




Electricity demand (TWh/year): Flexible demand0,00 Fixed demand 7,95 Fixed imp/exp. 0,00 Electric heating + HP 2,93 Transportation 0,06 Electric cooling 0,22 Total 11,16						Capacities Efficiencies MW-e MJ/s elec. Ther COP						Regulation StrategyTechnical regulation no. 1 CEEP regulation 000000000 Minimum Stabilisation share 0,98 Stabilisation share of CHP 0,00 Minimum CHP gr 3 load 0 MW Minimum PP 0 MW Heat Pump maximum share 1,00 Maximum import/export 2100 MW						Fuel Price level: Basic Capacities Storage Efficiencies Elec. Storage MW-e GWh Elec. Ther.					
District heating (TWh/year) Gr.1 Gr.2 Gr.3 Sum District heating demand 1,13 0,00 0,50 1,63 Solar Thermal 0,00 0,00 0,00 0,00 Industrial CHP (CSHP) 0,00 0,00 0,00 0,00 Demand after solar and CSHP 1,13 0,00 0,50 1,63						Group 2: CHP 0 1500 0,40 0,50 Heat Pump 0 0 3,00 Boiler 0 0,90 Group 3: CHP 443 82 0,21 0,47 Heat Pump 0 0 3,00 Boiler 0 0,90 Condensing 1058 0,29						Distr. lavex_market_price_2020.txt Addition factor 0,00 EUR/MWh Multiplication factor 1,00 Dependency factor 0,00 EUR/MWh pr. MW Average Market Price 39 EUR/MWh Gas Storage 0 GWh Syngas capacity 0 MW Biogas max to grid 0 MW						Charge 1: 0 0 0,80 Discharge 1: 0 0,90 Charge 2: 420 3 0,80 Discharge 2: 420 0,90 Electrolysers: 0 0 0,80 0,00 Rockbed Storage: 0 0 1,00 CAES fuel ratio: 0,000					
Wind 87 MW 0,16 TWh/year 0,00 Grid Photo Voltaic 35 MW 0,08 TWh/year 0,00 stabili- River Hydro 172 MW 0,44 TWh/year 0,00 sation River Hydro 0 MW 0 TWh/year 0,00 share Hydro Power 1685 MW 4,28 TWh/year Geothermal/Nuclear 0 MW 0 TWh/year						Heatstorage: gr.2: 0 GWh gr.30 GWh Fixed Boiler: gr.2:0,0 Per cent gr.0,0 Per cent Electricity prod. from CSHP Waste (TWh/year) Gr.1: 0,00 0,00 Gr.2: 0,00 0,00 Gr.3: 0,00 0,00						(TWh/year) Coal Oil Ngas Biomass Transport 0,00 13,43 0,01 0,00 Household 1,15 0,41 0,71 13,47 Industry 2,47 1,32 0,89 0,20 Various 5,83 1,87 1,07 0,39											

Output

District Heating											Electricity																Exchange			
Demand		Production								Ba- lance MW	Consumption						Production						Balance					Payment Imp Exp Million EUR		
Distr. heating MW	Solar MW	CSHP MW	DHP MW	CHP MW	HP MW	ELT MW	Boiler MW	EH MW	Elec. demand MW		Flex.& Transp MW	Elec- trolyser MW	EH MW	Hydro Pump MW	Tur- bine MW	RES MW	Hy- dro MW	Geo- thermal MW	CSHP MW	CHP MW	PP MW	Stab- Load %	Imp MW	Exp MW	CEEP MW	EEP MW				
January	391	0	0	271	81	0	0	0	0		39	795	7	4	0	701	0	0	100	488	0	0	435	484	140	0	0	0	0	0
February	307	0	0	213	75	0	0	0	0	18	822	7	3	0	550	0	0	84	487	0	0	407	404	144	0	0	0	0	0	0
March	283	0	0	197	72	0	0	0	0	14	761	7	3	0	508	0	0	108	482	0	0	389	297	146	2	0	0	0	0	0
April	190	0	0	132	53	0	0	0	0	5	806	7	2	0	341	0	0	61	486	0	0	288	321	155	0	0	0	0	0	0
May	114	0	0	79	35	0	0	0	0	0	874	7	1	0	204	0	0	50	487	0	0	187	360	159	1	0	0	0	0	0
June	70	0	0	49	21	0	0	0	0	0	1010	7	1	0	126	0	0	59	488	0	0	116	481	156	0	0	0	0	0	0
July	48	0	0	33	15	0	0	0	0	0	1121	7	1	0	86	0	0	62	488	0	0	79	585	152	1	0	0	0	0	0
August	41	0	0	28	12	0	0	0	0	0	1079	7	0	0	73	0	0	58	488	0	0	67	547	155	0	0	0	0	0	0
September	62	0	0	43	19	0	0	0	0	0	1058	7	1	0	111	0	0	67	488	0	0	102	520	153	0	0	0	0	0	0
October	147	0	0	102	45	0	0	0	0	0	984	7	2	0	263	0	0	81	488	0	0	241	447	149	0	0	0	0	0	0
November	256	0	0	178	67	0	0	0	0	11	917	7	3	0	459	0	0	85	487	0	0	361	452	145	0	0	0	0	0	0
December	315	0	0	219	76	0	0	0	0	20	924	7	4	0	565	0	0	109	487	0	0	412	491	140	0	0	0	0	0	0
Average	185	0	0	129	48	0	0	0	0	9	930	7	2	0	332	0	0	77	487	0	0	257	449	150	0	0	0	0	0	Average price
Maximum	610	0	0	424	82	0	0	0	0	104	1577	13	7	0	1094	0	0	233	488	0	0	443	982	210	345	0	0	0	0	(EUR/MWh)
Minimum	9	0	0	6	3	0	0	0	0	0	65	0	0	0	17	0	0	0	307	0	0	15	0	124	0	0	0	0	0	43
TWh/year	1,63	0,00	0,00	1,13	0,42	0,00	0,00	0,00	0,00	0,08	8,17	0,06	0,02	0,00	2,91	0,00	0,00	0,68	4,28	0,00	0,00	2,25	3,95		0,00	0,00	0,00	0,00	0	0

FUEL BALANCE (TWh/year):										Waste/ CAES BioCon-Electro- PV and Wind off										Industry			Imp/Exp Corrected		CO2 emission (Mt):	
DHP	CHP2	CHP3	Boiler2	Boiler3	PP	Geo/Nu.Hydro	HTL	Elc.ly.	version	Fuel	Wind	CSP	Wave	Hydro	Solar.Tt	Transp.househ.	Various	Total	Imp/Exp	Net	Total	Net				
Coal	0,54	-	0,84	-	-	13,55	-	-	-	-	-	-	-	-	-	-	1,15	8,29	24,37	0,01	24,38	10,09	10,09			
Oil	0,01	-	-	-	-	0,00	-	-	-	-	-	-	-	-	-	13,43	0,41	3,18	17,04	0,00	17,04	4,45	4,45			
N.Gas	0,40	-	-	-	-	0,00	-	-	-	-	-	-	-	-	-	0,82	0,71	1,99	3,92	0,00	3,92	0,91	1,10			
Biomass	0,31	-	0,04	-	-	0,00	-	-	-	-	-	-	-	-	-	-	13,47	0,59	14,41	0,00	14,41	0,00	0,00			
Renewable	-	-	-	-	-	-	-	4,28	-	-	-	0,16	0,08	-	4,71	-	-	-	4,95	0,00	4,95	0,00	0,00			
H2 etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,00	0,00	0,00	0,00				
Biofuel	-	-	0,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,00	0,00	0,00	0,00				
Nuclear/CCS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,00	0,00	0,00	0,00				
Total	1,25	-	0,88	-	-	13,55	-	4,28	-	-	-	0,16	0,08	-	4,71	-	14,25	15,74	14,06	64,69	0,01	64,70	15,46	15,64		



	District Heating Production																														
	Gr.1				Gr.2										Gr.3																
	District heating	Solar	CSHP	DHP	District heating	Solar	CSHP	CHP	HP	ELT	Boiler	EH	Storage	Balance	District heating	Solar	CSHP	CHP	HP	ELT	Boiler	EH	Storage	Balance	RES1 Wind	RES2 Photo	RES3 River	RES4-7	Total		
	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW		
January	271	0	0	271	0	0	0	0	0	0	0	0	0	0	119	0	0	81	0	0	0	0	0	39	18	7	75	0	100		
February	213	0	0	213	0	0	0	0	0	0	0	0	0	0	94	0	0	75	0	0	0	0	0	18	23	8	54	0	84		
March	197	0	0	197	0	0	0	0	0	0	0	0	0	0	86	0	0	72	0	0	0	0	0	14	29	8	71	0	108		
April	132	0	0	132	0	0	0	0	0	0	0	0	0	0	58	0	0	53	0	0	0	0	0	5	19	11	31	0	61		
May	79	0	0	79	0	0	0	0	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	21	10	20	0	50		
June	49	0	0	49	0	0	0	0	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	12	12	35	0	59		
July	33	0	0	33	0	0	0	0	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	10	13	38	0	62		
August	28	0	0	28	0	0	0	0	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	12	12	34	0	58		
September	43	0	0	43	0	0	0	0	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	0	15	10	42	0	67		
October	102	0	0	102	0	0	0	0	0	0	0	0	0	0	45	0	0	45	0	0	0	0	0	0	16	8	57	0	81		
November	178	0	0	178	0	0	0	0	0	0	0	0	0	0	78	0	0	67	0	0	0	0	0	11	17	7	61	0	85		
December	219	0	0	219	0	0	0	0	0	0	0	0	0	0	96	0	0	76	0	0	0	0	0	20	27	3	79	0	109		
Average	129	0	0	129	0	0	0	0	0	0	0	0	0	0	56	0	0	48	0	0	0	0	0	9	18	9	50	0	77		
Maximum	424	0	0	424	0	0	0	0	0	0	0	0	0	0	186	0	0	82	0	0	0	0	0	104	87	35	172	0	233		
Minimum	6	0	0	6	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0		
Total for the whole year																															
TWh/year	1,13	0,00	0,00	1,13	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,50	0,00	0,00	0,42	0,00	0,00	0,00	0,00		0,08	0,16	0,08	0,44	0,00	0,68		

Own use of heat from industrial CH0,00 TWh/year

ANNUAL COSTS (Million EUR)			NATURAL GAS EXCHANGE															
			DHP & Boilers	CHP2 CHP3	PP CAES	Indi- vidual	Trans port	Indu. Var.	Demand Sum	Bio- gas	Syn- gas	CO2Hy gas	SynHy gas	SynHy gas	Stor- age	Sum MW	Im- port MW	Ex- port MW
Total Fuel ex Ngas exchange = 1939			MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW
Uranium =	0																	
Coal =	247																	
FuelOil =	121	January	95	0	0	171	1	239	507	0	0	0	0	0	0	507	507	0
Gasoil/Diesel=	891	February	75	0	0	134	1	259	470	0	0	0	0	0	0	470	470	0
Petrol/JP =	157	March	69	0	0	124	1	242	437	0	0	0	0	0	0	437	437	0
Gas handling =	29	April	46	0	0	83	1	193	324	0	0	0	0	0	0	324	324	0
Biomass =	494	May	28	0	0	50	1	172	251	0	0	0	0	0	0	251	251	0
Food income =	0	June	17	0	0	31	1	139	189	0	0	0	0	0	0	189	189	0
Waste =	0	July	12	0	0	21	1	159	193	0	0	0	0	0	0	193	193	0
		August	10	0	0	18	1	112	141	0	0	0	0	0	0	141	141	0
Total Ngas Exchange costs =	63	September	15	0	0	27	1	156	200	0	0	0	0	0	0	200	200	0
		October	36	0	0	64	1	383	485	0	0	0	0	0	0	485	485	0
Marginal operation costs =	349	November	62	0	0	112	1	267	443	0	0	0	0	0	0	443	443	0
Total Electricity exchange =	0	December	77	0	0	138	1	391	608	0	0	0	0	0	0	608	608	0
Import =	0	Average	45	0	0	81	1	226	354	0	0	0	0	0	0	354	354	0
Export =	0	Maximum	149	0	3	268	1	739	872	0	0	0	0	0	0	872	872	0
Bottleneck =	0	Minimum	2	0	0	4	1	0	9	0	0	0	0	0	0	9	9	0
Fixed imp/ex=	0																	
Total CO2 emission costs =	0	Total for the whole year																
		TWh/year	0,40	0,00	0,00	0,71	0,01	1,99	3,11	0,00	0,00	0,00	0,00	0,00	0,00	3,11	3,11	0,00
Total variable costs =	2351																	
Fixed operation costs =	33910																	
Annual Investment costs =	57902																	
TOTAL ANNUAL COSTS =	94163																	