Input NovaScotia2030_trial001d_2024_11_17_WIP.txt — The EnergyPLAN model 11.4

Electricity demand (TWh/year):		Flexible demand	0.00
Fixed demand	12.17	Fixed imp/exp.	0.00
Electric heating + HP	2.33	Transportation	1.84
Electric cooling	0.00	Total	16.34

District heating (TWh/year)	Gr.1	Gr.2	Gr.3	Sum
District heating demand	0.00	0.00	14.00	14.00
Solar Thermal	0.00	0.00	0.00	0.00
Industrial CHP (CSHP)	0.00	5.00	0.00	5.00
Demand after solar and CSHP	0.00	-5.00	14.00	9.00

Wind	950	MW	2.83	TWh/year	0.00	Grid
Offshore Wind	6000	MW	20.29	TWh/year	0.00	stabili-
Photo Voltaic	300	MW	0.5	TWh/year	0.00	sation
River Hydro	168	MW	0.88	TWh/year	0.00	share
Hydro Power	730	MW	3.4	TWh/year		
Geothermal/Nuclear	0	MW	0	TWh/year		

	Capacities MW-e	MJ/s	Efficiencies elec.	Ther	COP
Group 2:					
CHP	700	2100	0.20	0.60	
Heat Pump	0	0			3.00
Boiler		0		0.90	
Group 3:					
CHP	0	0	0.85	0.00	
Heat Pump	0	0			3.00
Boiler		0		0.90	
Condensing	0		0.80		

Heatstorage:	gr.2:50	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:	0.83	0.00	
Gr.3:	0.00	0.00	

Regulation Strate	Technical regulation no. 3	
KEOL regulation	7.000000	
Minimum Stabilisation share	0.00	
Stabilisation share of CHP	0.00	
Minimum CHP gr 3 load	730	MW
Minimum PP	0	MW
Heat Pump maximum share	0.50	
Maximum import/export	20000	MW

Distr. Name :	Hour_nordpool.txt	
Addition factor	0.00	CAN/MWh
Multiplication factor	2.30	
Dependency factor	0.00	CAN/MWh pr. MW
Average Market Price	261	CAN/MWh
Gas Storage	0	GWh
Syngas capacity	0	MW
Biogas max to grid	0	MW

Fuel Price level: Basic

	Capacities MW-e	Storage GWh	Efficiencies elec.	Ther.
Hydro Pump:	1000	4000	0.80	
Hydro Turbine:	1000		0.90	
Electrol. Gr.2:	700	2000	0.80	0.20
Electrol. Gr.3:	5000	10000	0.85	0.00
Electrol. trans.:	4000	10000	0.85	
Ely. MicroCHP:	0	0	0.80	
CAES fuel ratio:		1.100		

(TWh/year)	Coal	Oil	Ngas	Biomass
Transport	0.00	0.95	0.00	0.00
Household	0.00	0.00	0.00	0.36
Industry	0.00	0.00	0.00	2.78
Various	0.00	0.00	0.00	0.00

Output

	District Heating										Electricity																Exchange	
	Demand	Production									Consumption						Production							Balance					Payment	
	Distr. heating	Solar	Waste CSHP	DHP	CHP	HP	ELT	Boiler	EH	Balance	Elec. demand	Flex.& Transp	HP	Elec-trolyser	EH	Hydro Pump	Tur-bine	RES	Hy-dro	Geo-thermal	Waste CSHP	CHP	PP	Stab-Load	Imp	Exp	CEEP	EEP	Imp	Exp
	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	Million CAN	
January	2699	0	569	0	0	0	0	0	0	2130	1660	209	450	879	0	0	0	3244	428	0	94	0	0	100	910	1479	0	1479	286	280
February	2551	0	569	0	0	0	0	0	0	1982	1649	209	425	879	0	0	0	3494	506	0	94	0	0	100	481	1414	0	1414	82	251
March	2198	0	569	0	0	0	0	0	0	1629	1473	209	366	879	0	0	0	2795	396	0	94	0	0	100	911	1269	0	1269	166	242
April	1642	0	569	0	0	0	0	0	0	1073	1296	209	274	879	0	0	0	2789	397	0	94	0	0	100	655	1278	0	1278	120	256
May	1076	0	569	0	0	0	0	0	0	507	1232	209	179	879	0	0	0	2636	357	0	94	0	0	100	666	1255	0	1255	137	264
June	787	0	569	0	0	0	0	0	0	218	1221	209	131	879	0	0	0	2586	369	0	94	0	0	100	541	1149	0	1149	81	226
July	639	0	569	0	0	0	0	0	0	70	1287	209	106	879	0	0	0	1993	283	0	94	0	0	100	969	858	0	858	121	119
August	662	0	569	0	0	0	0	0	0	93	1299	209	110	879	0	0	0	2251	318	0	94	0	0	100	776	943	0	943	138	185
September	933	0	569	0	0	0	0	0	0	364	1268	209	155	879	0	0	0	2638	370	0	94	0	0	100	666	1258	0	1258	130	255
October	1450	0	569	0	0	0	0	0	0	881	1309	209	242	879	0	0	0	2518	346	0	94	0	0	100	818	1139	0	1139	170	229
November	2046	0	569	0	0	0	0	0	0	1477	1413	209	341	879	0	0	0	3311	456	0	94	0	0	100	626	1646	0	1646	121	303
December	2473	0	569	0	0	0	0	0	0	1904	1531	209	412	879	0	0	0	3267	428	0	94	0	0	100	870	1628	0	1628	179	343
Average	1594	0	569	0	0	0	0	0	0	1025	1386	209	266	879	0	0	0	2789	387	0	94	0	0	100	743	1275	0	1275	Average price	
Maximum	2834	0	569	0	0	0	0	0	0	2265	2120	418	472	879	0	0	0	7231	730	0	94	0	0	100	3525	5751	0	5751	(CAN/MWh)	
Minimum	574	0	569	0	0	0	0	0	0	5	771	0	96	879	0	0	0	0	0	0	94	0	0	100	0	0	0	0	265	264
TWh/year	14.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	9.00	12.17	1.84	2.33	7.72	0.00	0.00	0.00	24.50	3.40	0.00	0.83	0.00	0.00		6.53	11.20	0.00	11.20	1733	2953

FUEL BALANCE (TWh/year):	DHP	CHP2	CHP3	Boiler2	Boiler3	PP	Geo/Nu.	Hydro	Waste	CAES Elc.ly.	BioCon-version	Synthetic Fuel	Wind	Offsh.	PV	Hydro	Solar.Th	Transp.	Industry household	Various	Total	Imp/Exp Corrected Imp/Exp	Netto	CO2 emission (Mt): Total	Netto
Coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00
Oil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.95	-	-	0.95	0.00	0.95	0.25	0.25
N.Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00
Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.36	2.78	3.14	0.00	3.14	0.00	0.00
Renewable	-	-	-	-	-	-	-	3.40	-	-	-	-	2.83	20.29	0.50	0.88	-	-	-	-	27.90	0.00	27.90	0.00	0.00
H2 etc.	-	-	-	-	-	-	-	-	-	-6.56	-	-	-	-	-	-	-	6.56	-	-	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	-	-	-	-	-	-	-	3.40	-	-6.56	-	-	2.83	20.29	0.50	0.88	-	7.51	0.36	2.78	31.99	-5.84	26.15	0.25	0.25

District Heating Production

	Gr.1				Gr.2										Gr.3										RES specification				
	District heating MW	Solar MW	CSHP MW	DHP MW	District heating MW	Solar MW	CSHP MW	CHP MW	HP MW	ELT MW	Boiler MW	EH MW	Stor-age MW	Ba-lance MW	District heating MW	Solar MW	CSHP MW	CHP MW	HP MW	ELT MW	Boiler MW	EH MW	Stor-age MW	Ba-lance MW	RES1 Wind MW	RES2 Offsho MW	RES3 Photo MW	RES4 River I MW	Total ro MW
January	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	2699	0	0	0	0	0	0	0	0	2699	393	2736	8	108	3244
February	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	2551	0	0	0	0	0	0	0	0	2551	410	2933	28	122	3494
March	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	2198	0	0	0	0	0	0	0	0	2198	326	2332	39	99	2795
April	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	1642	0	0	0	0	0	0	0	0	1642	315	2291	80	102	2789
May	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	1076	0	0	0	0	0	0	0	0	1076	298	2150	92	96	2636
June	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	787	0	0	0	0	0	0	0	0	787	283	2094	110	99	2586
July	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	639	0	0	0	0	0	0	0	0	639	216	1601	98	78	1993
August	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	662	0	0	0	0	0	0	0	0	662	246	1824	93	88	2251
September	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	933	0	0	0	0	0	0	0	0	933	299	2171	71	98	2638
October	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	1450	0	0	0	0	0	0	0	0	1450	290	2097	37	94	2518
November	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	2046	0	0	0	0	0	0	0	0	2046	395	2786	17	113	3311
December	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	2473	0	0	0	0	0	0	0	0	2473	397	2751	12	107	3267
Average	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	1594	0	0	0	0	0	0	0	0	1594	322	2310	57	100	2789
Maximum	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	2834	0	0	0	0	0	0	0	0	2834	945	5979	300	168	7231
Minimum	0	0	0	0	0	0	569	0	0	0	0	0	0	-569	574	0	0	0	0	0	0	0	0	574	0	0	0	0	0
Total for the whole year																													
TWh/year	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00		-5.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		14.00	2.83	20.29	0.50	0.88	24.50

ANNUAL COSTS (Million CAN)

Total Fuel ex Ngas exchange =	253
Uranium =	0
Coal =	0
FuelOil =	0
Gasoil/Diesel=	0
Petrol/JP =	140
Gas handling =	0
Biomass =	113
Food income =	0
Waste =	0
Total Ngas Exchange costs =	0
Marginal operation costs =	189
Total Electricity exchange =	-1220
Import =	1733
Export =	-2953
Bottleneck =	0
Fixed imp/ex=	0
Total CO2 emission costs =	8
Total variable costs =	-770
Fixed operation costs =	65
Annual Investment costs =	6580
TOTAL ANNUAL COSTS =	5875

NATURAL GAS EXCHANGE

	DHP & Boilers MW	CHP2 CHP3 MW	PP CAES MW	Indi-vidual MW	Trans port MW	Indu. Var. MW	Demand Sum MW	Bio-gas MW	Syn-gas MW	CO2Hy gas MW	SynHy gas MW	SynHy gas MW	Stor-age MW	Sum MW	Im-port MW	Ex-port MW
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total for the whole year																
TWh/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

RES Share: 97.0 Percent of Primary Energ229.2 Percent of Electricity 27.9 TWh electricity from RES