Input VdN.txt

The EnergyPLAN model 12.0

Electricity demand (GWh/year):		Flexible demand	0.00
Fixed demand	163.43	Fixed imp/exp.	0.00
Electric heating + HP	0.00	Transportation	0.00
Electric cooling	0.00	Total	163.43

District heating (GWh/year)	Gr.1	Gr.2	Gr.3	Sum
District heating demand	0.00	0.00	0.00	0.00
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	0.00	0.00	0.00	0.00

Photo Voltaic	936	kW	1.22	GWh/year	0.00	Grid
Photo Voltaic	0	kW	0	GWh/year	0.00	stabili-
Offshore Wind	0	kW	0	GWh/year	0.00	sation
River Hydro	0	kW	0	GWh/year	0.00	share
Hydro Power	105000	kW	311	GWh/year		
Geothermal/Nuclear	0	kW	0	GWh/year		

	Capacities kW-e	kJ/s	Efficiencies elec.	Ther	COP
Group 2:					
CHP	0	0	0.40	0.50	
Heat Pump	0	0			3.00
Boiler		0		0.90	
Group 3:					
CHP	0	0	0.40	0.50	
Heat Pump	100	300			3.00
Boiler		0		0.90	
Condensing	0		0.45		

Heatstorage:	gr.2: 0	MWh	gr.30	MWh
Fixed Boiler:	gr.2:0.0	Per cent	gr.0.0	Per cent

Electricity prod. from	CSHP	Waste	(GWh/year)
Gr.1:	0.00	0.00	
Gr.2:	0.00	0.00	
Gr.3:	0.00	0.00	

Regulation Strate	Technical regulation no. 1	
KEOL regulation	00000000	
Minimum Stabilisation share	0.00	
Stabilisation share of CHP	0.00	
Minimum CHP gr 3 load	300	kW
Minimum PP	0	kW
Heat Pump maximum share	0.50	
Maximum import/export	65000	kW

Distr. Name :	const.txt		
Addition factor	0.00	EUR/MWh	
Multiplication facto	203.00		
Dependency factor	0.00	EUR/MWh	pr. MW
Average Market Price	203	EUR/MWh	
Gas Storage	0	MWh	
Syngas capacity	0	kW	
Biogas max to grid	0	kW	

Fuel Price level: Basic

	Capacities kW-e	Storage MWh	Efficiencies elec.	Ther.
Hydro Pump:	0	0	0.80	
Hydro Turbine:	0		0.90	
Electrol. Gr.2:	0	0	0.80	0.10
Electrol. Gr.3:	0	0	0.80	0.10
Electrol. trans.:	0	0	0.80	
Ely. MicroCHP:	0	0	0.80	
CAES fuel ratio:		0.000		

(GWh/year)	Coal	Oil	Ngas	Biomass
Transport	0.00	194.69	2.50	0.00
Household	0.00	135.53	95.88	72.02
Industry	0.00	0.00	0.00	0.00
Various	0.00	0.00	0.00	0.00

Output

	District Heating											Electricity																	Exchange	
	Demand	Production										Consumption						Production							Balance					Payment	
	Distr. heating kW	Solar kW	Waste-CSHP kW	DHP kW	CHP kW	HP kW	ELT kW	Boiler kW	EH kW	Balance kW	Elec. demand kW	Flex.& Transp kW	HP kW	Elec-trolyser kW	EH kW	Hydro Pump kW	Tur-bine kW	RES kW	Hy-dro kW	Geo-thermal kW	Waste-CSHP kW	CHP kW	PP kW	Stab-Load %	Imp kW	Exp kW	CEEP kW	EEP kW	Imp 1000 EUR	Exp EUR
January	0	0	0	0	0	0	0	0	0	0	23713	0	0	0	0	0	0	89	19077	0	0	0	0	100	5518	971	0	971	833	147
February	0	0	0	0	0	0	0	0	0	0	22571	0	0	0	0	0	0	131	12628	0	0	0	0	100	9843	31	0	31	1391	4
March	0	0	0	0	0	0	0	0	0	0	20978	0	0	0	0	0	0	163	15864	0	0	0	0	100	5507	556	0	556	832	84
April	0	0	0	0	0	0	0	0	0	0	18197	0	0	0	0	0	0	163	31975	0	0	0	0	100	745	14687	0	14687	109	2147
May	0	0	0	0	0	0	0	0	0	0	15402	0	0	0	0	0	0	173	54802	0	0	0	0	100	0	39574	0	39574	0	5977
June	0	0	0	0	0	0	0	0	0	0	13132	0	0	0	0	0	0	173	53533	0	0	0	0	100	0	40574	0	40574	0	5930
July	0	0	0	0	0	0	0	0	0	0	13870	0	0	0	0	0	0	180	49095	0	0	0	0	100	0	35406	0	35406	0	5347
August	0	0	0	0	0	0	0	0	0	0	12022	0	0	0	0	0	0	167	33670	0	0	0	0	100	0	21814	0	21814	0	3295
September	0	0	0	0	0	0	0	0	0	0	16692	0	0	0	0	0	0	155	34017	0	0	0	0	100	21	17501	0	17501	3	2558
October	0	0	0	0	0	0	0	0	0	0	27107	0	0	0	0	0	0	118	41475	0	0	0	0	100	121	14607	0	14607	18	2206
November	0	0	0	0	0	0	0	0	0	0	20025	0	0	0	0	0	0	84	46694	0	0	0	0	100	1	26754	0	26754	0	3910
December	0	0	0	0	0	0	0	0	0	0	19606	0	0	0	0	0	0	73	31357	0	0	0	0	100	33	11856	0	11856	5	1791
Average	0	0	0	0	0	0	0	0	0	0	18605	0	0	0	0	0	0	139	35405	0	0	0	0	100	1790	18729	0	18729	Average price	
Maximum	0	0	0	0	0	0	0	0	0	0	40057	0	0	0	0	0	0	523	61744	0	0	0	0	100	25531	55447	0	55447	(EUR/MWh)	
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3929	0	0	0	0	100	0	0	0	0	203	203
GWh/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	163.43	0.00	0.00	0.00	0.00	0.00	0.00	1.22	311.00	0.00	0.00	0.00	0.00		15.72	164.51	0.00	164.51	319100	33396

FUEL BALANCE (GWh/year):	DHP	CHP2	CHP3	Boiler2	Boiler3	PP	Geo/Nu.	Hydro	Waste	CAES Elc.ly.	BioCon-version	Synthetic Fuel	PV	PV	Offsh.	Hydro	Solar.Th	Transp.	household	Industry Various	Total	Imp/Exp Corrected Imp/Exp	Netto	CO2 emission (kt): Total	Netto
Coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-51.58	-51.58	0.00	-17.64
Oil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194.69	123.76	-	318.45	-20.50	297.95	84.84	79.37
N.Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.47	95.88	-	101.35	-165.66	-64.30	20.72	-12.49
Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72.02	-	72.02	-92.91	-20.89	0.00	0.00
Renewable	-	-	-	-	-	-	-	311.00	-	-	-	-	1.22	-	-	-	9.42	-	-	-	321.64	0.00	321.64	0.00	0.00
H2 etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	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	0.00
Total	-	-	-	-	-	-	-	311.00	-	-	-	-	1.22	-	-	-	9.42	200.16	291.66	-	813.46	-330.65	482.81	105.56	49.25

District Heating Production

	Gr.1				Gr.2										Gr.3										RES specification				
	District heating kW	Solar kW	CSHP kW	DHP kW	District heating kW	Solar kW	CSHP kW	CHP kW	HP kW	ELT kW	Boiler kW	EH kW	Stor-age kW	Ba-lance kW	District heating kW	Solar kW	CSHP kW	CHP kW	HP kW	ELT kW	Boiler kW	EH kW	Stor-age kW	Ba-lance kW	RES1 Photo kW	RES2 Photo kW	RES3 Offshc kW	RES 4-7 /in kW	Total kW
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	0	0	0	89
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131	0	0	0	131
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163	0	0	0	163
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163	0	0	0	163
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173	0	0	0	173
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173	0	0	0	173
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180	0	0	0	180
August	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167	0	0	0	167
September	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155	0	0	0	155
October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	0	0	0	118
November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	0	0	0	84
December	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	0	0	0	73
Average	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139	0	0	0	139
Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	523	0	0	0	523
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total for the whole year GWh/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	1.22	0.00	0.00	0.00	1.22

Own use of heat from industrial CH0.00 GWh/year

ANNUAL COSTS (1000 EUR)

Total Fuel ex Ngas exchange =	46412
Uranium =	0
Coal =	0
FuelOil =	0
Gasoil/Diesel=	33488
Petrol/JP =	10404
Gas handling =	0
Biomass =	2520
Food income =	0
Waste =	0
Total Ngas Exchange costs =	6198
Marginal operation costs =	370
Total Electricity exchange =	-30205
Import =	3191
Export =	-33396
Bottleneck =	0
Fixed imp/ex=	0
Total CO2 emission costs =	0
Total variable costs =	22775
Fixed operation costs =	63660
Annual Investment costs =	66116
TOTAL ANNUAL COSTS =	152551

NATURAL GAS EXCHANGE

	DHP & Boilers kW	CHP2 CHP3 kW	PP CAES kW	Indi-vidual kW	Trans port kW	Indu. Var. kW	Demand Sum kW	Bio-gas kW	Syn-gas kW	CO2Hy gas kW	SynHy gas kW	SynHy gas kW	Stor-age kW	Sum kW	Im-port kW	Ex-port kW
January	0	0	0	16453	284	0	16738	0	0	0	0	0	0	16738	16738	0
February	0	0	0	15767	284	0	16052	0	0	0	0	0	0	16052	16052	0
March	0	0	0	13234	284	0	13518	0	0	0	0	0	0	13518	13518	0
April	0	0	0	10805	284	0	11090	0	0	0	0	0	0	11090	11090	0
May	0	0	0	8667	284	0	8951	0	0	0	0	0	0	8951	8951	0
June	0	0	0	6476	284	0	6760	0	0	0	0	0	0	6760	6760	0
July	0	0	0	5864	284	0	6149	0	0	0	0	0	0	6149	6149	0
August	0	0	0	6098	284	0	6383	0	0	0	0	0	0	6383	6383	0
September	0	0	0	7886	284	0	8171	0	0	0	0	0	0	8171	8171	0
October	0	0	0	10303	284	0	10587	0	0	0	0	0	0	10587	10587	0
November	0	0	0	13313	284	0	13598	0	0	0	0	0	0	13598	13598	0
December	0	0	0	16264	284	0	16549	0	0	0	0	0	0	16549	16549	0
Average	0	0	0	10915	284	0	11200	0	0	0	0	0	0	11200	11200	0
Maximum	0	0	0	19611	284	0	19896	0	0	0	0	0	0	19896	19896	0
Minimum	0	0	0	4275	284	0	4560	0	0	0	0	0	0	4560	4560	0
Total for the whole year GWh/year	0.00	0.00	0.00	95.88	2.50	0.00	98.38	0.00	0.00	0.00	0.00	0.00	0.00	98.38	98.38	0.00

RES Share: 48.4 Percent of Primary Energ191.0 Percent of Electricity 312.2 GWh electricity from RES