)
UK_Code5901	G5 - Mieten und Pachten (Euro)
UK_Code6001	G51 – darunter Mieten und Pachten für Produktionsanlagen (Euro)
UK_Code6101	G6 - Steuern, Abgaben & öffentliche Gebühren und Beiträge (Euro)
UK_Code6201	G61 - darunter Verbrauchsteuern (Euro)
UK_Code6301	G62 - darunter Konzessionsabgaben (Euro)
UK_Code6401	G7 - sonstige Kosten (Euro)
UK_Code6501	G8 - steuerliche Abschreibungen (Euro)
UK_Code6601	G9 - Fremdkapitalzinsen (Euro)
UK_Code6801	G71 - darunter Versicherungen (Euro)
UK_Code6901	G10 - Summe Kosten G1+G21+G22+G3+G41+G5+G6+G7+G8+G9 (Euro)
UK_Code7001	H1 - Umsatzsteuer (Euro)
UK_Code7101	H2 - abzugsfähige Umsatzsteuer (Euro)
UK_Code7201	H21 - darunter abzugsfähige Vorsteuer (Euro)
UK_Code7301	I1 - Stromsteuer ohne auf Betriebsverbrauch (Euro)
UK_Code7401	J1 - Subventionen für lfd. Produktion (Euro)
UK_Code8501	L1 - Abgabe Wasser an Versorger zur Weiterverteilung (1000ccm)
UK_Code8601	L2 - Abgabe Wasser an Letztverbraucher (1000ccm)
UK_Code8701	L3 - Abgabe Wasser gesamt L1+L2 (1000ccm)
UK_Code8801	M1 - Bezüge Wasser aus Ausland (Euro)
UK_Code8901	M2 - Lieferung Wasser ans Ausland (Euro)
UK_Code9001	K1 - Aufwendungen Forschung & Entwicklung (Euro)
UK_Code9101	K2 - Arbeitnehmer Forschung & Entwicklung (Anzahl)
UK_Code9201	I2 - Erdgassteuer ohne auf Betriebsverbrauch (Euro)
Erhebung über Stromabsatz und Erlöse der Elektrizitätsversorgungsunternehmen und Stromhändler EVAS No. 43331-083	
TM083_u	Teilnahme Stromabsatz
U_ABS_EF1011_sum	Absatz an E-Versorger (in MWh)
U_ABS_EF1012_sum	Erlös von E-Versorger (in 1.000 Euro)
U_ABS_EF1021_sum	Absatz an Hochspannung (in MWh)
U_ABS_EF1022_sum	Erlös von Hochspannung (in 1.000 Euro)
U_ABS_EF1031_sum	Absatz an Niederspannung (in MWh)
U_ABS_EF1032_sum	Erlös von Niederspannung (in 1.000 Euro)
U_ABS_EF1041_sum	Absatz an Sonderabn. gesamt (EF1021+EF1031) (in MWh)
U_ABS_EF1042_sum	Erlös von Sonderabn. gesamt (in 1.000 Euro)
U_ABS_EF1051_sum	Absatz an Tarifabnehmer (in MWh)
U_ABS_EF1052	Erlös von Tarifabnehmer (in 1.000 Euro)

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U_ABS_EF1061	Absatz an Letztverbraucher gesamt (EF1041+EF1051 = EF1071+EF1081+EF1091)
U_ABS_EF1062	Erlös von Letztverbraucher gesamt (in 1.000 Euro)
U_ABS_EF1071	Absatz an VG (in MWh)
U_ABS_EF1072	Erlös von VG (in 1.000 Euro)
U_ABS_EF1081	Absatz an Privathaushalte (in MWh)
U_ABS_EF1082	Erlös von Privathaushalten (in 1.000 Euro)
U_ABS_EF1091	Absatz an Sonstige (in MWh)
U_ABS_EF1092	Erlös von Sonstige (in 1.000 Euro)
U_ABS_EF1101	Absatz an Fahrstrom (in MWh)
U_ABS_EF1111	Betriebsverbrauch (in MWh)
U_ABS_EF1121	Verfügb. Strommenge Inland (EF1061+EF1111) (in MWh)
U_ABS_EF1131	Absatz an Ausland (in MWh)
U_ABS_EF1132	Erlös von Ausland (in 1.000 Euro)
U_ABS_EF1141	Absatz an Verkehr (in MWh)
U_ABS_EF1142	Erlös von Verkehr (in 1.000 Euro)
Erhebung über die Stromeinspeisung bei Netzbetreibern EVAS No. 43371-070	
TM070_u	Teilnahme Stromeinspeisung
U_Stromein_EF1013	Stromeinspeisung Industrie (MWh) = ZL01 Konventionelle Energieträger
U_Stromein_EF1014	Stromeinspeisung Andere (MWh) = ZL01 Konventionelle Energieträger
U_Stromein_EF1021	Anzahl der einspeisenden Anlagen = ZL02 Erneuerbare Energien (Summe ZL03-
U_Stromein_EF1022	Leistung (MW) = ZL02 Erneuerbare Energien (Summe ZL03-ZL12)
U_Stromein_EF1023	Stromeinspeisung Industrie(MWh) = ZL02 Erneuerbare Energien (Summe ZL03-ZL12)
U_Stromein_EF1024	Stromeinspeisung Andere (MWh) = ZL02 Erneuerbare Energien (Summe ZL03-ZL12)
U_Stromein_EF1025	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL02 Erneuerbare Energien
U_Stromein_EF1026	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL02 Erneuerbare Energien
U_Stromein_EF1031	Anzahl der einspeisenden Anlagen = ZL03 Wasserkraft
U_Stromein_EF1032	Leistung (MW) = ZL03 Wasserkraft
U_Stromein_EF1033	Stromeinspeisung Industrie (MWh) = ZL03 Wasserkraft
U_Stromein_EF1034	Stromeinspeisung Andere (MWh) = ZL03 Wasserkraft
U_Stromein_EF1035	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL03 Wasserkraft
U_Stromein_EF1036	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL03 Wasserkraft
U_Stromein_EF1041	Anzahl der einspeisenden Anlagen = ZL04 Windkraft
U_Stromein_EF1041a	Anzahl der einspeisenden Anlagen = ZL04 Onshore-Windkraft
U_Stromein_EF1041b	Anzahl der einspeisenden Anlagen = ZL04 Offshore-Windkraft
U_Stromein_EF1042	Leistung (MW)= ZL04 Windkraft
U_Stromein_EF1042a	Leistung (MW)= ZL04 Onshore-Windkraft
U_Stromein_EF1042b	Leistung (MW) = ZL05 Offshore-Windkraft
U_Stromein_EF1043	Stromeinspeisung Industrie (MWh) = ZL04 Windkraft
U_Stromein_EF1043a	Stromeinspeisung Industrie (MWh) = ZL04 Onshore-Windkraft
U_Stromein_EF1043b	Stromeinspeisung Industrie (MWh) =ZL04 Offshore-Windkraft

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U_Stromein_EF1044	Stromeinspeisung Andere (MWh) = ZL04 Windkraft
U_Stromein_EF1044a	Stromeinspeisung Andere (MWh) = ZL04 Onshore-Windkraft
U_Stromein_EF1044b	Stromeinspeisung Andere (MWh) = ZL04 Offshore-Windkraft
U_Stromein_EF1045a	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL04 Onshore-Windkraft
U_Stromein_EF1045b	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL04 Offshore-Windkraft
U_Stromein_EF1046a	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL04 Onshore-Windkraft
U_Stromein_EF1046b	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL04 Offshore-Windkraft
U_Stromein_EF1051	Anzahl der einspeisenden Anlagen = ZL05 Photovoltaik
U_Stromein_EF1052	Leistung (MW) = ZL05 Photovoltaik
U_Stromein_EF1053	Stromeinspeisung Industrie (MWh) = ZL05 Photovoltaik
U_Stromein_EF1054	Stromeinspeisung Andere (MWh) = ZL05 Photovoltaik
U_Stromein_EF1055	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL05 Photovoltaik
U_Stromein_EF1056	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL05 Photovoltaik
U_Stromein_EF1061	Anzahl der einspeisenden Anlagen = ZL06 Geothermie
U_Stromein_EF1062	Leistung (MW) = ZL06 Geothermie
U_Stromein_EF1063	Stromeinspeisung Industrie (MWh) = ZL06 Geothermie
U_Stromein_EF1064	Stromeinspeisung Andere (MWh) = ZL06 Geothermie
U_Stromein_EF1065	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL06 Geothermie
U_Stromein_EF1066	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL06 Geothermie
U_Stromein_EF1071	Anzahl der einspeisenden Anlagen = ZL07 Deponiegas
U_Stromein_EF1072	Leistung (MW) = ZL07 Deponiegas
U_Stromein_EF1073	Stromeinspeisung Industrie (MWh) = ZL07 Deponiegas
U_Stromein_EF1074	Stromeinspeisung Andere (MWh) = ZL07 Deponiegas
U_Stromein_EF1075	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL07 Deponiegas
U_Stromein_EF1076	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL07 Deponiegas
U_Stromein_EF1081	Anzahl der einspeisenden Anlagen = ZL08 Klärgas
U_Stromein_EF1082	Leistung (MW) = ZL08 Klärgas
U_Stromein_EF1083	Stromeinspeisung Industrie (MWh) = ZL08 Klärgas
U_Stromein_EF1084	Stromeinspeisung Andere (MWh) = ZL08 Klärgas
U_Stromein_EF1085	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL08 Klärgas
U_Stromein_EF1086	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL08 Klärgas
U_Stromein_EF1091	Anzahl der einspeisenden Anlagen = ZL09 Biogas
U_Stromein_EF1092	Leistung (MW) = ZL09 Biogas
U_Stromein_EF1093	Stromeinspeisung Industrie (MWh) = ZL09 Biogas
U_Stromein_EF1094	Stromeinspeisung Andere (MWh) = ZL09 Biogas
U_Stromein_EF1095	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL09 Biogas

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U_Stromein_EF1096	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL09 Biogas
U_Stromein_EF1101	Anzahl der einspeisenden Anlagen = ZL10 Feste Biomasse
U_Stromein_EF1102	Leistung (MW) = ZL10 Feste Biomasse
U_Stromein_EF1103	Stromeinspeisung Industrie (MWh) = ZL10 Feste Biomasse
U_Stromein_EF1104	Stromeinspeisung Andere (MWh) = ZL10 Feste Biomasse
U_Stromein_EF1105	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL10 Feste Biomasse
U_Stromein_EF1106	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL10 Feste Biomasse
U_Stromein_EF1111	Anzahl der einspeisenden Anlagen = ZL11 Flüssige Biomasse
U_Stromein_EF1112	Leistung (MW) = ZL11 Flüssige Biomasse
U_Stromein_EF1113	Stromeinspeisung Industrie (MWh) = ZL11 Flüssige Biomasse
U_Stromein_EF1114	Stromeinspeisung Andere (MWh) = ZL11 Flüssige Biomasse
U_Stromein_EF1115	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL11 Flüssige Biomasse
U_Stromein_EF1116	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL11 Flüssige Biomasse
U_Stromein_EF1121	Anzahl der einspeisenden Anlagen = ZL12 Sonstige erneuerbare Energien
U_Stromein_EF1122	Leistung (MW) = ZL12 Sonstige erneuerbare Energien
U_Stromein_EF1123	Stromeinspeisung Industrie (MWh) = ZL12 Sonstige erneuerbare Energien
U_Stromein_EF1124	Stromeinspeisung Andere (MWh) = ZL12 Sonstige erneuerbare Energien
U_Stromein_EF1125	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL12 Sonstige erneuerbare Energien
U_Stromein_EF1126	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL12 Sonstige erneuerbare Energien
U_Stromein_EF1131	Anzahl der einspeisenden Anlagen = ZL13 Abfälle einschl. Klärschlamm
U_Stromein_EF1132	Leistung (MW)= ZL13 Abfälle einschl. Klärschlamm
U_Stromein_EF1133	Stromeinspeisung Industrie (MWh) = ZL13 Abfälle einschl. Klärschlamm
U_Stromein_EF1134	Stromeinspeisung Andere (MWh) = ZL13 Abfälle einschl. Klärschlamm
U_Stromein_EF1135	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL13 Abfälle einschl. Klärschlamm
U_Stromein_EF1136	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL13 Abfälle einschl. Klärschlamm
U_Stromein_EF1141	Anzahl der einspeisenden Anlagen = ZL14 Abfälle, darunter Klärschlamm
U_Stromein_EF1142	Leistung (MW) = ZL14 Abfälle, darunter Klärschlamm
U_Stromein_EF1143	Stromeinspeisung Industrie (MWh) = ZL14 Abfälle, darunter Klärschlamm
U_Stromein_EF1144	Stromeinspeisung Andere (MWh) = ZL14 Abfälle, darunter Klärschlamm
U_Stromein_EF1145	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = ZL14 Abfälle, darunter Klärschlamm
U_Stromein_EF1146	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = ZL14 Abfälle, darunter Klärschlamm
U_Stromein_EF1151	Anzahl der einspeisenden Anlagen = Insgesamt (Summe ZL 02+13)

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U_Stromein_EF1152	Leistung (MW) = Insgesamt (Summe ZL 02+13)
U_Stromein_EF1153	Stromeinspeisung Industrie (MWh) = Insgesamt (Summe ZL 01+ 02+13)
U_Stromein_EF1154	Stromeinspeisung Andere (MWh) = Insgesamt (Summe ZL 01+ 02+13)
U_Stromein_EF1155	Vom Einspeiser selbst erzeugter und verbrauchter Strom Industrie (MWh) = Insgesamt (Summe ZL 01+ 02+13)
U_Stromein_EF1156	Vom Einspeiser selbst erzeugter und verbrauchter Strom Sonstige (MWh) = Insgesamt (Summe ZL 01+ 02+13)
Erhebung über die Elektrizitätsversorgung der Netzbetreiber EVAS No. 43312-066N	
TM066N_u	Teilnahme Netzbetreiber
U_netzb_EF101_mean	Bezug von Elektrizität von Markteilnehmern im Inland (EF102+EF103) in MW
U_netzb_EF101_sum	Bezug von Elektrizität von Markteilnehmern im Inland (EF102+EF103) in MW
U_netzb_EF102_mean	darunter Bezug von Elektrizität von konzerneigenen Kraftwerken und anderen in MWh - Jahresdurchschnitt
U_netzb_EF101_sum	darunter Bezug von Elektrizität von konzerneigenen Kraftwerken und anderen in MWh - Jahresdurchschnitt
U_netzb_EF103_mean	darunter Bezug von Elektrizität von sonstigen Markteilnehmern in MWh - Jahrensdurchschnitt
U_netzb_EF101_sum	darunter Bezug von Elektrizität von sonstigen Markteilnehmern in MWh - Jahressumme
U_netzb_EF111_mean	Bezug von Elektrizität aus dem Ausland in MWh - Jahresdurchschnitt
U_netzb_EF111_sum	Bezug von Elektrizität aus dem Ausland in MWh - Jahressumme
U_netzb_EF190_mean	Bezug von Elektrizität insgesamt (EF101 + EF111) in MWh - Jahresdurchschnitt
U_netzb_EF190_sum	Bezug von Elektrizität insgesamt (EF101 + EF111) in MWh - Jahressumme
U_netzb_EF201_mean	Abgabe von Elektrizität an Markteilnehmern im Inland (EF202+EF203) in MWh - Jahresdurchschnitt
U_netzb_EF201_sum	Abgabe von Elektrizität an Markteilnehmern im Inland (EF202+EF203) in MWh - Jahressumme
U_netzb_EF202_mean	darunter Abgabe von Elektrizität an anderen EVU in MWh - Jahresdurchschnitt
U_netzb_EF202_sum	darunter Abgabe von Elektrizität an anderen EVU in MWh - Jahressumme
U_netzb_EF203_mean	darunter Abgabe von Elektrizität an Letztverbraucher in MWh - Jahresdurchschnitt
U_netzb_EF203_sum	darunter Abgabe von Elektrizität an Letztverbraucher in MWh - Jahressumme
U_netzb_EF211_mean	Abgabe von Elektrizität an das Ausland in MWh - Jahresdurchschnitt
U_netzb_EF211_sum	Abgabe von Elektrizität an das Ausland in MWh - Jahressumme
U_netzb_EF290_mean	Abgabe von Elektrizität insgesamt (EF201 + EF211) in MWh - Jahresdurchschnitt
U_netzb_EF290_sum	Abgabe von Elektrizität insgesamt (EF201 + EF211) in MWh - Jahressumme
U_netzb_EF301_mean	Netzverluste in MWh - Jahresdurchschnitt
U_netzb_EF301_sum	Netzverluste in MWh - Jahressumme

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Investitionserhebung bei Betrieben der Energie- und Wasserversorgung EVAS No. 43211-076	
TMEVB_b	Teilnahme Investitionserhebung der Betriebe
BI_Code1100	Tätigkeitsschwerpunkt des Betriebes lt. Fragebogen
BI_Code1100_neu	Tätigkeitsschwerpunkt des Betriebs zusammengefasst
BI_Code1500	Umweltschutzanlagen enthalten?
BI_Code2001	Bruttozugänge - Bestehende. Gebäude und Bauten
BI_Code2201	Bruttozugänge - Grundstücke ohne Bauten
BI_Code3001	Bruttozugänge: Technische Anlagen und Maschinen
BI_Code4001	Bruttozugänge insgesamt - (Code 20-30)
BI_Code4101	Bruttozugänge - darunter selbsterst. Anlagen zu Herstellungskosten
BI_Code4801	Wert neuer Sachanlagen - Grundstücke mit Bauten
BI_Code4901	Wert neuer Sachanlagen - neue Anlagen und Maschinen
BI_Code5001	Wert neuer Sachanlagen - insgesamt (Code 48-49)
BI_Code6001	Gesamtzahl tätige Personen nur Betriebe Abwasser- und Abfallentsorgung sowie Beseitigung Umweltverschmutzungen
Monatsbericht bei den Betrieben der Energie- und Wasserversorgung EVAS No. 43111-065	
TM065_b	Teilnahme Monatsbericht
B_MBE_EF11_mean	Tätige Personen (einschliesslich tätiger Inhaber) im fachl. Betriebsteil Elektrizität - Jahresdurchschnitt
B_MBE_EF13_mean	Tätige Personen (einschliesslich tätiger Inhaber) im fachl. Betriebsteil Gas - Jahresdurchschnitt
B_MBE_EF15_mean	Tätige Personen (einschliesslich tätiger Inhaber) im fachl. Betriebsteil Fernwärme - Jahresdurchschnitt
B_MBE_EF17_mean	Tätige Personen (einschliesslich tätiger Inhaber) im fachl. Betriebsteil Wasser - Jahresdurchschnitt
B_MBE_EF19_mean	Tätige Personen (einschliesslich tätiger Inhaber) im fachl. Betriebsteil Baugewerbe - Jahresdurchschnitt
B_MBE_EF21_mean	Tätige Personen (einschliesslich tätiger Inhaber) in sonst. fachl. Betriebsteilen - Jahresdurchschnitt
B_MBE_EF23_mean	Tätige Personen (einschliesslich tätiger Inhaber) insgesamt - Jahresdurchschnitt
B_MBE_EF24_mean	tatsächlich geleistete volle Arbeitstunden insgesamt - Jahresdurchschnitt
B_MBE_EF24_sum	tatsächlich geleistete volle Arbeitstunden insgesamt - Jahressumme
B_MBE_EF25_mean	Bruttolohn- und –gehaltsumme einschl. Vergütungen für Auszubildende - Jahresdurchschnitt
B_MBE_EF25_sum	Bruttolohn- und –gehaltsumme einschl. Vergütungen für Auszubildende - Jahressumme
Erhebung über die Elektrizitäts- und Wärmeerzeugung der Stromerzeugungsanlagen für die allgemeine Versorgung EVAS No. 43311-066K	
TM066K_b	Teilnahme Kraftwerkeerhebung
Hauptenergietraeger	Hauptenergietraeger
B_kraftw_EF30_mean	Benutzungsdauer Anlagen in KWK-Prozessen (Std) - Jahresdurchschnitt
B_kraftw_EF30_sum	Benutzungsdauer Anlagen in KWK-Prozessen (Std) - Jahressumme
B_kraftw_EF401U3	Brennstoffeinsatz (Jahressumme) - insgesamt (GJ)
B_kraftw_EF401U3_mean	Brennstoffeinsatz (Jahresdurchschnitt) - insgesamt (GJ)

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B_kraftw_EF401U4	Brennstoffeinsatz (Jahressumme) - darunter für ungekoppelte Stromerzeugung
B_kraftw_EF401U4_mean	Brennstoffeinsatz (Jahresdurchschnitt) - darunter für ungekoppelte Stromerzeugung
B_kraftw_EF401U5	Brennstoffeinsatz (Jahressumme) - darunter für KWK (GJ)
B_kraftw_EF401U5_mean	Brennstoffeinsatz (Jahresdurchschnitt) - darunter für KWK (GJ)
B_kraftw_EF501U3	Brennstoffbezug (Jahressumme) (GJ)
B_kraftw_EF501U3_mean	Brennstoffbezug (Jahresdurchschnitt) (GJ)
B_kraftw_EF501U4	Brennstoffbestand (Jahressumme) (GJ)
B_kraftw_EF501U4_mean	Brennstoffbestand (Jahresdurchschnitt) (GJ)
B_kraftw_EF601U1_mean	Eigenverbrauch der Anlage – Strom (MWh) - Jahresdurchschnitt
B_kraftw_EF601U1_sum	Eigenverbrauch der Anlage – Strom (MWh) - Jahressumme
B_kraftw_EF601U2_mean	Eigenverbrauch der Anlage – Wärme (MWh) - Jahresdurchschnitt
B_kraftw_EF601U2_sum	Eigenverbrauch der Anlage – Wärme (MWh) - Jahressumme
B_kraftw_EF602U1_mean	Pumparbeit (nur Pumpspeicher-Anlagen) – Strom(MWh) - Jahresdurchschnitt
B_kraftw_EF602U1_sum	Pumparbeit (nur Pumpspeicher-Anlagen) – Strom(MWh) - Jahressumme
B_kraftw_EF701_mean	Wärmeabgabe aus KWK-Prozessen insgesamt (ohne Wärmebetriebsverbrauch)
B_kraftw_EF701_sum	Wärmeabgabe aus KWK-Prozessen insgesamt (ohne Wärmebetriebsverbrauch)
B_kraftw_EF702_mean	Wärmeabgabe aus KWK-Prozessen – darunter Ausfuhr (MWh)
B_kraftw_EF702_sum	Wärmeabgabe aus KWK-Prozessen – darunter Ausfuhr (MWh) - Jahressumme
B_kraftw_EF1101U1	Anzahl der Anlagen - Jahresdurchschnitt
B_kraftw_EF1101U1a	Anzahl der Anlagen - Typ A "konventionelle Anlagen"
B_kraftw_EF1101U1b	Anzahl der Anlagen - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF1101U2	Engpassleistung der Anlagen (MW) - elektrisch brutto - Jahressumme
B_kraftw_EF1101U2_mean	Engpassleistung der Anlagen (MW) - elektrisch brutto - Jahresdurchschnitt
B_kraftw_EF1101U2a	elektrische Engpassleistung (MW) brutto - Typ A "konventionelle Anlagen"
B_kraftw_EF1101U2a_mean	elektrische Engpassleistung (MW) brutto (Jahresdurchschnitt) - Typ "konventionelle Anlagen"
B_kraftw_EF1101U2b	elektrische Engpassleistung (MW) brutto - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF1101U2b_mean	elektrische Engpassleistung (MW) brutto (Jahresdurchschnitt) - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF1101U3	Engpassleistung der Anlagen (MW) - elektrisch netto - Jahressumme
B_kraftw_EF1101U3_mean	Engpassleistung der Anlagen (MW) - elektrisch netto - Jahresdurchschnitt
B_kraftw_EF1101U3a	elektrische Engpassleistung (MW) netto - Typ A "konventionelle Anlagen"
B_kraftw_EF1101U3a_mean	elektrische Engpassleistung (MW) netto (Jahresdurchschnitt) - Typ A "konventionelle Anlagen"
B_kraftw_EF1101U3b	elektrische Engpassleistung (MW) netto - Typ B "kohlenstoffarme Anlagen"

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B_kraftw_EF1101U3b_mean	elektrische Engpassleistung (MW) netto (Jahresdurchschnitt) - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF1101U4	Engpassleistung der Anlagen (MW) - thermisch netto - Jahressumme
B_kraftw_EF1101U4_mean	Engpassleistung der Anlagen (MW) - thermisch netto - Jahresdurchschnitt
B_kraftw_EF1101U4a	thermische Engpassleistung (MW) netto - Typ A "konventionelle Anlagen"
B_kraftw_EF1101U4a_mean	thermische Engpassleistung (MW) netto (Jahresdurchschnitt) - Typ A "konventionelle Anlagen"
B_kraftw_EF1101U4b	thermische Engpassleistung (MW) netto - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF1101U4b_mean	thermische Engpassleistung (MW) netto (Jahresdurchschnitt) - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF1201U1_mean	Verfügbare Leistung Anlage (inkl. KWK-Anlagen) insgesamt – Brutto elektrisch Jahresdurchschnitt
B_kraftw_EF1201U1_sum	Verfügbare Leistung Anlage (inkl. KWK-Anlagen) insgesamt – Brutto elektrisch Jahressumme
B_kraftw_EF1201U2_mean	Verfügbare Leistung Anlage (inkl. KWK-Anlagen) insgesamt – Netto elektrisch Jahresdurchschnitt
B_kraftw_EF1201U2_sum	Verfügbare Leistung Anlage (inkl. KWK-Anlagen) insgesamt – Netto elektrisch Jahressumme
B_kraftw_EF1202U1_mean	Höchstleistung Anlage (inkl. KWK-Anlagen) – Brutto elektrisch (MW) - Jahresdurchschnitt
B_kraftw_EF1202U1_sum	Höchstleistung Anlage (inkl. KWK-Anlagen) – Brutto elektrisch (MW) - Jahressumme
B_kraftw_EF1202U2_mean	Höchstleistung Anlage (inkl. KWK-Anlagen) – Netto elektrisch (MW) - Jahresdurchschnitt
B_kraftw_EF1202U2_sum	Höchstleistung Anlage (inkl. KWK-Anlagen) insgesamt – Netto elektrisch Jahressumme
B_kraftw_EF2101U1	Nettostromerzeugung Anlagen - insgesamt (MWh) - Jahressumme
B_kraftw_EF2101U1_mean	Nettostromerzeugung Anlagen - insgesamt (MWh) - Jahresdurchschnitt
B_kraftw_EF2101U1a	Nettostromerzeugung (MWh) - insgesamt - Typ A "konventionelle Anlagen"
B_kraftw_EF2101U1a_mean	Nettostromerzeugung (MWh) (Jahresdurchschnitt) - insgesamt - Typ A "konventionelle Anlagen"
B_kraftw_EF2101U1b	Nettostromerzeugung (MWh) - insgesamt - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF2101U1b_mean	Nettostromerzeugung (MWh) (Jahresdurchschnitt) - insgesamt - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF2101U2	Nettostromerzeugung Anlagen - darunter Kraftwärmekopplung (KWK) (MWh) - Jahressumme
B_kraftw_EF2101U2_mean	Nettostromerzeugung Anlagen - darunter Kraftwärmekopplung (KWK) (MWh) - Jahresdurchschnitt
B_kraftw_EF2101U2a	Nettostromerzeugung (MWh) - darunter KWK - Typ A "konventionelle Anlagen"
B_kraftw_EF2101U2a_mean	Nettostromerzeugung (MWh) (Jahresdurchschnitt) - darunter KWK - Typ A "konventionelle Anlagen"
B_kraftw_EF2101U2b	Nettostromerzeugung (MWh) - darunter KWK - Typ B "kohlenstoffarme Anlagen"

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B_kraftw_EF2101U2b_mean	Nettostromerzeugung (MWh) (Jahresdurchschnitt) - darunter KWK - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF2101U3	Nettowärmeerzeugung Anlagen - insgesamt (MWh) - Jahressumme
B_kraftw_EF2101U3_mean	Nettowärmeerzeugung Anlagen - insgesamt (MWh) - Jahresdurchschnitt
B_kraftw_EF2101U3a	Nettowärmeerzeugung (MWh) - insgesamt - Typ A "konventionelle Anlagen" - Jahressumme
B_kraftw_EF2101U3a_mean	Nettowärmeerzeugung (MWh) (Jahresdurchschnitt) - insgesamt - Typ A "konventionelle Anlagen"
B_kraftw_EF2101U3b	Nettowärmeerzeugung (MWh) - insgesamt - Typ B "kohlenstoffarme Anlagen" - Jahressumme
B_kraftw_EF2101U3b_mean	Nettowärmeerzeugung (MWh) (Jahresdurchschnitt) - insgesamt - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF2101U4	Nettowärmeerzeugung Anlagen - darunter Kraftwärmekopplung (KWK) (MWh) - Jahressumme
B_kraftw_EF2101U4_mean	Nettowärmeerzeugung Anlagen - darunter Kraftwärmekopplung (KWK) (MWh) - Jahresdurchschnitt
B_kraftw_EF2101U4a	Nettowärmeerzeugung (MWh) - darunter KWK - Typ A "konventionelle Anlagen" - Jahressumme
B_kraftw_EF2101U4a_mean	Nettowärmeerzeugung (MWh) (Jahresdurchschnitt) - darunter KWK - Typ A "konventionelle Anlagen"
B_kraftw_EF2101U4b	Nettowärmeerzeugung (MWh) - darunter KWK - Typ B "kohlenstoffarme Anlagen" - Jahressumme
B_kraftw_EF2101U4b_mean	Nettowärmeerzeugung (MWh) (Jahresdurchschnitt) - darunter KWK - Typ B "kohlenstoffarme Anlagen"
B_kraftw_EF2201U2	Stromerzeugung (Jahressumme) - Brutto insgesamt (MWh)
B_kraftw_EF2201U2_mean	Stromerzeugung (Jahresdurchschnitt) - Brutto insgesamt (MWh)
B_kraftw_EF2201U3	Stromerzeugung (Jahressumme) - Netto insgesamt (MWh)
B_kraftw_EF2201U3_mean	Stromerzeugung (Jahresdurchschnitt) - Netto insgesamt (MWh)
B_kraftw_EF2201U4	Stromerzeugung (Jahressumme) - Netto darunter KWK (MWh)
B_kraftw_EF2201U4_mean	Stromerzeugung (Jahresdurchschnitt) - Netto darunter KWK (MWh)
B_kraftw_EF2201U5	Nettowärmeerzeugung (Jahressumme) - insgesamt (MWh)
B_kraftw_EF2201U5_mean	Nettowärmeerzeugung (Jahresdurchschnitt) - insgesamt (MWh)
B_kraftw_EF2201U6	Nettowärmeerzeugung (Jahressumme) - darunter KWK (MWh)
B_kraftw_EF2201U6_mean	Nettowärmeerzeugung (Jahresdurchschnitt) - darunter KWK (MWh)
Erhebung über Erzeugung, Bezug, Verwendung und Abgabe von Wärme EVAS No. 43411-064	
TM064_b	Teilnahme Wärmeerhebung
B_waerme_EF21	Heizwerke - Netto-Wärme-Engpassleistung (MW) des Berichtsjahres im Dezember
B_waerme_EF22	Heizwerke - Eigenverbrauch der Wärmeerzeugung (MWh) im Berichtsjahr
B_waerme_EF1001	Nettowärmeerzeugung (einschl. Wärmebetriebsverbrauch) (MWh)
B_waerme_EF1002	Bezug Inland zusammen (Zeilen 03 bis 05) (MWh)
B_waerme_EF1003	von Energieversorgungsunternehmen (MWh)
B_waerme_EF1004	von VG sowie Bergbau und Gewinnung von Steinen und Erden (MWh)
B_waerme_EF1005	von sonst. Lieferanten (MWh)
B_waerme_EF1006	Bezug Ausland (MWh)
B_waerme_EF1007	Wärmebetriebsverbrauch (MWh)
B_waerme_EF1008	Zur Abgabe verfügbar = (Zeilen 01 + 02 + 06 minus 07) (MWh)

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B_waerme_EF1009	Abgabe Inland = (Z. 10+11) (MWh)
B_waerme_EF1010	Abgabe an EVU (MWh)
B_waerme_EF1011	Abgabe an Letztverbraucher = (Z. 12 bis 15) (MWh)
B_waerme_EF1011a	a) an VG sowie Bergbau und Gewinnung von Steinen und Erden (MWh)
B_waerme_EF1011b	b) an private Haushalte (MWh)
B_waerme_EF1011c	c) an sonst. Letztverbraucher (MWh)
B_waerme_EF1011d	d) an Verkehr (MWh)
B_waerme_EF1015	Abgabe Ausland (MWh)
B_waerme_EF1016	Abgabe insgesamt (ohne Netzverluste) = (09 + 16) (MWh)
B_waerme_EF1017	Netzverluste = (08 minus 17) (MWh)
B_waerme_EF2301U3	Brennstoffeinsatz für Wärmeerzeugung (GJ) insgesamt
B_waerme_EF2301U4	Nettowärmeerzeugung (MWh) insgesamt
B_waerme_EF2401U3	Brennstoffbezug im Berichtsjahr (GJ) insgesamt
B_waerme_EF2401U4	Bestand am Jahresende des Berichtsjahres (GJ) insgesamt

KOMIED dataset based on Energiestatistiken der amtlichen Statistik 2003-2012.

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