

Appendix

A. Parameterization of Power Plant Models

Unless otherwise specified, standard parameterization of EBSILON® Professional is used.

A.1 Existing Power Plant

A.1.1 Coal Mills

Parameterization of component #129 (coal mill)

Parameter	Unit	Value	Source/comment
FMODE	n/a	0	calculation mode
FFU	n/a	1	modeling configuration
FDP12	n/a	-1	modeling configuration
FTMIX	n/a	0	modeling configuration
FMOUTGAS	n/a	1	modeling configuration
FCM	n/a	1	modeling configuration
FCMEB	n/a	0	modeling configuration
FQEL	n/a	0	modeling configuration
MIA	—	0.2	[89(p.295)]
MIATMIX	—	0.2	default value
FLOSS	n/a	0	modeling configuration
DQLR	—	0.01	own assumption
FREV	n/a	1	modeling configuration
RXH2OBN	—	0.17	[80(p.141),82(p.124),89(p.295)]

FMOUTGAS is adjusted to meet a coal dust density of 0.4 kg/m³ (STP), which is calculated as follows [82(p.133-136)]. The outlet duct temperature changes linearly.

$$\text{Coal dust density:} \quad \rho_{dust} = \frac{\dot{m}_C \cdot (1 - W_{evap})}{\dot{V}_{FG} + \dot{V}_W}$$

$$\text{Evaporated water fraction:} \quad W_{evap} = 1 - [(1 - W_{inlet}) \cdot (1 + W_{outlet})]$$

$$\text{Flue gas retraction:} \quad \dot{V}_{FG} = \frac{\dot{m}_C \cdot (1 - W_{evap})}{\rho_{dust}} \cdot \left(\frac{273}{273 + T_{out}} \right) - W_{evap} \cdot 1.244 \frac{m^3}{s}$$

$$\text{Occurring vapor:} \quad \dot{V}_W = W_{evap} \cdot 1.244 \frac{m^3}{s}$$

A.1.2 Furnace Section

Parameterization of component #90 (furnace)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FCALC	n/a	2	modeling configuration
FALAM	n/a	0	modeling configuration
ALAMN	—	1.15	[90(p.326)]
DP12N	bar	0.2	[90(p.343)]
ETABN	—	0.992	[82(p.78/86)]
ZW	m	20	[90(p.421),89(p.313)]
ZD	m	20	[90(p.421),89(p.313)]
ZH	m	60	[90(p.421),89(p.313),87(p.116)]
OUTH	m	60	[90(p.421),89(p.313),87(p.116)]
FTYP	n/a	0	modeling configuration
FCON	n/a	2	modeling configuration
FCOCON	n/a	0	modeling configuration
COCON	mg/m ³	100	[86(p.109)]
FNOCON	n/a	0	modeling configuration
NOCON	mg/m ³	180	[86(p.109)]
NOSPL	—	0.5	default value
RFLAN	—	0.85	[82(p.163/166),89(p.309)]
ASHSPL	n/a	0	modeling configuration
FTYPUB	n/a	0	modeling configuration
FUB	n/a	1	unburnt compound: carbon
TASHE	°C	850	own assumption
FLOSS	n/a	1	modeling configuration
C	—	0.0315	DIN 1942: lignite; [81(p.40)]
QNMAX	MW	1750	modeling configuration
NCVUB	kJ/kg	27200	DIN 1942: lignite; [81(p.47)]
CSPL	—	1.02	DIN 1942: dry furnace
CPFL	—	0.86	DIN 1942: fly ash

Further flue gas path within the boiler is modeled via component #88 (flue gas segment) and component #89 (heat exchanger section) – see Section 3.1.2, Table 4. False air is considered via component #3 (mixer) at the boiler outlet. The furnace exit temperature of 1,000 °C is adjusted by the cold flue gas recirculation.

A.1.3 Combustion Air Preheater

Parameterization of component #25 (air preheater)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPEC	n/a	2	modeling configuration
DTN	K	20	[80(p.150)]
FDP12N	n/a	1	modeling configuration
DP12N	bar	0.005	[85(p.62)]
FDP34N	n/a	1	modeling configuration
DP34N	bar	0.015	[85(p.62)]
DQLR	—	0.01	own assumption
FFLOW	n/a	0	flow regime: counter flow
FVOL	n/a	0	modeling configuration
FVALKA	n/a	0	modeling configuration

A.1.4 Fresh Air Preheater

Parameterization of component #10 (heating condenser)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FDP12	n/a	1	modeling configuration
FDP12N	bar	0.01	[85(p.62)]
FDP34	n/a	1	modeling configuration
FDP34N	bar	0.01	[85(p.62)]
DQLR	—	0	own assumption
FRABEK	n/a	1	modeling configuration
FSPEC	n/a	11	modeling configuration
FVALKA	n/a	0	modeling configuration

False air of 5 % from fresh air to flue gas is considered via component #18 (splitter) using $M3M1 = 0.05$ and component #3 (mixer).

A.1.5 Fresh Air Fan

Parameterization of component #24 (compressor/fan)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPECH	n/a	0	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.8	[85(p.64)]
ETAMN	—	0.99	default value

A.1.6 Electrostatic Precipitator

Parameterization of component #85 (electrostatic precipitator)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FDUST	n/a	0	modeling configuration
M3M1N	—	0.9987	[86(p.115),87(p.317)]
QM2D	—	34.5	[89(p.742)]
DP12N	bar	0.01	own assumption

Heat loss is considered via component #13 (piping) using DN = 0.005 (thermal loss).

A.1.7 Induced Draft Fan

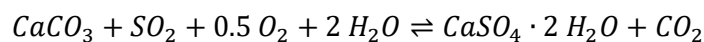
Parameterization of component #24 (compressor/fan)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPECH	n/a	0	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.85 0.785	induced draft fan [85(p.61)] flue gas recirculation [96(p.4)]
ETAMN	—	0.99	default value

Heat loss is considered via component #13 (piping) using DN = 0.05 (thermal loss).

A.1.8 Flue Gas Desulfurization Unit

The overall chemical reaction [80,87] is considered via component #28 (collecting drum) and mass flow relations between the educts/products and the arriving amount of SO₂ based on stoichiometry (factor 1.5).



→ 0.5 kg O₂ per kg SO₂ and 2.3438 kg CaCO₃ per kg SO₂ and 0.6875 kg CO₂ per kg SO₂

Leaving the absorber, the flue gas is saturated with water in the model. The SO₂ removal including any remaining fly ash is realized via component #52 (separator). The oxidation air fan (see parameterization below) has to overcome a pressure of 1.8 bar. EbsScript is used to cover the pressure drop of the flue gas and the auxiliary power of the recirculation pumps depending on plant load and the amount of SO₂ to be separated.

$$\Delta p = \Delta p_{\min} + \Delta p_{\max-\min} \left(\frac{\dot{V}_{FG}}{\dot{V}_{FG,0}} \right)^2$$

→ Δp_{min} = 8 mbar; Δp_{max-min} = 7 mbar

Determined by a liquid/gas ratio of 14 l/m³ (STP) [89(p.754)], the amount of slurry for circulation is calculated. The respective pumps (see parameterization below) are set to meet an outlet pressure of 2.23/2.45/2.67/2.89 bar. At full plant load, every spray level is equally supplied. Referring to the decreasing flue gas flow and the load-dependent liquid/gas ratio, the slurry mass flow is reduced beginning at level 4. The resulting electricity demand upon simulation is further adjusted according to the incoming SO₂ concentration (at STP,dry) by an own correlation in relation to the reference cases.

$$P_{aux} = \left(10 \cdot \left(\frac{x_{SO_2}}{x_{SO_2,ref}} \right)^2 - 20 \cdot \left(\frac{x_{SO_2}}{x_{SO_2,ref}} \right) + 11 \right) \cdot P_{el,pumps}$$

Parameterization of recirculation pumps via component #8 (fixed speed pump)

Parameter	Unit	Value	Source/comment
FMODE	n/a	0	calculation mode
FCALC	n/a	0	modeling configuration
FSPECP	n/a	-1	modeling configuration
FSPECH	n/a	0	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.8	[96(p.4)]
FCHRX	n/a	2	characteristic curve: mass flow basis
ETAMN	—	0.998	default value

Parameterization of oxidation air fan via component #24 (compressor/fan)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPECH	n/a	0	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.8	[85(p.64)]
ETAMN	—	0.99	default value

A.1.9 Regenerative Flue Gas Heater

Parameterization of component #55 (general heat exchanger)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPEC	n/a	1	own assumption
DTN	K	65	[86(p.116),82(p.523)]
DP12N	bar	0.005	own assumption
DP23N	bar	0.005	own assumption
AL12CN	W/m ² K	50	default value: flue gas
AL23CN	W/m ² K	50	default value: flue gas
FFLOW	n/a	0	flow regime: counter flow
FVOL	n/a	1	modeling configuration

A.1.10 Low Pressure Feed Water Heating Section

Parameterization of preheaters via component #10 (heating condenser)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
DT3S2N	K	5	[85(p.58/118),99(p.89)]
FDP12	n/a	1	modeling configuration
DP12N	bar	1.5	[85(p.104),171(p.556)]
FDP34	n/a	1	modeling configuration
DP34N	bar	0	phase change
DQLR	—	0	own assumption
FRABEK	n/a	1	modeling configuration
FSPEC	n/a	0	modeling configuration
FVALKA	n/a	0	modeling configuration

Parameterization of after coolers via component #27 (after cooler)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPEC	n/a	11	modeling configuration
DTN	K	7	[80(p.291),87(p.151)]
FDP12	n/a	1	modeling configuration
DP12N	bar	0.5	[85(p.104),171(p.556)]
FDP34	n/a	1	modeling configuration
DP34N	bar	0.05	[85(p.104),171(p.556)]
DQLR	—	0	own assumption
FFLOW	n/a	0	flow regime: counter flow
FVOL	n/a	1	modeling configuration
FVALKA	n/a	0	modeling configuration

A.1.11 Boiler Feed Water Pump

Parameterization of component #8 (fixed speed pump)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FCALC	n/a	0	modeling configuration
FSPECP	n/a	-1	modeling configuration
FSPECH	n/a	0	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.855 0.825	backing pump [86(p.134)] main pump [86(p.134)]
FCHRX	n/a	2	characteristic curve: mass flow basis
ETAMN	—	0.998	default value

A.1.12 High Pressure Feed Water Heating Section

Parameterization of preheaters via component #10 (heating condenser)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
DT3S2N	K	2	[87(p.151)]
FDP12	n/a	1	modeling configuration
DP12N	bar	3	[85(p.104),171(p.556)]
FDP34	n/a	1	modeling configuration
DP34N	bar	0	phase change
DQLR	—	0	own assumption
FRABEK	n/a	1	modeling configuration
FSPEC	n/a	0	modeling configuration
FVALKA	n/a	0	modeling configuration

Parameterization of after coolers via component #27 (after cooler)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPEC	n/a	11	modeling configuration
DTN	K	5	[85(p.58/118),99(p.89)]
FDP12	n/a	1	modeling configuration
DP12N	bar	1	[85(p.104),171(p.556)]
FDP34	n/a	1	modeling configuration
DP34N	bar	0.05	[85(p.104),171(p.556)]
DQLR	—	0	own assumption
FFLOW	n/a	0	flow regime: counter flow
FVOL	n/a	1	modeling configuration
FVALKA	n/a	0	modeling configuration

A.1.13 Desuperheater

Parameterization of component #43 (desuperheater)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
DP12N	bar	3	[85(p.58)]
DP34N	bar	0.03	[85(p.58)]
DT44SN	K	40	[80(p.288),99(p.85/88)]
FFLOW	n/a	0	flow regime: counter flow
FSPEC	n/a	11	modeling configuration

A.1.14 Steam Turbine

Parameterization of HPST via component #6 (general turbine)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FP1N	n/a	1	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.91	[87(p.162),98(p.41)]
ETAMN	—	0.995	default value
QLOSSM	MW	0	own assumption
FSPEC	n/a	0	modeling configuration
FCHR	n/a	0	characteristic curve: mass flow basis

Parameterization of IPST via component #6 (general turbine)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FP1N	n/a	0	modeling configuration
P1NSET	bar	28/17/10	see Section 3.1.2, Table 6
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.92	[82(p.76),100(p.4)]
ETAMN	—	0.995	default value
QLOSSM	MW	0	own assumption
FSPEC	n/a	0	modeling configuration
FCHR	n/a	0	characteristic curve: mass flow basis

Parameterization of first stage LPST via component #6 (general turbine)

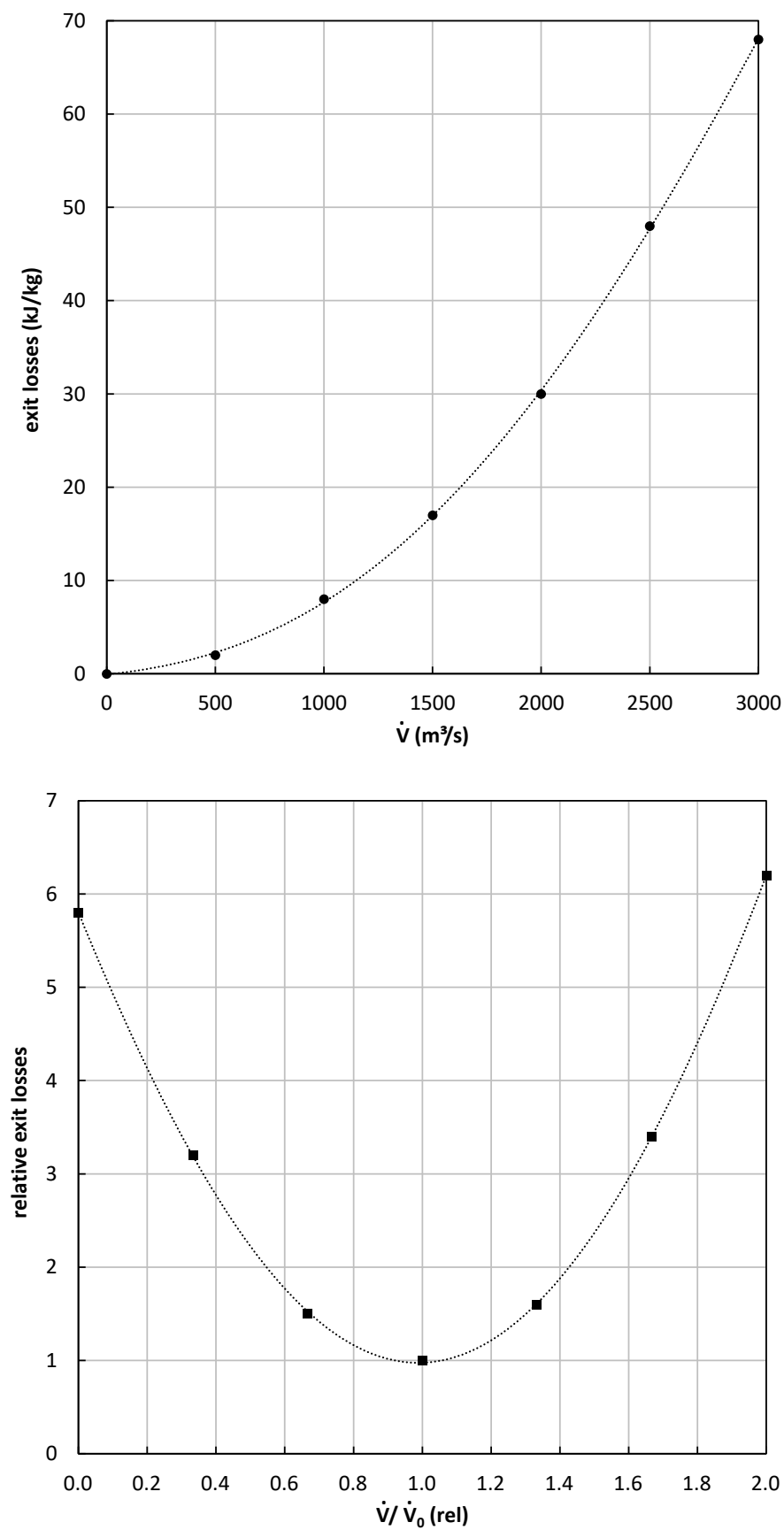
<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FP1N	n/a	0	modeling configuration
P1NSET	bar	5.5	see Section 3.1.2, Table 6
ETAIN	—	0.90	[82(p.76),85(p.117),99(p.90)]
ETAMN	—	0.995	default value
QLOSSM	MW	0	own assumption
FSPEC	n/a	0	modeling configuration
FCHR	n/a	0	characteristic curve: mass flow basis

Parameterization of remaining LPST via component #56 (extended turbine)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FP1N	n/a	0	modeling configuration
P1NSET	bar	2.17/0.86/0.28	see Section 3.1.2, Table 6
FDHLO	n/a	0	modeling configuration
DHLON	kJ/kg	0/0/25	[98(p.86)]
QLPN	kW	1	default value
FQLMRN	n/a	2	modeling configuration
QLMRN	—	0.005	default value
ETAIN	—	0.90	[82(p.76),85(p.117),99(p.90)]
FBAU	n/a	1	modeling configuration
BFAC	—	0.9	[102(p.2)]
FABB	n/a	0	modeling configuration
FETA	n/a	0	characteristic curve: mass flow basis

Long piping between turbine and boiler house are considered via component #13 (piping) using DN = 0.03 (thermal loss), DP12RN = 0.05 (pressure loss) and respective GH (geodetic height difference – see Section 3.1.2, Table 5). Short piping between turbine and feed water preheaters are considered analogous using DP12RN = 0.05 and GH values.

The determination of exit losses at the final stage of LPST derives from Figure 42. Upon the outlet volume flow, the specific exit losses (left) are quantified. Referring to the load-dependent operation, this value is relatively adjusted (right).

**Figure 42: Exit losses at the final stage of LPST**

A.1.15 Cold End

Parameterization of component #7 (condenser)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPECD	n/a	0	modeling configuration
DT3S2N	K	3	[85(p.58/60),87(p.158)]
FDP12N	n/a	0	modeling configuration
DP12N	bar	0.5	[85(p.104),171(p.556)]
DP34N	bar	0	phase change
FP3MIN	n/a	1	modeling configuration
EP3MIN	n/a	EbsScript	characteristic curve
DQLR	—	0	own assumption
FSPEC	n/a	0	modeling configuration
FVALKA	n/a	0	modeling configuration

Parameterization of component #111 (wet natural draft cooling tower)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FWETZONE	n/a	0	modeling configuration
PWETZONE	°C	20	[81(p.37)]
FMERKEL	n/a	0	modeling configuration
FCIRC	n/a	0	modeling configuration

A.2 Future Power Plant

A.2.1 Coal Mills

Compare to Section A.1.1 except the following parameterization (component #129).

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
RXH2OBN	—	0.15	[82(p.124),85(p.51),89(p.298)]

A.2.2 Fluidized-Bed Drying Unit

Parameterization of fluidized-bed dryer via component #84 (coal drying unit)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPEC	n/a	2	modeling configuration
FSPECT	n/a	1	modeling configuration
FSPECP	n/a	0	modeling configuration
XH2OBN	—	0.12	[76(p.3),87(p.181),106(p.2)]
T2N	°C	110	[76(p.4),87(p.182)]
DT23N	K	0	own assumption
DT5S5N	K	40	own assumption
DP45N	bar	0.8	[76(p.7),85(p.64)]
DPFB	bar	0.2	[105(p.238)]
DPNFN	bar	0	own assumption

Parameterization of fluidization fan via component #24 (compressor/fan)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPECH	n/a	0	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.8	[85(p.64)]
ETAMN	—	0.99	default value

Heat losses are applied to the heating steam stream and considered via component #13 (piping) using $DN = 0.01$. The air cooling of dry lignite is realized by component #15 (heat extraction) and component #39 (controller with internal set point).

Concerning the capacity of the fluidized-bed dryer, a maximum throughput of 150 t/h raw lignite per power block is calculated. This fits well to data from the literature [76] about demonstrated drying units.

Table 30: Modeling results of fluidized-bed drying unit (at nominal load) compared to the literature

Parameter	Unit	Model	Literature [17,85,105]
Two-stage grinding	kWh/t (dry lignite)	7.0	9.7 (+2.7 / +38 %)
Forced draft fans	kWh/t (dry lignite)	10.9	10.9 (+0.0 / +0 %)
Total auxiliary power	kWh/t (dry lignite)	21.7	22.5 (+0.8 / +4 %)
Electric drying demand	MJ/kg (H ₂ O)	0.08	0.09 (+0.01 / +13 %)
Steam consumption	t/t (dry lignite)	1.10	1.06 (-0.04 / -4 %)
Thermal drying demand	MJ/kg (H ₂ O)	2.85	2.46 (-0.39 / -14 %)

A.2.3 Boiler Configuration

Compare to Section A.1.2 except the following parameterization (component #90).

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
ETABN	—	0.995	own assumption
NOCON	m ³ /mg	220	own assumption
QNMAX	MW	1250	modeling configuration

Calculations of the furnace's cross sectional area heat release at nominal plant load result in 4.3 MW/m² (EPP) and 3.0 MW/m² (FPP) against a corresponding literature value of 4.5 MW/m² [82(p.222)]. Referring to the volumetric heat release, both plant models equal 0.1 MW/m³ in accordance to the literature [80(p.164)]. Moreover, a comparison between the literature-based flue gas temperatures per boiler section [91] and the simulation are made as shown in Figure 43.

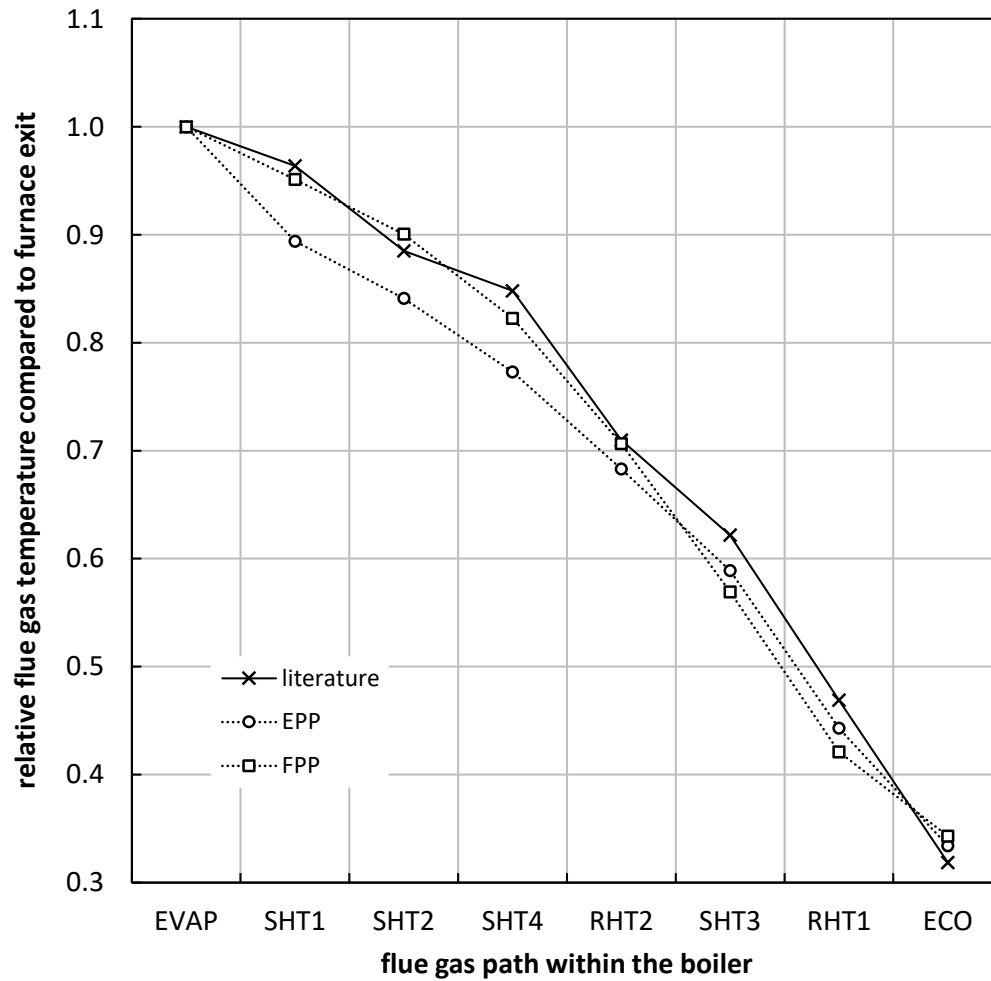


Figure 43: Comparison of relative flue gas temperature per boiler section along the flue gas path

A.2.4 DeNO_x Unit

Parameterization of component #86 (SCR-DeNO_x unit)

Parameter	Unit	Value	Source/comment
FMODE	n/a	0	calculation mode
FCON	n/a	2	modeling configuration
NOXN	mg/m ³	180	own assumption
FSPEC	n/a	1	modeling configuration
NOXT	mg/m ³	200	own assumption
NH3N	mg/m ³	2	default value
NH3MAX	mg/m ³	5	[80(p.302),89(p.762)]
TMIN	°C	300	[82(p.534),89(p.758)]
TMAX	°C	450	[82(p.535)]
DP12N	bar	0.01	own assumption

A.2.5 Preheater Bypass Economizer

Parameterization of component #26 (economizer/evaporator/superheater)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPEC	n/a	-4	modeling configuration
FDP12N	n/a	1	modeling configuration
DP12N	bar	1	[109(p.223)]
FDP34N	n/a	1	modeling configuration
DP34N	bar	0.005	[109(p.223)]
DQLR	—	0	own assumption
FFLOW	n/a	0	flow regime: counter flow
FVOL	n/a	1	modeling configuration
FVALKA	n/a	0	modeling configuration

A.2.6 Combustion Air Preheater

Compare to Section A.1.3 except the following parameterization (component #25).

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
DTN	K	15	own assumption

A.2.7 Flue Gas Heat Transfer System

Parameterization of air preheater via component #55 (general heat exchanger)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPEC	n/a	1	own assumption
DTN	K	20	[113(p.3/4)]
DP12N	bar	0.005	own assumption
DP23N	bar	0.005	own assumption
AL12CN	W/m ² K	50	default value: air
AL23CN	W/m ² K	500	default value: water
FFLOW	n/a	0	flow regime: counter flow
FVOL	n/a	1	modeling configuration

Parameterization of flue gas heat recovery via component #26 (eco./evap./superh.)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FSPEC	n/a	-5	modeling configuration
FDP12N	n/a	1	modeling configuration
DP12N	bar	0.5	[85(p.62)]
FDP34N	n/a	1	modeling configuration
DP34N	bar	0.01	[85(p.62)]
DQLR	—	0	own assumption
FFLOW	n/a	0	flow regime: counter flow
FVOL	n/a	1	modeling configuration
FVALKA	n/a	0	modeling configuration

A.2.8 Flue Gas Desulfurization Unit

The scrubber unit including chemical reaction, separators and oxidation air fan is configured analogous to the existing power plant (Section A.1.8). Instead of circulation modeling, Equation 12 determines the load-dependent electricity demand also in relation to the incoming amount of SO₂. As for the pressure drop, Equation 13 is applied.

A.2.9 Low Pressure Feed Water Heating Section

Compare to Section A.1.10 except the following parameterization (component #10).

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
DP12N	bar	1	own assumption

A.2.10 Boiler Feed Water Pump and Power Turbine

Parameterization of pump via component #8 (fixed speed pump)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0/-1	calculation mode: duo/mono block operation
FCALC	n/a	0	modeling configuration
FSPECP	n/a	-1	modeling configuration
FSPECH	n/a	0	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.9	[85(p.117),99(p.90)]
FCHRX	n/a	2	characteristic curve: mass flow basis
ETAMN	—	1	own assumption

Parameterization of power turbine via component #6 (general turbine)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0/-1	calculation mode: duo/mono block operation
FP1N	n/a	1	modeling configuration
FVALETAI	n/a	0	modeling configuration
ETAIN	—	0.9	[85(p.117),99(p.90)]
ETAMN	—	1	own assumption
QLOSSM	MW	0	own assumption
FSPEC	n/a	0	modeling configuration
FCHR	n/a	0	characteristic curve: mass flow basis

A.2.11 High Pressure Feed Water Heating Section

Compare to Section A.1.10 except the following parameterization (component #10).

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0/-1	calculation mode: duo/mono block operation
DP12N	bar	2	own assumption

A.2.12 Desuperheater

Compare to Section A.1.10 except the following parameterization (component #10).

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0/-1	calculation mode: duo/mono block operation
DT44SN	K	60	[80(p.288),99(p.85/88)]

A.2.13 Steam Turbine

Compare to Section A.1.14 except the following configuration per component.

Parameterization of HPST via component #6 (general turbine)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
ETAIN	—	0.94	[82(p.76)]
ETAMN	—	0.998	own assumption

Parameterization of IPST via component #6 (general turbine)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
P1NSET	bar	50/35/20/10	see Section 3.1.3, Table 8
ETAIN	—	0.96	[80(p.261),87(p.162)]
ETAMN	—	0.998	own assumption

Parameterization of first stage LPST via component #6 (general turbine)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
P1NSET	bar	4.68	see Section 3.1.3, Table 8
ETAIN	—	0.93	[100(p.4)]
ETAMN	—	0.998	own assumption

Parameterization of remaining LPST via component #56 (extended turbine)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
P1NSET	bar	2.06/0.76/0.23	see Section 3.1.3, Table 8
DHLON	kJ/kg	0/0/20	[98(p.86)]
ETAIN	—	0.93	[100(p.4)]

Configuration of piping and exit losses analogous to existing power plant (Section A.1.14).

A.2.14 Cold End

Compare to Section A.1.15 except the following parameterization (component #7).

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
DT3S2N	K	1.5	[85(p.58/60),87(p.158)]

Parameterization of component #112 (wet forced draft cooling tower)

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Source/comment</u>
FMODE	n/a	0	calculation mode
FWETZONE	n/a	0	modeling configuration
PWETZONE	°C	20	[81(p.37)]
FMERKEL	n/a	0	modeling configuration
FCIRC	n/a	0	modeling configuration
FTYPEFAN	n/a	1	forced draft fan
EFFFANN	—	0.785	[96(p.4)]
EFFMOT	—	0.95	own assumption

B. Modeling Results

B.1 Flowcharts

B.1.1 Existing Power Plant

Figure 44 illustrates the air / flue gas path of the EPP with stream indications referring to the stream reports in Section B2 and B3.

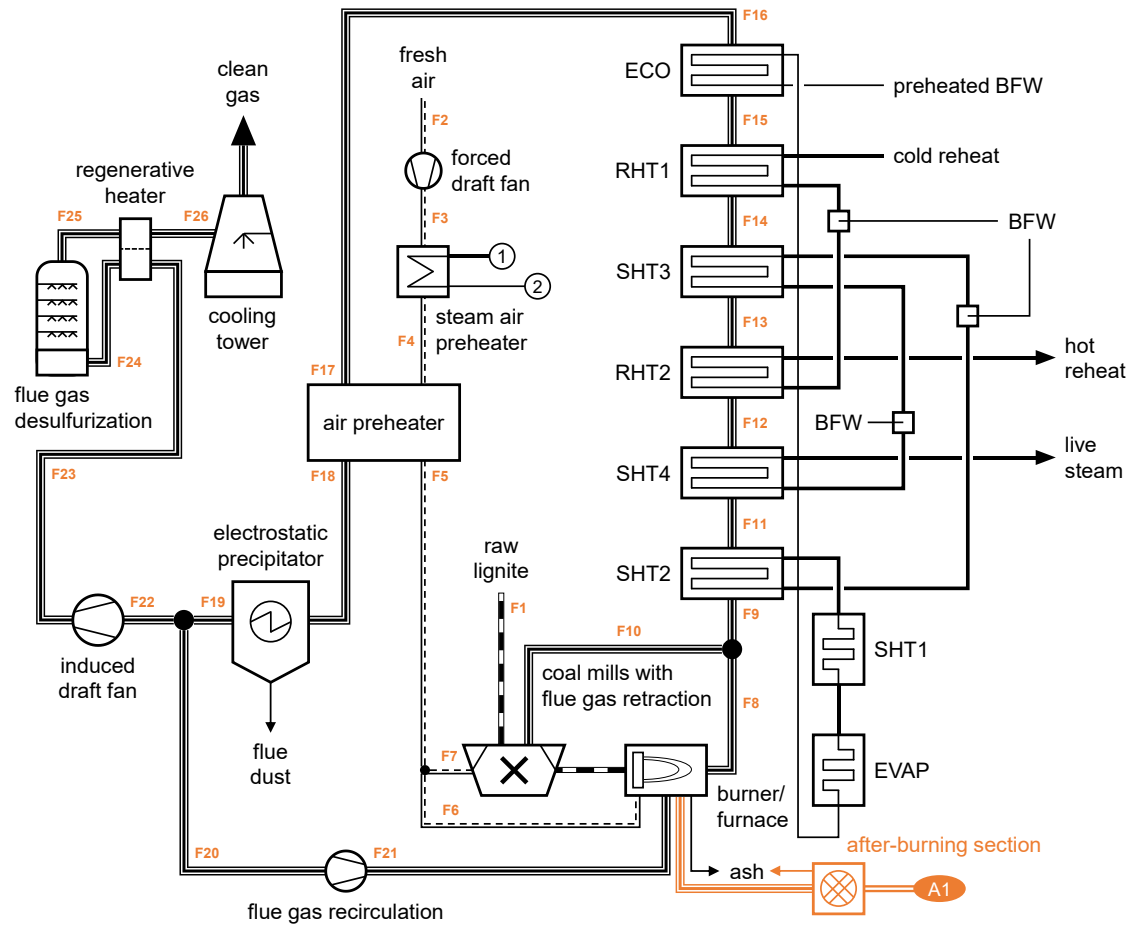


Figure 44: Air / flue gas path of EPP with stream indications

Figure 45 illustrates the water-steam cycle of the EPP with stream indications referring to the stream reports in Section B2 and B3.

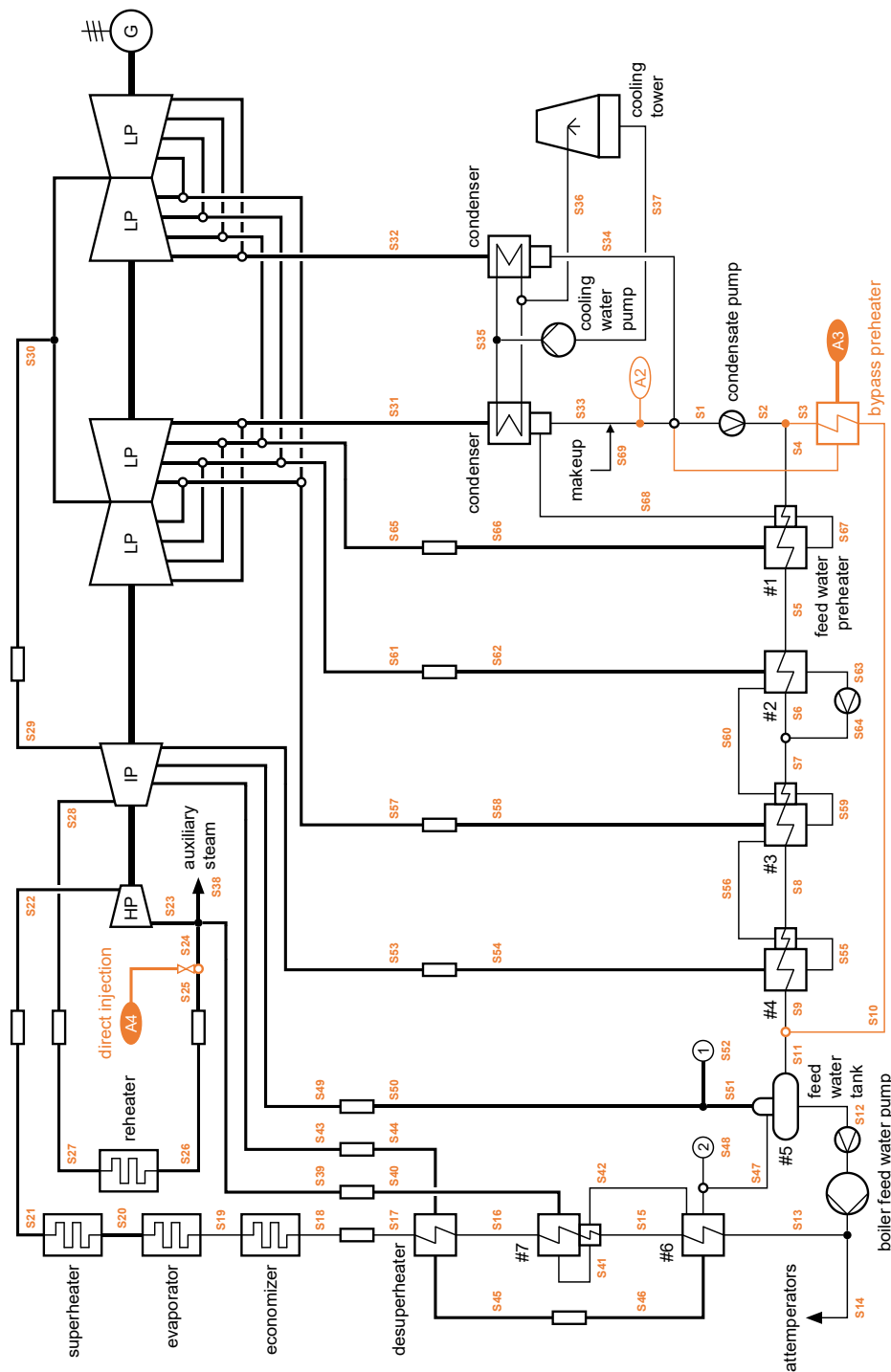


Figure 45: Water-steam cycle of EPP with stream indications

B.1.2 Future Power Plant

Figure 46 illustrates the air / flue gas path of the FPP with stream indications referring to the stream reports in Section B2 and B3.

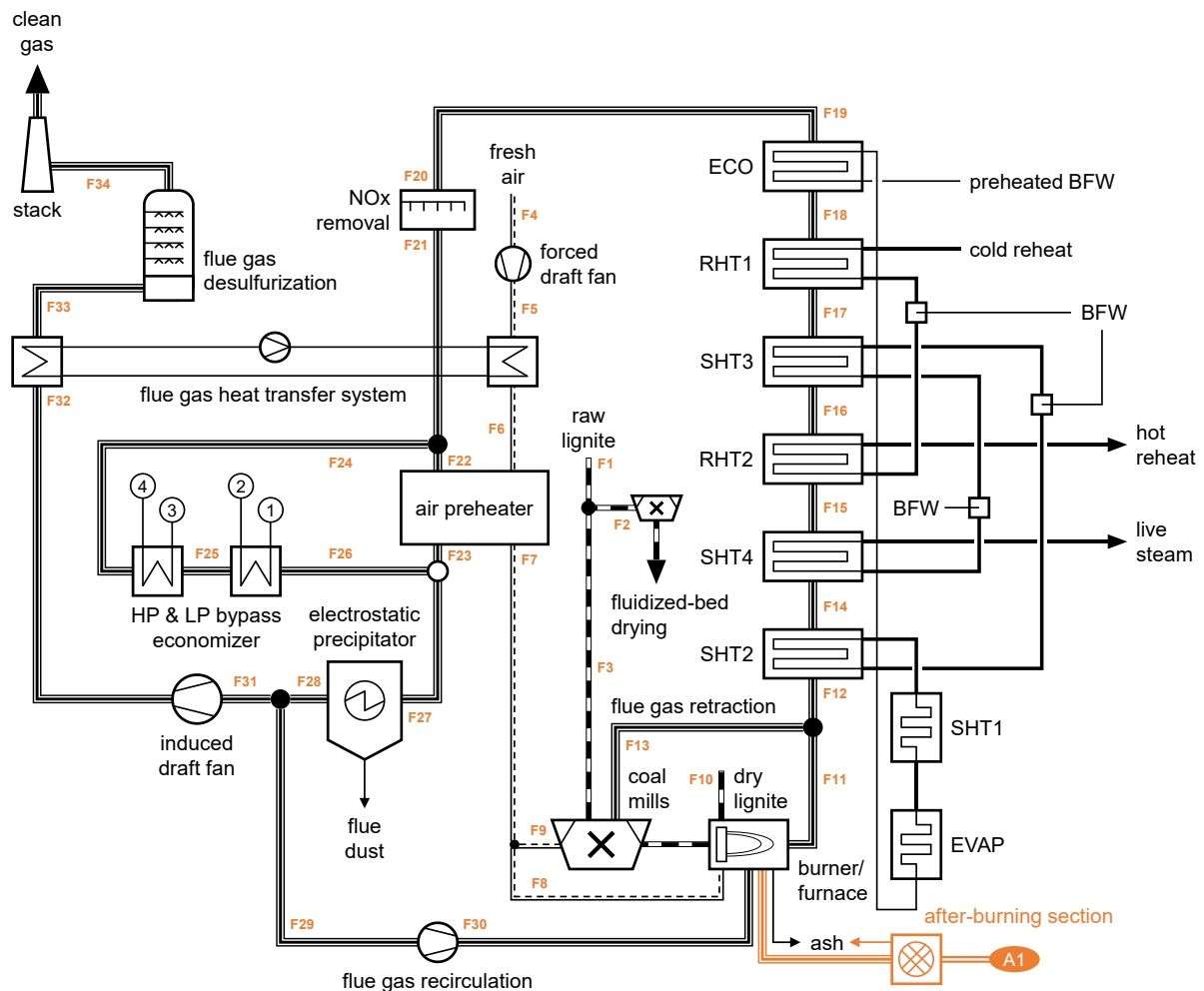


Figure 46: Air / flue gas path of FPP with stream indications

Figure 47 illustrates the water-steam cycle of the FPP with stream indications referring to the stream reports in Section B2 and B3.

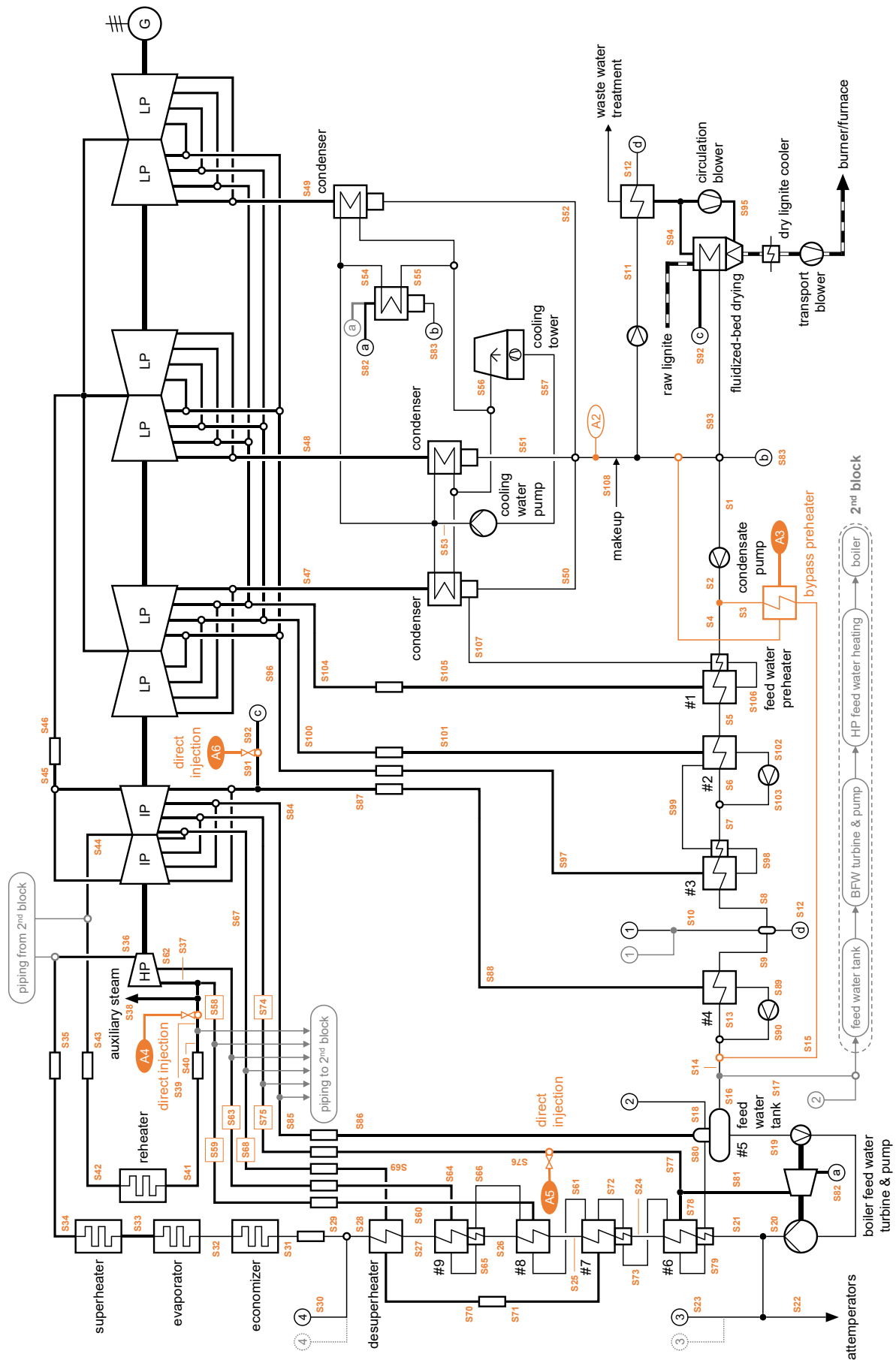


Figure 47: Water-steam cycle of FPP with stream indications

B.2 Reference Cases

B.2.1 Existing Power Plant

Table 31: Stream report of EPP reference

Stream number	Boiler capacity: 100 %			
	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	185.6
F2	1.013	20.0	20.2	648.9
F3	1.058	24.5	24.8	648.9
F4	1.048	40.0	40.5	648.9
F5	1.043	302.1	310.6	616.5
F6	1.043	302.1	310.6	288.0
F7	1.043	302.1	310.6	328.5
F8	1.003	1000.1	1270.4	1179.2
F9	1.003	1000.1	1270.4	977.3
F10	1.003	1000.1	1270.4	201.9
F11	1.003	840.7	1047.5	977.3
F12	1.002	772.8	954.5	977.3
F13	1.001	683.0	833.5	977.3
F14	1.000	589.0	709.4	977.3
F15	0.999	443.1	522.7	977.3
F16	0.998	333.5	387.3	977.3
F17	0.998	330.0	384.2	989.6
F18	0.983	183.6	208.8	1022.0
F19	0.973	182.9	208.3	1014.6
F20	0.973	182.9	208.3	15.0
F21	1.023	190.5	217.2	15.0
F22	0.973	182.9	208.3	999.6
F23	1.038	182.6	207.9	999.6
F24	1.033	130.2	147.3	999.6
F25	1.018	65.0	73.2	1005.2
F26	1.008	112.7	127.7	1005.2
S1	0.066	36.2	154.4	377.4
S2	19.621	36.4	154.4	377.4
S3	19.621	36.4	154.4	0.0
S4	19.621	36.4	154.4	377.4
S5	17.803	36.2	154.4	377.4
S6	16.090	89.2	374.6	377.4
S7	16.090	89.9	377.7	439.0
S8	14.072	116.3	488.9	439.0
S9	12.055	149.6	630.9	439.0
S10	12.055	155.5	699.7	0.0
S11	12.055	149.6	630.9	439.0
S12	9.532	177.8	753.5	518.9
S13	238.812	182.1	784.5	489.4
S14	238.812	182.1	784.5	29.5
S15	235.784	199.4	859.6	489.4
S16	231.746	236.6	1025.4	489.4
S17	228.718	240.4	1042.6	489.4
S18	217.611	238.2	1015.2	489.4
S19	221.947	291.7	1289.6	489.4
S20	198.734	385.3	2715.4	489.4
S21	170.000	530.0	3372.3	514.2
S22	161.770	523.0	3362.2	514.2
S23	34.417	298.2	2975.6	470.6
S24	34.417	298.2	2975.6	470.6
S25	34.417	298.2	2975.6	470.6
S26	32.556	292.6	2966.7	470.6
S27	29.542	539.0	3545.2	475.3
S28	28.128	533.7	3534.6	475.3
S29	5.667	306.4	3076.2	409.6
S30	5.525	306.2	3076.2	409.6
S31	0.066	38.0	2409.9	177.9
S32	0.066	38.0	2410.0	177.9
S33	0.066	36.5	153.1	194.4
S34	0.066	36.5	153.1	177.9
S35	2.850	20.0	84.3	12784.8
S36	2.350	35.0	146.9	12784.8
S37	1.013	20.0	84.0	12784.8
S38	34.417	298.2	2975.6	5.0
S39	34.417	298.2	2975.6	38.6
S40	32.667	296.1	2975.6	38.6
S41	32.667	238.6	1031.0	38.6
S42	32.617	204.5	873.2	38.6
S43	17.077	456.2	3375.5	17.7
S44	16.214	455.7	3375.5	17.7
S45	16.184	242.0	2899.7	17.7
S46	16.021	241.7	2899.7	17.7
S47	16.021	213.6	1459.1	60.4
S48	9.532	177.8	753.5	4.1
S49	10.045	380.6	3223.0	23.6
S50	9.532	380.2	3223.0	23.6
S51	9.532	380.2	3223.0	19.5
S52	9.532	380.2	3223.0	4.1
S53	5.667	306.4	3076.2	24.4
S54	5.382	306.1	3076.2	24.4
S55	5.382	154.6	652.3	24.4
S56	5.331	123.3	518.1	24.4
S57	2.180	203.8	2877.5	18.6
S58	2.071	203.5	2877.5	18.6
S59	2.071	121.3	509.4	43.0
S60	2.020	96.9	406.2	43.0
S61	0.865	119.3	2716.6	18.6
S62	0.821	119.1	2716.6	18.6
S63	0.821	94.2	394.6	61.7
S64	16.090	94.4	396.5	61.7
S65	0.281	67.6	2556.1	16.6
S66	0.267	66.5	2556.1	16.6
S67	0.267	66.5	278.2	16.6
S68	0.217	43.4	181.9	16.6
S69	0.066	15.0	63.0	5.1

Stream number	Boiler capacity: 75 %			
	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	143.3
F2	1.013	20.0	20.2	485.2
F3	1.040	22.8	23.1	485.2
F4	1.034	40.0	40.5	485.2
F5	1.031	277.5	284.7	461.0
F6	1.031	277.5	284.7	216.9
F7	1.031	277.5	284.7	244.1
F8	1.009	970.8	1229.7	927.2
F9	1.009	970.8	1229.7	734.1
F10	1.009	970.8	1229.7	193.1
F11	1.008	790.6	979.3	734.1
F12	1.008	730.0	897.0	734.1
F13	1.007	639.8	776.6	734.1
F14	1.007	557.7	669.2	734.1
F15	1.006	418.0	491.5	734.1
F16	1.006	302.6	350.0	734.1
F17	1.006	299.5	347.4	743.4
F18	0.997	167.0	189.6	767.5
F19	0.992	166.4	189.2	762.5
F20	0.992	166.4	189.2	0.0
F21	1.021	174.7	196.8	0.0
F22	0.992	166.4	189.2	762.3
F23	1.024	162.4	184.5	762.3
F24	1.021	114.5	129.3	762.3
F25	1.014	65.0	73.3	766.4
F26	1.008	110.2	124.8	766.4
S1	0.061	35.1	147.1	268.3
S2	13.238	35.2	148.9	289.3
S3	13.238	35.2	148.9	0.0
S4	13.238	35.2	148.9	289.3
S5	12.083	120.5	242.1	289.3
S6	11.164	84.0	352.8	289.3
S7	11.164	84.5	354.8	333.9
S8	9.998	110.1	462.5	333.9
S9	8.833	142.2	599.1	333.9
S10	8.833	155.5	699.5	0.0
S11	8.833	142.2	599.1	333.9
S12	7.384	167.1	706.6	389.6
S13	169.868	170.1	728.6	367.5
S14	169.868	170.1	728.6	22.1
S15	168.161	187.8	805.5	367.5
S16	165.890	223.1	962.1	367.5
S17	164.183	227.2	980.6	367.5
S18	158.006	225.1	970.8	367.5
S19	163.777	261.7	1240.8	367.5
S20	150.726	360.9	2772.1	367.5
S21	127.500	530.0	3421.3	386.0
S22	122.744	524.1	3411.0	386.0
S23	25.504	299.4	3006.6	359.8
S24	25.504	299.4	3006.6	354.8
S25	25.504	299.4	3006.6	354.8
S26	24.394	294.3	2997.6	354.8
S27	22.064	539.0	3552.4	358.4
S28	21.272	533.9	3541.8	358.4
S29	4.294	308.1	3083.0	311.2
S30	4.212	308.0	3083.0	311.2
S31	0.061	36.6	2438.4	136.4
S32	0.061	36.6	2438.4	136.4
S33	0.061	35.5	148.6	147.7
S34	0.061	35.5	148.6	136.4
S35	2.850	19.7	82.8	12784.8
S36	2.350	31.3	131.6	12784.8
S37	1.013	19.7	82.6	12784.8
S38	25.504	299.4	3006.6	5.0
S39	25.504	299.4	3006.6	26.2
S40	24.667	296.3	3006.6	26.2
S41	24.667	223.2	958.7	26.2
S42	24.644	191.0	812.6	26.2
S43	12.927	457.1	3382.7	13.5
S44	12.423	456.8	3382.7	13.5
S45	12.405	227.2	2881.1	13.5
S46	12.313	227.1	2881.1	13.5
S47	12.313	200.4	1452.6	43.1
S48	7.384	167.1	706.6	3.3
S49	7.627	382.3	3230.7	16.1
S50	7.384	382.1	3230.7	16.1
S51	7.384	382.1	3230.7	12.8
S52	7.384	382.1	3230.7	3.3
S53	4.294	308.1	3083.0	17.5
S54	4.146	307.9	3083.0	17.5
S55	4.146	144.9	610.3	17.5
S56	4.120	115.3	484.1	17.5
S57	1.664	205.8	2883.9	13.6
S58	1.605	205.6	2883.9	13.6
S59	1.605	113.4	475.8	31.1
S60	1.579	90.0	376.9	31.1
S61	0.861	120.3	2720.6	13.5
S62	0.839	120.2	2720.6	13.5
S63	0.839	87.5	366.6	44.6
S64	11.164	87.7	367.9	44.6
S65	0.217	61.8	2559.7	11.3
S66	0.210	61.2	2559.7	11.3
S67	0.210	61.2	256.0	11.3
S68	0.187	40.0	167.6	11.3
S69	0.061	15.0	63.0	5.1

Stream number	Boiler capacity: 50 %			
	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	98.9
F2	1.013	20.0	20.2	351.8
F3	1.029	21.8	22.0	351.8
F4	1.026	40.0	40.5	351.8
F5	1.025	274.8	281.9	334.2
F6	1.025	274.8	281.9	171.5
F7	1.025	274.8	281.9	162.7
F8	1.012	924.3	1157.4	883.5
F9	1.012	924.3	1157.4	526.6
F10	1.012	924.3	1157.4	156.9
F11	1.012	726.5	887.2	526.6
F12	1.012	667.8	809.1	526.6
F13	1.011	598.2	717.9	526.6
F14	1.011	542.3	645.7	526.6
F15	1.011	419.9	491.4	526.6
F16	1.011	298.4	343.3	526.6
F17	1.011	295.3	340.7	533.4
F18	1.006	162.3	183.3	551.0
F19	1.003	161.7	182.9	547.7
F20	1.003	161.7	182.9	0.0
F21	1.018	165.9	187.8	0.0
F22	1.003	161.7	182.9	547.7
F23	1.016	155.4	176.6	547.7
F24	1.014	105.8	118.9	547.7
F25	1.011	65.0	73.4	555.3
F26	1.008	112.4	127.6	555.3
S1	0.058	34.3	143.6	196.5
S2	7.632	34.4	144.8	196.5
S3	7.632	34.4	144.8	0.0
S4	7.632	34.4	144.8	196.5
S5	5.19	162.6	654.7	196.5
S6	6.675	76.3	319.9	196.5
S7	6.675	76.5	320.8	224.1
S8	6.150	100.7	422.5	224.1
S9	5.626	130.9	550.2	224.1
S10	5.626	156.3	698.8	0.0
S11	5.626	130.9	550.2	224.1
S12	4.980	151.7	639.5	257.4

Table 32: Key performance parameters of EPP reference

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	50
Boiler capacity	%	100	95	90	85	80	75	70	65	60	55	50
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	345	310
Net electricity generation	MW	604	575	547	517	487	456	426	392	360	326	293
Gross plant energy efficiency	%	38.0	37.7	37.6	37.4	37.1	36.7	36.3	36.0	35.4	34.8	34.0
Net plant energy efficiency	%	35.4	35.2	35.2	35.1	34.9	34.6	34.3	34.0	33.5	32.9	32.1
Thermodynamic mean temperature	K	622	620	617	615	612	609	606	602	598	594	589
CO ₂ emissions	kg/s	190.7	182.2	173.5	164.7	155.8	147.3	138.7	128.9	119.9	110.9	101.7
Specific CO ₂ emissions	g/kWh	1136	1141	1143	1146	1152	1162	1173	1184	1201	1223	1251
Auxiliary power	MW	45.8	41.5	37.6	34.2	31.1	28.3	25.8	23.3	21.2	19.2	17.2
• Ancillary units	MW	0.953	0.921	0.891	0.866	0.843	0.810	0.810	0.810	0.810	0.810	0.810
• Cooling water pump	MW	2.881	2.881	2.881	2.881	2.881	2.880	2.880	2.880	2.880	2.880	2.880
• Condensate pump	MW	1.147	1.028	0.925	0.831	0.747	0.670	0.600	0.526	0.466	0.411	0.359
• Boiler feed water pump	MW	17.182	15.323	13.733	12.323	11.041	9.867	8.783	7.726	6.787	5.914	5.098
• Flue gas treatment	MW	3.918	3.858	3.794	3.735	3.677	3.619	3.558	3.478	3.355	3.160	2.993
• Coal mills	MW	5.198	4.966	4.728	4.488	4.247	4.014	3.778	3.513	3.268	2.912	2.573
• Forced draft fan	MW	3.187	2.877	2.510	2.190	1.899	1.651	1.430	1.192	1.065	0.967	0.861
• Induced draft fan	MW	11.370	9.644	8.161	6.866	5.727	4.798	3.981	3.152	2.588	2.106	1.646
Specific auxiliary power	%	7.1	6.7	6.4	6.2	6.0	5.8	5.7	5.6	5.6	5.5	5.6

B.2.2 Future Power Plant (Duo Block Operation)

Table 33: Stream report of FPP-D reference

Boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	125.5
F2	1.013	15.0	45.1	40.2
F3	1.013	15.0	45.1	85.4
F4	1.013	20.0	20.2	476.5
F5	1.057	24.1	24.4	476.5
F6	1.047	115.3	117.1	476.5
F7	1.042	322.3	331.8	452.7
F8	1.042	322.3	331.8	145.9
F9	1.042	322.3	331.8	145.9
F10	4.000	90.2	180.8	20.4
F11	1.004	1075.7	1346.8	819.5
F12	1.004	1075.7	1346.8	733.2
F13	1.004	1075.7	1346.8	86.3
F14	1.003	924.1	1137.2	733.2
F15	1.003	844.3	1029.0	733.2
F16	1.002	724.9	870.1	733.2
F17	1.001	583.8	687.4	733.2
F18	1.000	431.9	497.7	733.2
F19	0.999	352.1	401.1	733.2
F20	0.999	352.1	401.1	733.2
F21	0.989	345.9	397.2	749.6
F22	0.989	345.9	397.2	502.2
F23	0.975	177.1	197.9	526.1
F24	0.985	230.0	259.9	247.4
F25	0.985	230.0	259.9	247.4
F26	0.980	160.0	179.1	247.4
F27	0.975	177.1	191.9	733.2
F28	0.965	171.0	191.4	103.2
F29	0.965	171.0	191.4	103.2
F30	1.023	176.7	200.3	103.2
F31	0.965	171.0	191.4	665.3
F32	1.043	161.1	178.1	665.3
F33	1.034	104.0	126.7	665.3
F34	1.011	58.2	-17.4	673.3
S1	0.035	26.6	127.6	246.9
S2	16.388	30.6	129.8	246.9
S3	16.388	30.6	129.8	0.0
S4	16.388	30.6	129.8	246.9
S5	14.967	56.6	238.1	246.9
S6	14.020	85.2	357.9	246.9
S7	14.020	85.2	357.9	246.9
S8	12.601	114.1	479.4	273.3
S9	12.601	109.2	458.7	392.4
S10	12.601	109.2	458.7	206.0
S11	0.035	26.6	130.4	319.1
S12	12.601	105.0	441.1	319.1
S13	11.670	143.0	602.5	392.4
S14	11.670	147.4	621.5	616.2
S15	13.307	165.4	690.5	0.0
S16	11.670	147.4	621.5	308.1
S17	11.670	147.4	621.5	308.1
S18	12.601	156.0	658.6	200.0
S19	9.262	176.7	748.7	387.8
S20	333.449	181.9	788.7	387.8
S21	333.449	181.9	788.7	315.9
S22	333.449	181.9	788.7	21.9
S23	333.449	181.9	788.7	50.0
S24	330.637	206.9	896.6	315.9
S25	327.824	235.9	1024.8	315.9
S26	325.946	266.7	1186.3	315.9
S27	323.138	298.5	1290.6	315.9
S28	320.325	291.9	1287.3	315.9
S29	320.325	296.9	1312.1	365.9
S30	332.450	327.0	1468.3	50.0
S31	330.869	358.6	1512.1	365.9
S32	315.332	330.7	1490.7	365.9
S33	305.387	427.3	2612.7	365.9
S34	285.000	605.0	3476.5	384.4
S35	272.070	597.7	3468.1	384.4
S36	272.070	597.7	3468.1	768.8
S37	56.499	342.6	3032.1	737.6
S38	56.499	342.6	3032.1	5.0
S39	56.499	342.6	3032.1	679.6
S40	56.499	342.6	3032.1	339.8
S41	53.554	336.5	3023.0	339.8
S42	51.121	620.0	3712.5	343.2
S43	48.738	614.4	3701.4	343.2
S44	48.738	614.4	3701.4	686.4
S45	4.680	263.6	2090.2	508.0
S46	4.574	263.4	2090.2	508.0
S47	0.035	26.6	2297.5	156.7
S48	0.035	26.6	2297.5	156.7
S49	0.035	26.6	2297.5	156.7
S50	0.035	25.1	105.1	168.1
S51	0.035	25.1	105.1	168.1
S52	0.035	25.1	105.1	156.7
S53	2.850	17.9	75.4	37788.4
S54	2.850	17.9	75.4	2726.1
S55	2.350	23.7	99.4	37788.4
S56	2.350	24.8	104.4	37788.4
S57	1.013	17.9	75.2	37788.4
S58	56.499	342.6	3032.1	48.0
S59	56.499	342.6	3032.1	24.0
S60	53.837	340.0	3032.1	384.0
S61	53.837	288.6	1178.0	39.6
S62	76.233	365.0	3104.8	31.1
S63	76.233	365.0	3104.8	15.6
S64	72.642	362.2	3104.8	15.6
S65	72.642	288.3	1280.9	15.6
S66	72.642	271.5	1192.1	15.6
S67	34.129	551.6	3569.3	28.7
S68	34.129	551.6	3569.3	14.3
S69	32.488	550.9	3569.3	14.3
S70	32.488	297.6	2980.3	14.3
S71	32.151	237.7	1026.7	53.9
S72	32.151	237.7	1026.7	53.9
S73	32.105	211.7	905.7	53.9
S74	19.515	460.0	3380.7	51.2
S75	19.515	460.0	3380.7	25.6
S76	18.578	459.5	3380.7	25.6
S77	18.578	459.5	3380.7	25.6
S78	18.578	459.5	3380.7	10.8
S79	18.578	298.7	891.7	64.7
S80	18.532	186.8	793.4	64.7
S81	18.578	459.5	3380.7	14.8
S82	0.040	26.8	2332.1	34.8
S83	0.040	26.8	2332.1	29.6
S84	9.762	358.2	3176.0	10.0
S85	9.762	358.2	3176.0	15.0
S86	9.292	357.8	3176.0	15.0
S87	4.689	263.6	2090.2	23.8
S88	4.689	263.2	2090.2	23.8
S89	4.689	147.6	622.1	23.8
S90	12.601	147.8	623.1	23.8
S91	4.689	263.6	2090.2	44.8
S92	4.689	263.6	2090.2	44.8
S93	3.901	102.8	431.1	44.8
S94	1.113	110.5	2696.1	79.3
S95	1.113	129.6	2733.0	39.6
S96	2.014	175.3	2820.8	13.4
S97	1.917	175.0	2820.8	13.4
S98	1.917	118.9	499.0	13.4
S99	1.670	92.5	387.7	13.4
S100	0.739	91.4	2652.5	12.9
S101	0.703	90.1	2652.5	12.9
S102	0.703	90.1	377.2	26.4
S103	0.703	90.1	377.2	26.4
S104	0.224	62.5	2486.9	11.5
S105	0.213	61.4	2486.9	11.5
S106	0.213	61.4	267.1	11.5
S107	0.198	37.4	156.8	11.5
S108	0.035	16.0	63.0	10.1

Boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	90.1
F2	1.013	15.0	45.1	39.6
F3	1.013	15.0	45.1	50.5
F4	1.013	20.0	20.2	345.2
F5	1.040	22.6	22.9	345.2
F6	1.035	120.6	122.5	345.2
F7	1.032	297.7	305.9	328.0
F8	1.032	297.7	305.9	245.0
F9	1.032	297.7	305.9	83.0
F10	4.000	90.2	180.8	20.1
F11	1.011	1050.0	1299.6	580.1
F12	1.011	1050.0	1299.6	515.9
F13	1.011	1050.0	1299.6	64.3
F14	1.011	873.6	1059.5	515.9
F15	1.010	804.1	966.9	515.9
F16	1.010	683.3	838.7	515.9
F17	1.009	565.9	669.0	515.9
F18	1.009	423.8	483.8	515.9
F19	1.008	324.2	364.8	515.9
F20	1.008	319.7	361.2	524.3
F21	1.004	317.8	361.3	529.3
F22	1.004	317.8	361.3	354.6
F23	0.997	168.4	186.9	371.9
F24	1.004	230.0	258.4	174.7
F25	1.002	230.0	258.4	174.7
F26	0.999	160.0	178.0	174.7
F27	0.997	165.7	184.1	546.6
F28	0.982	165.7	184.1	416.3
F29	0.982	165.1	183.6	72.2
F30	1.020	168.9	187.9	72.2
F31	0.992	165.1	183.6	471.0
F32	1.024	161.1	178.1	471.0
F33	1.019	96.2	106.1	471.0
F34	1.011	60.6	33.8	478.4
S1	0.032	25.2	121.3	107.5
S2	9.370	29.1	123.0	107.5
S3	9.370	29.1	123.0	0.0
S4	9.370	29.1	123.0	107.5
S5	9.101	53.9	228.3	107.5
S6	8.921	80.9	339.4	107.5
S7	8.921	81.1	340.2	118.4
S8	8.655	109.1	458.1	118.4
S9	8.655	106.1	445.5	289.9
S10	8.655	106.1	445.5	160.0
S11	0.032	25.2	127.4	311.5
S12	8.655	105.0	440.8	311.5
S13	8.147	134.4	565.4	289.9
S14	8.147	140.4	591.1	222.1
S15	8.147	140.4	591.1	0.0
S16	8.147	140.4	591.1	222.1
S17	8.147	140.4	591.1	222.1
S18	8.655	153.1	645.0	140.0
S19	8.655	164.5	695.1	271.8
S20	225.862	167.9	722.7	221.5
S21	225.862	167.9	722.7	221.5
S22	225.862	167.9	722.7	35.0
S23	225.862	167.9	722.7	35.0
S24	224.483	194.3	836.5	221.5
S25	223.104	220.2	951.1	221.5
S26	222.182	246.5	1079.1	221.5
S27	220.809	267.2	1168.4	221.5
S28	219.426	272.8	1195.2	221.5
S29	219.426	273.9	1200.9	256.5
S30	225.376	291.2	1236.5	25.0
S31	214.402	273.9	1200.9	256.5
S32	220.687	317.1	1425.9	256.5
S33	215.724	395.3	2716.7	256.5
S34	199.500	605.0	3553.5	269.4
S35	192.124	599.9	3542.9	269.4
S36	192.924	599.0	3542.9	546.6
S37	39.352	345.7	3084.1	519.9
S38	39.352	345.7	3084.1	5.0
S39	39.352	345.7	3084.1	481.7
S40	39.352	345.7	3084.1	240.9
S41	37.768	340.5	3074.8	240.9
S42	36.985	620.0	3723.9	243.3
S43	34.862	614.7	3712.7	243.3
S44	34.862	614.7	3712.7	486.5
S45	3.334	265.7	2098.7	361.4
S46	3.275	265.6	2098.7	361.4
S47	0.032	25.2	2333.9	115.3
S48	0.032	25.2	2333.9	115.3
S49	0.032	25.2	2333.9	115.3
S50	0.032	24.1	101.2	120.0
S51	0.032	24.1	101.2	115.3
S52	0.032	24.1	101.2	115.3
S53	2.850	18.1	76.2	37788.4
S54	2.850	1		

Table 34: Key performance parameters of FPP-D reference

Parameter	Unit	Related boiler capacity (%)												
		100	95	90	85	80	75	70	65	60	55	50	45	40
Boiler capacity	%	100	95	90	85	80	75	70	65	60	55	50	45	40
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	430
Net electricity generation	MW	1047	1000	951	901	850	798	746	688	634	578	521	464	408
Gross plant energy efficiency	%	47.6	47.5	47.5	47.3	47.2	47.1	47.0	46.9	46.6	46.3	45.8	45.2	44.5
Net plant energy efficiency	%	45.3	45.3	45.2	45.2	45.1	45.0	45.0	44.9	44.6	44.2	43.7	43.0	42.3
Thermodynamic mean temperature	K	679	674	668	663	657	651	644	638	631	625	617	610	601
CO ₂ emissions	kg/s	258.7	247.3	235.4	223.4	211.0	198.4	185.7	171.8	159.2	146.4	133.5	120.8	108.0
Specific CO ₂ emissions	g/kWh	890	890	891	892	894	896	896	899	904	912	923	937	954
Auxiliary power	MW	53.4	49.9	46.4	43.2	39.7	36.6	33.7	30.9	28.9	27.0	25.3	23.6	22.0
• Ancillary units	MW	3.355	3.176	3.024	2.879	2.614	2.368	2.155	1.963	1.798	1.660	1.553	1.467	1.400
• Cooling water pump	MW	8.148	8.148	8.148	8.149	8.149	8.148	8.149	8.149	8.150	8.150	8.151	8.149	8.150
• Condensate pump	MW	0.639	0.555	0.473	0.401	0.339	0.285	0.234	0.187	0.169	0.151	0.131	0.112	0.094
• Cooling tower fan	MW	7.570	7.223	6.876	6.529	6.182	5.835	5.488	5.141	4.794	4.448	4.101	3.754	3.407
• Flue gas treatment	MW	4.769	4.728	4.686	4.644	4.602	4.559	4.516	4.471	4.429	4.385	4.342	4.298	4.255
• Coal mills	MW	4.882	4.571	4.236	3.899	3.557	3.214	2.868	2.506	2.318	2.130	1.941	1.753	1.566
• Fluidized-bed dryer	MW	3.182	3.149	3.129	3.107	3.081	3.052	3.021	2.965	2.751	2.532	2.312	2.094	1.880
• Forced draft fan	MW	4.146	3.784	3.387	3.017	2.655	2.324	2.023	1.710	1.463	1.271	1.078	0.796	0.550
• Induced draft fan	MW	16.700	14.542	12.478	10.553	8.558	6.791	5.262	3.851	2.997	2.299	1.691	1.178	0.745
Specific auxiliary power	%	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.3	4.4	4.5	4.6	4.8	5.1

B.2.3 Future Power Plant (Mono Block Operation)

Table 35: Stream report of FPP-M reference

Boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	130.7
F2	1.013	15.0	45.1	41.8
F3	1.013	15.0	45.1	88.9
F4	1.013	20.0	126.2	498.1
F5	1.060	24.3	24.6	498.1
F6	1.050	114.5	116.2	498.1
F7	1.044	321.3	330.8	473.2
F8	1.044	321.3	330.8	22.5
F9	1.044	321.3	330.8	150.8
F10	4.000	90.2	180.9	21.2
F11	1.002	1115.9	1402.8	845.0
F12	1.002	1115.9	1402.8	759.0
F13	1.002	1115.9	1402.8	86.0
F14	1.002	981.8	1216.2	759.0
F15	1.001	908.9	1116.4	759.0
F16	1.000	801.7	971.7	759.0
F17	0.999	674.0	803.4	759.0
F18	0.998	488.5	567.3	759.0
F19	0.996	352.1	401.0	759.0
F20	0.996	352.1	387.1	770.8
F21	0.996	346.0	387.2	775.8
F22	0.996	346.0	387.2	519.8
F23	0.971	175.6	196.0	544.7
F24	0.986	346.0	387.2	250.0
F25	0.981	230.0	258.6	250.0
F26	0.976	160.0	179.0	256.0
F27	0.971	170.6	190.6	800.7
F28	0.962	169.9	190.2	256.0
F29	0.960	169.9	190.2	102.3
F30	1.023	178.3	199.2	102.3
F31	0.950	169.9	190.2	693.2
F32	1.046	172.2	192.8	492.0
F33	1.035	114.3	127.0	693.2
F34	1.011	57.8	-23.9	701.8
S1	0.031	24.4	105.1	133.5
S2	6.844	25.2	106.1	133.5
S3	6.844	25.2	106.1	0.0
S4	6.844	25.2	106.1	133.5
S5	6.429	46.1	193.7	133.5
S6	6.152	71.7	300.6	133.5
S7	6.152	71.9	301.5	146.0
S8	5.749	98.8	414.3	146.0
S9	5.749	102.0	427.8	200.1
S10	5.749	102.0	427.8	100.0
S11	0.031	24.4	106.8	154.2
S12	5.749	105.0	440.5	154.2
S13	5.507	125.7	528.4	200.1
S14	5.507	133.8	562.8	308.2
S15	5.535	157.7	1080.0	0.0
S16	5.507	133.8	562.8	308.2
S17	5.507	133.8	562.8	308.2
S18	5.749	150.5	634.6	100.0
S19	4.918	219.2	637.5	367.5
S20	329.500	155.6	676.6	296.7
S21	329.500	155.6	676.6	296.7
S22	329.500	155.6	676.6	20.0
S23	329.500	155.6	676.6	50.0
S24	326.500	175.8	762.0	296.7
S25	323.500	200.8	869.6	296.7
S26	321.500	225.2	1021.7	296.7
S27	318.500	247.6	1078.6	296.7
S28	315.500	252.9	1102.0	296.7
S29	315.500	261.6	1142.1	346.7
S30	328.527	310.3	1380.0	50.0
S31	326.800	281.5	1142.1	346.7
S32	312.388	330.7	1491.1	346.7
S33	303.442	427.2	2620.7	346.7
S34	285.000	605.0	3476.5	364.3
S35	273.446	598.3	3466.1	364.3
S36	273.446	598.1	3466.1	364.3
S37	32.458	275.3	2919.9	355.5
S38	32.458	275.3	2919.9	5.0
S39	32.458	275.3	2919.9	326.8
S40	32.458	275.3	2919.9	326.8
S41	30.044	268.7	2911.1	326.8
S42	26.034	620.0	3731.3	330.0
S43	23.757	614.3	3720.1	330.0
S44	23.757	614.3	3720.1	330.0
S45	2.367	275.6	3021.6	259.0
S46	2.367	275.3	3021.6	259.0
S47	0.031	24.4	2402.6	80.5
S48	0.031	24.4	2402.6	80.5
S49	0.031	24.4	2402.6	80.5
S50	0.031	22.9	96.2	85.4
S51	0.031	22.9	96.2	80.5
S52	0.031	22.9	96.2	80.5
S53	2.850	18.2	76.5	36456.6
S54	2.850	18.2	76.5	1394.3
S55	2.350	24.0	106.8	1394.3
S56	2.350	22.0	92.7	36456.6
S57	1.013	18.2	76.3	36456.6
S58	32.458	275.3	2919.9	23.7
S59	32.458	275.3	2919.9	23.7
S60	31.861	275.3	2919.9	23.7
S61	31.861	237.2	1024.3	32.5
S62	39.891	300.7	2963.9	8.8
S63	39.891	300.7	2963.9	8.8
S64	39.625	300.3	2963.9	8.8
S65	39.625	249.8	1084.7	8.8
S66	39.575	240.2	1036.8	8.8
S67	16.777	554.6	3591.7	10.8
S68	16.777	554.5	3591.7	10.8
S69	16.538	554.4	3591.7	10.8
S70	16.508	262.9	2948.7	10.8
S71	16.466	262.9	2948.7	10.8
S72	16.466	202.8	864.9	43.3
S73	16.416	180.8	766.9	43.3
S74	9.705	466.6	3407.3	22.5
S75	9.705	466.6	3407.3	22.5
S76	9.521	466.5	3407.3	22.5
S77	9.521	466.5	3407.3	22.5
S78	9.521	466.5	3407.3	7.9
S79	9.521	177.8	253.3	51.2
S80	9.471	180.6	678.4	51.2
S81	9.521	466.5	3407.3	14.6
S82	0.040	20.0	2426.5	14.6
S83	0.040	21.0	87.9	14.6
S84	4.958	369.1	3207.8	8.2
S85	4.958	369.1	3207.8	8.2
S86	4.919	369.0	3207.8	8.2
S87	2.397	275.6	3021.6	1.1
S88	2.371	275.6	3021.6	8.1
S89	2.371	125.7	528.0	8.1
S90	5.749	125.8	528.0	8.1
S91	2.397	275.6	3021.6	21.4
S92	2.397	275.6	3021.6	21.4
S93	0.939	57.9	242.3	21.4
S94	1.113	110.5	2696.0	41.3
S95	1.313	129.3	2732.5	20.6
S96	1.041	186.9	2849.5	6.5
S97	1.017	186.9	2849.5	6.5
S98	1.017	100.1	419.4	6.5
S99	1.006	76.0	318.4	6.5
S100	0.380	95.8	2675.8	6.0
S101	0.373	95.8	2675.8	6.0
S102	0.373	74.2	310.4	12.5
S103	6.152	74.3	311.3	12.5
S104	0.115	48.6	2509.8	4.9
S105	0.113	48.3	2509.8	4.9
S106	0.113	48.3	202.2	4.9
S107	0.105	28.4	118.7	4.9
S108	0.031	15.0	63.0	5.1

Boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	94.1
F2	1.013	15.0	45.1	39.5
F3	1.013	15.0	45.1	54.6
F4	1.013	20.0	126.2	358.5
F5	1.041	22.7	23.0	358.5
F6	1.035	120.1	122.0	358.5
F7	1.033	300.0	308.4	340.5
F8	1.033	300.0	308.4	250.1
F9	1.033	300.0	308.4	90.5
F10	4.000	90.2	180.8	20.0
F11	1.009	1050.0	1302.1	632.7
F12	1.009	1050.0	1302.1	563.8
F13	1.009	1050.0	1302.1	69.0
F14	1.009	901.5	1099.2	563.8
F15	1.008	841.1	1018.0	563.8
F16	1.008	737.6	891.9	563.8
F17	1.007	636.5	750.0	563.8
F18	1.007	468.5	539.2	563.8
F19	1.006	323.9	365.2	563.8
F20	1.006	319.7	361.9	572.5
F21	1.001	317.9	361.9	577.5
F22	1.001	317.9	361.9	387.0
F23	0.992	175.6	192.9	404.9
F24	1.001	317.9	361.9	190.6
F25	0.998	230.0	258.6	190.6
F26	0.995	160.0	178.2	190.6
F27	0.992	169.2	186.2	595.5
F28	0.987	169.6	187.2	252.0
F29	0.987	169.6	187.8	100.0
F30	1.020	173.0	192.8	100.0
F31	0.987	168.6	187.8	492.0
F32	1.025	172.2	194.9	492.0
F33	1.020	101.3	111.9	492.0
F34	1.011	60.3	20.9	500.8
S1	0.031	21.8	91.4	71.3
S2	4.338	21.9	92.3	71.3
S3	4.338	21.9	92.3	0.0
S4	4.338	21.9	92.3	71.3
S5	4.209	42.0	176.1	71.3
S6	4.130	66.3	279.1	71.3
S7	4.130	66.7	279.4	77.6
S8	4.016	92.4	387.2	77.6
S9	4.016	100.5	421.5	147.7
S10	4.016	100.5	421.5	70.0
S11	0.031	21.3	93.6	140.0
S12	4.016	100.5	440.4	140.0
S13	3.884	116.2	487.6	147.7
S14	3.884	127.5	535.9	221.5
S15	3.884	143.6	612.6	0.0
S16	3.884	127.5	535.9	221.5
S17	3.884	127.5	535.9	221.5
S18	4.016	168.3	640.4	70.0
S19	3.583	139.7	587.8	257.6
S20	223.380	142.6	614.7	257.6
S21	223.380	142.6	614.7	206.0
S22	223.380	142.6	614.7	14.6
S23	223.380	142.6	614.7	35.0
S24	221.908	164.2	706.4	206.0
S25	220.436	186.5	802.3	206.0
S26	219.453	217.5	938.7	206.0
S27	217.986	229.9	989.7	206.0
S28	216.512	234.0	1013.2	206.0
S29	216.512	239.2	1036.8	243.0
S30	222.906	269.0	1177.1	50.0
S31	212.344	239.2	1036.8	243.0
S32	218.639	317.1	1426.2	243.0
S33	214.174	395.3	2723.5	243.0
S34	199.500	605.0	3553.5	255.3
S35	193.639	598.3	3542.9	255.3
S36	193.639	598.3	3542.9	255.3
S37	22.272	277.8	2964.3	250.2
S38	22.272	277.8	2964.3	5.0
S39	22.272	277.8	2964.3	231.3
S40	22.272	277.8	2964.3	231.3
S41	20.988	272.4	2955.4	231.3
S42	18.042	620.0	3737.2	233.6
S43	16.907	614.6	3726.0	233.6
S44	16.908	614.6	3726.0	233.6
S45	1.726	279.4	3031.1	185.9
S46	1.710	279.3	3031.1	185.9
S47	0.031	24.4	2457.1	59.1
S48	0.031	24.4	2457.1	59.1
S49	0.031	24.4	2457.1	59.1
S50	0.031	23.4	98.0	61.5
S51	0.031	23.4	98.0	59.1
S52	0.031	23.4	98.0	59.1
S53	2.850	17.8	75.0	36456.6
S54	2.850	17.8	75.0	1394.3
S55	2.350	20.7	89.4	1394.3
S56</				

Table 36: Key performance parameters of FPP-M reference

Parameter	Unit	Related boiler capacity (%)											
		100	95	90	85	80	75	70	65	60	55	50	45
Boiler capacity	%	100	95	90	85	80	75	70	65	60	55	50	45
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	245
Net electricity generation	MW	516	493	467	442	416	390	364	336	309	282	255	228
Gross plant energy efficiency	%	45.7	45.5	45.4	45.3	45.1	45.0	44.7	44.4	44.2	44.0	43.8	43.6
Net plant energy efficiency	%	42.9	42.8	42.7	42.6	42.5	42.4	42.1	41.8	41.5	41.3	40.9	40.6
Thermodynamic mean temperature	K	700	693	685	678	671	663	655	648	640	632	624	615
CO ₂ emissions	kg/s	134.8	128.8	122.5	116.1	109.7	103.2	96.9	90.1	83.3	76.6	69.8	62.9
Specific CO ₂ emissions	g/kWh	939	941	943	946	949	951	958	965	971	977	985	993
Auxiliary power	MW	33.5	31.3	29.3	27.5	25.8	24.2	22.8	21.1	19.9	18.8	17.7	16.8
• Ancillary units	MW	2.015	1.937	1.835	1.749	1.673	1.604	1.534	1.383	1.266	1.164	1.086	1.029
• Cooling water pump	MW	7.874	7.874	7.874	7.874	7.874	7.874	7.873	7.874	7.874	7.875	7.874	7.875
• Condensate pump	MW	0.173	0.155	0.136	0.120	0.106	0.093	0.083	0.073	0.064	0.057	0.049	0.042
• Cooling tower fan	MW	5.090	4.857	4.624	4.390	4.157	3.924	3.690	3.457	3.224	2.990	2.757	2.524
• Flue gas treatment	MW	2.392	2.371	2.349	2.328	2.306	2.285	2.264	2.241	2.219	2.197	2.175	2.153
• Coal mills	MW	2.543	2.380	2.204	2.027	1.850	1.671	1.549	1.437	1.328	1.219	1.110	1.000
• Fluidized-bed dryer	MW	1.481	1.467	1.459	1.449	1.439	1.428	1.368	1.280	1.191	1.101	1.009	0.917
• Forced draft fan	MW	2.341	2.077	1.858	1.650	1.459	1.282	1.087	0.889	0.770	0.668	0.567	0.466
• Induced draft fan	MW	9.613	8.166	6.991	5.926	4.943	4.065	3.330	2.499	1.949	1.505	1.112	0.783
Specific auxiliary power	%	6.1	6.0	5.9	5.9	5.8	5.8	5.9	5.9	6.0	6.2	6.5	6.9

B.3 Annex Integration

B.3.1 Scenario EPP-EFG-MTG

Table 37: Stream report of EPP-EFG-MTG

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	180.1
F2	1.013	20.0	20.2	626.0
F3	1.055	24.3	24.6	626.0
F4	1.046	40.0	40.5	626.0
F5	1.041	298.7	307.0	594.7
F6	1.041	298.7	307.0	279.7
F7	1.041	298.7	307.0	315.0
F8	1.004	1000.0	1270.2	1153.2
F9	1.000	1000.0	1270.2	947.9
F10	1.004	1000.0	1270.2	205.4
F11	1.003	837.2	1042.7	947.9
F12	1.003	770.4	951.3	947.9
F13	1.002	676.2	824.4	947.9
F14	1.002	584.0	667.6	947.9
F15	1.000	433.7	510.9	947.9
F16	0.999	329.0	381.7	947.9
F17	0.999	325.5	378.8	959.7
F18	0.985	181.7	206.6	991.0
F19	0.975	181.1	206.2	983.9
F20	0.975	181.1	206.2	11.8
F21	1.023	188.4	214.8	11.8
F22	0.975	181.1	206.2	972.1
F23	1.038	180.2	205.2	972.1
F24	1.032	128.4	145.2	972.1
F25	1.018	65.0	73.2	977.6
F26	1.008	112.4	127.4	977.6
S1	0.061	35.1	147.2	277.0
S2	12.937	36.3	153.6	365.3
S3	19.237	36.3	153.6	0.3
S4	19.237	36.3	153.6	365.0
S5	17.350	62.2	261.6	365.0
S6	15.934	90.2	378.8	365.0
S7	15.934	90.9	381.8	425.1
S8	14.042	117.4	493.6	425.1
S9	12.149	150.9	636.4	425.1
S10	12.149	171.6	726.6	0.3
S11	12.149	150.9	636.5	425.5
S12	9.777	178.9	758.4	503.2
S13	230.366	183.1	788.2	474.5
S14	230.366	183.1	788.2	28.8
S15	227.524	200.6	864.1	474.5
S16	223.723	238.1	1031.8	474.5
S17	220.877	241.0	1049.2	474.5
S18	210.404	239.6	1038.7	474.5
S19	200.5	290.5	1283.7	474.5
S20	192.999	382.4	2720.4	474.5
S21	164.000	530.0	3378.3	498.5
S22	157.139	523.2	3368.2	498.5
S23	35.035	304.3	2989.8	460.8
S24	35.035	304.3	2989.8	456.8
S25	35.035	301.4	2981.9	477.8
S26	33.108	295.6	2973.0	477.8
S27	30.047	539.0	3544.7	482.6
S28	28.588	533.6	3534.1	482.6
S29	5.802	307.3	3077.7	418.6
S30	5.653	307.1	3077.7	418.6
S31	0.066	37.8	2408.4	182.8
S32	0.066	37.8	2408.4	182.8
S33	0.066	36.3	152.2	199.4
S34	0.066	36.3	152.2	182.8
S35	2.850	20.8	87.5	14476.7
S36	2.350	34.4	144.4	14476.7
S37	1.013	20.8	87.2	14476.7
S38	35.035	304.3	2989.8	5.0
S39	35.035	304.3	2989.8	37.7
S40	33.344	302.3	2989.8	37.7
S41	33.344	239.8	1036.5	37.7
S42	33.295	205.6	878.2	37.7
S43	17.389	456.5	3375.6	17.4
S44	16.557	456.0	3375.6	17.4
S45	16.527	243.5	2901.8	17.4
S46	16.370	243.2	2901.8	17.4
S47	16.370	214.8	1465.5	59.1
S48	9.777	178.9	758.4	4.0
S49	10.257	381.2	3223.9	22.8
S50	9.777	380.8	3223.9	22.8
S51	9.777	380.8	3223.9	18.8
S52	9.777	380.8	3223.9	4.0
S53	5.802	307.3	3077.7	23.8
S54	5.531	306.9	3077.7	23.8
S55	5.531	155.7	656.8	23.8
S56	5.483	124.4	522.6	23.8
S57	2.237	204.8	2879.3	18.2
S58	2.132	204.5	2879.3	18.2
S59	2.132	122.3	513.4	41.9
S60	2.084	97.8	410.1	41.9
S61	0.889	120.5	2718.7	18.2
S62	0.847	120.3	2718.7	18.2
S63	0.847	95.0	398.2	60.2
S64	15.934	95.2	400.0	60.2
S65	0.289	68.2	2558.0	16.6
S66	0.275	67.1	2558.0	16.6
S67	0.275	67.1	280.8	16.6
S68	0.224	43.6	182.5	16.6
S69	0.066	15.0	63.0	5.1

Related boiler capacity: 75 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	137.8
F2	1.013	20.0	20.2	464.6
F3	1.038	22.6	22.9	464.6
F4	1.032	40.0	40.5	464.6
F5	1.030	277.7	284.8	441.4
F6	1.030	277.7	284.8	204.1
F7	1.030	277.7	284.8	237.3
F8	1.009	971.1	1230.0	896.6
F9	1.009	971.1	1230.0	709.3
F10	1.009	971.1	1230.0	187.9
F11	1.009	791.2	980.0	709.3
F12	1.009	732.0	899.6	709.3
F13	1.008	636.7	772.3	709.3
F14	1.007	556.5	667.6	709.3
F15	1.007	411.2	483.1	709.3
F16	1.007	302.0	349.3	709.3
F17	1.007	299.0	346.7	718.2
F18	0.999	167.6	190.2	741.5
F19	0.994	167.0	189.8	736.4
F20	0.994	167.0	189.8	0.0
F21	1.020	174.7	198.8	0.0
F22	0.994	167.0	189.8	736.4
F23	1.022	162.6	184.8	736.4
F24	1.020	114.0	128.7	736.4
F25	1.014	65.0	73.3	740.6
F26	1.008	111.0	125.8	740.6
S1	0.061	35.1	147.2	277.0
S2	12.981	35.3	148.9	277.0
S3	12.981	35.3	148.9	0.3
S4	12.981	35.3	148.9	276.7
S5	11.897	35.5	245.8	276.7
S6	11.083	85.7	357.7	276.7
S7	11.083	85.7	359.6	319.7
S8	10.014	111.4	468.0	319.7
S9	8.945	143.7	605.4	319.7
S10	8.945	171.6	726.3	0.3
S11	8.945	143.7	605.6	320.0
S12	7.612	168.4	712.0	373.8
S13	161.939	171.2	733.1	352.3
S14	161.939	171.2	733.1	21.4
S15	160.370	189.2	811.0	352.3
S16	158.281	224.8	969.5	352.3
S17	156.711	228.9	988.1	352.3
S18	151.014	226.8	978.3	352.3
S19	156.927	280.5	1235.0	352.3
S20	144.839	357.9	2781.3	352.3
S21	122.400	530.0	3427.0	370.1
S22	116.018	524.2	3416.7	370.1
S23	26.079	307.4	3024.3	344.8
S24	26.079	307.4	3024.3	339.8
S25	26.079	302.2	3011.9	361.9
S26	24.922	297.1	3002.8	361.9
S27	22.551	539.0	3552.0	365.5
S28	21.722	533.9	3541.3	365.5
S29	4.425	309.1	3084.7	320.1
S30	4.337	308.9	3084.7	320.1
S31	0.061	36.5	2432.6	141.4
S32	0.061	36.5	2432.6	141.4
S33	0.061	35.4	148.5	152.6
S34	0.061	35.4	148.5	141.4
S35	2.850	20.4	85.7	14476.7
S36	2.350	31.0	130.2	14476.7
S37	1.013	20.4	85.4	14476.7
S38	26.079	307.4	3024.3	5.0
S39	26.079	307.4	3024.3	25.3
S40	25.285	306.4	3024.3	25.3
S41	25.285	224.6	964.8	25.3
S42	25.264	192.3	818.5	25.3
S43	13.233	457.4	3383.0	13.1
S44	12.786	457.1	3383.0	13.1
S45	12.740	229.0	2883.6	13.1
S46	12.652	228.8	2883.6	13.1
S47	12.652	201.9	1459.8	41.7
S48	9.712	168.4	712.0	3.3
S49	7.833	382.9	3231.8	15.4
S50	7.612	382.8	3231.8	15.4
S51	7.612	382.8	3231.8	12.1
S52	7.612	382.8	3231.8	3.3
S53	4.425	309.1	3084.7	16.9
S54	4.286	308.9	3084.7	16.9
S55	4.286	146.1	615.5	18.9
S56	4.262	116.6	489.4	16.9
S57	1.719	206.9	2885.8	13.1
S58	1.664	206.7	2885.8	13.1
S59	1.664	114.5	480.4	30.0
S60	1.640	91.1	381.6	30.0
S61	0.685	121.4	2722.5	13.0
S62	0.664	121.3	2722.5	13.0
S63	0.664	88.5	370.8	43.1
S64	11.083	88.7	372.1	43.1
S65	0.224	62.5	2560.9	11.2
S66	0.218	61.9	2560.9	11.2
S67	0.218	61.9	259.2	11.2
S68	0.195	40.3	168.8	11.2
S69	0.061	15.0	63.0	5.1

Related boiler capacity: 50 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	98.6
F2	1.013	20.0	20.2	350.4
F3	1.029	21.7	22.0	350.4
F4	1.026	40.0	40.5	350.4
F5	1.025	275.2	282.3	332.8
F6	1.025	275.2	282.3	168.0
F7	1.025	275.2	282.3	164.9
F8	1.012	929.5	1164.4	684.2
F9	1.012	929.5	1164.4	529.3
F10	1.012	929.5	1164.4	154.9
F11	1.012	732.9	895.7	529.3
F12	1.012	674.8	818.2	529.3
F13	1.011	599.0	718.7	529.3
F14	1.011	543.5	647.2	529.3
F15	1.011	411.4	480.7	529.3
F16	1.010	298.4	343.2	529.3
F17	1.010	295.3	340.7	536.1
F18	1.006	163.2	184.4	553.6
F19	1.003	162.6	183.9	550.3
F20	1.003	162.6	183.9	0.0
F21	1.018	166.9	188.9	0.0
F22	1.003	162.6	183.9	550.3
F23	1.016	158.3	176.6	550.3
F24	1.014	106.3	119.4	550.3
F25	1.011	65.0	73.4	558.2
F26	1.008	112.8	128.0	558.2
S1	0.058	34.4	144.1	

B.3.2 Scenario EPP-EFG-FT

Table 38: Stream report of EPP-EFG-FT

Stream					Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)					
F1	1.013	15.0	45.1	181.8					
F2	1.013	20.0	20.2	633.3					
F3	1.056	24.4	24.7	633.3					
F4	1.046	40.0	40.5	633.3					
F5	1.042	299.7	308.0	601.6					
F6	1.042	299.7	308.0	282.0					
F7	1.042	299.7	308.0	319.6					
F8	1.000	1000.0	1270.2	1157.9					
F9	1.004	1000.0	1270.2	953.6					
F10	1.004	1000.0	1270.2	204.2					
F11	1.003	838.4	1044.3	953.6					
F12	1.003	771.2	952.3	953.6					
F13	1.002	679.1	828.3	953.6					
F14	1.001	586.3	705.9	953.6					
F15	1.000	438.1	516.4	953.6					
F16	0.999	330.5	383.6	953.6					
F17	0.999	327.0	380.6	953.6					
F18	0.984	181.9	206.8	997.2					
F19	0.975	181.2	206.4	990.0					
F20	0.975	181.2	206.4	11.5					
F21	1.023	198.7	215.1	11.5					
F22	0.975	181.2	206.4	978.5					
F23	1.037	180.5	205.5	978.5					
F24	1.032	128.7	145.5	978.5					
F25	1.018	65.0	73.2	984.1					
F26	1.012	112.4	127.3	984.1					
S1	0.066	37.9	171.2	377.9					
S2	17.841	41.1	173.6	377.9					
S3	17.841	41.1	173.6	52.0					
S4	17.841	41.1	173.6	325.8					
S5	16.336	63.8	268.3	325.8					
S6	15.209	91.3	383.6	325.8					
S7	15.209	91.9	386.2	379.2					
S8	13.702	118.4	497.9	379.2					
S9	12.196	151.9	641.1	379.2					
S10	12.196	165.9	701.6	52.0					
S11	12.196	153.6	648.4	431.3					
S12	9.752	178.8	757.9	506.7					
S13	232.623	183.0	788.0	477.8					
S14	232.623	183.0	788.0	28.9					
S15	229.736	200.0	861.8	477.8					
S16	225.886	237.0	1027.2	477.8					
S17	222.999	240.8	1044.2	477.8					
S18	212.398	238.6	1033.8	477.8					
S19	216.879	290.9	1285.7	477.8					
S20	194.747	383.4	2719.4	477.8					
S21	166.600	530.0	3378.3	502.0					
S22	158.739	523.2	3366.2	502.0					
S23	34.460	301.0	2982.7	464.5					
S24	34.460	301.0	2982.7	459.5					
S25	34.460	299.7	2979.2	470.4					
S26	32.595	294.0	2970.3	470.4					
S27	29.583	539.0	3545.2	475.1					
S28	28.171	533.7	3534.6	475.1					
S29	5.774	308.5	3080.3	415.8					
S30	5.627	308.3	3080.3	415.8					
S31	0.066	37.9	2411.1	185.3					
S32	0.066	37.9	2411.1	185.3					
S33	0.066	36.4	152.4	198.3					
S34	0.066	36.4	152.4	185.3					
S35	2.850	20.8	87.6	14476.7					
S36	2.350	34.6	145.3	14476.7					
S37	1.013	20.8	87.4	14476.7					
S38	34.460	301.0	2982.7	5.0					
S39	34.460	301.0	2982.7	37.5					
S40	32.797	298.9	2982.7	37.5					
S41	32.797	238.9	1032.1	37.5					
S42	32.749	204.9	875.1	37.5					
S43	17.161	456.7	3376.5	17.0					
S44	16.362	456.3	3376.5	17.0					
S45	16.334	242.2	2899.4	17.0					
S46	16.183	241.9	2899.4	17.0					
S47	16.183	213.8	1455.5	58.6					
S48	9.752	178.8	757.9	4.1					
S49	10.161	381.9	3225.7	21.0					
S50	9.752	381.6	3225.7	21.0					
S51	9.752	381.6	3225.7	16.9					
S52	9.752	381.6	3225.7	4.1					
S53	5.774	308.5	3080.3	21.2					
S54	5.556	308.2	3080.3	21.2					
S55	5.556	155.9	657.6	21.2					
S56	5.518	124.9	524.8	21.2					
S57	2.238	206.3	2882.4	16.2					
S58	2.155	206.1	2882.4	16.2					
S59	2.155	122.6	514.8	37.4					
S60	2.117	98.4	412.6	37.4					
S61	0.895	122.3	2722.2	16.0					
S62	0.863	122.1	2722.2	16.0					
S63	0.863	95.5	400.2	53.4					
S64	15.209	95.7	402.0	53.4					
S65	0.293	68.5	2561.9	13.0					
S66	0.284	67.8	2561.9	13.0					
S67	0.284	67.8	284.0	13.0					
S68	0.293	46.4	194.2	13.0					
S69	0.066	15.0	63.0	5.1					

Stream					Related boiler capacity: 75 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)					
F1	1.013	15.0	45.1	138.8					
F2	1.013	20.0	20.2	467.6					
F3	1.038	22.6	22.8	467.6					
F4	1.032	40.0	40.5	467.6					
F5	1.030	277.6	284.8	444.3					
F6	1.030	277.6	284.8	202.8					
F7	1.030	277.6	284.8	241.4					
F8	1.009	970.8	1229.6	898.5					
F9	1.009	970.8	1229.6	710.7					
F10	1.009	970.8	1229.6	187.8					
F11	1.009	792.1	981.4	710.7					
F12	1.008	732.8	903.8	710.7					
F13	1.008	638.8	775.2	710.7					
F14	1.007	558.5	670.1	710.7					
F15	1.007	413.4	485.7	710.7					
F16	1.006	302.2	349.5	710.7					
F17	1.006	299.1	346.8	719.6					
F18	0.998	167.2	189.8	743.0					
F19	0.993	166.6	189.4	738.0					
F20	0.993	166.6	189.4	0.0					
F21	1.020	174.4	198.4	0.0					
F22	0.993	166.6	189.4	738.0					
F23	1.022	162.2	184.4	738.0					
F24	1.020	113.8	128.6	738.0					
F25	1.014	65.0	73.3	742.0					
F26	1.008	110.8	126.6	742.0					
S1	0.061	36.5	160.2	281.8					
S2	12.454	38.4	161.8	281.8					
S3	12.454	38.4	161.8	24.0					
S4	12.454	38.4	161.8	257.9					
S5	11.512	59.3	249.0	257.9					
S6	10.805	85.8	359.9	257.9					
S7	10.805	86.2	361.7	297.9					
S8	8.877	111.9	470.0	297.9					
S9	8.947	144.2	607.5	297.9					
S10	8.949	169.4	716.8	24.0					
S11	8.949	146.1	615.7	321.8					
S12	7.598	169.3	711.7	373.9					
S13	163.311	171.2	733.0	352.5					
S14	163.311	171.2	733.0	21.4					
S15	161.740	188.8	809.5	352.5					
S16	159.649	224.1	966.5	352.5					
S17	158.077	229.2	964.8	352.5					
S18	152.380	226.0	975.0	352.5					
S19	158.288	290.9	1237.0	352.5					
S20	146.263	358.9	2780.6	352.5					
S21	124.100	530.0	3425.1	370.4					
S22	119.723	524.2	3414.8	370.4					
S23	25.781	304.1	3017.4	345.2					
S24	25.781	304.1	3017.4	340.2					
S25	25.781	300.2	3007.7	357.9					
S26	24.652	295.1	2998.7	357.9					
S27	22.310	539.0	3552.2	361.5					
S28	21.500	533.9	3541.5	361.5					
S29	4.411	310.0	3086.6	318.6					
S30	4.324	309.9	3086.6	318.6					
S31	0.061	36.5	2433.7	142.5					
S32	0.061	36.5	2433.7	142.5					
S33	0.061	35.5	148.5	151.9					
S34	0.061	35.5	148.5	142.5					

B.3.3 Scenario EPP-FBG-MTG

Table 39: Stream report of EPP-FBG-MTG

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	179.0
F2	1.013	20.0	20.2	621.2
F3	1.053	24.1	24.4	621.2
F4	1.044	40.0	40.5	621.2
F5	1.039	300.9	309.2	590.2
F6	1.039	300.9	309.2	264.6
F7	1.039	300.9	309.2	325.6
F8	1.004	1000.0	1269.2	1155.5
F9	1.000	1269.2	956.0	
F10	1.004	1000.0	1269.2	199.6
F11	1.003	838.7	1043.9	956.0
F12	1.003	771.7	952.2	956.0
F13	1.002	678.7	827.1	956.0
F14	1.001	586.1	705.0	956.0
F15	1.000	436.6	514.2	956.0
F16	0.999	330.4	383.2	956.0
F17	0.999	327.0	380.3	967.8
F18	0.984	194.2	209.3	998.8
F19	0.975	183.5	208.9	991.7
F20	0.975	183.5	208.9	15.9
F21	1.023	190.7	217.2	15.9
F22	0.975	183.5	208.9	975.7
F23	1.037	182.7	208.0	975.7
F24	1.032	129.8	146.8	975.7
F25	1.018	65.0	73.2	982.5
F26	1.008	113.4	128.5	982.5
S1	0.064	36.4	152.4	368.6
S2	19.202	36.6	154.9	368.6
S3	19.202	36.6	154.9	3.8
S4	19.202	36.6	154.9	364.8
S5	17.317	62.1	261.3	364.8
S6	15.902	90.0	378.2	364.8
S7	15.902	90.7	381.2	424.8
S8	14.013	117.2	492.8	424.8
S9	12.123	150.6	636.4	424.8
S10	12.123	169.1	715.3	3.8
S11	12.123	150.8	636.1	428.6
S12	9.716	178.6	757.2	508.6
S13	232.946	182.9	787.3	477.7
S14	232.946	182.9	787.3	28.9
S15	230.061	200.2	862.8	477.7
S16	226.213	237.6	1029.8	477.7
S17	223.328	241.4	1047.2	477.7
S18	212.725	239.2	1036.7	477.7
S19	217.206	290.9	1285.7	477.7
S20	194.729	383.4	2719.5	477.7
S21	166.600	530.0	3376.3	501.8
S22	158.745	523.2	3366.2	501.8
S23	34.825	302.2	2984.9	464.0
S24	34.825	302.2	2984.9	459.0
S25	34.825	300.1	2979.1	475.3
S26	32.922	294.3	2970.2	475.3
S27	29.878	539.0	3544.9	480.1
S28	28.435	533.6	3534.3	480.1
S29	5.766	307.2	3077.5	416.1
S30	5.619	307.0	3077.5	416.1
S31	0.065	37.8	2408.5	181.8
S32	0.065	37.8	2408.5	181.8
S33	0.065	36.3	152.0	198.1
S34	0.065	36.3	152.0	181.8
S35	2.850	20.8	87.4	14476.7
S36	2.350	34.3	143.9	14476.7
S37	1.013	20.8	87.1	14476.7
S38	34.825	302.2	2984.9	5.0
S39	34.825	302.2	2984.9	37.8
S40	33.128	300.2	2984.9	37.8
S41	33.128	239.4	1034.8	37.8
S42	33.080	205.2	876.7	37.8
S43	17.291	456.4	3375.7	17.4
S44	16.457	456.0	3375.7	17.4
S45	16.427	243.0	2901.1	17.4
S46	16.270	242.7	2901.1	17.4
S47	16.270	214.4	1463.1	59.3
S48	9.716	178.6	757.2	4.1
S49	10.196	381.1	3223.9	22.8
S50	9.716	380.7	3223.9	22.8
S51	9.716	380.7	3223.9	18.8
S52	9.716	380.7	3223.9	4.1
S53	5.766	307.2	3077.5	23.7
S54	5.496	306.8	3077.5	23.7
S55	5.496	155.4	656.7	23.7
S56	5.448	124.1	521.7	23.7
S57	2.222	204.6	2879.1	18.1
S58	2.119	204.4	2879.1	18.1
S59	2.119	122.0	512.5	41.8
S60	2.071	97.7	409.3	41.8
S61	0.883	120.3	2718.5	18.2
S62	0.842	120.1	2718.5	18.2
S63	0.842	94.9	397.5	60.0
S64	15.902	95.0	399.3	60.0
S65	0.287	68.1	2557.8	16.3
S66	0.273	67.0	2557.8	16.3
S67	0.273	67.0	280.4	16.3
S68	0.225	43.7	182.9	16.3
S69	0.065	15.0	63.0	5.1

Related boiler capacity: 75 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	136.7
F2	1.013	20.0	20.2	458.9
F3	1.036	22.4	22.7	458.9
F4	1.031	40.0	40.5	458.9
F5	1.029	278.5	285.7	438.9
F6	1.029	278.5	285.7	189.3
F7	1.029	278.5	285.7	246.7
F8	1.009	973.9	1232.6	896.1
F9	1.009	973.9	1232.6	712.6
F10	1.009	973.9	1232.6	183.5
F11	1.009	793.6	982.3	712.6
F12	1.009	733.8	901.2	712.6
F13	1.008	639.6	775.4	712.6
F14	1.008	558.6	669.6	712.6
F15	1.007	413.7	485.7	712.6
F16	1.007	302.2	349.1	712.6
F17	1.007	299.1	346.8	721.4
F18	0.999	169.3	192.1	744.3
F19	0.993	168.7	191.7	739.3
F20	0.993	168.7	191.7	0.0
F21	1.021	176.5	200.8	0.0
F22	0.993	168.7	191.7	739.3
F23	1.023	164.3	186.6	739.3
F24	1.020	114.9	129.6	739.3
F25	1.014	65.0	73.3	744.6
F26	1.008	111.7	128.6	744.6
S1	0.061	35.5	148.9	280.4
S2	12.948	35.7	150.6	280.4
S3	12.948	35.7	150.6	3.8
S4	12.948	35.7	150.6	276.6
S5	11.864	58.4	245.4	276.6
S6	11.051	85.0	356.8	276.6
S7	11.051	85.5	358.8	319.6
S8	8.983	112.4	467.0	319.6
S9	8.915	143.4	604.2	319.6
S10	8.915	169.0	715.0	3.8
S11	8.915	143.7	605.5	323.3
S12	7.555	168.1	710.7	377.2
S13	164.337	170.9	732.1	355.6
S14	164.337	170.9	732.1	21.6
S15	162.739	188.8	809.5	355.6
S16	160.611	224.3	967.2	355.6
S17	159.013	228.4	985.7	355.6
S18	153.216	226.2	975.8	355.6
S19	159.098	280.9	1236.9	355.6
S20	146.603	358.9	2779.1	355.6
S21	124.100	530.0	3425.1	373.6
S22	119.642	524.2	3414.8	373.6
S23	25.883	304.6	3018.3	348.1
S24	25.883	304.6	3018.3	343.1
S25	25.883	300.9	3009.1	359.4
S26	24.744	295.8	3000.1	369.4
S27	22.389	539.0	3552.1	363.0
S28	21.572	533.9	3541.5	363.0
S29	4.391	309.0	3084.6	317.6
S30	4.394	308.9	3084.6	317.6
S31	0.061	36.5	2433.7	140.3
S32	0.061	36.5	2433.7	140.3
S33	0.061	35.4	148.3	151.3
S34	0.061	35.4	148.3	140.3
S35	2.850	20.3	85.5	14476.7
S36	2.350	30.9	129.8	14476.7
S37	1.013	20.3	85.3	14476.7
S38	25.883	304.6	3018.3	5.0
S39	25.883	304.6	3018.3	25.5
S40	25.084	303.7	3018.3	25.5
S41	25.084	224.1	962.8	25.5
S42	25.063	191.9	816.8	25.5
S43	13.137	457.4	3383.1	13.2
S44	12.658	457.1	3383.1	13.2
S45	12.641	228.4	2882.7	13.2
S46	12.553	228.2	2882.7	13.2
S47	12.553	201.5	1457.5	41.9
S48	7.555	168.1	710.7	3.2
S49	7.775	382.9	3231.8	15.3
S50	7.555	382.7	3231.8	15.3
S51	7.555	382.7	3231.8	12.1
S52	7.555	382.7	3231.8	3.2
S53	4.391	309.0	3084.6	16.9
S54	4.253	308.8	3084.6	16.9
S55	4.253	145.8	614.3	16.9
S56	4.228	116.3	488.3	16.9
S57	1.705	206.8	2885.8	13.1
S58	1.651	206.7	2885.8	13.1
S59	1.651	114.3	479.4	30.0
S60	1.627	90.9	380.7	30.0
S61	0.680	121.3	2722.5	13.0
S62	0.658	121.2	2722.5	13.0
S63	0.658	88.3	369.9	42.9
S64	11.051	88.4	371.3	42.9
S65	0.223	62.4	2561.0	11.0
S66	0.216	61.8	2561.0	11.0
S67	0.216	61.8	258.6	11.0
S68	0.195	40.5	168.6	11.0
S69	0.061	15.0	63.0	5.1

Related boiler capacity: 50 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	96.3
F2	1.013	20.0	20.2	340.2
F3	1.028	21.6	21.9	340.2
F4	1.025	40.0	40.5	340.2
F5	1.024	276.2	283.3	323.2
F6	1.024	276.2	283.3	152.5
F7	1.024	276.2	283.3	170.7
F8	1.012	932.0	1166.3	676.0
F9	1.012	932.0	1166.3	525.9
F10	1.012	932.0	1166.3	150.1
F11	1.012	733.9	895.8	525.9
F12	1.012	675.2	817.7	525.9
F13	1.011	600.6	719.9	525.9
F14	1.011	544.7	647.8	525.9
F15	1.011	414.2	483.6	525.9
F16	1.011	298.4	342.7	525.9
F17	1.011	295.3	340.2	532.6
F18	1.006	165.4	186.7	546.5
F19	1.004	164.8	186.3	546.2
F20	1.004	164.8	186.3	0.0
F21	1.018	169.0	191.1	0.0
F22	1.004	164.8	186.3	546.2
F23	1.016	158.3	178.8	546.2
F24	1.014	107.0	120.1	546.2
F25	1.011	65.0	73.4	555.1
F26</				

B.3.4 Scenario EPP-FBG-FT

Table 40: Stream report of EPP-FBG-FT

Related boiler capacity: 100 %					Related boiler capacity: 75 %					Related boiler capacity: 50 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)	Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)	Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	181.2	F1	1.013	15.0	45.1	138.1	F1	1.013	15.0	45.1	97.9
F2	1.013	20.0	20.2	630.6	F2	1.013	20.0	20.2	464.9	F2	1.013	20.0	20.2	347.5
F3	1.055	24.3	24.6	630.6	F3	1.037	22.6	22.8	464.9	F3	1.029	21.7	22.0	347.5
F4	1.046	40.0	40.5	630.6	F4	1.032	40.0	40.5	464.9	F4	1.026	40.0	40.5	347.5
F5	1.041	300.1	308.4	590.0	F5	1.030	277.9	285.1	441.6	F5	1.024	275.4	282.5	330.1
F6	1.041	300.1	308.4	278.1	F6	1.030	277.9	285.1	198.5	F6	1.024	275.4	282.5	164.0
F7	1.041	300.1	308.4	320.9	F7	1.030	277.9	285.1	243.1	F7	1.024	275.4	282.5	166.1
F8	1.004	1000.0	1269.4	1160.5	F8	1.009	971.9	1230.0	899.2	F8	1.012	929.1	1162.4	881.4
F9	1.004	1000.0	1269.4	957.3	F9	1.009	971.9	1230.0	712.7	F9	1.012	929.1	1162.4	527.5
F10	1.004	1000.0	1269.4	203.2	F10	1.009	971.9	1230.0	186.5	F10	1.012	929.1	1162.4	153.9
F11	1.003	837.7	1042.6	957.3	F11	1.009	792.1	980.4	712.7	F11	1.012	731.5	892.7	527.5
F12	1.003	770.3	950.4	957.3	F12	1.009	732.5	899.5	712.7	F12	1.012	673.0	814.9	527.5
F13	1.002	678.8	827.3	957.3	F13	1.008	639.0	774.7	712.7	F13	1.011	599.2	719.2	527.5
F14	1.001	585.7	704.6	957.3	F14	1.008	558.2	669.2	712.7	F14	1.011	543.5	646.4	527.5
F15	1.000	438.7	516.7	957.3	F15	1.007	414.3	486.4	712.7	F15	1.011	414.6	484.1	527.5
F16	0.999	330.4	383.2	957.3	F16	1.007	302.2	349.2	712.7	F16	1.011	298.4	342.8	527.5
F17	0.999	327.0	380.3	969.3	F17	1.007	299.1	346.6	721.7	F17	1.011	295.3	340.2	534.2
F18	0.984	182.8	207.6	1000.8	F18	0.999	168.0	190.6	744.9	F18	1.006	163.6	184.5	551.6
F19	0.975	182.1	207.2	993.6	F19	0.993	167.4	190.2	739.8	F19	1.003	163.0	184.1	548.3
F20	0.975	182.1	207.2	13.1	F20	0.993	167.4	190.2	0.0	F20	1.003	163.0	184.1	0.0
F21	1.023	189.5	215.9	13.1	F21	1.021	175.2	199.3	0.0	F21	1.018	167.2	189.0	0.0
F22	0.975	182.1	207.2	980.5	F22	0.993	167.4	190.2	739.8	F22	1.003	163.0	184.1	548.3
F23	1.037	181.4	206.4	980.5	F23	1.023	163.0	185.1	739.8	F23	1.016	156.6	176.8	548.3
F24	1.032	129.1	146.0	980.5	F24	1.020	114.2	128.9	739.8	F24	1.014	106.3	119.3	548.3
F25	1.018	65.0	73.2	987.0	F25	1.014	65.0	73.3	744.9	F25	1.011	65.0	73.4	557.1
F26	1.008	112.7	127.7	987.0	F26	1.008	111.1	125.9	744.9	F26	1.008	113.0	128.2	557.1
S1	0.066	37.9	173.3	381.0	S1	0.061	36.5	161.9	284.4	S1	0.058	35.5	165.1	200.8
S2	17.737	41.6	175.7	381.0	S2	12.420	38.8	163.6	284.4	S2	7.760	39.6	166.4	200.8
S3	17.737	41.6	175.7	58.3	S3	12.420	38.8	163.6	25.7	S3	7.760	39.6	166.4	22.0
S4	17.737	41.6	175.7	322.7	S4	12.420	38.8	163.6	256.7	S4	7.760	39.6	166.4	178.9
S5	16.261	63.9	268.6	322.7	S5	11.486	59.3	249.1	256.7	S5	7.306	54.0	226.7	178.9
S6	15.154	91.3	383.7	322.7	S6	10.786	85.7	359.7	256.7	S6	6.966	79.0	331.1	178.9
S7	15.154	91.9	386.2	375.6	S7	10.786	86.1	361.5	296.5	S7	6.966	79.2	332.0	204.6
S8	13.677	118.4	497.9	375.6	S8	8.966	111.8	469.7	286.5	S8	6.529	103.7	435.1	204.6
S9	12.199	151.9	641.0	375.6	S9	8.946	144.1	607.2	286.5	S9	6.092	134.2	564.7	204.6
S10	12.199	165.6	700.3	58.3	S10	8.946	169.2	715.8	27.7	S10	6.092	159.4	863.3	22.0
S11	12.199	153.8	649.0	433.9	S11	8.946	146.3	616.5	324.2	S11	6.092	141.0	593.7	226.5
S12	9.725	178.7	757.3	509.4	S12	5.755	168.2	711.2	376.4	S12	5.426	154.9	653.6	257.4
S13	233.504	182.9	787.6	480.4	S13	163.996	171.1	732.5	354.9	S13	105.637	157.0	668.6	245.0
S14	233.504	182.9	787.6	29.0	S14	163.996	171.1	732.5	21.5	S14	105.637	157.0	668.6	12.4
S15	230.587	199.8	861.1	480.4	S15	162.404	188.6	808.7	354.9	S15	104.878	174.3	743.3	245.0
S16	226.695	236.8	1026.1	480.4	S16	160.285	223.9	965.4	354.9	S16	103.872	206.9	886.8	245.0
S17	223.778	240.5	1043.1	480.4	S17	158.693	227.9	983.7	354.9	S17	103.113	210.9	904.9	245.0
S18	213.069	238.3	1032.6	480.4	S18	152.523	225.8	973.9	354.9	S18	100.416	208.9	895.8	245.0
S19	217.522	290.9	1285.7	480.4	S19	158.812	290.9	1237.0	354.9	S19	107.242	270.9	1188.1	245.0
S20	195.009	383.4	2718.2	480.4	S20	146.522	358.9	2779.4	354.9	S20	101.345	325.0	2803.3	245.0
S21	166.600	530.0	3376.3	504.7	S21	124.100	530.0	3425.1	372.8	S21	85.500	530.0	3487.8	257.4
S22	158.652	623.1	3366.2	504.7	S22	119.662	524.2	3414.8	372.8	S22	82.864	524.8	3457.4	257.4
S23	34.345	300.6	2982.1	467.1	S23	25.693	303.7	3016.7	347.5	S23	17.580	307.8	3048.7	242.1
S24	34.345	300.6	2982.1	462.1	S24	25.693	303.7	3016.7	342.5	S24	17.580	307.8	3048.7	237.1
S25	34.345	299.8	2979.9	468.9	S25	25.693	300.5	3008.8	356.7	S25	17.580	302.0	3035.7	251.3
S26	32.490	294.1	2971.0	468.9	S26	24.570	295.4	2999.7	356.7	S26	16.992	297.3	3026.6	251.3
S27	29.487	539.0	3545.3	473.6	S27	22.234	539.0	3552.3	360.3	S27	15.297	528.8	3536.5	251.3
S28	28.083	533.7	3534.6	473.6	S28	21.430	533.9	3541.6	360.3	S28	14.921	523.8	3525.9	251.3
S29	5.758	308.5	3080.4	414.6	S29	4.397	310.0	3086.7	317.6	S29	3.101	306.4	3082.3	225.5
S30	5.611	308.4	3080.4	414.6	S30	4.310	309.9	3086.7	317.6	S30	3.058	306.3	3082.3	225.5
S31	0.066	37.9	2411.4	185.0	S31	0.061	36.5	2434.2	142.2	S31	0.058	35.5	2487.7	102.7
S32	0.066	37.9	2411.4	185.0	S32	0.061	36.5	2434.2	142.2	S32	0.058	35.5	2487.7	102.7
S33	0.066	36.4	152.4	197.7	S33	0.061	35.4	148.5	151.4	S33	0.058	34.8	145.8	107.2
S34	0.066	36.4	152.4	185.0	S34	0.061	35.4	148.5	142.2	S34	0.058	34.8	145.8	102.7
S35	2.850	20.8	87.6	14476.7	S35	2.850	20.4	85.7	14476.7	S35	2.850	19.6	82.5	14476.7
S36	2.350	34.6	145.2	14476.7	S36	2.350	31.1	130.6	14476.7	S36	2.350	27.5	115.7	14476.7
S37	1.013	20.8	87.3	14476.7	S37	1.013	20.4	85.5	14476.7	S37	1.013	19.6	82.2	14476.7
S38	34.345	300.6	2982.1	5.0	S38	25.693	303.7	3016.7	5.0	S38	17.580	307.8	3048.7	5.0
S39	34.345	300.6	2982.1	37.6	S39	25.693	303.7	3016.7	25.3	S39	17.580	307.8	3048.7	15.3
S40	32.673	238.6	1031.0	37.6	S40	24.908	202.8	961.1	25.3	S40	17.281	207.4	3048.7	15.3
S41	32.673	238.6	1031.0	37.6	S41	24.908	202.8	961.1	25.3	S41	17.281	205.1	875.5	15.3
S42	32.624	204.7	874.3	37.6	S42	24.887	191.7	815.8	25.3	S42	17.274	176.1	746.3	15.3
S43	17.106	456.7	3376.6	17.0	S43	13.070	457.6	3383.7	12.9	S43	9.141	450.0	3372.3	8.6
S44	16.307	456.3	3376.6	17.0	S44	12.606	457.3	3383.7	12.9	S44	8.937	449.9	3372.3	8.6
S45	16.278	241.9	2899.0	17.0	S45	12.590	227.8	2881.6	12.9	S45	8.929	209.5	2856.7	8.6
S46	16.128	241.6	2899.0	17.0	S46	12.507	227.7	2881.6	12.9	S46	8.893	209.4	2856.7	8.6
S47	16.128	213.6	1454.0	58.7	S47	12.505	201.1	1451.9	41.5	S47	8.893	184.9	1425.8	26.4
S48	9.725	178.7	757.3	4.1	S48	7.575	168.2	711.2	3.3	S48	5.426	154.9	653.6	2.5
S49	10.130	381.9	3225.8	20.9	S49	7.762	383.6	3233.3	14.1	S49	5.475	378.6	3226.8	7.1
S50	9.725	381.6	3225.8	20.9	S50	7.575	383.4							

B.3.5 Scenario EPP-EFG-MTG-H2AVG

Table 41: Stream report of EPP-EFG-MTG-H2AVG

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	179.9
F2	1.013	20.0	20.2	626.5
F3	1.055	24.3	24.6	626.5
F4	1.046	40.0	40.5	626.5
F5	1.041	298.7	307.0	594.2
F6	1.041	298.7	307.0	278.9
F7	1.041	298.7	307.0	315.3
F8	1.004	1000.0	1270.2	1152.8
F9	1.004	1000.0	1270.2	947.6
F10	1.004	1000.0	1270.2	205.2
F11	1.003	837.3	1042.7	947.6
F12	1.003	770.5	951.4	947.6
F13	1.002	676.3	824.5	947.6
F14	1.001	584.1	703.0	947.6
F15	1.000	433.8	511.0	947.6
F16	0.999	329.0	381.7	947.6
F17	0.999	325.5	378.8	959.4
F18	0.985	181.8	205.7	990.7
F19	0.975	181.1	206.2	983.6
F20	0.975	181.1	206.2	11.9
F21	1.023	188.5	214.8	11.9
F22	0.975	181.1	206.2	971.7
F23	1.036	180.3	205.3	971.7
F24	1.032	128.4	145.3	971.7
F25	1.018	65.0	73.2	977.3
F26	1.008	112.5	127.4	977.3
S1	0.066	36.4	152.5	365.7
S2	19.136	36.6	155.0	365.7
S3	19.136	36.6	155.0	3.5
S4	19.136	36.6	155.0	362.2
S5	17.277	62.3	262.1	362.2
S6	15.883	90.3	379.3	362.2
S7	15.883	91.0	382.2	421.9
S8	14.019	117.5	494.0	421.9
S9	12.155	151.0	636.9	421.9
S10	12.155	166.0	702.1	3.5
S11	12.155	151.1	637.4	425.4
S12	9.783	178.9	758.5	503.0
S13	230.311	183.1	788.3	474.2
S14	230.311	183.1	788.3	28.8
S15	227.467	200.5	864.1	474.2
S16	223.673	238.0	1031.7	474.2
S17	220.830	241.8	1049.1	474.2
S18	210.367	230.6	1038.6	474.2
S19	214.890	250.5	1283.7	474.2
S20	192.976	382.4	2720.5	474.2
S21	154.900	530.0	3378.3	498.2
S22	157.146	523.2	3368.2	498.2
S23	35.016	304.3	2989.7	460.6
S24	35.016	304.3	2989.7	455.6
S25	35.016	301.2	2981.7	477.8
S26	33.091	295.5	2972.7	477.8
S27	30.032	539.0	3544.8	482.3
S28	28.575	533.6	3534.1	482.3
S29	5.804	307.4	3077.9	418.7
S30	5.655	307.2	3077.9	418.7
S31	0.066	37.8	2408.6	183.1
S32	0.066	37.8	2408.6	183.1
S33	0.066	36.3	152.2	199.5
S34	0.066	36.3	152.2	193.1
S35	2.850	20.8	87.5	14476.7
S36	2.350	34.4	144.5	14476.7
S37	1.013	20.8	87.2	14476.7
S38	35.016	304.3	2989.7	5.0
S39	35.016	304.3	2989.7	37.7
S40	33.328	302.2	2989.7	37.7
S41	33.328	239.8	1036.4	37.7
S42	33.280	205.6	878.1	37.7
S43	17.884	456.5	3375.7	17.4
S44	16.554	456.0	3375.7	17.4
S45	16.525	243.4	2801.7	17.4
S46	16.369	243.2	2801.7	17.4
S47	16.369	214.8	1465.0	59.1
S48	9.783	178.9	758.5	4.0
S49	10.257	381.2	3224.0	22.7
S50	9.783	380.8	3224.0	22.7
S51	9.783	380.8	3224.0	16.6
S52	9.783	380.8	3224.0	4.0
S53	5.804	307.4	3077.9	23.6
S54	5.537	307.1	3077.9	23.6
S55	5.537	150.7	657.0	23.6
S56	5.489	124.4	522.9	23.6
S57	2.238	204.9	2879.5	18.0
S58	2.136	204.6	2879.5	18.0
S59	2.136	122.3	513.6	41.6
S60	2.088	97.9	410.4	41.6
S61	0.890	120.6	2719.0	18.1
S62	0.849	120.4	2719.0	18.1
S63	0.849	95.1	398.4	59.7
S64	15.883	95.3	400.3	59.7
S65	0.289	68.3	2568.3	16.3
S66	0.276	67.2	2558.3	16.3
S67	0.276	67.2	281.1	16.3
S68	0.227	43.8	183.3	16.3
S69	0.066	15.0	63.0	5.1

Related boiler capacity: 75 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	137.7
F2	1.013	20.0	20.2	464.0
F3	1.038	22.6	22.9	464.0
F4	1.032	40.0	40.5	464.0
F5	1.030	277.7	284.9	440.8
F6	1.030	277.7	284.9	203.1
F7	1.030	277.7	284.9	237.7
F8	1.009	971.2	1230.1	895.8
F9	1.009	971.2	1230.1	708.8
F10	1.009	971.2	1230.1	187.0
F11	1.009	791.3	980.2	708.8
F12	1.009	732.2	899.8	708.8
F13	1.008	636.8	772.6	708.8
F14	1.008	556.7	667.8	708.8
F15	1.007	411.3	483.2	708.8
F16	1.007	302.0	349.3	708.8
F17	1.007	299.0	346.7	717.7
F18	0.999	167.6	190.3	740.9
F19	0.994	167.0	189.9	735.9
F20	0.994	167.0	189.9	0.0
F21	1.020	174.8	198.9	0.0
F22	0.994	167.0	189.9	735.9
F23	1.022	162.6	184.8	735.9
F24	1.020	114.0	128.8	735.9
F25	1.014	65.0	73.3	740.1
F26	1.008	111.1	125.9	740.1
S1	0.061	35.6	148.9	277.4
S2	12.910	35.7	150.7	277.4
S3	12.910	35.7	150.7	3.3
S4	12.910	35.7	150.7	274.1
S5	11.846	58.6	246.3	274.1
S6	11.048	85.3	358.1	274.1
S7	11.048	85.8	360.0	316.7
S8	8.999	115.5	468.4	316.7
S9	8.950	143.8	605.9	316.7
S10	8.950	171.8	727.2	3.3
S11	8.950	144.1	607.1	320.0
S12	7.617	168.4	712.2	373.5
S13	161.878	171.2	733.2	352.1
S14	161.878	171.2	733.2	21.4
S15	160.311	189.2	810.9	352.1
S16	158.225	224.8	969.4	352.1
S17	156.658	239.9	987.9	352.1
S18	150.970	226.7	978.0	352.1
S19	156.885	280.5	1235.0	352.1
S20	144.809	357.9	2781.4	352.1
S21	122.400	530.0	3427.0	369.9
S22	118.005	524.2	3416.7	369.9
S23	26.058	307.3	3024.2	344.6
S24	26.058	307.3	3024.2	339.6
S25	26.058	302.1	3011.5	361.6
S26	24.902	296.9	3002.5	361.6
S27	22.534	539.0	3552.0	365.2
S28	21.707	533.9	3541.3	365.2
S29	4.427	309.2	3085.0	320.1
S30	4.339	309.1	3085.0	320.1
S31	0.061	36.5	2432.6	141.6
S32	0.061	36.5	2432.6	141.6
S33	0.061	35.4	148.5	152.6
S34	0.061	35.4	148.5	141.6
S35	2.850	20.4	85.7	14476.7
S36	2.350	31.0	130.3	14476.7
S37	1.013	20.4	85.5	14476.7
S38	26.058	307.3	3024.2	5.0
S39	26.058	307.3	3024.2	25.3
S40	25.266	306.3	3024.2	25.3
S41	25.266	224.5	964.6	25.3
S42	25.245	192.3	818.4	25.3
S43	13.226	457.4	3383.1	13.1
S44	12.752	457.2	3383.1	13.1
S45	12.736	228.9	2883.5	13.1
S46	12.649	228.7	2883.5	13.1
S47	12.649	201.9	1459.2	41.6
S48	7.617	168.4	712.2	3.2
S49	7.833	383.0	3232.0	15.2
S50	7.617	382.9	3232.0	15.2
S51	7.617	382.9	3232.0	11.8
S52	7.617	382.9	3232.0	3.2
S53	4.427	309.2	3085.0	16.8
S54	4.291	309.0	3085.0	16.8
S55	4.291	146.2	615.7	16.8
S56	4.267	116.6	489.7	16.8
S57	1.720	207.0	2886.2	13.0
S58	1.667	206.9	2886.2	13.0
S59	1.667	114.5	480.6	29.8
S60	1.643	91.1	381.9	29.8
S61	0.686	121.6	2722.9	12.9
S62	0.665	121.4	2722.9	12.9
S63	0.665	88.6	371.0	42.6
S64	11.048	88.7	372.4	42.6
S65	0.225	62.6	2561.3	11.0
S66	0.219	62.0	2561.3	11.0
S67	0.219	62.0	259.5	11.0
S68	0.197	40.6	169.9	11.0
S69	0.061	15.0	63.0	5.1

Related boiler capacity: 50 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	98.5
F2	1.013	20.0	20.2	350.1
F3	1.029	21.7	22.0	350.1
F4	1.026	40.0	40.5	350.1
F5	1.025	275.2	282.3	332.6
F6	1.025	275.2	282.3	167.5
F7	1.025	275.2	282.3	165.0
F8	1.012	929.7	1164.6	884.0
F9	1.012	929.7	1164.6	529.3
F10	1.012	929.7	1164.6	154.7
F11	1.012	733.1	895.8	529.3
F12	1.012	674.9	818.3	529.3
F13	1.011	599.1	719.9	529.3
F14	1.011	543.7	647.3	529.3
F15	1.011	411.4	480.7	529.3
F16	1.010	298.4	343.2	529.3
F17	1.010	295.4	340.7	536.0
F18	1.006	163.3	184.4	553.5
F19	1.003	162.7	184.0	550.2
F20	1.003	162.7	184.0	0.0
F21	1.018	167.0	189.9	0.0
F22	1.003	162.7	184.0	550.2
F23	1.016	156.4	176.7	550.2
F24	1.014	106.3	119.4	550.2
F25	1.011	65.0	73.4	558.1
F26	1.008	112.8	128.1	558.1
S1	0.058	35.0	146.6	195.8
S2	8.070	35.1	147.8	195.8
S3	8.070	35.1	147.8	3.3
S4	8.070	35.1	147.8	192.5
S5	7.545	53.9	226.1	192.5
S6	7.152	78.9	330.9	192.5
S7	7.152	79.2	331.9	220.3
S8	6.844	103.7	435.3	220.3
S9	6.137	134.4	565.2	220.3
S10	6.137	159.7	727.0	3.3
S11	6.137	134.9	567.6	223.6
S12	5.492	155.4	655.6	257.4
S13	105.632	157.5	670.6	245.0

B.3.6 Scenario EPP-EFG-MTG-H2MAX

Table 42: Stream report of EPP-EFG-MTG-H2MAX

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	179.8
F2	1.013	20.0	20.2	625.0
F3	1.055	24.3	24.6	625.0
F4	1.046	40.0	40.5	625.0
F5	1.041	298.8	307.0	993.7
F6	1.041	298.8	307.0	278.1
F7	1.041	298.8	307.0	315.6
F8	1.004	1000.0	1270.2	1152.3
F9	1.004	1000.0	1270.2	947.3
F10	1.004	1000.0	1270.2	205.0
F11	1.003	837.3	1042.8	947.3
F12	1.003	770.6	951.4	947.3
F13	1.002	676.4	824.6	947.3
F14	1.001	584.2	703.1	947.3
F15	1.000	433.8	511.0	947.3
F16	0.999	329.0	381.8	947.3
F17	0.999	325.5	378.8	959.2
F18	0.987	181.9	206.7	990.4
F19	0.975	181.2	206.3	983.3
F20	0.975	181.2	206.3	12.0
F21	1.023	188.5	214.9	12.0
F22	0.975	181.2	206.3	971.3
F23	1.036	180.3	205.3	971.3
F24	1.032	128.4	145.3	971.3
F25	1.018	65.0	73.2	979.9
F26	1.008	112.5	127.5	976.9
S1	0.066	36.6	153.3	366.0
S2	19.080	36.8	155.8	366.0
S3	19.080	36.8	155.8	5.3
S4	19.080	36.8	155.8	360.7
S5	17.237	62.4	262.5	360.7
S6	15.855	90.3	379.5	360.7
S7	15.855	91.0	382.5	420.1
S8	14.007	117.6	494.2	420.1
S9	12.159	151.0	637.1	420.1
S10	12.159	167.8	709.6	5.3
S11	12.159	151.2	638.0	425.4
S12	9.787	179.0	758.6	502.8
S13	230.266	183.1	788.4	474.1
S14	230.266	183.1	788.4	28.8
S15	227.425	200.6	864.1	474.1
S16	223.634	238.0	1031.7	474.1
S17	220.793	241.8	1049.0	474.1
S18	210.339	239.6	1038.5	474.1
S19	214.864	290.5	1283.7	474.1
S20	192.957	382.4	2720.6	474.1
S21	184.800	530.0	3378.3	498.0
S22	157.153	623.2	3988.2	498.0
S23	35.006	304.2	2989.6	460.4
S24	35.006	304.2	2989.6	455.4
S25	35.006	301.2	2981.5	477.4
S26	33.083	295.4	2972.6	477.4
S27	30.025	539.0	3544.8	482.2
S28	28.569	533.6	3534.1	482.2
S29	5.806	307.4	3078.0	418.8
S30	5.657	307.3	3078.0	418.8
S31	0.066	37.8	2408.7	183.3
S32	0.066	37.8	2408.7	183.3
S33	0.066	36.3	152.3	199.5
S34	0.066	36.3	152.3	183.3
S35	2.850	20.8	87.5	14476.7
S36	2.350	34.4	144.5	14476.7
S37	1.013	20.8	87.3	14476.7
S38	35.006	304.2	2989.6	5.0
S39	35.006	304.2	2989.6	37.6
S40	33.321	302.2	2989.6	37.6
S41	33.321	239.8	1036.3	37.6
S42	33.272	205.6	878.1	37.6
S43	17.381	456.5	3375.7	17.3
S44	16.554	456.0	3375.7	17.3
S45	16.525	243.4	2901.7	17.3
S46	16.369	243.1	2901.7	17.3
S47	16.369	214.8	1464.7	59.0
S48	9.787	179.0	758.6	4.0
S49	10.258	381.3	3224.1	22.6
S50	9.787	380.9	3224.1	22.6
S51	9.787	380.9	3224.1	18.5
S52	9.787	380.9	3224.1	4.0
S53	5.806	307.4	3078.0	23.5
S54	5.540	307.1	3078.0	23.5
S55	5.540	155.7	657.1	23.5
S56	5.493	124.5	523.0	23.5
S57	2.239	205.0	2879.6	17.9
S58	2.138	204.7	2879.6	17.9
S59	2.138	122.3	513.7	41.4
S60	2.091	97.9	410.5	41.4
S61	0.891	120.7	2719.2	18.0
S62	0.850	120.5	2719.2	18.0
S63	0.850	95.1	398.6	59.4
S64	15.855	95.3	400.4	59.4
S65	0.290	68.3	2558.5	16.2
S66	0.276	67.2	2558.5	16.2
S67	0.276	67.2	281.3	16.2
S68	0.228	43.9	183.8	16.2
S69	0.066	15.0	63.0	5.1

Related boiler capacity: 75 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	137.5
F2	1.013	20.0	20.2	463.4
F3	1.037	22.6	22.9	463.4
F4	1.032	40.0	40.5	463.4
F5	1.030	277.7	284.9	440.3
F6	1.030	277.7	284.9	202.3
F7	1.030	277.7	284.9	238.0
F8	1.009	971.3	1230.3	895.1
F9	1.009	971.3	1230.3	708.4
F10	1.009	971.3	1230.3	186.7
F11	1.009	791.5	980.4	708.4
F12	1.009	732.3	900.0	708.4
F13	1.008	637.0	772.7	708.4
F14	1.008	556.9	668.0	708.4
F15	1.007	411.3	483.2	708.4
F16	1.007	302.0	349.3	708.4
F17	1.007	296.0	346.7	717.3
F18	0.999	167.7	190.4	740.5
F19	0.994	167.1	190.0	735.5
F20	0.994	167.1	190.0	0.0
F21	1.020	174.8	199.0	0.0
F22	0.994	167.1	190.0	735.5
F23	1.022	162.7	184.9	735.5
F24	1.020	114.0	128.8	735.5
F25	1.014	65.0	73.3	739.6
F26	1.008	111.1	125.9	739.6
S1	0.061	35.8	150.0	277.6
S2	12.868	35.9	151.7	277.6
S3	12.868	35.9	151.7	5.1
S4	12.868	35.9	151.7	272.5
S5	11.816	58.7	246.6	272.5
S6	11.027	85.4	358.3	272.5
S7	11.027	85.8	360.2	314.9
S8	8.990	116.6	468.6	314.9
S9	8.953	143.9	606.1	314.9
S10	8.953	171.6	726.5	5.1
S11	8.953	144.3	608.0	320.0
S12	7.620	168.4	712.2	373.3
S13	161.833	171.3	733.3	351.8
S14	161.833	171.3	733.3	21.4
S15	160.268	189.2	810.9	351.8
S16	158.185	224.8	969.3	351.8
S17	156.618	239.8	987.8	351.8
S18	150.938	226.7	977.9	351.8
S19	156.855	280.5	1235.0	351.8
S20	144.786	357.9	2781.5	351.8
S21	122.400	530.0	3427.0	369.7
S22	118.031	624.2	3416.7	369.7
S23	26.046	307.2	3024.1	344.4
S24	26.046	307.2	3024.1	339.4
S25	26.046	302.0	3011.3	361.4
S26	24.893	296.8	3002.2	361.4
S27	22.525	539.0	3552.0	365.0
S28	21.699	533.9	3541.3	365.0
S29	4.428	309.3	3085.1	320.2
S30	4.341	309.2	3085.1	320.2
S31	0.061	36.5	2432.7	141.8
S32	0.061	36.5	2432.7	141.8
S33	0.061	35.4	148.5	152.6
S34	0.061	35.4	148.5	141.8
S35	2.850	20.4	85.7	14476.7
S36	2.350	31.1	130.4	14476.7
S37	1.013	20.4	85.5	14476.7
S38	26.046	307.2	3024.1	5.0
S39	26.046	307.2	3024.1	25.3
S40	25.257	306.3	3024.1	25.3
S41	25.257	224.5	964.5	25.3
S42	25.236	192.3	818.4	25.3
S43	13.223	457.5	3383.1	13.1
S44	12.751	457.2	3383.1	13.1
S45	12.734	228.9	2883.4	13.1
S46	12.648	228.7	2883.4	13.1
S47	12.648	201.9	1458.8	41.6
S48	7.620	168.4	712.2	3.2
S49	7.834	383.1	3232.2	15.1
S50	7.620	382.9	3232.2	15.1
S51	7.620	382.9	3232.2	11.8
S52	7.620	382.9	3232.2	3.2
S53	4.428	309.3	3085.1	16.7
S54	4.294	309.1	3085.1	16.7
S55	4.294	146.2	615.8	16.7
S56	4.270	116.7	489.9	16.7
S57	1.721	207.1	2886.4	12.9
S58	1.668	207.0	2886.4	12.9
S59	1.668	114.6	480.7	29.6
S60	1.645	91.2	382.1	29.6
S61	0.687	121.7	2723.1	12.8
S62	0.666	121.6	2723.1	12.8
S63	0.666	88.6	371.2	42.4
S64	11.027	88.7	372.5	42.4
S65	0.225	62.6	2561.5	10.8
S66	0.219	62.0	2561.5	10.8
S67	0.219	62.0	259.6	10.8
S68	0.198	46.7	170.6	10.8
S69	0.061	15.0	63.0	5.1

Related boiler capacity: 50 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	98.5
F2	1.013	20.0	20.2	349.8
F3	1.029	21.7	22.0	349.8
F4	1.026	40.0	40.5	349.8
F5	1.025	275.3	282.3	332.3
F6	1.025	275.3	282.3	167.0
F7	1.025	275.3	282.3	165.2
F8	1.012	929.8	1164.8	883.7
F9	1.012	929.8	1164.8	529.2
F10	1.012	929.8	1164.8	154.6
F11	1.012	733.2	896.0	529.2
F12	1.012	675.0	818.4	529.2
F13	1.011	599.2	719.0	529.2
F14	1.011	543.8	647.4	529.2
F15	1.011	411.4	480.7	529.2
F16	1.010	298.4	343.2	529.2
F17	1.010	295.3	340.7	536.0
F18	1.006	163.4	184.5	553.4
F19	1.003	162.8	184.1	550.1
F20	1.003	162.8	184.1	0.0
F21	1.018	167.0	189.0	0.0
F22	1.003	162.8	184.1	550.1
F23	1.016	156.4	176.8	550.1
F24	1.014	106.3	119.5	550.1
F25	1.011	65.0	73.4	558.1
F26	1.008	11		

B.3.7 Scenario EPP-EFG-MTG-H2MAX-F2 (Doubled Annex Plant)

Table 43: Stream report of EPP-EFG-MTG-H2MAX-F2

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	174.2
F2	1.013	20.0	20.2	602.4
F3	1.052	24.0	24.3	602.4
F4	1.044	40.0	40.5	602.4
F5	1.039	295.4	303.5	572.3
F6	1.039	295.4	303.5	267.6
F7	1.039	295.4	303.5	304.7
F8	1.004	1000.0	1270.1	1124.6
F9	1.004	1000.0	1270.1	918.9
F10	1.004	1000.0	1270.1	205.7
F11	1.004	834.3	1038.6	918.9
F12	1.003	768.7	948.8	918.9
F13	1.003	669.8	815.9	918.9
F14	1.002	579.4	696.9	918.9
F15	1.001	424.2	499.0	918.9
F16	1.000	324.4	376.2	918.9
F17	1.000	321.1	373.4	930.4
F18	0.987	180.1	204.6	960.5
F19	0.978	179.4	204.2	953.7
F20	0.978	179.4	204.2	9.2
F21	1.023	186.4	212.4	9.2
F22	0.978	179.4	204.2	944.5
F23	1.034	178.1	202.7	944.5
F24	1.030	126.7	143.3	944.5
F25	1.017	65.0	73.3	950.2
F26	1.008	112.2	127.1	950.2
S1	0.066	37.4	156.6	355.1
S2	18.599	37.6	159.0	355.1
S3	18.599	37.6	159.0	10.8
S4	18.599	37.6	159.0	344.4
S5	16.919	63.4	266.8	344.4
S6	15.659	91.5	384.6	344.4
S7	15.659	92.2	387.4	401.5
S8	13.971	118.8	499.7	401.5
S9	12.283	152.5	643.5	401.5
S10	12.283	166.1	702.5	10.8
S11	12.283	152.9	645.0	412.3
S12	10.051	180.1	763.7	487.5
S13	221.988	184.1	792.3	459.4
S14	221.988	184.1	792.3	28.1
S15	219.320	201.7	868.8	459.4
S16	215.758	239.5	1038.3	459.4
S17	213.089	243.3	1056.8	459.4
S18	203.239	241.1	1045.3	459.4
S19	207.940	289.3	1277.9	459.4
S20	187.237	379.5	2726.1	459.4
S21	159.800	530.0	3384.3	482.7
S22	152.500	623.3	3374.1	482.7
S23	35.648	310.6	3004.3	445.9
S24	35.648	310.6	3004.3	440.9
S25	35.648	304.0	2887.1	484.9
S26	33.657	298.3	2978.1	484.9
S27	30.551	539.0	3544.3	489.8
S28	29.048	533.6	3533.6	489.8
S29	5.953	308.4	3079.7	428.6
S30	5.796	308.3	3079.7	428.6
S31	0.066	38.0	2409.7	189.2
S32	0.066	38.0	2409.7	189.2
S33	0.066	36.6	153.2	204.8
S34	0.066	36.6	153.2	189.2
S35	2.850	20.9	88.0	14476.7
S36	2.350	35.0	146.8	14476.7
S37	1.013	20.9	87.7	14476.7
S38	35.648	310.6	3004.3	5.0
S39	35.648	310.6	3004.3	36.7
S40	34.020	308.7	3004.3	36.7
S41	34.020	240.9	1042.0	36.7
S42	33.974	206.7	893.3	36.7
S43	17.709	456.8	3375.9	17.0
S44	16.914	456.3	3375.9	17.0
S45	16.886	244.9	2903.8	17.0
S46	16.736	244.6	2903.8	17.0
S47	16.736	216.1	1470.5	57.7
S48	10.051	180.1	763.7	4.0
S49	10.484	382.0	3225.2	21.6
S50	10.051	381.6	3225.2	21.6
S51	10.051	381.6	3225.2	17.7
S52	10.051	381.6	3225.2	4.0
S53	5.953	308.4	3079.7	22.6
S54	5.796	308.2	3079.7	22.6
S55	5.796	156.9	602.0	22.6
S56	5.863	125.6	528.1	22.6
S57	2.302	206.1	2881.8	17.2
S58	2.208	205.9	2881.8	17.2
S59	2.208	123.4	518.1	39.9
S60	2.184	99.0	415.0	39.9
S61	0.919	122.2	2721.8	17.3
S62	0.881	122.0	2721.8	17.3
S63	0.881	96.1	402.7	57.1
S64	15.659	96.3	404.5	57.1
S65	0.299	69.0	2561.3	15.6
S66	0.286	68.0	2561.3	15.6
S67	0.286	68.0	284.7	15.6
S68	0.242	44.6	186.8	15.6
S69	0.066	15.0	63.0	5.1

Related boiler capacity: 75 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	131.7
F2	1.013	20.0	20.2	441.7
F3	1.035	22.3	22.6	441.7
F4	1.031	40.0	40.5	441.7
F5	1.028	278.1	285.3	416.6
F6	1.028	278.1	285.3	189.1
F7	1.028	278.1	285.3	230.5
F8	1.010	967.8	1225.2	864.1
F9	1.010	967.8	1225.2	682.8
F10	1.010	967.8	1225.2	181.3
F11	1.009	786.4	973.3	682.8
F12	1.009	727.9	894.0	682.8
F13	1.009	637.9	773.7	682.8
F14	1.008	558.9	670.5	682.8
F15	1.008	405.7	476.2	682.8
F16	1.007	301.5	348.6	682.8
F17	1.007	298.5	346.1	691.3
F18	1.000	168.4	191.2	713.4
F19	0.995	167.8	190.8	708.6
F20	0.995	167.8	190.8	0.0
F21	1.020	175.0	199.1	0.0
F22	0.995	167.8	190.8	708.6
F23	1.021	163.0	185.2	708.6
F24	1.019	113.5	128.2	708.6
F25	1.013	65.0	73.3	712.9
F26	1.008	112.0	127.0	712.9
S1	0.062	36.7	154.1	265.4
S2	12.477	36.9	155.7	265.4
S3	12.477	36.9	155.7	10.7
S4	12.477	36.9	155.7	254.7
S5	11.558	59.8	251.3	254.7
S6	10.869	86.7	363.7	254.7
S7	10.869	87.1	365.5	294.6
S8	9.961	113.0	474.5	294.6
S9	8.053	145.4	619.2	294.6
S10	8.053	166.1	702.2	10.7
S11	8.053	146.2	616.0	305.3
S12	7.837	169.6	717.3	356.6
S13	154.643	172.3	737.5	339.4
S14	154.643	172.3	737.5	17.2
S15	153.187	190.3	815.7	339.4
S16	151.247	226.3	976.3	339.4
S17	149.791	230.4	984.9	339.4
S18	144.488	228.3	984.9	339.4
S19	150.520	279.3	1229.1	339.4
S20	139.186	354.9	2789.7	339.4
S21	117.300	530.0	3452.7	356.6
S22	113.223	624.3	3427.4	356.6
S23	26.603	315.4	3042.3	332.0
S24	26.603	315.4	3042.3	327.0
S25	26.603	304.3	3015.3	371.0
S26	25.386	299.1	3006.2	371.0
S27	22.939	539.0	3551.6	371.0
S28	22.085	533.8	3540.9	371.0
S29	4.553	310.4	3087.2	328.5
S30	4.461	310.3	3087.2	328.5
S31	0.062	36.7	2429.8	147.1
S32	0.062	36.7	2429.8	147.1
S33	0.062	35.7	149.4	157.2
S34	0.062	35.7	149.4	147.1
S35	2.850	20.5	86.2	14476.7
S36	2.350	31.6	132.5	14476.7
S37	1.013	20.5	86.0	14476.7
S38	26.603	315.4	3042.3	5.0
S39	26.603	315.4	3042.3	24.6
S40	25.843	314.6	3042.3	24.6
S41	25.843	225.7	970.2	24.6
S42	25.823	193.5	823.6	24.6
S43	13.492	457.8	3383.5	12.7
S44	13.046	457.5	3383.5	12.7
S45	13.030	230.4	2885.8	12.7
S46	12.948	230.3	2885.8	12.7
S47	12.948	203.2	1462.9	40.4
S48	7.837	169.6	717.3	3.1
S49	8.024	383.9	3233.5	14.1
S50	7.837	383.7	3233.5	14.1
S51	7.837	383.7	3233.5	10.8
S52	7.837	383.7	3233.5	3.1
S53	4.553	310.4	3087.2	15.7
S54	4.433	310.3	3087.2	15.7
S55	4.433	147.4	620.9	15.7
S56	4.412	118.0	495.4	15.7
S57	1.776	208.4	2888.8	12.2
S58	1.729	208.3	2888.8	12.2
S59	1.729	115.7	485.4	27.8
S60	1.708	92.3	386.9	27.8
S61	0.711	123.1	2725.6	12.1
S62	0.692	123.0	2725.6	12.1
S63	0.692	89.6	375.5	39.9
S64	10.869	89.8	376.8	39.9
S65	0.233	63.4	2563.7	10.2
S66	0.228	62.9	2563.7	10.2
S67	0.228	62.9	263.2	10.2
S68	0.209	41.6	174.3	10.2
S69	0.062	15.0	63.0	5.1

Related boiler capacity: 55 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	94.9
F2	1.013	20.0	20.2	374.5
F3	1.030	21.8	22.1	374.5
F4	1.027	40.0	40.5	374.5
F5	1.025	273.5	280.5	355.8
F6	1.025	273.5	280.5	177.0
F7	1.025	273.5	280.5	178.8
F8	1.011	950.0	1188.9	700.7
F9	1.011	947.7	1188.9	554.1
F10	1.011	947.7	1188.9	146.6
F11	1.011	760.7	932.4	554.1
F12	1.011	705.7	858.7	554.1
F13	1.011	627.5	755.4	554.1
F14	1.010	575.1	687.4	554.1
F15	1.010	439.5	515.3	554.1
F16	1.010	339.7	392.8	554.1
F17	1.010	295.7	340.9	561.3
F18	1.005	161.7	182.5	580.0
F19	1.002	160.9	182.1	576.5
F20	1.002	160.9	182.1	0.0
F21	1.018	165.6	187.6	0.0
F22	1.002			
F23	1.016	154.8	175.1	576.5
F24	1.015	106.3	119.6	576.5
F25	1.012	65.5	73.7	588.5
F26	1.008	111.0	126.2	588.4

B.3.8 Scenario EPP-EFG-MTG-H2MAX-SH100 (100 K Superheating)

Table 44: Stream report of EPP-EFG-MTG-H2MAX-SH100

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	179.5
F2	1.013	20.0	20.2	623.9
F3	1.055	24.3	24.6	623.9
F4	1.040	40.0	40.5	623.9
F5	1.041	298.7	306.9	592.7
F6	1.041	298.7	306.9	276.6
F7	1.041	298.7	306.9	316.1
F8	1.004	1000.0	1270.2	1147.5
F9	1.000	1000.0	1270.2	942.9
F10	1.004	1000.0	1270.2	204.6
F11	1.003	835.7	1040.6	942.9
F12	1.003	768.4	948.4	942.9
F13	1.002	673.8	821.2	942.9
F14	1.001	580.7	698.6	942.9
F15	1.000	434.7	512.1	942.9
F16	0.999	329.0	381.8	942.9
F17	0.999	325.5	378.8	954.8
F18	0.985	181.5	206.3	985.9
F19	0.976	180.8	205.9	978.9
F20	0.976	180.8	205.9	9.0
F21	1.023	188.3	214.6	9.0
F22	0.976	180.8	205.9	969.9
F23	1.036	179.9	204.9	969.9
F24	1.031	128.2	145.0	969.9
F25	1.018	65.0	73.2	975.5
F26	1.008	112.4	127.3	975.5
S1	0.066	36.6	153.2	367.2
S2	19.127	36.8	155.7	367.2
S3	19.127	36.8	155.7	5.3
S4	19.127	36.8	155.7	362.0
S5	17.271	62.3	262.2	362.0
S6	15.879	90.2	379.2	362.0
S7	15.879	91.0	382.1	421.5
S8	14.019	117.5	493.9	421.5
S9	12.158	150.9	636.7	421.5
S10	12.158	167.8	709.6	5.3
S11	12.158	151.1	637.6	426.8
S12	9.770	178.9	758.2	504.5
S13	230.743	183.1	788.1	475.7
S14	230.743	183.1	788.1	28.8
S15	227.882	200.5	863.7	475.7
S16	224.065	238.0	1031.5	475.7
S17	221.204	241.8	1048.8	475.7
S18	210.678	239.5	1038.3	475.7
S19	215.184	290.5	1283.7	475.7
S20	193.128	382.4	2719.8	475.7
S21	184.900	530.0	3378.3	499.8
S22	157.086	623.2	3368.2	499.8
S23	35.002	304.2	2089.6	462.0
S24	35.002	304.2	2089.6	457.0
S25	35.002	306.0	2094.2	477.0
S26	33.061	300.2	2085.2	477.0
S27	29.994	539.0	3544.8	481.8
S28	28.540	533.6	3534.2	481.8
S29	5.796	307.4	3077.8	418.2
S30	5.648	307.2	3077.8	418.2
S31	0.066	37.8	2408.6	183.0
S32	0.066	37.8	2408.6	183.0
S33	0.066	36.3	152.2	199.2
S34	0.066	36.3	152.2	183.0
S35	2.850	20.8	87.5	14476.7
S36	2.350	34.4	144.4	14476.7
S37	1.013	20.8	87.2	14476.7
S38	35.002	304.2	2089.6	5.0
S39	35.002	304.2	2089.6	37.8
S40	33.302	302.2	2089.6	37.8
S41	33.302	239.7	1036.2	37.8
S42	33.254	205.5	877.8	37.8
S43	17.361	456.5	3375.7	17.4
S44	16.530	456.0	3375.7	17.4
S45	16.501	243.4	2901.7	17.4
S46	16.344	243.1	2901.7	17.4
S47	16.344	214.7	1464.0	59.2
S48	9.770	178.9	758.2	4.0
S49	10.243	381.2	3224.0	22.6
S50	9.770	380.8	3224.0	22.6
S51	9.770	380.8	3224.0	16.6
S52	9.770	380.8	3224.0	4.0
S53	5.796	307.4	3077.8	23.6
S54	5.529	307.0	3077.8	23.6
S55	5.529	155.7	656.8	23.6
S56	5.482	124.4	522.7	23.6
S57	2.235	204.9	2879.5	18.0
S58	2.133	204.6	2879.5	18.0
S59	2.133	122.3	513.4	41.6
S60	2.086	97.9	410.2	41.6
S61	0.889	120.6	2719.0	18.0
S62	0.848	120.4	2719.0	18.0
S63	0.848	95.1	398.3	59.6
S64	15.879	95.2	400.1	59.6
S65	0.289	68.2	2558.3	16.2
S66	0.275	67.1	2558.3	16.2
S67	0.275	67.1	281.1	16.2
S68	0.227	43.9	183.7	16.2
S69	0.066	15.0	63.0	5.1

Related boiler capacity: 75 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	137.3
F2	1.013	20.0	20.2	462.5
F3	1.037	22.6	22.9	462.5
F4	1.032	40.0	40.5	462.5
F5	1.030	277.8	284.9	439.4
F6	1.030	277.8	284.9	201.9
F7	1.030	277.8	284.9	237.5
F8	1.009	968.2	1225.9	894.6
F9	1.009	968.2	1225.9	707.4
F10	1.009	968.2	1225.9	187.3
F11	1.009	786.9	974.1	707.4
F12	1.009	727.2	893.2	707.4
F13	1.008	631.8	765.9	707.4
F14	1.008	551.0	660.4	707.4
F15	1.007	412.1	484.2	707.4
F16	1.007	302.0	349.3	707.4
F17	1.007	299.0	346.7	716.2
F18	0.999	167.8	190.4	739.4
F19	0.994	167.1	190.1	734.4
F20	0.994	167.1	190.1	0.0
F21	1.020	174.8	199.0	0.0
F22	0.994	167.1	190.1	734.4
F23	1.022	162.7	184.9	734.4
F24	1.020	114.0	128.8	734.4
F25	1.014	65.0	73.3	738.5
F26	1.008	112.4	128.0	738.5
S1	0.061	35.8	149.9	278.9
S2	12.902	35.9	151.6	278.9
S3	12.902	35.9	151.6	5.1
S4	12.902	35.9	151.6	273.8
S5	11.840	58.6	246.3	273.8
S6	11.044	85.3	357.9	273.8
S7	11.044	85.7	359.9	316.4
S8	8.997	115.5	465.2	316.4
S9	8.950	143.8	605.6	316.4
S10	8.950	171.7	726.5	5.1
S11	8.950	144.2	607.6	321.4
S12	7.605	168.3	711.9	375.0
S13	162.247	171.2	733.0	353.5
S14	162.247	171.2	733.0	21.5
S15	160.667	189.1	810.5	353.5
S16	158.564	224.7	969.1	353.5
S17	156.981	229.8	987.6	353.5
S18	151.250	226.6	977.7	353.5
S19	157.153	280.5	1235.0	353.5
S20	144.972	357.9	2780.7	353.5
S21	122.400	530.0	3427.0	371.4
S22	117.987	624.2	3416.7	371.4
S23	26.040	307.2	3024.0	346.0
S24	26.040	307.2	3024.0	341.0
S25	26.040	308.9	3028.2	361.0
S26	24.873	303.8	3019.1	361.0
S27	22.495	539.0	3552.0	364.6
S28	21.671	533.9	3541.4	364.6
S29	4.419	309.2	3085.0	319.6
S30	4.332	309.1	3085.0	319.6
S31	0.061	36.5	2432.9	141.5
S32	0.061	36.5	2432.9	141.5
S33	0.061	35.4	148.5	152.3
S34	0.061	35.4	148.5	141.5
S35	2.850	20.4	85.7	14476.7
S36	2.350	31.0	130.3	14476.7
S37	1.013	20.4	85.4	14476.7
S38	26.040	307.2	3024.0	5.0
S39	26.040	307.2	3024.0	25.4
S40	25.241	306.3	3024.0	25.4
S41	25.241	224.5	964.4	25.4
S42	25.220	192.2	818.0	25.4
S43	13.204	457.4	3383.1	13.1
S44	12.728	457.2	3383.1	13.1
S45	12.712	228.8	2883.4	13.1
S46	12.624	228.6	2883.4	13.1
S47	12.624	201.8	1458.0	41.7
S48	7.605	168.3	711.9	3.2
S49	7.820	383.0	3232.1	15.1
S50	7.605	382.9	3232.1	15.1
S51	7.605	382.9	3232.1	11.9
S52	7.605	382.9	3232.1	3.2
S53	4.419	309.2	3085.0	16.8
S54	4.283	309.0	3085.0	16.8
S55	4.283	146.1	615.4	16.8
S56	4.280	118.6	489.5	16.8
S57	1.718	207.0	2886.2	13.0
S58	1.664	206.9	2886.2	13.0
S59	1.664	114.5	480.4	29.7
S60	1.640	91.1	381.7	29.7
S61	0.685	121.6	2722.9	12.9
S62	0.664	121.5	2722.9	12.9
S63	0.664	88.5	370.9	42.6
S64	11.044	88.7	372.2	42.6
S65	0.224	62.6	2561.4	10.8
S66	0.218	62.0	2561.4	10.8
S67	0.218	62.0	259.4	10.8
S68	0.197	40.7	170.5	10.8
S69	0.061	15.0	63.0	5.1

Related boiler capacity: 50 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	97.7
F2	1.013	20.0	20.2	346.4
F3	1.029	21.7	21.9	346.4
F4	1.026	40.0	40.5	346.4
F5	1.024	275.4	282.5	329.0
F6	1.024	275.4	282.5	163.1
F7	1.024	275.4	282.5	165.9
F8	1.012	925.6	1158.9	679.4
F9	1.012	925.6	1158.9	525.2
F10	1.012	925.6	1158.9	154.2
F11	1.012	727.2	888.0	525.2
F12	1.012	668.5	809.9	525.2
F13	1.011	592.6	710.5	525.2
F14	1.011	536.7	638.4	525.2
F15	1.011	412.9	482.5	525.2
F16	1.011	298.4	343.2	525.2
F17	1.011	295.3	340.7	531.9
F18	1.006	163.6	184.8	549.2
F19	1.004	163.0	184.4	545.9
F20	1.004	163.0	184.4	0.0
F21	1.018	167.2	189.2	0.0
F22	1.018	163.0	184.4	545.9
F23	1.016	166.6	177.0	545.9
F24	1.014	106.3	119.4	545.9
F25	1.011	65.0	73.4	553.8
F26	1.008	113.1	128.4	553.8

B.3.9 Scenario FPP-D-EFG-MTG

Table 45: Stream report of FPP-D-EFG-MTG

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	123.0
F2	1.013	15.0	45.1	39.3
F3	1.013	15.0	45.1	83.6
F4	1.013	15.0	45.1	465.5
F5	1.057	24.1	24.4	465.5
F6	1.047	115.4	117.1	465.5
F7	1.042	322.3	331.9	442.2
F8	1.042	322.3	331.9	282.7
F9	1.042	322.3	331.9	148.5
F10	4.000	90.2	180.8	19.9
F11	1.014	1076.3	1347.6	804.0
F12	1.004	1076.3	1347.6	281.4
F13	1.004	1076.3	1347.6	83.6
F14	1.003	925.1	1138.6	720.4
F15	1.003	845.3	1030.3	720.4
F16	1.002	725.7	871.2	720.4
F17	1.001	584.5	688.3	720.4
F18	1.000	432.5	498.4	720.4
F19	1.000	352.0	401.0	720.4
F20	0.999	347.3	397.1	731.5
F21	0.989	345.9	397.2	736.5
F22	0.989	345.9	397.2	493.4
F23	0.975	178.0	198.9	516.7
F24	0.969	345.9	397.2	243.0
F25	0.965	230.0	259.9	243.0
F26	0.960	160.0	179.1	243.0
F27	0.975	172.2	192.6	759.8
F28	0.965	171.6	192.1	759.8
F29	0.965	171.6	192.1	100.8
F30	1.023	179.3	201.0	100.8
F31	0.965	171.6	192.1	654.1
F32	1.044	173.1	193.9	854.1
F33	1.034	115.2	127.9	854.1
F34	1.011	68.2	-17.3	661.9
S1	0.035	26.6	126.8	243.7
S2	16.387	30.4	128.9	243.7
S3	16.387	30.4	128.9	0.0
S4	16.387	30.4	128.9	243.7
S5	14.968	56.6	238.1	243.7
S6	14.021	85.2	358.0	243.7
S7	14.021	85.7	360.0	243.7
S8	12.603	114.1	479.5	269.7
S9	12.603	109.2	458.9	381.2
S10	12.603	109.2	458.9	200.0
S11	0.035	26.6	126.8	78.5
S12	12.603	105.0	441.1	311.5
S13	11.675	143.0	602.6	381.2
S14	11.675	147.2	620.8	302.2
S15	13.395	155.4	690.5	0.0
S16	11.675	147.2	620.8	302.2
S17	11.675	147.2	620.8	302.2
S18	12.603	155.2	655.2	200.0
S19	9.298	176.7	748.8	381.4
S20	333.409	181.9	788.8	319.5
S21	333.409	181.9	788.8	20.8
S22	333.409	181.9	788.8	21.5
S23	333.409	181.9	788.8	40.0
S24	330.600	206.9	896.7	309.8
S25	327.790	235.9	1024.8	309.8
S26	325.917	266.7	1166.3	309.8
S27	323.106	286.4	1260.6	309.8
S28	320.288	291.9	1287.3	309.8
S29	320.298	296.6	1310.8	359.8
S30	332.410	324.8	1456.4	50.0
S31	309.945	296.5	1310.8	359.8
S32	315.313	307.7	1409.7	359.8
S33	305.373	427.3	2612.8	359.8
S34	285.000	605.0	3476.5	378.0
S35	272.078	597.7	3466.1	378.0
S36	272.078	597.7	3466.1	786.0
S37	56.487	342.5	3032.0	725.5
S38	56.487	342.5	3032.0	5.0
S39	56.487	342.5	3032.0	888.5
S40	56.487	342.5	3032.0	34.2
S41	53.544	336.5	2990.4	334.2
S42	51.112	620.0	3712.5	337.6
S43	48.731	614.4	3701.4	337.6
S44	48.731	614.4	3701.4	0.0
S45	4.692	263.7	2990.4	516.8
S46	4.577	263.5	2990.4	516.8
S47	0.035	26.6	2297.6	159.7
S48	0.035	26.6	2297.6	159.8
S49	0.035	26.6	2297.6	159.8
S50	0.035	25.1	105.1	171.2
S51	0.035	25.1	105.1	159.8
S52	0.035	25.1	105.1	14.8
S53	2.850	17.9	75.4	38573.8
S54	2.850	17.9	75.4	2842.4
S55	2.350	23.7	99.5	2842.4
S56	2.350	24.2	104.4	2842.4
S57	1.013	17.9	75.2	38573.8
S58	56.487	342.5	3032.0	47.1
S59	56.487	342.5	3032.0	23.5
S60	53.830	340.0	3032.0	23.5
S61	53.830	268.6	1178.0	38.8
S62	76.212	385.0	3104.7	30.5
S63	76.212	385.0	3104.7	15.3
S64	76.212	385.0	3104.7	15.3
S65	72.627	388.3	1280.8	15.3
S66	72.582	271.5	1192.0	15.3
S67	34.129	551.6	3569.3	28.1
S68	34.129	551.6	3569.3	14.0
S69	32.492	550.9	3569.3	14.0
S70	32.464	297.6	2980.2	14.0
S71	32.155	297.2	2980.2	14.0
S72	32.155	237.7	1026.7	52.8
S73	32.110	211.7	955.8	52.8
S74	19.525	460.2	3381.0	33.8
S75	19.525	460.2	3381.0	16.9
S76	18.619	459.6	3381.0	16.9
S77	18.619	358.6	3159.5	27.9
S78	18.619	358.6	3159.5	11.6
S79	18.619	208.8	892.2	64.5
S80	18.573	168.8	793.6	64.5
S81	18.619	358.6	3159.5	16.3
S82	0.040	28.8	2221.1	16.3
S83	0.040	20.8	87.2	32.5
S84	9.708	358.3	3176.2	29.6
S85	9.708	358.3	3176.2	14.8
S86	9.298	357.9	3176.2	14.8
S87	4.692	263.7	2990.4	23.1
S88	4.471	263.3	2990.4	23.1
S89	4.471	217.7	622.2	23.1
S90	12.603	147.8	623.3	23.1
S91	4.692	263.7	2990.4	43.8
S92	4.692	263.5	2990.0	43.9
S93	3.995	102.6	431.8	24.9
S94	1.113	110.5	2696.1	77.6
S95	1.313	129.6	2733.0	38.8
S96	2.015	175.4	2821.0	13.2
S97	1.918	175.1	2821.0	13.2
S98	1.918	118.9	499.1	13.2
S99	1.871	92.6	387.8	13.2
S100	0.739	91.4	2652.6	12.8
S101	0.704	90.1	2652.6	12.8
S102	0.704	90.1	377.3	26.0
S103	14.021	90.2	378.9	26.0
S104	0.224	62.5	2487.0	11.4
S105	0.213	61.4	2487.0	11.4
S106	0.213	61.4	257.2	11.4
S107	0.166	37.2	155.9	11.4
S108	0.035	15.0	63.0	10.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	87.6
F2	1.013	15.0	45.1	38.5
F3	1.013	15.0	45.1	49.1
F4	1.013	29.0	29.4	334.3
F5	1.039	22.5	22.8	334.3
F6	1.034	126.8	122.6	334.3
F7	1.032	297.9	306.1	317.5
F8	1.032	297.9	306.1	231.6
F9	1.032	297.9	306.1	86.0
F10	4.000	90.2	180.8	19.5
F11	1.011	1050.0	1299.7	565.8
F12	1.011	1050.0	1299.7	565.8
F13	1.011	1050.0	1299.7	62.0
F14	1.011	874.9	1061.3	503.8
F15	1.010	805.4	968.7	503.8
F16	1.010	694.3	810.6	503.8
F17	1.010	567.4	661.0	503.8
F18	1.009	424.8	485.0	503.8
F19	1.009	324.0	364.7	503.8
F20	1.009	319.7	361.2	512.0
F21	1.004	317.7	361.3	517.0
F22	1.004	317.7	361.3	346.4
F23	0.997	169.6	188.3	363.1
F24	1.004	317.7	361.3	170.6
F25	1.002	230.0	258.4	170.6
F26	1.000	160.0	178.1	170.6
F27	0.997	166.5	185.0	533.7
F28	0.992	165.9	184.6	530.5
F29	0.989	165.9	184.6	70.4
F30	1.020	168.7	188.8	70.4
F31	0.992	165.9	184.6	460.1
F32	1.024	161.8	178.9	460.1
F33	1.019	107.4	107.4	460.1
F34	1.011	60.6	32.4	467.6
S1	0.032	25.2	121.4	105.8
S2	9.300	29.1	123.0	105.8
S3	9.300	29.1	123.0	0.0
S4	9.300	29.1	123.0	105.8
S5	9.122	54.1	227.1	105.8
S6	8.944	81.1	340.4	105.8
S7	8.944	81.1	341.2	116.5
S8	8.680	109.4	459.4	116.5
S9	8.680	106.2	446.0	278.2
S10	8.680	106.2	446.0	140.0
S11	0.032	25.2	121.4	301.7
S12	8.680	105.0	440.8	301.7
S13	8.185	134.8	567.2	278.2
S14	8.185	140.5	591.7	432.1
S15	9.122	54.1	227.1	0.0
S16	8.185	140.5	591.7	216.1
S17	8.185	140.5	591.7	216.1
S18	8.680	152.2	641.8	140.0
S19	9.178	169.8	696.8	265.5
S20	225.383	168.3	724.2	265.5
S21	225.383	168.3	724.2	215.4
S22	225.383	168.3	724.2	15.0
S23	225.383	168.3	724.2	35.0
S24	224.028	194.0	835.1	215.4
S25	222.673	220.1	950.6	215.4
S26	221.767	248.2	1078.5	215.4
S27	220.418	268.9	1168.7	215.4
S28	219.059	272.5	1193.8	215.4
S29	219.059	273.4	1198.3	250.4
S30	224.897	279.0	1225.8	35.0
S31	214.200	273.4	1198.3	250.4
S32	220.418	273.4	1209.0	250.4
S33	215.503	395.3	2717.7	250.4
S34	199.500	605.0	3553.5	263.1
S35	193.026	599.1	3542.9	263.1
S36	193.026	599.1	3542.9	586.2
S37	39.132	344.9	3082.7	507.9
S38	39.132	344.9	3082.7	5.0
S39	39.132	344.9	3082.7	470.8
S40	39.132	344.9	3082.7	235.3
S41	37.570	339.7	3073.4	235.3
S42	35.804	620.0	3724.0	237.6
S43	34.638	614.7	3712.8	237.6
S44	34.638	614.7	3712.8	475.3
S45	3.308	267.5	3002.3	370.6
S46	3.308	267.4	3002.3	370.6
S47	0.032	25.2	2334.5	118.4
S48	0.032	25.2	2334.5	118.4
S49	0.032	25.2	2334.5	118.4
S50	0.032	24.2	101.3	123.0
S51	0.032	24.2	101.3	118.4
S52	0.032	24.2	101.3	118.4
S53	2.850	18.1	76.3	38573.8
S54	2.850	18.1		

B.3.10 Scenario FPP-M-EFG-MTG

Table 46: Stream report of FPP-M-EFG-MTG

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	125.3
F2	1.013	15.0	45.1	40.1
F3	1.013	15.0	45.1	85.2
F4	1.013	15.0	45.1	474.4
F5	1.057	24.1	24.4	474.4
F6	1.047	115.0	116.8	474.4
F7	1.042	322.3	331.8	450.7
F8	1.042	322.3	331.8	292.5
F9	1.042	322.3	331.8	158.2
F10	4.000	90.2	180.9	20.3
F11	1.003	1117.4	1405.0	815.3
F12	1.003	1117.4	1405.0	734.9
F13	1.003	1117.4	1405.0	80.3
F14	1.002	988.5	1225.5	734.9
F15	1.002	917.2	1127.7	734.9
F16	1.001	894.2	975.2	734.9
F17	1.000	679.3	810.3	734.9
F18	0.998	484.6	562.6	734.9
F19	0.997	352.0	401.0	734.9
F20	0.997	347.3	387.1	701.2
F21	0.987	345.9	397.2	71.2
F22	0.987	345.9	397.2	503.3
F23	0.972	177.9	198.8	527.1
F24	0.967	345.9	397.2	247.9
F25	0.962	230.0	298.9	247.9
F26	0.977	160.0	179.1	247.9
F27	0.972	172.2	192.5	775.0
F28	0.962	171.5	192.0	770.0
F29	0.962	171.5	192.0	101.2
F30	1.023	179.7	201.4	101.2
F31	0.962	171.5	192.0	668.9
F32	1.045	173.6	194.4	668.9
F33	1.038	116.0	128.9	668.9
F34	1.011	58.0	-20.8	677.1
S1	0.031	24.4	105.6	126.0
S2	6.763	25.3	106.6	126.0
S3	6.763	25.3	106.6	0.0
S4	6.763	25.3	106.6	126.0
S5	6.384	46.7	196.0	126.0
S6	6.131	72.3	303.2	126.0
S7	6.131	72.5	304.1	137.8
S8	5.762	99.5	417.2	137.8
S9	5.762	102.3	429.3	185.7
S10	5.762	102.3	429.3	100.0
S11	0.031	24.4	107.1	1.0
S12	5.762	105.0	440.5	147.8
S13	5.542	126.4	531.3	185.7
S14	5.542	134.3	564.8	293.3
S15	5.831	157.7	1120.9	61.0
S16	5.542	134.3	564.8	293.3
S17	5.542	134.3	564.8	293.3
S18	5.762	149.4	629.5	100.0
S19	4.886	151.8	639.8	349.7
S20	327.206	156.1	678.6	279.7
S21	327.206	156.1	678.6	279.7
S22	327.206	156.1	678.6	20.0
S23	327.206	156.1	678.6	600.0
S24	324.206	176.5	760.9	279.7
S25	321.206	202.1	875.1	279.7
S26	319.206	237.3	1031.2	279.7
S27	316.206	248.8	1083.0	279.7
S28	313.206	254.2	1107.8	279.7
S29	313.206	262.4	1146.0	329.7
S30	326.232	306.3	1359.6	50.0
S31	305.061	262.4	1146.0	329.7
S32	310.721	279.7	1481.4	329.7
S33	302.309	427.2	2625.3	129.7
S34	285.000	605.0	3476.5	346.3
S35	274.245	598.4	3496.1	346.3
S36	274.245	598.4	3496.1	346.3
S37	33.670	279.6	2927.2	338.8
S38	33.670	279.6	2927.2	5.0
S39	33.670	277.1	2920.0	332.8
S40	33.670	277.1	2920.0	332.8
S41	31.089	270.3	2911.2	332.8
S42	26.939	620.0	3730.6	336.1
S43	24.498	614.3	3719.4	336.1
S44	24.498	614.3	3719.4	336.1
S45	2.437	273.6	3017.6	268.1
S46	2.406	273.6	3017.6	268.1
S47	0.031	24.4	2397.0	83.8
S48	0.031	24.4	2397.1	83.8
S49	0.031	24.4	2397.1	83.8
S50	0.031	22.9	96.2	88.5
S51	0.031	22.9	96.2	83.8
S52	0.031	22.9	96.2	2.8
S53	2.850	18.2	76.8	37067.9
S54	2.850	18.2	76.8	1336.5
S55	2.350	24.0	100.7	1336.5
S56	2.350	22.2	93.2	37067.9
S57	1.013	18.2	76.5	37067.9
S58	33.670	279.6	2927.2	23.0
S59	33.670	279.6	2927.2	23.0
S60	33.094	279.6	2927.2	23.0
S61	33.094	238.3	1034.4	30.6
S62	40.492	302.4	2966.8	7.6
S63	40.492	302.4	2966.8	7.6
S64	40.262	302.4	2966.8	7.6
S65	40.262	302.4	2966.8	7.6
S66	40.232	242.3	1048.8	7.6
S67	17.237	553.7	3589.7	10.9
S68	17.237	553.7	3589.7	10.9
S69	16.985	553.6	3589.7	10.9
S70	16.956	264.2	2950.1	10.9
S71	16.911	264.1	2950.1	10.9
S72	16.911	204.1	870.7	41.4
S73	16.881	180.5	765.9	41.4
S74	9.827	463.7	3400.7	21.1
S75	9.827	463.7	3400.7	21.1
S76	9.470	463.4	3400.7	21.1
S77	9.470	463.4	3400.7	21.1
S78	9.470	463.4	3400.7	7.2
S79	9.470	177.5	752.3	48.6
S80	9.420	161.1	580.7	48.6
S81	9.470	463.4	3400.7	13.9
S82	0.040	29.0	2424.1	13.9
S83	0.040	21.0	87.9	13.9
S84	5.026	366.5	3202.3	7.9
S85	5.026	366.5	3202.3	7.9
S86	4.989	366.5	3202.3	7.9
S87	2.437	273.6	3017.6	7.6
S88	2.413	273.6	3017.6	7.6
S89	2.413	126.2	530.4	7.6
S90	5.762	126.3	531.0	7.6
S91	2.437	273.6	3017.6	20.6
S92	2.437	273.2	3016.7	20.6
S93	1.054	61.1	256.8	20.7
S94	1.113	110.5	2696.0	39.5
S95	1.313	129.5	2732.7	19.8
S96	1.059	185.4	2846.3	6.2
S97	1.038	185.3	2846.3	6.2
S98	1.038	100.6	421.8	6.2
S99	1.027	76.6	320.8	6.2
S100	0.388	94.6	2673.3	5.7
S101	0.388	94.6	2673.3	5.7
S102	0.380	74.7	312.5	11.9
S103	6.131	74.8	313.4	11.9
S104	0.118	49.0	2507.7	4.7
S105	0.116	48.7	2507.7	4.7
S106	0.116	48.7	2504.0	4.7
S107	0.108	28.5	119.3	4.7
S108	0.031	15.0	63.0	5.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	88.8
F2	1.013	15.0	45.1	37.3
F3	1.013	15.0	45.1	51.5
F4	1.013	23.0	29.0	336.2
F5	1.039	22.5	22.8	336.2
F6	1.034	120.7	122.6	336.2
F7	1.031	300.0	308.3	319.4
F8	1.031	300.0	308.3	225.4
F9	1.031	300.0	308.3	94.0
F10	4.000	90.2	180.7	18.9
F11	1.009	1050.0	1302.2	603.0
F12	1.009	1050.0	1302.2	538.9
F13	1.009	1050.0	1302.2	64.5
F14	1.009	906.0	1105.4	538.5
F15	1.009	846.8	1025.7	538.5
F16	1.008	744.7	890.4	538.5
F17	1.008	645.8	762.1	538.5
F18	1.007	463.8	533.5	538.5
F19	1.007	323.0	364.1	538.5
F20	1.007	318.8	360.8	546.7
F21	1.002	317.0	360.9	551.2
F22	1.002	317.0	360.9	369.6
F23	0.994	175.7	195.5	386.4
F24	1.002	317.0	360.9	182.1
F25	0.989	230.0	298.7	182.1
F26	0.996	160.0	178.3	182.1
F27	0.994	170.7	190.0	568.5
F28	0.988	170.0	189.5	565.2
F29	0.989	170.0	189.5	96.3
F30	1.020	174.2	194.3	96.3
F31	0.988	170.0	189.5	469.0
F32	1.025	166.4	183.4	469.0
F33	1.029	113.9	128.9	469.0
F34	1.011	60.5	21.5	477.7
S1	0.031	23.2	97.2	63.0
S2	4.303	23.3	98.2	63.0
S3	4.303	23.3	98.2	0.0
S4	4.303	23.3	98.2	63.0
S5	4.208	42.8	179.5	63.0
S6	4.145	67.5	283.0	63.0
S7	4.145	67.5	283.3	68.7
S8	4.053	93.4	391.5	68.7
S9	4.053	101.1	423.9	134.2
S10	4.053	101.1	423.9	69.0
S11	0.031	23.7	90.4	134.6
S12	4.053	105.0	440.4	134.6
S13	3.938	117.1	491.6	134.2
S14	3.938	128.4	539.8	206.8
S15	4.053	128.4	539.8	206.8
S16	3.938	128.4	539.8	206.8
S17	3.938	128.4	539.8	206.8
S18	4.053	144.1	636.1	69.0
S19	4.053	144.1	636.1	240.7
S20	218.654	143.4	617.7	240.7
S21	218.654	143.4	617.7	194.6
S22	218.654	143.4	617.7	11.6
S23	218.654	143.4	617.7	34.5
S24	217.003	164.7	707.8	194.6
S25	215.952	188.2	809.5	194.6
S26	214.983	220.3	950.9	194.6
S27	213.537	230.0	994.9	194.6
S28	212.084	235.5	1019.7	194.6
S29	212.084	240.0	1040.4	229.1
S30	218.393	264.8	1156.9	34.5
S31	208.246	240.0	1040.4	229.1
S32	214.581	234.1	1424.1	229.1
S33	210.437	394.1	2731.7	229.1
S34	196.650	605.0	3556.0	240.7
S35	191.276	599.4	3545.4	240.7
S36	191.276	599.4	3545.4	240.7
S37	23.308	285.5	2979.3	236.6
S38	23.308	285.5	2979.3	5.0
S39	23.308	279.5	2964.5	240.1
S40	23.308	279.5	2964.5	240.1
S41	21.974	273.9	2955.6	240.1
S42	18.844	620.0	3736.6	240.1
S43	17.605	614.6	3725.4	240.1
S44	17.605	614.6	3725.4	240.1
S45	1.777	277.8	3027.9	194.8
S46	1.760	277.8	3027.9	194.8
S47	0.031	24.4	2451.8	62.3
S48	0.031	24.4	2451.8	62.3
S49	0.031	24.4	2451.8	62.4
S50	0.031	23.4	98.1	64.5
S51	0.031	23.4	98.1	62.4
S52	0.031	23.4	98.1	2.8
S53	2.850	18.0	75.6	37067.9
S54	2.850	18.0	75.6	1336.5
S55	2.350	21.0	88.5	1336.5
S56				

B.3.11 Scenario FPP-D-EFG-FT

Table 47: Stream report of FPP-D-EFG-FT

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	123.4
F2	1.013	15.0	45.1	39.5
F3	1.013	15.0	45.1	83.9
F4	1.013	20.0	58.2	497.3
F5	1.057	24.1	24.4	467.3
F6	1.047	115.4	117.1	467.3
F7	1.042	322.3	331.9	443.9
F8	1.042	322.3	331.9	286.1
F9	1.042	322.3	331.9	148.8
F10	4.000	90.2	180.8	20.0
F11	1.004	1075.2	1346.0	805.5
F12	1.004	1075.2	1346.0	21.3
F13	1.004	1075.2	1346.0	84.1
F14	1.003	924.2	1137.4	721.3
F15	1.003	844.5	1029.3	721.3
F16	1.002	725.2	870.4	721.3
F17	1.001	584.2	687.8	721.3
F18	1.000	432.4	498.2	721.3
F19	0.999	352.1	401.1	721.3
F20	0.999	347.3	397.1	732.4
F21	0.989	345.9	397.2	737.5
F22	0.989	345.9	397.2	494.1
F23	0.975	177.6	198.5	517.5
F24	0.989	345.9	397.2	243.4
F25	0.985	230.0	259.9	243.4
F26	0.980	160.0	179.1	243.4
F27	0.975	172.0	192.3	760.8
F28	0.965	171.3	191.8	760.6
F29	0.965	171.3	191.8	101.6
F30	1.023	179.0	200.6	716.0
F31	0.965	171.3	191.8	654.4
F32	1.044	172.9	191.8	854.4
F33	1.034	144.8	127.4	243.4
F34	1.011	58.2	-17.3	662.2
S1	0.035	26.6	127.1	242.6
S2	16.385	30.5	129.2	242.6
S3	16.385	30.5	129.2	101.6
S4	16.385	30.5	129.2	242.6
S5	14.965	56.6	238.2	242.6
S6	14.020	85.2	358.0	242.6
S7	14.020	85.7	360.0	238.5
S8	12.603	114.1	479.5	268.5
S9	12.603	109.2	458.8	381.3
S10	12.603	109.2	458.8	200.0
S11	0.035	26.6	129.6	301.8
S12	12.603	109.2	441.1	312.9
S13	11.674	143.0	602.6	381.3
S14	11.674	147.3	620.9	604.5
S15	13.393	155.4	690.5	0.0
S16	11.674	147.3	620.9	302.2
S17	11.674	147.3	620.9	302.2
S18	12.603	155.3	655.4	200.0
S19	9.297	176.1	748.8	381.2
S20	333.408	181.9	788.8	381.2
S21	333.408	181.9	788.8	309.7
S22	333.408	181.9	788.8	21.5
S23	333.408	181.9	788.8	604.0
S24	330.598	206.9	896.7	309.7
S25	327.789	235.9	1024.8	309.7
S26	325.915	266.7	1166.3	309.7
S27	323.107	296.4	1280.6	309.7
S28	320.297	291.9	1287.3	309.7
S29	320.297	296.6	1310.9	359.7
S30	332.409	324.9	1457.3	50.0
S31	309.944	296.6	1310.9	359.7
S32	315.312	427.3	2612.8	359.7
S33	305.373	427.3	2612.8	359.7
S34	285.000	605.0	3476.5	377.9
S35	272.078	597.7	3496.1	377.9
S36	272.078	597.7	3496.1	758.8
S37	56.486	342.5	3032.0	725.2
S38	56.486	342.5	3032.0	5.0
S39	56.486	342.5	3032.0	888.2
S40	56.486	342.5	3032.0	334.1
S41	53.542	336.5	3032.0	334.1
S42	51.111	620.0	3712.5	337.4
S43	48.729	614.4	3701.4	337.4
S44	48.729	614.4	3701.4	301.9
S45	4.692	263.7	2990.5	519.0
S46	4.578	263.5	2990.5	519.0
S47	0.035	26.6	2297.6	160.5
S48	0.035	26.6	2297.6	160.6
S49	0.035	26.6	2297.6	160.6
S50	0.035	25.1	105.1	171.9
S51	0.035	25.1	105.1	160.6
S52	0.035	25.1	105.1	141.6
S53	2.850	17.9	75.4	38716.8
S54	2.850	17.9	75.4	2813.0
S55	2.350	23.7	99.5	2813.0
S56	2.350	24.9	104.4	38716.8
S57	1.013	17.9	75.2	38716.8
S58	56.486	342.5	3032.0	27.5
S59	56.486	342.5	3032.0	43.0
S60	53.628	340.0	2932.0	29.5
S61	53.628	286.6	1177.9	38.8
S62	76.211	385.0	3104.7	30.5
S63	76.211	385.0	3104.7	15.3
S64	72.625	382.3	3022.2	15.3
S65	72.625	388.3	1280.8	15.3
S66	72.580	271.5	1192.0	15.3
S67	34.127	551.6	3569.3	28.1
S68	34.127	551.6	3569.3	14.0
S69	32.489	550.9	3569.3	14.0
S70	32.461	297.6	2980.3	14.0
S71	32.153	297.2	2980.3	14.0
S72	32.153	237.7	1026.7	52.8
S73	32.107	211.7	955.8	52.8
S74	19.522	460.1	3380.9	37.0
S75	19.522	460.1	3380.9	18.5
S76	18.609	459.6	3380.9	18.5
S77	18.609	377.1	3200.2	27.3
S78	18.609	377.1	3200.2	11.4
S79	18.609	208.8	892.1	64.2
S80	18.563	186.8	793.6	64.2
S81	18.609	377.1	3200.2	15.9
S82	0.040	28.8	2242.5	15.9
S83	0.040	20.8	87.2	31.8
S84	9.767	358.3	3176.2	29.6
S85	9.767	358.3	3176.2	14.8
S86	9.297	357.9	3176.2	14.8
S87	4.692	263.7	2990.5	23.2
S88	4.472	263.3	2990.5	23.2
S89	4.472	147.3	622.2	23.2
S90	12.603	147.8	623.3	23.2
S91	4.692	263.7	2990.5	38.1
S92	4.692	249.9	2961.9	44.5
S93	3.999	102.8	431.9	44.5
S94	1.113	110.5	2696.1	77.9
S95	1.313	129.6	2733.0	39.0
S96	2.015	175.4	2821.0	13.2
S97	1.918	175.1	2821.0	13.2
S98	1.918	118.9	490.1	13.2
S99	1.871	92.6	387.8	13.2
S100	0.739	91.4	2652.7	12.7
S101	0.704	90.1	2652.7	12.7
S102	0.704	90.1	377.3	25.9
S103	14.020	90.2	378.9	25.9
S104	0.224	62.5	2487.1	11.3
S105	0.213	61.4	2487.1	11.3
S106	0.213	61.4	257.2	11.3
S107	0.166	37.3	156.2	11.3
S108	0.035	15.0	63.0	10.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	88.0
F2	1.013	15.0	45.1	38.7
F3	1.013	15.0	45.1	49.3
F4	1.013	20.0	58.2	338.2
F5	1.039	22.5	22.8	336.2
F6	1.034	120.7	122.6	336.2
F7	1.032	297.7	305.9	319.3
F8	1.032	297.7	305.9	233.9
F9	1.032	297.7	305.9	85.4
F10	4.000	90.2	180.8	19.6
F11	1.011	1050.0	1299.5	566.3
F12	1.011	1050.0	1299.5	503.9
F13	1.011	1050.0	1299.5	62.4
F14	1.011	875.0	1061.3	503.9
F15	1.010	805.5	968.7	503.9
F16	1.010	694.8	810.7	503.9
F17	1.010	567.8	661.1	503.9
F18	1.009	425.0	485.2	503.9
F19	1.009	324.3	364.9	503.9
F20	1.009	319.7	361.2	512.1
F21	1.004	317.7	361.3	517.1
F22	1.004	317.7	361.3	346.5
F23	0.997	168.9	187.5	363.3
F24	1.004	317.7	361.3	170.6
F25	1.002	298.4	305.9	70.2
F26	1.000	160.0	178.1	170.6
F27	0.997	166.1	184.5	533.9
F28	0.992	165.5	184.0	530.7
F29	0.992	165.5	184.0	70.2
F30	1.020	169.2	188.3	70.2
F31	0.992	165.5	184.0	460.4
F32	1.024	161.4	178.4	460.4
F33	1.019	96.0	106.6	460.4
F34	1.011	60.6	33.4	467.8
S1	0.032	25.2	121.7	104.4
S2	9.370	29.2	123.4	104.4
S3	9.370	29.2	123.4	0.0
S4	9.370	29.2	123.4	104.4
S5	9.108	54.1	227.3	104.4
S6	8.933	81.2	340.7	104.4
S7	8.933	81.2	341.5	114.9
S8	8.673	109.5	459.8	114.9
S9	8.673	106.2	446.0	278.5
S10	8.673	106.2	446.0	140.0
S11	0.032	25.2	126.7	303.8
S12	8.673	105.0	440.8	303.8
S13	8.177	134.9	567.5	278.5
S14	8.177	140.5	591.8	432.5
S15	8.177	140.5	591.8	0.0
S16	8.177	140.5	591.8	216.2
S17	8.177	140.5	591.8	216.2
S18	8.673	152.2	641.8	140.0
S19	6.969	164.8	685.4	265.4
S20	225.377	168.2	723.9	265.4
S21	225.377	168.2	723.9	215.4
S22	225.377	168.2	723.9	15.0
S23	225.377	168.2	723.9	15.0
S24	224.022	194.0	835.1	215.4
S25	222.667	220.1	950.4	215.4
S26	221.761	248.2	1078.4	215.4
S27	220.411	266.6	1166.6	215.4
S28	219.057	272.4	1193.7	215.4
S29	219.052	273.4	1198.2	250.4
S30	224.891	279.0	1225.7	35.0
S31	214.193	273.3	1198.2	250.4
S32	220.387	371.1	1420.9	250.4
S33	215.504	395.3	2717.7	250.4
S34	199.500	605.0	3553.5	263.0
S35	199.025	599.1	3542.9	263.0
S36	199.025	599.1	3542.9	526.0
S37	39.121	344.9	3082.6	507.7
S38	39.121	344.9	3082.6	5.0
S39	39.121	344.9	3082.6	470.4
S40	39.121	344.9	3082.6	235.2
S41	37.559	339.7	3073.4	235.2
S42	35.793	620.0	3724.0	237.6
S43	34.626	614.7	3712.9	237.6
S44	34.626	614.7	3712.9	475.1
S45	3.375	267.7	3002.9	372.7
S46	3.315	267.7	3002.9	372.7
S47	0.032	25.2	2334.6	119.2
S48	0.032	25.2	2334.6	119.2
S49	0.032	25.2	2334.6	119.2
S50	0.032	24.2	101.4	123.8
S51	0.032	24.2	101.4	119.2
S52	0.032	24.2	101.4	119.2
S53	2.850	18.1	76.4	38716.8
S54	2.850			

B.3.12 Scenario FPP-M-EFG-FT

Table 48: Stream report of FPP-M-EFG-FT

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	126.4
F2	1.013	15.0	45.1	40.4
F3	1.013	15.0	45.1	86.0
F4	1.013	20.0	50.2	479.3
F5	1.058	24.1	24.4	479.3
F6	1.048	114.9	116.6	479.3
F7	1.043	321.8	331.4	455.3
F8	1.043	321.8	331.4	296.8
F9	1.043	321.8	331.4	156.5
F10	4.000	90.2	180.9	20.5
F11	1.003	1115.7	1402.6	817.6
F12	1.003	1115.7	1402.6	735.9
F13	1.003	1115.7	1402.6	81.7
F14	1.002	985.3	1221.0	735.9
F15	1.002	913.4	1122.5	735.9
F16	1.001	803.5	974.2	735.9
F17	0.999	677.6	808.0	735.9
F18	0.998	487.4	566.0	735.9
F19	0.997	352.1	401.0	735.9
F20	0.997	347.3	397.0	747.3
F21	0.987	345.9	397.2	750.3
F22	0.987	345.9	397.2	504.1
F23	0.972	176.7	197.4	528.0
F24	0.967	345.9	397.2	248.3
F25	0.962	230.0	259.6	248.3
F26	0.977	160.0	179.1	248.3
F27	0.972	171.4	191.5	776.3
F28	0.962	170.7	191.1	771.3
F29	0.962	170.7	191.1	100.3
F30	1.023	178.9	200.4	100.3
F31	0.962	170.7	191.1	671.0
F32	1.046	172.8	193.5	81.0
F33	1.038	1143.9	1277.7	193.5
F34	1.011	57.9	-21.2	679.3
S1	0.031	24.4	106.0	126.7
S2	6.796	25.4	107.0	126.7
S3	6.796	25.4	107.0	126.7
S4	6.796	25.4	107.0	126.7
S5	6.409	46.7	196.2	126.7
S6	6.151	72.5	303.8	126.7
S7	6.151	72.7	304.6	138.7
S8	5.774	99.7	418.0	138.7
S9	5.774	102.4	429.7	188.0
S10	5.774	102.4	429.7	100.0
S11	0.031	24.4	107.5	149.3
S12	5.774	105.0	440.6	149.3
S13	5.548	126.7	532.3	188.0
S14	5.548	134.4	565.4	295.7
S15	5.548	134.4	565.4	295.7
S16	5.548	134.4	565.4	295.7
S17	5.548	134.4	565.4	295.7
S18	5.774	149.5	630.2	100.0
S19	4.987	151.7	639.7	100.0
S20	327.744	156.1	678.6	282.5
S21	327.744	156.1	678.6	282.5
S22	327.744	156.1	678.6	282.5
S23	327.744	156.1	678.6	282.5
S24	327.744	156.1	678.6	282.5
S25	327.744	156.1	678.6	282.5
S26	327.744	156.1	678.6	282.5
S27	327.744	156.1	678.6	282.5
S28	327.744	156.1	678.6	282.5
S29	327.744	156.1	678.6	282.5
S30	327.744	156.1	678.6	282.5
S31	327.744	156.1	678.6	282.5
S32	327.744	156.1	678.6	282.5
S33	327.744	156.1	678.6	282.5
S34	327.744	156.1	678.6	282.5
S35	327.744	156.1	678.6	282.5
S36	327.744	156.1	678.6	282.5
S37	327.744	156.1	678.6	282.5
S38	327.744	156.1	678.6	282.5
S39	327.744	156.1	678.6	282.5
S40	327.744	156.1	678.6	282.5
S41	327.744	156.1	678.6	282.5
S42	327.744	156.1	678.6	282.5
S43	327.744	156.1	678.6	282.5
S44	327.744	156.1	678.6	282.5
S45	327.744	156.1	678.6	282.5
S46	327.744	156.1	678.6	282.5
S47	327.744	156.1	678.6	282.5
S48	327.744	156.1	678.6	282.5
S49	327.744	156.1	678.6	282.5
S50	327.744	156.1	678.6	282.5
S51	327.744	156.1	678.6	282.5
S52	327.744	156.1	678.6	282.5
S53	327.744	156.1	678.6	282.5
S54	327.744	156.1	678.6	282.5
S55	327.744	156.1	678.6	282.5
S56	327.744	156.1	678.6	282.5
S57	327.744	156.1	678.6	282.5
S58	327.744	156.1	678.6	282.5
S59	327.744	156.1	678.6	282.5
S60	327.744	156.1	678.6	282.5
S61	327.744	156.1	678.6	282.5
S62	327.744	156.1	678.6	282.5
S63	327.744	156.1	678.6	282.5
S64	327.744	156.1	678.6	282.5
S65	327.744	156.1	678.6	282.5
S66	327.744	156.1	678.6	282.5
S67	327.744	156.1	678.6	282.5
S68	327.744	156.1	678.6	282.5
S69	327.744	156.1	678.6	282.5
S70	327.744	156.1	678.6	282.5
S71	327.744	156.1	678.6	282.5
S72	327.744	156.1	678.6	282.5
S73	327.744	156.1	678.6	282.5
S74	327.744	156.1	678.6	282.5
S75	327.744	156.1	678.6	282.5
S76	327.744	156.1	678.6	282.5
S77	327.744	156.1	678.6	282.5
S78	327.744	156.1	678.6	282.5
S79	327.744	156.1	678.6	282.5
S80	327.744	156.1	678.6	282.5
S81	327.744	156.1	678.6	282.5
S82	327.744	156.1	678.6	282.5
S83	327.744	156.1	678.6	282.5
S84	327.744	156.1	678.6	282.5
S85	327.744	156.1	678.6	282.5
S86	327.744	156.1	678.6	282.5
S87	327.744	156.1	678.6	282.5
S88	327.744	156.1	678.6	282.5
S89	327.744	156.1	678.6	282.5
S90	327.744	156.1	678.6	282.5
S91	327.744	156.1	678.6	282.5
S92	327.744	156.1	678.6	282.5
S93	327.744	156.1	678.6	282.5
S94	327.744	156.1	678.6	282.5
S95	327.744	156.1	678.6	282.5
S96	327.744	156.1	678.6	282.5
S97	327.744	156.1	678.6	282.5
S98	327.744	156.1	678.6	282.5
S99	327.744	156.1	678.6	282.5
S100	327.744	156.1	678.6	282.5

B.3.13 Scenario FPP-D-FBG-MTG

Table 49: Stream report of FPP-D-FBG-MTG

Stream number	Related boiler capacity: 100 %			
	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	122.4
F2	1.013	15.0	45.1	39.2
F3	1.013	15.0	45.1	83.2
F4	1.013	20.0	52.2	463.1
F5	1.057	24.1	24.4	463.1
F6	1.047	115.4	117.1	463.1
F7	1.042	322.3	331.9	439.9
F8	1.042	322.3	331.9	286.6
F9	1.042	322.3	331.9	150.4
F10	4.000	90.2	180.8	19.8
F11	1.004	1077.7	1348.9	804.9
F12	1.004	1077.7	1348.9	22.0
F13	1.004	1077.7	1348.9	82.9
F14	1.004	926.0	1139.4	722.0
F15	1.003	846.1	1031.0	722.0
F16	1.002	726.4	871.6	722.0
F17	1.001	584.0	688.5	722.0
F18	1.000	432.6	498.3	722.0
F19	0.999	352.0	400.8	722.0
F20	0.999	347.3	396.9	722.0
F21	0.990	345.9	397.1	738.0
F22	0.990	345.9	397.1	494.5
F23	0.975	179.2	200.2	517.6
F24	0.990	345.9	397.1	243.6
F25	0.985	230.0	259.8	243.6
F26	0.980	160.0	179.0	243.6
F27	0.975	173.0	193.4	761.2
F28	0.966	172.4	193.0	756.4
F29	0.966	172.4	193.0	100.9
F30	1.023	180.1	201.8	100.9
F31	0.966	172.4	193.0	655.5
F32	1.044	173.8	194.6	655.5
F33	1.034	116.2	120.1	335.5
F34	1.011	58.2	-17.3	663.7
S1	0.035	26.6	126.8	247.2
S2	16.388	30.4	129.0	247.2
S3	16.388	30.4	129.0	311.2
S4	16.388	30.4	129.0	247.2
S5	14.967	56.6	238.1	247.2
S6	14.020	85.2	358.0	247.2
S7	14.020	85.7	360.0	247.2
S8	12.601	114.1	479.4	273.6
S9	12.601	109.3	459.0	383.7
S10	12.601	109.3	459.0	200.0
S11	0.035	26.6	126.8	247.2
S12	16.388	30.4	129.0	311.2
S13	11.672	143.0	602.6	383.7
S14	11.672	147.3	620.9	607.0
S15	13.395	155.4	690.5	610.0
S16	11.672	147.3	620.9	303.5
S17	11.672	147.3	620.9	303.5
S18	12.601	155.3	655.7	200.0
S19	9.295	176.7	748.9	382.8
S20	333.425	181.9	788.8	382.8
S21	333.425	181.9	788.8	311.2
S22	333.425	181.9	788.8	21.6
S23	333.425	181.9	788.8	600.0
S24	330.614	206.9	886.6	311.2
S25	327.804	235.9	1024.8	311.2
S26	325.930	266.7	1166.3	311.2
S27	323.120	296.4	1280.6	311.2
S28	320.309	291.9	1287.3	311.2
S29	320.309	296.6	1310.9	361.2
S30	332.425	325.0	1457.5	50.0
S31	309.655	296.5	1310.9	361.2
S32	315.322	320.7	1460.7	361.2
S33	305.378	427.3	2612.7	361.2
S34	285.000	605.0	3476.5	379.4
S35	272.076	597.7	3466.1	379.4
S36	272.076	597.7	3466.1	758.9
S37	56.491	342.6	3032.0	728.2
S38	56.491	342.6	3032.0	5.0
S39	56.491	342.6	3032.0	670.9
S40	56.491	342.6	3032.0	335.5
S41	53.547	336.5	3022.9	335.5
S42	51.116	620.0	3712.5	338.8
S43	48.733	614.4	3701.4	338.8
S44	48.733	614.4	3701.4	247.8
S45	4.691	263.6	2990.4	515.5
S46	4.576	263.5	2990.4	515.5
S47	0.035	26.6	2297.6	159.1
S48	0.035	26.6	2297.6	159.2
S49	0.035	26.6	2297.6	159.2
S50	0.035	25.1	105.1	170.7
S51	0.035	25.1	105.1	159.2
S52	0.035	25.1	105.1	170.7
S53	2.850	17.9	75.4	38413.8
S54	2.850	17.9	75.4	2815.4
S55	2.350	23.7	99.5	2815.4
S56	2.350	24.9	104.4	38413.8
S57	1.013	17.9	75.2	38413.8
S58	56.491	342.6	3032.0	47.3
S59	56.491	342.6	3032.0	23.6
S60	53.632	340.3	3176.2	23.6
S61	53.632	288.6	1178.0	38.0
S62	76.219	385.0	3104.7	30.7
S63	76.219	385.0	3104.7	15.3
S64	72.632	382.3	1280.9	15.3
S65	72.632	388.3	1280.9	15.3
S66	72.587	271.5	1192.1	15.3
S67	34.130	551.6	3569.3	28.2
S68	34.130	551.6	3569.3	14.1
S69	32.480	550.9	3569.3	14.1
S70	32.482	297.6	2980.3	14.1
S71	32.154	297.2	2980.3	14.1
S72	32.154	237.7	1026.7	53.1
S73	32.154	211.7	955.8	53.1
S74	19.522	460.1	3380.9	38.3
S75	19.522	460.1	3380.9	19.1
S76	18.606	459.6	3380.9	19.1
S77	18.606	392.7	3212.6	27.3
S78	18.606	382.7	3212.6	11.4
S79	18.606	208.8	892.1	64.5
S80	18.550	186.8	793.5	64.5
S81	18.606	392.7	3212.6	19.9
S82	0.040	28.8	2249.0	15.9
S83	0.040	20.8	87.2	31.8
S84	9.766	358.3	3176.2	29.7
S85	9.766	358.3	3176.2	14.8
S86	9.295	357.8	3176.2	14.8
S87	4.691	263.6	2990.4	23.3
S88	4.471	263.3	2990.4	23.3
S89	4.471	147.7	622.2	23.3
S90	12.601	147.8	623.2	23.3
S91	4.691	263.6	2990.4	42.7
S92	4.691	261.4	2985.7	43.7
S93	3.955	102.6	149.2	43.7
S94	1.113	110.5	2696.1	77.3
S95	1.313	129.6	2733.0	38.6
S96	2.015	175.4	2821.0	13.4
S97	1.918	176.1	2821.0	13.4
S98	1.918	118.9	490.1	13.4
S99	1.871	92.5	387.8	13.4
S100	0.739	91.4	2652.6	13.0
S101	0.704	90.1	2652.6	13.0
S102	0.704	90.1	377.3	26.4
S103	14.020	90.2	378.9	26.4
S104	0.224	62.5	2487.0	11.6
S105	0.213	61.4	2487.0	11.6
S106	0.213	61.4	257.1	11.6
S107	0.166	37.2	155.9	11.6
S108	0.035	15.0	63.0	10.1

Stream number	Related boiler capacity: 70 %			
	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	87.0
F2	1.013	15.0	45.1	38.2
F3	1.013	15.0	45.1	48.8
F4	1.013	20.0	52.2	332.0
F5	1.039	22.5	22.8	332.0
F6	1.034	120.8	122.7	332.0
F7	1.032	298.2	306.4	315.4
F8	1.032	298.2	306.4	228.9
F9	1.032	298.2	306.4	86.6
F10	4.000	90.2	180.8	19.4
F11	1.011	1050.0	1298.9	568.3
F12	1.011	1050.0	1298.9	506.8
F13	1.011	1050.0	1298.9	61.5
F14	1.011	874.6	1060.4	506.8
F15	1.010	805.1	967.8	506.8
F16	1.010	694.3	808.8	506.8
F17	1.010	567.0	660.2	506.8
F18	1.009	424.6	484.5	506.8
F19	1.009	324.1	364.5	506.8
F20	1.009	319.7	361.0	514.9
F21	1.004	317.7	361.1	519.9
F22	1.004	317.7	361.1	348.3
F23	0.997	171.2	189.9	364.9
F24	1.004	317.7	361.1	171.6
F25	1.002	298.3	307.2	171.6
F26	1.000	160.0	178.0	171.6
F27	0.997	167.6	186.1	536.5
F28	0.992	167.0	185.7	533.3
F29	0.992	167.0	185.7	71.7
F30	1.020	170.7	189.9	71.7
F31	0.992	167.0	185.7	461.6
F32	1.024	162.8	181.0	461.6
F33	1.019	90.2	102.2	461.6
F34	1.011	60.6	32.6	469.4
S1	0.032	25.2	121.4	109.8
S2	9.417	29.1	123.0	109.8
S3	9.417	29.1	123.0	109.8
S4	9.417	29.1	123.0	109.8
S5	9.137	54.0	226.7	109.8
S6	8.950	80.9	339.5	109.8
S7	8.950	81.7	340.3	109.8
S8	8.673	109.1	458.2	120.9
S9	8.673	106.2	445.8	280.8
S10	8.673	106.2	445.8	140.0
S11	0.032	25.2	121.4	269.9
S12	8.673	105.0	440.8	299.9
S13	8.175	134.7	566.9	280.8
S14	8.175	140.5	591.5	434.9
S15	8.175	140.5	591.5	0.0
S16	8.175	140.5	591.5	217.4
S17	8.175	140.5	591.5	217.4
S18	8.673	152.3	642.5	140.0
S19	8.673	146.3	606.2	269.9
S20	225.517	168.2	723.8	269.9
S21	225.517	168.2	723.8	216.8
S22	225.517	168.2	723.8	15.1
S23	225.517	168.2	723.8	15.0
S24	224.156	194.0	835.3	216.8
S25	222.796	220.1	950.6	216.8
S26	221.886	248.3	1078.8	216.8
S27	220.531	269.9	1167.1	216.8
S28	219.167	275.5	1194.1	216.8
S29	219.167	273.5	1198.8	251.8
S30	225.031	279.5	1228.1	35.0
S31	214.291	273.5	1198.8	251.8
S32	220.463	317.1	1426.9	251.8
S33	215.553	395.3	2717.5	251.8
S34	199.500	605.0	3553.5	264.5
S35	193.003	599.1	3542.9	264.5
S36	193.003	599.1	3542.9	520.0
S37	39.179	345.1	3083.0	510.5
S38	39.179	345.1	3083.0	5.0
S39	39.179	345.1	3083.0	473.0
S40	39.179	345.1	3083.0	236.5
S41	37.613	330.9	3073.7	236.5
S42	35.842	620.0	3724.0	238.9
S43	34.672	614.7	3712.8	238.9
S44	34.672	614.7	3712.8	477.8
S45	3.363	267.2	3001.7	369.2
S46	3.303	267.1	3001.7	369.2
S47	0.032	25.2	2334.4	117.7
S48	0.032	25.2	2334.4	117.7
S49	0.032	25.2	2334.4	117.7
S50	0.032	24.2	101.3	122.6
S51	0.032	24.2	101.3	117.8
S52	0.032	24.2	101.3	117.8
S53	2.850	18.1	76.3	38413.8

B.3.14 Scenario FPP-M-FBG-MTG

Table 50: Stream report of FPP-M-FBG-MTG

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	124.2
F2	1.013	15.0	45.1	39.8
F3	1.013	15.0	45.1	84.5
F4	1.013	20.0	20.2	469.9
F5	1.057	24.0	24.3	469.9
F6	1.047	115.1	116.9	469.9
F7	1.042	322.5	332.1	446.4
F8	1.022	322.5	332.1	286.6
F9	1.042	322.5	332.1	159.8
F10	4.000	90.2	180.9	20.1
F11	1.003	1120.3	1407.9	816.7
F12	1.003	1120.3	1407.9	737.6
F13	1.003	1120.3	1407.9	79.1
F14	1.002	989.7	1226.1	737.6
F15	1.002	917.8	1127.5	737.6
F16	1.001	805.9	976.5	737.6
F17	1.000	679.8	810.2	737.6
F18	0.999	486.6	564.5	737.6
F19	0.997	352.0	400.6	737.6
F20	0.997	347.3	386.7	737.6
F21	0.989	345.9	386.9	73.8
F22	0.988	345.9	386.9	505.0
F23	0.973	179.8	200.8	528.5
F24	0.988	345.9	386.9	248.8
F25	0.983	230.0	259.6	248.8
F26	0.978	160.0	178.9	248.8
F27	0.973	173.4	193.8	777.3
F28	0.963	172.8	193.3	772.4
F29	0.963	172.8	193.3	100.4
F30	1.023	181.0	202.7	100.4
F31	0.963	172.8	193.3	672.0
F32	1.045	174.7	195.5	872.0
F33	1.038	177.8	193.8	872.0
F34	1.011	57.9	-21.0	881.1
S1	0.031	24.4	105.7	130.1
S2	6.797	25.3	106.7	130.1
S3	6.797	25.3	106.7	0.0
S4	6.797	25.3	106.7	130.1
S5	6.406	46.6	195.7	130.1
S6	6.144	72.2	302.9	130.1
S7	6.144	72.5	303.8	142.3
S8	5.763	99.4	416.8	142.3
S9	5.763	102.2	428.9	189.0
S10	5.763	102.2	428.9	100.0
S11	0.031	24.4	105.7	130.1
S12	5.763	105.0	440.5	146.7
S13	5.539	126.4	531.2	189.0
S14	5.539	134.2	564.3	296.7
S15	5.539	134.2	564.3	296.7
S16	5.539	134.2	564.3	296.7
S17	5.539	134.2	564.3	296.7
S18	5.763	149.4	629.6	100.0
S19	4.985	151.7	639.5	353.7
S20	327.721	156.1	678.4	353.7
S21	327.721	156.1	678.4	283.5
S22	327.721	156.1	678.4	20.2
S23	327.721	156.1	678.4	60.0
S24	324.721	175.9	762.3	283.5
S25	321.721	201.7	873.6	283.5
S26	319.721	236.7	1028.2	283.5
S27	316.721	248.4	1081.2	283.5
S28	313.721	253.7	1105.4	283.5
S29	313.721	261.9	1143.7	333.5
S30	326.747	306.6	1361.1	50.0
S31	305.481	281.9	1143.7	333.5
S32	320.717	299.7	1461.3	333.5
S33	302.514	427.2	2624.4	333.5
S34	285.000	605.0	3476.5	350.4
S35	274.101	588.3	3466.1	350.4
S36	274.101	588.3	3466.1	350.4
S37	33.279	278.3	2924.9	342.5
S38	33.279	278.3	2924.9	5.0
S39	33.279	278.4	2919.5	330.8
S40	33.279	278.4	2919.5	330.8
S41	30.755	269.6	2910.8	330.8
S42	26.652	620.0	3730.8	334.1
S43	24.267	614.3	3719.7	334.1
S44	24.267	614.3	3719.7	334.1
S45	2.436	274.8	3020.0	266.6
S46	2.405	274.8	3020.0	266.6
S47	0.031	24.4	2398.4	83.2
S48	0.031	24.4	2398.4	83.2
S49	0.031	24.4	2398.4	83.2
S50	0.031	22.9	96.2	88.0
S51	0.031	22.9	96.2	83.2
S52	0.031	22.9	96.2	20.2
S53	2.850	18.2	76.8	36880.0
S54	2.850	18.2	76.8	1351.2
S55	2.850	24.0	100.7	1351.2
S56	2.850	22.2	93.2	36880.0
S57	1.013	18.2	76.5	36880.0
S58	33.279	278.3	2924.9	23.1
S59	33.279	278.3	2924.9	23.1
S60	32.697	237.4	2924.9	20.1
S61	32.697	238.1	1031.2	30.9
S62	40.234	301.6	2965.5	7.8
S63	40.234	301.6	2965.5	7.8
S64	40.013	301.4	2965.5	7.8
S65	40.013	301.4	1087.5	7.8
S66	39.963	241.7	1045.6	7.8
S67	17.103	554.1	3590.5	10.7
S68	17.103	554.1	3590.5	10.7
S69	16.881	554.0	3590.5	10.7
S70	16.831	263.8	2949.7	10.7
S71	16.788	263.8	2949.7	10.7
S72	16.788	203.7	869.1	41.6
S73	16.738	189.9	787.3	41.6
S74	9.809	464.9	3403.4	21.5
S75	9.809	464.9	3403.4	21.5
S76	9.541	464.7	3403.4	21.5
S77	9.541	464.7	3403.4	21.5
S78	9.541	464.7	3403.4	7.4
S79	9.541	177.9	753.7	49.0
S80	9.491	161.1	580.4	49.0
S81	9.541	464.7	3403.4	14.0
S82	0.040	29.0	2424.4	14.0
S83	0.040	21.0	87.9	14.0
S84	5.018	367.7	3204.7	8.0
S85	5.018	367.7	3204.7	8.0
S86	4.980	367.6	3204.7	8.0
S87	2.436	274.8	3020.0	7.8
S88	2.411	274.8	3020.0	7.8
S89	2.411	126.2	230.3	7.8
S90	5.763	126.3	530.9	7.8
S91	2.436	274.8	3020.0	19.6
S92	2.436	269.2	3008.7	20.6
S93	1.089	61.4	267.5	20.6
S94	1.113	110.5	2696.0	39.2
S95	1.313	129.9	2732.8	19.6
S96	1.059	186.3	2848.2	6.4
S97	1.036	186.3	2848.2	6.4
S98	1.036	100.6	421.6	6.4
S99	1.026	76.6	320.6	6.4
S100	0.387	95.4	2674.8	5.9
S101	0.387	95.4	2674.8	5.9
S102	0.380	74.6	312.4	12.2
S103	6.144	74.7	313.2	12.2
S104	0.117	49.0	2508.9	4.8
S105	0.116	48.7	2508.9	4.8
S106	0.116	48.7	203.8	4.8
S107	0.107	28.5	119.4	4.8
S108	0.031	15.0	63.0	5.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	87.8
F2	1.013	15.0	45.1	36.9
F3	1.013	15.0	45.1	50.9
F4	1.013	20.0	20.2	331.3
F5	1.038	22.4	22.7	331.5
F6	1.033	120.8	122.7	331.5
F7	1.031	301.6	310.0	315.0
F8	1.031	301.6	310.0	216.6
F9	1.031	301.6	310.0	98.4
F10	4.000	90.2	180.7	18.7
F11	1.009	1052.9	1304.8	608.9
F12	1.009	1052.9	1304.8	546.2
F13	1.009	1052.9	1304.8	62.8
F14	1.009	910.4	1110.1	546.2
F15	1.009	851.4	1030.7	546.2
F16	1.008	742.1	886.1	546.2
F17	1.008	643.3	758.0	546.2
F18	1.007	465.1	534.6	546.2
F19	1.007	323.7	364.7	546.2
F20	1.007	319.7	361.4	546.2
F21	1.002	317.9	361.5	559.3
F22	1.002	317.9	361.5	374.7
F23	0.993	179.1	199.1	391.3
F24	1.002	317.9	361.5	184.6
F25	0.989	230.0	258.4	184.6
F26	0.990	160.0	178.1	184.6
F27	0.993	173.0	192.4	575.9
F28	0.988	172.3	191.9	572.6
F29	0.989	172.3	191.9	100.0
F30	1.020	176.6	196.8	100.0
F31	0.988	172.3	191.9	472.5
F32	1.025	168.7	187.7	472.5
F33	1.024	177.8	177.8	472.5
F34	1.011	60.5	21.1	482.1
S1	0.031	23.3	97.7	67.8
S2	4.328	23.4	98.7	67.8
S3	4.328	23.4	98.7	0.0
S4	4.328	23.4	98.7	67.8
S5	4.222	42.7	179.0	67.8
S6	4.151	67.4	282.5	67.8
S7	4.151	67.4	282.5	73.8
S8	4.048	93.3	391.1	73.8
S9	4.048	100.8	422.8	137.0
S10	4.048	100.8	422.8	70.0
S11	0.031	23.3	97.7	133.2
S12	4.048	105.0	440.4	133.2
S13	3.930	117.0	491.3	137.0
S14	3.930	128.2	538.9	210.7
S15	3.930	128.2	538.9	210.7
S16	3.930	128.2	538.9	210.7
S17	3.930	128.2	538.9	210.7
S18	4.048	144.0	634.6	70.0
S19	4.985	151.7	660.7	244.7
S20	221.511	143.3	617.4	244.7
S21	221.511	143.3	617.4	195.7
S22	221.511	143.3	617.4	14.0
S23	221.511	143.3	617.4	35.0
S24	220.085	164.9	703.9	195.7
S25	218.658	187.8	808.0	195.7
S26	217.705	219.4	947.0	195.7
S27	216.282	229.4	992.1	195.7
S28	214.853	234.8	1018.4	195.7
S29	214.853	239.5	1038.4	230.7
S30	221.037	265.7	1161.1	35.0
S31	211.009	239.6	1038.4	230.7
S32	217.349	271.1	1429.4	230.7
S33	213.096	395.2	2728.2	230.7
S34	199.500	605.0	3553.5	242.4
S35	194.124	590.4	3542.9	242.4
S36	194.124	590.4	3542.9	242.4
S37	23.024	281.7	2971.2	238.1
S38	23.024	281.7	2971.2	5.0
S39	23.024	277.4	2960.5	236.1
S40	23.024	277.4	2960.5	236.1
S41	21.664	271.8	2951.6	236.1
S42	18.630	620.0	3736.8	238.4
S43	17.421	614.6	3726.6	238.4
S44	17.421	614.6	3726.6	238.4
S45	1.777	279.1	3030.5	193.8
S46	1.760	279.1	3030.5	193.8
S47	0.031	24.4	2453.2	61.8
S48	0.031	24.4	2453.2	61.8
S49	0.031	24.4	2453.2	61.8
S50	0.031	23.4	98.0	64.1
S51	0.031	23.4	98.0	61.8
S52	0.031	23.4	98.0	61.8
S53	2.850	18.0	75.6	36880.0
S54	2.850	18.0	75.6	1351.2
S55	2.350	21.1	88.6	1351.2
S				

B.3.15 Scenario FPP-D-FBG-FT

Table 51: Stream report of FPP-D-FBG-FT

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	123.0
F2	1.013	15.0	45.1	39.4
F3	1.013	15.0	45.1	83.6
F4	1.013	20.0	120.2	465.6
F5	1.057	24.1	24.4	465.6
F6	1.047	115.4	117.1	465.6
F7	1.042	322.4	331.9	442.3
F8	1.042	322.4	331.9	289.9
F9	1.042	322.4	331.9	148.4
F10	4.000	90.2	180.8	19.5
F11	1.004	1075.8	1346.3	806.2
F12	1.004	1075.8	1346.3	722.5
F13	1.004	1075.8	1346.3	83.7
F14	1.003	924.6	1137.4	722.5
F15	1.003	844.8	1029.3	722.5
F16	1.002	725.4	870.3	722.5
F17	1.001	584.3	687.7	722.5
F18	1.000	432.4	498.0	722.5
F19	0.999	352.0	400.8	722.5
F20	0.999	347.3	396.9	722.5
F21	0.999	345.9	397.1	738.6
F22	0.989	345.9	397.1	494.8
F23	0.975	178.4	199.2	518.1
F24	0.969	345.9	397.1	243.7
F25	0.985	230.0	299.8	243.7
F26	0.980	160.0	179.0	243.7
F27	0.975	172.5	192.8	761.8
F28	0.965	171.8	192.3	757.0
F29	0.965	171.8	192.3	102.0
F30	1.023	179.5	201.1	102.0
F31	0.965	171.8	192.3	655.0
F32	1.044	173.3	194.0	855.0
F33	1.034	115.3	128.1	106.9
F34	1.011	68.2	-17.3	663.3
S1	0.035	26.6	127.1	244.8
S2	16.368	30.5	129.3	244.8
S3	16.388	30.5	129.3	10.0
S4	16.388	30.5	129.3	244.8
S5	14.968	56.6	238.1	244.8
S6	14.021	85.2	358.0	244.8
S7	14.021	85.7	360.0	244.8
S8	12.603	114.1	479.5	270.9
S9	12.603	109.2	458.9	382.8
S10	12.603	109.2	458.9	200.0
S11	0.035	26.6	127.1	244.8
S12	12.603	105.0	441.1	311.9
S13	11.674	143.0	602.6	382.8
S14	11.674	147.3	620.9	303.0
S15	13.395	165.4	690.5	61.0
S16	11.674	147.3	620.9	303.0
S17	11.674	147.3	620.9	303.0
S18	12.603	155.3	655.7	200.0
S19	9.297	176.7	748.8	380.0
S20	333.416	181.9	788.8	380.0
S21	333.416	181.9	788.8	380.0
S22	333.416	181.9	788.8	21.6
S23	333.416	181.9	788.8	60.0
S24	330.606	206.9	886.6	310.4
S25	327.796	235.9	1024.8	310.4
S26	325.923	266.7	1166.3	310.4
S27	323.114	286.4	1280.6	310.4
S28	320.303	291.9	1287.3	310.4
S29	320.303	296.6	1311.0	360.4
S30	332.417	325.1	1458.0	50.0
S31	309.949	296.6	1311.0	360.4
S32	315.817	320.7	1400.7	360.4
S33	305.375	427.3	2612.8	360.4
S34	285.000	605.0	3476.5	378.7
S35	272.078	597.7	3466.1	378.7
S36	272.078	597.7	3466.1	757.3
S37	56.488	342.5	3032.0	726.7
S38	56.488	342.5	3032.0	5.0
S39	56.488	342.5	3032.0	869.6
S40	56.488	342.5	3032.0	334.8
S41	53.544	336.5	3022.9	334.8
S42	51.113	620.0	3712.5	338.1
S43	48.731	614.4	3701.4	338.1
S44	48.731	614.4	3701.4	24.3
S45	4.692	263.7	2990.4	518.4
S46	4.578	263.5	2990.4	518.4
S47	0.035	26.6	127.1	160.2
S48	0.035	26.6	127.1	160.2
S49	0.035	26.6	127.1	160.2
S50	0.035	25.1	105.1	171.7
S51	0.035	25.1	105.1	160.3
S52	0.035	25.1	105.1	24.3
S53	2.850	17.9	75.4	38634.5
S54	2.850	17.9	75.4	2794.9
S55	2.350	23.7	99.5	2794.9
S56	2.350	24.9	104.4	38634.5
S57	1.013	17.9	75.2	38634.5
S58	56.488	342.5	3032.0	47.1
S59	56.488	342.5	3032.0	23.6
S60	53.829	358.3	3176.2	24.6
S61	53.829	358.3	3176.2	38.9
S62	76.215	385.0	3104.7	30.6
S63	76.215	385.0	3104.7	15.3
S64	72.628	392.2	3233.5	15.3
S65	72.628	392.2	3233.5	15.3
S66	72.583	392.2	3233.5	15.3
S67	34.128	551.6	3569.3	28.2
S68	34.128	551.6	3569.3	14.1
S69	32.485	550.9	3560.3	14.1
S70	32.461	297.6	2980.3	14.1
S71	32.152	297.2	2980.3	14.1
S72	32.152	237.7	1026.7	53.0
S73	32.195	211.7	956.7	53.0
S74	19.521	460.1	3380.9	39.8
S75	19.521	460.1	3380.9	19.9
S76	18.602	459.6	3380.9	19.9
S77	18.602	392.2	3233.5	27.0
S78	18.602	392.2	3233.5	11.3
S79	18.602	208.8	892.0	64.2
S80	18.556	186.8	793.6	64.2
S81	18.602	392.2	3233.5	15.7
S82	0.040	28.8	2259.7	15.7
S83	0.040	20.8	87.2	31.4
S84	9.767	358.3	3176.2	29.6
S85	9.767	358.3	3176.2	14.8
S86	9.297	357.9	3176.2	14.8
S87	4.692	263.7	2990.4	23.2
S88	4.472	263.3	2990.4	23.2
S89	4.472	147.7	622.2	23.2
S90	12.603	147.8	623.3	23.2
S91	4.692	263.7	2990.4	37.1
S92	4.692	247.8	2957.5	44.4
S93	3.995	102.6	151.2	44.4
S94	1.113	110.5	2696.1	77.7
S95	1.313	129.6	2733.0	38.8
S96	2.015	175.4	2821.0	13.3
S97	1.918	176.1	2821.0	13.3
S98	1.918	118.9	490.1	13.3
S99	1.871	92.6	387.8	13.3
S100	0.739	91.4	2652.7	12.8
S101	0.704	90.4	2652.7	12.8
S102	0.704	90.1	377.3	26.1
S103	14.021	90.2	378.9	26.1
S104	0.224	62.5	2487.0	11.4
S105	0.213	61.4	2487.0	11.4
S106	0.213	61.4	257.2	11.4
S107	0.166	37.3	156.2	11.4
S108	0.035	15.0	63.0	10.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	87.6
F2	1.013	15.0	45.1	38.5
F3	1.013	15.0	45.1	49.1
F4	1.013	20.0	120.2	334.5
F5	1.039	22.5	22.8	334.5
F6	1.034	120.8	122.6	334.5
F7	1.032	297.9	306.1	317.8
F8	1.032	297.9	306.1	231.9
F9	1.032	297.9	306.1	85.9
F10	4.000	90.2	180.8	19.5
F11	1.011	1050.0	1298.8	567.6
F12	1.011	1050.0	1298.8	505.6
F13	1.011	1050.0	1298.8	62.1
F14	1.011	874.8	1060.5	505.6
F15	1.010	805.3	967.9	505.6
F16	1.010	694.5	809.9	505.6
F17	1.010	567.3	660.4	505.6
F18	1.009	424.8	484.6	505.6
F19	1.009	324.1	364.5	505.6
F20	1.009	319.7	361.0	513.7
F21	1.004	317.7	361.1	518.1
F22	1.004	317.7	361.1	347.6
F23	0.997	169.9	188.4	364.3
F24	1.004	317.7	361.1	171.2
F25	1.002	289.2	341.2	171.2
F26	1.000	160.0	178.0	171.2
F27	0.997	166.7	185.1	535.5
F28	0.992	166.1	184.6	532.3
F29	0.992	166.1	184.6	71.1
F30	1.020	169.9	188.9	71.1
F31	0.992	166.1	184.6	461.2
F32	1.024	162.0	180.0	461.2
F33	1.019	107.6	107.6	461.2
F34	1.011	60.6	34.2	468.7
S1	0.032	25.2	121.7	106.9
S2	9.389	29.2	123.4	106.9
S3	9.389	29.2	123.4	0.0
S4	9.389	29.2	123.4	106.9
S5	9.118	54.1	227.1	106.9
S6	8.937	81.1	340.4	106.9
S7	8.937	81.1	341.2	117.8
S8	8.669	109.4	459.5	117.8
S9	8.669	106.2	446.0	280.0
S10	8.669	106.2	446.0	140.0
S11	0.032	25.2	121.7	106.9
S12	8.669	105.0	440.8	302.3
S13	8.172	134.8	567.4	280.0
S14	8.172	140.5	591.8	434.0
S15	8.172	140.5	591.8	0.0
S16	8.172	140.5	591.8	217.0
S17	8.172	140.5	591.8	217.0
S18	8.669	152.3	642.3	140.0
S19	4.266	171.7	696.2	266.1
S20	225.451	168.2	723.7	216.1
S21	225.451	168.2	723.7	216.1
S22	225.451	168.2	723.7	15.1
S23	225.451	168.2	723.7	35.0
S24	224.092	194.0	835.3	216.1
S25	222.734	220.1	950.4	216.1
S26	221.826	248.2	1078.6	216.1
S27	220.474	266.9	1168.8	216.1
S28	219.112	273.4	1193.8	216.1
S29	219.112	273.4	1193.8	251.1
S30	224.965	279.2	1226.8	35.0
S31	214.243	273.4	1193.8	251.1
S32	220.445	273.4	1193.8	251.1
S33	215.532	395.3	2717.6	251.1
S34	199.500	605.0	3553.5	263.8
S35	193.013	599.1	3542.9	263.8
S36	193.013	599.1	3542.9	527.8
S37	39.145	345.0	3082.8	509.2
S38	39.145	345.0	3082.8	5.0
S39	39.145	345.0	3082.8	471.8
S40	39.145	345.0	3082.8	235.9
S41	37.581	339.8	3073.5	235.9
S42	35.812	620.0	3724.0	238.2
S43	34.644	614.7	3712.8	238.2
S44	34.644	614.7	3712.8	24.3
S45	3.373	267.6	3002.6	372.2
S46	3.313	267.5	3002.6	372.2
S47	0.032	25.2	121.7	118.9
S48	0.032	25.2	121.7	118.9
S49	0.032	25.2	121.7	118.9
S50	0.032	24.2	101.4	123.6
S51	0.032	24.2	101.4	118.9
S52	0.032	25.1	101.4	24.3
S53	2.850	18.1	76.4	38634.5
S54	2.850	18.1		

B.3.16 Scenario FPP-M-FBG-FT

Table 52: Stream report of FPP-M-FBG-FT

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	125.7
F2	1.013	15.0	45.1	40.2
F3	1.013	15.0	45.1	85.5
F4	1.013	20.0	50.2	476.3
F5	1.058	24.1	24.4	476.3
F6	1.048	114.9	116.7	476.3
F7	1.043	322.1	331.7	452.4
F8	1.041	322.9	331.7	236.0
F9	1.043	322.1	331.7	157.5
F10	4.000	90.2	180.9	20.4
F11	1.003	1116.7	1402.8	819.2
F12	1.003	1116.7	1402.8	738.3
F13	1.003	1116.7	1402.8	80.9
F14	1.002	985.2	1219.9	738.3
F15	1.002	913.0	1120.9	738.3
F16	1.001	804.0	973.9	738.3
F17	0.999	677.3	807.0	738.3
F18	0.998	488.4	566.8	738.3
F19	0.997	352.0	400.6	738.3
F20	0.997	347.3	396.7	749.6
F21	0.987	345.9	396.8	784.6
F22	0.987	345.9	396.8	505.6
F23	0.972	177.9	198.6	529.4
F24	0.967	345.9	396.8	249.0
F25	0.962	230.0	259.6	249.0
F26	0.977	160.0	178.9	249.0
F27	0.972	172.2	192.3	778.4
F28	0.962	171.5	191.9	773.5
F29	0.962	171.5	191.9	100.8
F30	1.023	179.8	201.2	100.8
F31	0.962	171.5	191.9	672.7
F32	1.046	173.7	194.3	872.7
F33	1.035	116.1	120.0	872.7
F34	1.011	57.9	-21.6	681.8
S1	0.031	24.4	106.0	129.3
S2	6.819	25.4	107.0	129.3
S3	6.819	25.4	107.0	0.0
S4	6.819	25.4	107.0	129.3
S5	6.423	46.6	195.9	129.3
S6	6.158	72.4	303.4	129.3
S7	6.158	72.6	304.3	141.5
S8	5.772	99.6	417.7	141.5
S9	5.772	102.4	429.4	190.0
S10	5.772	102.4	429.4	100.0
S11	0.031	24.4	107.0	148.5
S12	5.772	105.0	440.6	148.5
S13	5.543	126.6	532.2	190.0
S14	5.543	134.3	565.1	297.9
S15	5.817	157.9	611.8	61.0
S16	5.543	134.3	565.1	297.9
S17	5.543	134.3	565.1	297.9
S18	5.772	149.5	630.4	100.0
S19	4.976	151.7	639.4	29.1
S20	328.159	156.0	678.3	355.1
S21	328.159	156.0	678.3	284.9
S22	328.159	156.0	678.3	20.2
S23	328.159	156.0	678.3	50.0
S24	328.159	176.2	763.9	284.9
S25	322.159	201.0	870.8	284.9
S26	320.159	235.5	1022.7	284.9
S27	317.159	247.6	1077.6	284.9
S28	314.159	252.7	1109.9	284.9
S29	314.159	261.1	1139.8	334.9
S30	327.186	306.7	1361.7	50.0
S31	305.801	261.1	1139.8	334.9
S32	311.433	297.2	1481.3	334.9
S33	302.771	427.2	2623.4	334.9
S34	285.000	605.0	3476.5	351.8
S35	273.920	588.3	3466.1	351.8
S36	273.920	588.3	3466.1	351.8
S37	32.566	275.7	2920.5	343.7
S38	32.566	275.7	2920.5	5.0
S39	32.566	275.1	2918.7	322.8
S40	32.566	275.1	2918.7	322.8
S41	30.144	268.4	2909.9	322.8
S42	26.130	620.0	3731.2	326.0
S43	23.843	614.3	3720.0	326.0
S44	23.843	614.3	3720.0	326.0
S45	2.453	277.9	3026.1	269.6
S46	2.421	277.8	3026.1	269.6
S47	0.031	24.4	2400.3	84.2
S48	0.031	24.4	2400.3	84.2
S49	0.031	24.4	2400.3	84.2
S50	0.031	22.9	96.2	89.0
S51	0.031	22.9	96.2	84.2
S52	0.031	22.9	96.2	24.2
S53	2.850	18.3	77.0	37291.2
S54	2.850	18.3	77.0	1451.7
S55	2.350	24.0	100.7	1451.7
S56	2.350	22.2	93.5	37291.2
S57	1.013	18.3	76.7	37291.2
S58	32.566	275.7	2920.5	22.8
S59	32.566	275.7	2920.5	22.8
S60	31.997	274.1	2920.5	22.8
S61	31.997	237.5	1025.4	30.9
S62	39.721	300.1	2962.8	8.1
S63	39.721	300.1	2962.8	8.1
S64	39.482	299.8	2962.8	8.1
S65	39.482	249.5	1083.7	8.1
S66	39.432	240.5	1039.8	8.1
S67	16.858	554.7	3592.1	10.3
S68	16.858	554.7	3592.1	10.3
S69	16.831	554.6	3592.1	10.3
S70	16.601	263.2	2949.0	10.3
S71	16.561	263.1	2949.0	10.3
S72	16.561	203.0	866.1	41.2
S73	16.511	181.2	788.8	41.2
S74	9.779	467.2	3408.5	16.4
S75	9.779	467.2	3408.5	16.4
S76	9.619	467.1	3408.5	16.4
S77	9.619	379.5	3221.5	23.7
S78	9.619	379.5	3221.5	8.2
S79	9.619	178.2	755.3	49.4
S80	9.569	161.0	580.3	49.4
S81	9.619	379.5	3221.5	15.6
S82	0.040	29.0	2334.0	15.6
S83	0.040	21.0	87.9	15.6
S84	5.013	370.1	3209.7	7.9
S85	5.013	370.1	3209.7	7.9
S86	4.976	370.0	3209.7	7.9
S87	2.453	277.9	3026.1	7.8
S88	2.427	277.8	3026.1	7.8
S89	2.427	128.4	531.2	7.8
S90	5.772	126.5	531.8	7.8
S91	2.453	277.9	3026.1	13.9
S92	2.453	237.8	2945.2	21.3
S93	1.083	151.7	259.0	21.3
S94	1.113	110.5	2696.0	39.7
S95	1.313	129.4	2732.7	19.8
S96	1.066	188.9	2853.3	6.3
S97	1.043	188.9	2853.3	6.3
S98	1.043	100.8	422.4	6.3
S99	1.032	76.7	321.2	6.3
S100	0.390	97.5	2678.8	5.9
S101	0.382	97.4	2678.8	5.9
S102	0.382	74.8	313.0	12.2
S103	6.158	74.9	313.8	12.2
S104	0.118	49.1	2511.9	4.8
S105	0.118	48.7	2511.9	4.8
S106	0.116	48.7	204.1	1.8
S107	0.108	28.6	119.7	4.8
S108	0.031	15.0	63.0	5.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	89.1
F2	1.013	15.0	45.1	37.4
F3	1.013	15.0	45.1	51.7
F4	1.013	20.0	50.2	337.4
F5	1.039	22.5	22.8	337.4
F6	1.034	120.7	122.5	337.4
F7	1.031	299.9	308.2	320.5
F8	1.031	299.9	308.2	228.9
F9	1.031	299.9	308.2	93.6
F10	4.000	90.2	180.7	18.9
F11	1.009	1050.0	1300.5	606.2
F12	1.009	1050.0	1300.2	541.3
F13	1.009	1050.0	1300.5	64.9
F14	1.009	903.7	1100.8	541.3
F15	1.009	843.8	1020.4	541.3
F16	1.008	744.2	886.6	541.3
F17	1.008	644.2	789.0	541.3
F18	1.007	466.6	536.2	541.3
F19	1.007	323.0	363.7	541.3
F20	1.007	318.8	360.3	549.5
F21	1.002	317.0	360.4	594.5
F22	1.002	317.0	360.4	371.5
F23	0.993	175.8	195.3	388.4
F24	1.002	317.0	360.4	183.0
F25	0.989	230.0	258.4	183.0
F26	0.996	160.0	178.1	183.0
F27	0.993	170.7	189.8	571.4
F28	0.988	170.1	189.3	568.1
F29	0.98			

B.3.17 Scenario FPP-D-EFG-MTG-H2AVG

Table 53: Stream report of FPP-D-EFG-MTG-H2AVG

Related boiler capacity: 100 %					
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)	
F1	1.013	15.0	45.1	122.9	
F2	1.013	15.0	45.1	39.3	
F3	1.013	15.0	45.1	83.6	
F4	1.013	15.0	45.1	465.1	
F5	1.057	24.1	24.4	465.1	
F6	1.047	115.4	117.1	465.1	
F7	1.042	322.3	331.8	441.9	
F8	1.042	322.3	331.8	282.3	
F9	1.042	322.3	331.8	146.6	
F10	4.000	90.2	180.8	19.9	
F11	1.004	1076.3	1347.6	803.6	
F12	1.004	1076.3	1347.6	720.1	
F13	1.004	1076.3	1347.6	83.5	
F14	1.003	925.1	1138.6	720.1	
F15	1.003	845.3	1030.3	720.1	
F16	1.002	725.7	871.2	720.1	
F17	1.001	584.6	688.3	720.1	
F18	1.000	432.5	498.4	720.1	
F19	0.999	352.0	401.0	720.1	
F20	0.999	347.3	397.1	731.2	
F21	0.990	345.9	397.2	736.2	
F22	0.990	345.9	397.2	493.2	
F23	0.975	178.1	199.1	516.5	
F24	0.990	345.9	397.2	242.9	
F25	0.985	230.0	259.9	242.9	
F26	0.980	160.0	179.1	242.9	
F27	0.975	172.3	192.7	759.4	
F28	0.965	171.7	192.2	754.6	
F29	0.965	171.7	192.2	754.6	
F30	1.023	179.4	201.1	100.8	
F31	0.965	171.7	192.2	653.8	
F32	1.044	173.2	193.9	653.8	
F33	1.034	115.1	120.0	653.8	
F34	1.011	58.2	-17.3	661.6	
S1	0.035	26.6	126.8	243.6	
S2	16.386	30.4	126.9	243.6	
S3	16.386	30.4	126.9	30.0	
S4	16.386	30.4	126.9	243.6	
S5	14.966	56.6	238.2	243.6	
S6	14.020	85.2	358.0	243.6	
S7	14.020	85.7	360.0	269.6	
S8	12.602	114.1	479.5	269.6	
S9	12.602	109.2	458.9	380.9	
S10	12.602	109.2	458.9	200.0	
S11	0.035	26.2	124.4	261.3	
S12	12.602	105.0	441.1	311.3	
S13	11.673	143.0	602.8	380.9	
S14	11.673	147.2	620.8	804.0	
S15	13.394	165.4	696.5	61.0	
S16	11.673	147.2	620.8	302.0	
S17	11.673	147.2	620.8	302.0	
S18	12.602	155.2	655.2	200.0	
S19	9.297	176.7	749.8	381.2	
S20	333.410	181.9	788.8	381.2	
S21	333.410	181.9	788.8	30.6	
S22	333.410	181.9	788.8	215.5	
S23	333.410	181.9	788.8	60.0	
S24	333.600	206.9	886.3	309.6	
S25	327.791	235.9	1024.8	309.6	
S26	325.917	266.7	1168.3	309.6	
S27	323.109	286.4	1296.6	309.6	
S28	320.286	291.9	1287.3	309.6	
S29	320.286	296.6	1310.7	359.6	
S30	332.411	324.7	1456.1	50.0	
S31	309.946	296.5	1310.7	359.6	
S32	315.314	307.7	1480.7	359.6	
S33	305.373	427.3	2612.8	359.6	
S34	285.000	605.0	3476.5	377.8	
S35	272.079	597.7	3496.1	377.8	
S36	272.079	597.7	3496.1	759.7	
S37	56.488	342.5	3032.0	725.2	
S38	56.488	342.5	3032.0	5.0	
S39	56.488	342.5	3032.0	688.1	
S40	56.488	342.5	3032.0	344.1	
S41	37.544	336.5	3022.9	334.1	
S42	51.113	620.0	3712.5	337.4	
S43	48.731	614.4	3701.4	337.4	
S44	48.731	614.4	3701.4	674.8	
S45	4.692	263.7	2990.4	517.3	
S46	4.577	263.5	2990.4	517.3	
S47	0.035	26.6	2297.6	159.9	
S48	0.035	26.6	2297.6	160.0	
S49	0.035	26.6	2297.6	160.0	
S50	0.035	25.1	105.1	171.3	
S51	0.035	25.1	105.1	160.0	
S52	0.035	25.1	105.1	160.0	
S53	2.850	17.9	75.4	38612.7	
S54	2.850	17.9	75.4	2841.5	
S55	2.350	23.7	99.5	2841.5	
S56	2.350	24.9	104.4	38612.7	
S57	1.013	17.9	75.2	38612.7	
S58	56.488	342.5	3032.0	47.0	
S59	56.488	342.5	3032.0	23.5	
S60	53.830	340.5	3176.2	23.5	
S61	53.830	268.6	1178.0	38.8	
S62	76.213	385.0	3104.7	30.5	
S63	76.213	385.0	3104.7	15.3	
S64	72.627	382.2	3104.7	15.3	
S65	72.627	298.3	1280.8	15.3	
S66	72.582	271.5	1192.0	15.3	
S67	34.129	551.6	3569.3	28.1	
S68	34.129	551.6	3569.3	14.0	
S69	32.491	550.9	3569.3	14.0	
S70	32.463	297.6	2980.2	14.0	
S71	32.155	297.2	2980.2	14.0	
S72	32.155	237.7	1026.7	52.8	
S73	32.109	211.7	905.8	52.8	
S74	19.524	460.2	3381.0	33.8	
S75	19.524	460.2	3381.0	16.9	
S76	18.619	459.6	3381.0	16.9	
S77	18.619	358.3	3158.8	27.9	
S78	18.619	358.3	3158.8	11.6	
S79	18.619	208.8	892.2	64.4	
S80	18.573	186.8	793.6	64.4	
S81	18.619	358.3	3158.8	16.3	
S82	0.040	28.8	2220.7	16.3	
S83	0.040	20.8	87.2	32.5	
S84	9.768	358.3	3176.2	29.6	
S85	9.768	358.3	3176.2	14.8	
S86	9.297	357.9	3176.2	14.8	
S87	4.692	263.7	2990.4	23.1	
S88	4.471	263.3	2990.4	23.1	
S89	4.471	263.7	2990.4	23.1	
S90	12.602	147.8	623.3	23.1	
S91	4.692	263.7	2990.4	43.0	
S92	4.692	261.6	2996.3	43.9	
S93	3.955	102.8	431.2	43.9	
S94	1.113	110.5	2696.1	77.6	
S95	1.313	129.6	2733.0	38.8	
S96	2.015	175.4	2821.0	13.2	
S97	1.818	175.1	2821.0	13.2	
S98	1.918	118.9	490.1	13.2	
S99	1.871	92.6	387.8	13.2	
S100	0.739	91.4	2652.6	26.0	
S101	0.704	90.1	2652.6	12.8	
S102	0.704	90.1	377.3	12.8	
S103	14.020	90.2	378.9	26.0	
S104	0.224	62.5	2487.0	11.4	
S105	0.213	61.4	2487.0	11.4	
S106	0.213	61.4	267.2	11.4	
S107	0.166	37.2	155.9	11.4	
S108	0.035	15.0	63.0	10.1	

Related boiler capacity: 70 %					
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)	
F1	1.013	15.0	45.1	87.5	
F2	1.013	15.0	45.1	38.4	
F3	1.013	15.0	45.1	49.0	
F4	1.013	25.0	42.4	333.9	
F5	1.039	22.5	22.8	333.9	
F6	1.034	120.8	122.6	333.9	
F7	1.032	297.9	306.1	317.2	
F8	1.032	297.9	306.1	212.2	
F9	1.032	297.9	306.1	96.1	
F10	4.000	90.2	180.8	19.5	
F11	1.011	1050.0	1299.7	565.5	
F12	1.011	1050.0	1298.7	503.6	
F13	1.011	1050.0	1299.7	61.9	
F14	1.011	874.9	1061.4	503.6	
F15	1.010	805.5	968.8	503.6	
F16	1.010	694.7	861.1	503.6	
F17	1.010	567.5	661.1	503.6	
F18	1.009	424.9	485.1	503.6	
F19	1.009	324.1	364.8	503.6	
F20	1.009	319.7	361.2	511.7	
F21	1.004	317.7	361.3	516.8	
F22	1.004	317.7	361.3	346.2	
F23	0.997	169.7	188.4	362.9	
F24	1.004	317.7	361.3	170.5	
F25	1.002	238.4	268.4	170.5	
F26	1.000	160.0	178.1	170.5	
F27	0.997	166.6	185.1	533.5	
F28	0.992	166.0	184.7	530.3	
F29	0.992	166.0	184.7	70.4	
F30	1.020	169.7	188.9	70.4	
F31	0.992	166.0	184.7	459.8	
F32	1.024	161.9	180.0	459.8	
F33	1.019	107.5	107.5	459.8	
F34	1.011	60.6	32.3	467.3	
S1	0.032	25.2	121.4	105.8	
S2	9.389	29.2	123.1	105.8	
S3	9.389	29.2	123.1	0.0	
S4	9.389	29.2	123.1	105.8	
S5	9.121	54.1	227.1	105.8	
S6	8.943	81.1	340.1	105.8	
S7	8.943	81.2	340.9	116.5	
S8	8.678	109.3	458.9	116.5	
S9	8.678	106.2	445.8	277.9	
S10	8.678	106.2	445.8	140.0	
S11	0.032	25.2	124.4	301.5	
S12	8.678	105.0	440.8	301.5	
S13	8.184	134.8	567.3	277.9	
S14	8.184	140.5	591.6	431.8	
S15	8.184	140.5	591.6	0.0	
S16	8.184	140.5	591.6	215.9	
S17	8.184	140.5	591.6	215.9	
S18	8.678	152.1	641.5	140.0	
S19	8.678	149.8	606.6	265.3	
S20	225.373	168.3	724.1	215.3	
S21	225.373	168.3	724.1	215.3	
S22	225.373	168.3	724.1	15.0	
S23	225.373	168.3	724.1	35.0	
S24	224.019	194.0	835.0	215.3	
S25	222.664	220.1	950.5	215.3	
S26	221.759	248.2	1078.5	215.3	
S27	220.410	266.6	1168.6	215.3	
S28	219.052	272.4	1193.7	215.3	
S29	219.052	273.4	1198.2	250.3	
S30	224.888	279.0	1225.6	35.0	
S31	214.194	273.4	1198.2	250.3	
S32	220.391	317.2	1424.1	250.3	
S33	215.488	395.3	2717.7	250.3	
S34	199.500	605.0	3553.5	262.9	
S35	193.028	599.1	3542.9	262.9	
S36	193.028	599.1	3542.9	525.9	
S37	39.125	344.9	308		

B.3.18 Scenario FPP-M-EFG-MTG-H2AVG

Table 54: Stream report of FPP-M-EFG-MTG-H2AVG

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	125.1
F2	1.013	15.0	45.1	40.0
F3	1.013	15.0	45.1	85.1
F4	1.013	20.0	20.2	473.7
F5	1.039	24.3	24.6	473.7
F6	1.049	115.0	116.8	473.7
F7	1.044	322.1	331.6	450.0
F8	1.044	322.1	331.6	291.6
F9	1.044	322.1	331.6	158.4
F10	4.000	90.2	180.9	20.3
F11	1.005	1117.7	1405.5	814.2
F12	1.005	1117.7	1405.5	734.0
F13	1.005	1117.7	1405.5	80.2
F14	1.005	988.8	1226.0	734.0
F15	1.004	917.5	1128.1	734.0
F16	1.003	804.5	975.6	734.0
F17	1.002	679.6	810.6	734.0
F18	1.001	484.8	562.7	734.0
F19	1.000	352.0	401.0	734.0
F20	1.000	347.3	397.1	745.2
F21	0.990	345.9	397.2	750.2
F22	0.990	345.9	397.2	502.7
F23	0.975	178.1	199.0	526.3
F24	0.990	345.9	397.2	247.6
F25	0.985	290.0	299.9	247.6
F26	0.980	160.0	179.1	247.6
F27	0.975	172.3	192.7	773.9
F28	0.965	171.7	192.2	769.0
F29	0.965	171.7	192.2	31.3
F30	1.025	179.8	201.5	100.8
F31	0.965	171.7	192.2	668.2
F32	1.046	173.4	194.2	668.2
F33	1.038	115.5	128.9	668.2
F34	1.011	58.0	-20.7	676.4
S1	0.031	24.4	105.7	125.9
S2	6.762	25.3	106.7	125.9
S3	6.762	25.3	106.7	0.0
S4	6.762	25.3	106.7	125.9
S5	6.383	46.7	196.1	125.9
S6	6.130	72.4	303.4	125.9
S7	6.130	72.6	304.2	137.7
S8	5.761	99.5	417.3	137.7
S9	5.761	102.3	429.3	185.4
S10	5.761	102.3	429.3	100.0
S11	0.031	24.4	105.7	0.0
S12	5.761	105.0	440.5	147.7
S13	5.541	126.5	531.5	185.4
S14	5.541	134.3	564.8	293.0
S15	5.831	157.7	1129.3	61.0
S16	5.541	134.3	564.8	293.0
S17	5.541	134.3	564.8	293.0
S18	5.761	149.3	629.3	100.0
S19	4.989	151.8	639.8	349.3
S20	327.176	156.1	678.6	279.3
S21	327.176	156.1	678.6	279.3
S22	327.176	156.1	678.6	20.0
S23	327.176	156.1	678.6	60.0
S24	324.176	176.5	180.9	279.3
S25	321.176	202.0	875.1	279.3
S26	319.176	237.3	1031.1	279.3
S27	316.176	247.3	1082.9	279.3
S28	313.176	254.2	1107.7	279.3
S29	313.176	262.4	1145.8	329.3
S30	326.203	306.1	1358.7	50.0
S31	305.040	262.4	1145.8	329.3
S32	310.702	427.2	1481.4	329.3
S33	302.295	427.2	1481.4	329.3
S34	285.000	605.0	3476.5	346.0
S35	274.256	598.4	3466.1	346.0
S36	274.256	598.4	3466.1	346.0
S37	33.655	279.6	2927.1	338.5
S38	33.655	279.6	2927.1	5.0
S39	33.655	277.0	2919.8	332.5
S40	33.655	277.0	2919.8	332.5
S41	31.077	277.0	2911.0	332.5
S42	26.928	620.0	3730.6	335.8
S43	24.489	614.3	3719.4	335.8
S44	24.489	614.3	3719.4	335.8
S45	2.440	273.8	3018.0	268.6
S46	2.408	273.8	3018.0	268.6
S47	0.031	24.4	2397.0	84.0
S48	0.031	24.4	2397.0	84.0
S49	0.031	24.4	2397.0	84.0
S50	0.031	22.9	96.2	88.7
S51	0.031	22.9	96.2	84.0
S52	0.031	22.9	96.2	29.0
S53	2.850	18.2	76.8	37109.2
S54	2.850	18.2	76.8	1336.4
S55	2.350	24.0	100.7	1336.4
S56	2.350	22.2	93.2	37109.2
S57	1.013	18.2	76.8	37109.2
S58	33.655	279.6	2927.1	23.0
S59	33.655	279.6	2927.1	23.0
S60	33.070	279.8	2927.1	23.0
S61	33.070	238.3	1034.3	30.5
S62	40.473	302.3	2966.7	7.5
S63	40.473	302.3	2966.7	7.5
S64	40.264	302.1	2967.7	7.5
S65	40.264	250.7	1088.3	7.5
S66	40.214	242.3	1048.7	7.5
S67	17.232	553.7	3589.7	10.9
S68	17.232	553.7	3589.7	10.9
S69	16.985	553.6	3590.7	10.9
S70	16.950	264.2	2950.1	10.9
S71	16.906	264.1	2950.1	10.9
S72	16.906	204.0	870.7	41.4
S73	16.855	190.5	765.6	41.4
S74	9.825	463.7	3400.8	21.0
S75	9.825	463.7	3400.8	21.0
S76	9.468	463.5	3400.8	21.0
S77	9.468	463.5	3400.8	21.0
S78	9.468	463.5	3400.8	7.2
S79	9.468	177.5	752.3	48.5
S80	9.418	161.1	680.7	48.5
S81	9.468	463.5	3400.8	13.9
S82	0.040	29.0	2424.1	13.9
S83	0.040	21.0	87.9	13.9
S84	5.026	366.6	3202.4	7.9
S85	5.026	366.6	3202.4	7.9
S86	4.989	366.5	3202.4	7.9
S87	2.440	273.8	3018.0	7.6
S88	2.416	273.8	3018.0	7.6
S89	2.416	126.3	2530.5	7.6
S90	5.761	126.4	531.2	7.6
S91	2.440	273.8	3018.0	19.8
S92	2.440	268.9	3007.9	20.7
S93	1.062	81.3	256.7	20.7
S94	1.113	110.5	2696.0	39.5
S95	1.313	129.5	2732.7	19.7
S96	1.061	185.5	2846.6	6.2
S97	1.039	185.6	2846.6	6.2
S98	1.039	100.7	421.9	6.2
S99	1.029	76.7	321.0	6.2
S100	0.388	94.7	2673.5	5.7
S101	0.381	84.3	2673.5	5.7
S102	0.381	74.7	312.7	11.9
S103	6.130	74.8	313.5	11.9
S104	0.118	49.0	2507.9	4.7
S105	0.116	48.7	2507.9	4.7
S106	0.116	48.6	254.1	4.7
S107	0.108	28.5	119.4	4.7
S108	0.031	15.0	63.0	5.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	88.7
F2	1.013	15.0	45.1	37.2
F3	1.013	15.0	45.1	51.4
F4	1.013	20.0	20.2	335.6
F5	1.039	22.5	22.8	335.6
F6	1.034	120.7	122.6	335.6
F7	1.031	299.9	308.2	318.8
F8	1.031	299.9	308.2	202.9
F9	1.031	299.9	308.2	94.2
F10	4.000	90.2	180.7	18.9
F11	1.010	1050.0	1302.2	602.3
F12	1.010	1050.0	1302.2	537.9
F13	1.010	1050.0	1302.2	64.4
F14	1.009	906.1	1105.5	537.9
F15	1.009	846.9	1025.9	537.9
F16	1.009	744.8	890.6	537.9
F17	1.008	646.0	762.3	537.9
F18	1.007	463.9	533.6	537.9
F19	1.007	323.0	364.1	537.9
F20	1.007	318.8	360.8	546.1
F21	1.007	317.0	360.9	551.2
F22	1.002	317.0	360.9	369.3
F23	0.994	175.9	195.7	386.0
F24	1.002	317.0	360.9	181.9
F25	0.989	290.0	298.7	181.9
F26	0.997	160.0	178.3	181.9
F27	0.994	170.8	190.2	567.9
F28	0.989	170.2	189.7	564.7
F29	0.989	170.2	189.7	96.2
F30	1.020	174.4	194.5	96.2
F31	0.989	170.2	189.7	468.4
F32	1.025	166.5	185.5	468.4
F33	1.029	114.0	144.0	468.4
F34	1.011	60.5	21.6	477.2
S1	0.031	23.3	97.5	63.0
S2	4.290	23.4	98.5	63.0
S3	4.290	23.4	98.5	0.0
S4	4.290	23.4	98.5	63.0
S5	4.195	42.8	176.6	63.0
S6	4.132	67.6	283.3	63.0
S7	4.132	67.7	283.4	68.6
S8	4.041	93.5	391.8	68.6
S9	4.041	101.1	424.0	134.0
S10	4.041	101.1	424.0	69.0
S11	0.031	23.4	97.7	0.0
S12	4.041	105.0	440.4	134.5
S13	3.926	117.0	491.4	134.0
S14	3.926	128.4	539.7	206.6
S15	4.042	127.0	540.4	0.0
S16	3.926	128.4	539.7	206.6
S17	3.926	128.4	539.7	206.6
S18	4.041	144.0	636.0	69.0
S19	4.041	144.0	636.0	240.4
S20	218.822	143.3	617.2	240.4
S21	218.822	143.3	617.2	194.4
S22	218.822	143.3	617.2	11.6
S23	218.822	143.3	617.2	34.5
S24	215.972	164.7	702.8	194.4
S25	215.922	188.2	809.4	194.4
S26	214.954	220.2	950.8	194.4
S27	213.508	230.0	994.8	194.4
S28	212.056	239.9	1039.6	194.4
S29	212.056	239.9	1040.1	228.9
S30	218.361	264.6	1155.9	34.5
S31	208.225	240.0	1040.1	228.9
S32	214.954	264.1	1424.1	228.9
S33	210.419	304.1	1731.7	228.9
S34	196.650	605.0	3556.0	240.4
S35	191.294	599.4	3545.4	240.4
S36	191.294	599.4	3545.4	240.4
S37	23.382	285.4	2979.1	236.3
S38	23.382	285.4	2979.1	5.0
S39	23.382	279.4	2964.2	239.8
S40	23.382	279.4	2964.2	239.8
S41	21.960	273.8	2955.3	239.8
S42	18.832	620.0	3736.6	239.8
S43	17.595	614.6	3725.4	239.8
S44	17.595	614.6	3725.4	239.8
S45	1.781	278.1	3028.5	195.4
S46	1.784	278.1	3028.5	195.4
S47	0.031	24.4	2451.9	62.5
S48	0.031	24.4	2451.9	62.6
S49	0.031	24.4	2451.9	62.6
S50	0.031	23.4	98.1	64.7
S51	0.031	23.4	98.1	62.6
S52	0.031	23.4	98.1	29.0
S53	2.850	18.0	75.7	37109.2
S54	2.850	18.0	75.7	1336.4
S55	2.350	21.0	88.5	1336.4

B.3.19 Scenario FPP-D-EFG-MTG-H2MAX

Table 55: Stream report of FPP-D-EFG-MTG-H2MAX

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	122.8
F2	1.013	15.0	45.1	39.3
F3	1.013	15.0	45.1	83.5
F4	1.013	20.0	52.2	464.8
F5	1.057	24.1	24.4	464.8
F6	1.047	115.4	117.1	464.8
F7	1.042	322.4	331.9	441.6
F8	1.042	322.4	331.9	282.1
F9	1.042	322.4	331.9	146.5
F10	4.000	90.2	180.8	19.9
F11	1.004	1075.0	1345.8	804.7
F12	1.004	1075.0	1345.8	721.2
F13	1.004	1075.0	1345.8	83.6
F14	1.003	924.1	1137.2	721.2
F15	1.003	844.4	1029.1	721.2
F16	1.002	725.0	870.3	721.2
F17	1.001	584.1	687.8	721.2
F18	1.000	432.3	498.2	721.2
F19	0.999	352.0	401.1	721.2
F20	0.999	347.3	397.1	732.2
F21	0.989	345.9	397.2	737.2
F22	0.989	345.9	397.2	494.0
F23	0.975	178.4	190.4	517.2
F24	0.989	345.9	397.2	243.3
F25	0.985	179.0	190.4	243.3
F26	0.980	160.0	179.1	243.3
F27	0.975	172.5	192.9	760.5
F28	0.965	171.9	192.4	755.7
F29	0.965	171.9	192.4	102.1
F30	1.023	179.6	201.3	102.1
F31	0.965	171.9	192.4	653.6
F32	1.044	173.4	194.2	653.6
F33	1.034	115.3	128.2	243.6
F34	1.011	58.2	-17.3	661.4
S1	0.035	26.6	126.8	243.6
S2	16.386	30.4	126.9	243.6
S3	16.386	30.4	126.9	243.6
S4	16.386	30.4	126.9	243.6
S5	14.967	56.6	238.2	243.6
S6	14.967	56.2	356.0	243.6
S7	14.021	85.7	360.0	269.6
S8	12.603	114.1	479.5	269.6
S9	12.603	109.2	458.9	380.8
S10	12.603	109.2	458.9	200.0
S11	0.035	26.6	126.9	311.1
S12	12.603	105.0	441.1	311.1
S13	11.674	143.0	602.6	380.8
S14	11.674	147.3	620.9	301.9
S15	13.384	155.4	696.5	61.0
S16	11.674	147.3	620.9	301.9
S17	11.674	147.3	620.9	301.9
S18	12.603	155.3	655.4	200.0
S19	9.298	176.7	749.8	381.1
S20	333.408	181.9	788.8	309.5
S21	333.408	181.9	788.8	309.5
S22	333.408	181.9	788.8	21.5
S23	333.408	181.9	788.8	60.0
S24	333.599	206.9	886.7	309.5
S25	327.789	235.9	1024.8	309.5
S26	325.916	266.7	1166.3	309.5
S27	323.107	296.4	1280.6	309.5
S28	320.287	291.9	1297.3	309.5
S29	320.297	296.6	1310.9	359.5
S30	332.409	324.9	1457.1	50.0
S31	309.944	296.6	1310.9	359.5
S32	315.313	329.7	1489.7	269.2
S33	305.373	427.3	2612.8	359.5
S34	285.000	605.0	3476.5	377.7
S35	272.079	597.7	3496.1	377.7
S36	272.079	597.7	3496.1	755.5
S37	56.487	342.5	3032.0	724.9
S38	56.487	342.5	3032.0	5.0
S39	56.487	342.5	3032.0	867.9
S40	56.487	342.5	3032.0	34.0
S41	53.543	336.5	3022.9	334.0
S42	51.112	620.0	3712.5	337.3
S43	48.730	614.4	3701.4	337.3
S44	48.730	614.4	3701.4	674.6
S45	4.692	263.7	2990.4	517.7
S46	4.577	263.5	2990.4	517.7
S47	0.035	26.6	2297.6	160.1
S48	0.035	26.6	2297.6	160.1
S49	0.035	26.6	2297.6	160.1
S50	0.035	25.1	105.1	171.5
S51	0.035	25.1	105.1	160.1
S52	0.035	25.1	105.1	149.1
S53	2.850	17.9	75.4	38636.0
S54	2.850	17.9	75.4	2841.4
S55	2.350	17.7	99.5	2841.4
S56	2.350	24.9	104.4	38636.0
S57	1.013	17.9	75.2	38636.0
S58	56.487	342.5	3032.0	27.3
S59	56.487	342.5	3032.0	43.0
S60	53.829	340.0	3032.0	24.5
S61	53.829	268.6	1178.0	38.8
S62	76.211	384.9	3104.7	30.5
S63	76.211	384.9	3104.7	15.3
S64	72.626	382.3	3104.7	15.3
S65	72.626	288.3	1280.8	15.3
S66	72.581	271.5	1192.0	15.3
S67	34.129	551.6	3569.3	28.1
S68	34.129	551.6	3569.3	14.0
S69	32.491	550.9	3569.3	14.0
S70	32.463	297.6	2980.2	14.0
S71	32.155	297.2	2980.2	14.0
S72	32.155	237.7	1026.7	52.8
S73	32.109	211.7	955.8	52.8
S74	19.524	460.2	3381.0	33.7
S75	19.524	460.2	3381.0	16.9
S76	18.619	459.6	3381.0	16.9
S77	18.619	357.8	3157.8	27.9
S78	18.619	357.8	3157.8	11.6
S79	18.619	208.8	892.2	64.4
S80	18.573	186.8	793.6	64.4
S81	18.619	357.8	3157.8	16.3
S82	0.040	28.8	2220.2	16.3
S83	0.040	20.8	87.2	32.5
S84	9.768	358.3	3176.2	29.5
S85	9.768	358.3	3176.2	14.8
S86	9.298	357.9	3176.2	14.8
S87	4.692	263.7	2990.4	23.1
S88	4.472	263.3	2990.4	23.1
S89	4.472	147.7	622.2	23.1
S90	12.603	147.8	623.3	23.1
S91	4.692	263.7	2990.4	42.5
S92	4.692	260.6	2994.1	43.9
S93	3.995	102.8	431.2	43.9
S94	1.113	110.5	2696.1	77.6
S95	1.313	129.6	2733.0	38.8
S96	2.015	175.4	2821.0	13.2
S97	1.918	175.1	2821.0	13.2
S98	1.918	118.9	490.1	13.2
S99	1.871	92.6	387.8	13.2
S100	0.739	91.4	2652.7	12.8
S101	0.704	90.1	2652.7	12.8
S102	0.704	90.1	377.3	26.0
S103	14.021	90.2	378.9	26.0
S104	0.224	62.5	2487.0	11.4
S105	0.213	61.4	2487.0	11.4
S106	0.213	61.4	257.2	11.4
S107	0.166	37.2	155.9	11.4
S108	0.035	15.0	63.0	10.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	87.4
F2	1.013	15.0	45.1	38.4
F3	1.013	15.0	45.1	49.0
F4	1.013	20.0	52.2	333.9
F5	1.039	22.5	22.8	333.6
F6	1.034	120.8	122.6	333.6
F7	1.032	297.9	306.1	316.9
F8	1.032	297.9	306.1	230.9
F9	1.032	297.9	306.1	86.2
F10	4.000	90.2	180.8	19.5
F11	1.011	1050.0	1299.6	565.2
F12	1.011	1050.0	1299.6	503.4
F13	1.011	1050.0	1299.6	61.8
F14	1.011	874.9	1061.4	503.4
F15	1.010	805.5	968.8	503.4
F16	1.010	694.4	861.0	503.4
F17	1.010	567.4	661.0	503.4
F18	1.009	424.8	486.0	503.4
F19	1.009	324.0	364.7	503.4
F20	1.009	319.7	361.2	511.5
F21	1.002	317.7	361.3	516.5
F22	1.004	31		

B.3.20 Scenario FPP-M-EFG-MTG-H2MAX

Table 56: Stream report of FPP-M-EFG-MTG-H2MAX

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	125.0
F2	1.013	15.0	45.1	40.0
F3	1.013	15.0	45.1	85.0
F4	1.013	20.0	52.2	473.1
F5	1.029	24.3	24.6	473.1
F6	1.049	115.0	116.8	473.1
F7	1.044	322.3	331.9	449.4
F8	1.024	282.0	289.4	291.0
F9	1.044	322.3	331.9	158.4
F10	4.000	90.2	180.9	20.3
F11	1.005	1116.0	1403.0	815.5
F12	1.005	1116.0	1403.0	735.3
F13	1.005	1116.0	1403.0	89.2
F14	1.004	987.4	1224.0	735.3
F15	1.004	916.3	1126.4	735.3
F16	1.003	803.5	874.2	735.3
F17	1.002	678.8	699.7	735.3
F18	1.001	484.4	562.3	735.3
F19	1.000	352.0	401.0	735.3
F20	1.000	347.3	397.1	746.5
F21	0.990	345.9	397.2	751.5
F22	0.990	345.9	397.2	503.5
F23	0.974	178.4	199.4	527.2
F24	0.990	345.9	397.2	248.0
F25	0.985	230.0	259.9	248.0
F26	0.979	160.0	179.1	248.0
F27	0.974	172.5	192.9	775.2
F28	0.964	171.9	192.4	770.2
F29	0.964	171.9	192.4	102.4
F30	1.025	180.0	201.7	102.4
F31	0.964	171.9	192.4	667.8
F32	1.046	173.7	194.5	667.8
F33	1.038	116.2	122.2	667.8
F34	1.011	58.0	-20.7	676.0
S1	0.031	24.4	105.7	125.9
S2	6.762	25.3	106.7	125.9
S3	6.762	25.3	106.7	0.0
S4	6.762	25.3	106.7	125.9
S5	6.383	46.7	196.2	125.9
S6	6.131	72.4	303.5	125.9
S7	6.131	72.6	304.3	137.7
S8	5.762	99.5	417.4	137.7
S9	5.762	102.4	429.4	185.3
S10	5.762	102.4	429.4	100.0
S11	0.031	24.4	107.2	0.0
S12	5.762	105.0	440.5	147.5
S13	5.542	126.5	531.6	185.3
S14	5.542	134.3	565.1	292.9
S15	5.630	157.7	1120.3	61.0
S16	5.542	134.3	565.1	292.9
S17	5.542	134.3	565.1	292.9
S18	5.762	149.4	629.7	100.0
S19	4.990	151.8	639.9	90.0
S20	327.153	156.1	678.7	349.1
S21	327.153	156.1	678.7	279.1
S22	327.153	156.1	678.7	20.0
S23	327.153	156.1	678.7	610.0
S24	324.1350	176.5	760.9	279.1
S25	321.153	202.0	875.0	279.1
S26	319.153	237.3	1031.0	279.1
S27	316.153	248.7	1082.8	279.1
S28	313.153	254.1	1107.6	279.1
S29	313.153	262.4	1145.9	329.1
S30	326.180	306.4	1359.9	50.0
S31	305.023	262.4	1145.9	249.1
S32	320.689	277.2	1491.4	329.1
S33	302.261	427.2	2625.4	329.1
S34	285.000	605.0	3476.5	345.8
S35	274.265	598.4	3496.1	345.8
S36	274.265	598.4	3496.1	345.8
S37	33.645	279.5	2927.1	338.2
S38	33.645	279.5	2927.1	5.0
S39	33.645	276.9	2919.6	332.3
S40	33.645	276.9	2919.6	332.3
S41	31.068	270.1	2910.9	332.3
S42	26.920	620.0	3730.6	335.6
S43	24.483	614.3	3719.5	335.6
S44	24.483	614.3	3719.5	335.6
S45	2.442	274.0	3018.2	269.0
S46	2.410	273.9	3018.2	269.0
S47	0.031	24.4	2397.0	84.1
S48	0.031	24.4	2397.0	84.1
S49	0.031	24.4	2397.0	84.1
S50	0.031	22.9	96.2	88.8
S51	0.031	22.9	96.2	84.1
S52	0.031	22.9	96.2	24.1
S53	2.850	18.2	76.8	37130.9
S54	2.850	18.2	76.8	1336.3
S55	2.350	24.0	100.7	1336.3
S56	2.350	24.0	93.3	37130.9
S57	1.013	18.2	76.6	37130.9
S58	33.645	279.5	2927.1	22.9
S59	33.645	279.5	2927.1	22.9
S60	33.027	279.7	2927.1	22.9
S61	33.020	238.3	1034.2	30.5
S62	40.459	302.3	2966.6	7.5
S63	40.459	302.3	2966.6	7.5
S64	40.250	302.1	2966.6	7.5
S65	40.250	250.7	1089.2	7.5
S66	40.200	242.3	1048.6	7.5
S67	17.228	553.7	3589.7	10.8
S68	17.228	553.7	3589.7	10.8
S69	16.977	553.6	3589.7	10.8
S70	16.947	264.2	2950.1	10.8
S71	16.902	264.1	2950.1	10.8
S72	16.902	204.0	870.6	41.3
S73	16.859	180.5	765.8	41.3
S74	9.824	463.7	3400.8	21.0
S75	9.824	463.7	3400.8	21.0
S76	9.467	463.5	3400.8	21.0
S77	9.467	463.5	3400.8	21.0
S78	9.467	463.5	3400.8	7.1
S79	9.467	177.5	752.2	48.5
S80	9.417	161.1	580.7	48.5
S81	9.467	463.5	3400.8	13.9
S82	0.040	29.0	2424.1	13.9
S83	0.040	21.0	87.9	13.9
S84	5.027	366.6	3202.6	7.9
S85	5.027	366.6	3202.6	7.9
S86	4.990	366.6	3202.6	7.9
S87	2.442	274.0	3018.2	7.6
S88	2.418	273.9	3018.2	7.6
S89	2.418	126.3	530.7	1.6
S90	5.762	126.4	531.3	7.6
S91	2.442	274.0	3018.2	19.3
S92	2.442	266.4	3002.9	20.8
S93	1.067	110.5	257.2	20.8
S94	1.113	110.5	2696.0	39.4
S95	1.313	129.5	2732.7	19.7
S96	1.061	185.6	2846.8	6.2
S97	1.040	185.6	2846.8	6.2
S98	1.040	100.7	422.0	6.2
S99	1.030	76.7	321.1	6.2
S100	0.388	94.8	2673.7	5.7
S101	0.381	94.8	2673.7	2.7
S102	0.381	74.7	312.8	11.9
S103	6.131	74.8	313.6	11.9
S104	0.118	49.1	2508.0	4.7
S105	0.116	48.8	2508.0	4.7
S106	0.116	48.8	2508.0	4.7
S107	0.108	28.5	119.4	4.7
S108	0.031	15.0	63.0	5.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	88.5
F2	1.013	15.0	45.1	37.2
F3	1.013	15.0	45.1	51.4
F4	1.013	20.0	52.2	336.9
F5	1.039	22.5	22.2	335.0
F6	1.034	120.7	122.6	335.0
F7	1.031	300.0	308.3	318.2
F8	1.031	300.0	298.3	223.9
F9	1.031	300.0	308.3	94.3
F10	4.000	90.2	180.7	18.8
F11	1.010	1050.0	1302.2	601.8
F12	1.010	1050.0	1302.2	537.6
F13	1.010	1050.0	1302.2	64.3
F14	1.009	906.2	1105.6	537.6
F15	1.009	847.0	1026.0	537.6
F16	1.008	744.9	890.8	537.6
F17	1.008	646.1	762.4	537.6
F18	1.007	463.9	533.6	537.6
F19	1.007	323.0	364.1	537.6
F20	1.007	318.8	360.8	545.8
F21	1.002	317.0	360.9	550.8
F22	1.002	317.0	360.9	369.0
F23	0.994	176.0	195.8	385.8
F24				

B.3.21 Scenario FPP-D-EFG-MTG-H2MAX-F2 (Doubled Annex Plant)

Table 57: Stream report of FPP-D-EFG-MTG-H2MAX-F2

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	120.1
F2	1.013	15.0	45.1	38.4
F3	1.013	15.0	45.1	81.7
F4	1.013	20.0	20.2	433.0
F5	1.057	24.0	24.4	453.0
F6	1.047	115.4	117.1	453.0
F7	1.042	322.4	332.0	430.3
F8	1.042	322.4	332.0	277.4
F9	1.042	322.4	332.0	153.0
F10	4.000	90.2	180.8	19.5
F11	1.004	1072.5	1342.3	791.5
F12	1.004	1072.5	1342.3	710.5
F13	1.004	1072.5	1342.3	81.0
F14	1.003	922.6	1135.3	710.5
F15	1.003	843.2	1027.6	710.5
F16	1.002	724.2	889.2	710.5
F17	1.001	583.7	687.3	710.5
F18	1.000	432.4	486.3	710.5
F19	0.999	352.0	401.0	710.5
F20	0.999	347.3	397.1	721.3
F21	0.999	345.9	397.3	726.3
F22	0.989	345.9	397.3	486.6
F23	0.975	180.1	201.4	509.3
F24	0.989	345.9	397.3	239.7
F25	0.985	230.0	259.9	239.7
F26	0.980	160.0	179.1	239.7
F27	0.975	173.7	194.3	749.0
F28	0.965	173.0	183.8	102.5
F29	0.965	173.0	183.8	102.5
F30	1.023	180.7	202.7	102.5
F31	0.965	173.0	183.8	641.7
F32	1.044	174.6	195.6	641.7
F33	1.035	117.0	130.1	641.7
F34	1.011	58.2	-17.3	649.3
S1	0.035	26.6	125.9	240.1
S2	16.384	30.2	126.1	240.1
S3	16.384	30.2	126.1	303.0
S4	16.384	30.2	126.1	240.1
S5	14.966	56.6	238.2	240.1
S6	14.021	85.3	358.1	240.1
S7	14.021	85.7	360.1	240.1
S8	12.605	114.1	479.6	265.7
S9	12.605	109.3	459.0	368.9
S10	12.605	109.3	459.0	200.0
S11	0.035	26.6	125.9	240.1
S12	12.605	109.3	441.1	303.2
S13	11.678	143.0	602.8	368.9
S14	11.678	147.2	620.4	591.3
S15	13.391	165.4	690.5	591.3
S16	11.678	147.2	620.4	295.7
S17	11.678	147.2	620.4	295.7
S18	12.605	154.6	652.7	200.0
S19	9.304	176.8	749.0	374.2
S20	333.358	182.0	788.9	374.2
S21	333.358	182.0	788.9	303.0
S22	333.358	182.0	788.9	21.1
S23	333.358	182.0	788.9	60.0
S24	333.552	207.1	887.4	303.0
S25	327.745	235.9	1025.0	303.0
S26	325.874	266.7	1186.3	303.0
S27	323.069	286.4	1280.5	303.0
S28	320.262	291.8	1287.1	303.0
S29	320.262	296.4	1309.8	353.0
S30	332.359	323.1	1447.2	50.0
S31	309.919	296.3	1309.8	353.0
S32	315.285	307.7	1489.7	353.0
S33	305.355	427.3	2612.8	353.0
S34	285.000	605.0	3476.5	370.9
S35	272.091	597.7	3486.1	370.9
S36	272.091	597.7	3486.1	741.8
S37	56.476	342.5	3031.9	711.9
S38	56.476	342.5	3031.9	5.0
S39	56.476	342.5	3031.9	695.0
S40	56.476	342.5	3031.9	39.0
S41	53.534	336.4	3022.9	328.0
S42	51.104	620.0	3712.5	331.3
S43	48.724	614.4	3701.4	331.3
S44	48.724	614.4	3701.4	624.5
S45	4.695	263.8	2990.6	527.6
S46	4.580	263.6	2990.6	527.6
S47	0.035	26.6	2297.7	163.5
S48	0.035	26.6	2297.7	163.6
S49	0.035	26.6	2297.7	163.6
S50	0.035	25.1	105.1	174.8
S51	0.035	25.1	105.1	163.6
S52	0.035	25.1	105.1	163.6
S53	2.850	17.9	75.4	39450.6
S54	2.850	17.9	75.4	2905.5
S55	2.350	23.7	99.4	2905.5
S56	2.350	24.9	104.4	39450.6
S57	1.013	17.9	75.2	39450.6
S58	56.476	342.5	3031.9	46.0
S59	56.476	342.5	3031.9	23.0
S60	53.828	340.2	3031.9	29.0
S61	53.828	286.6	1178.0	29.9
S62	76.188	384.9	3104.6	29.9
S63	76.188	384.9	3104.6	14.9
S64	72.612	382.7	3094.6	14.9
S65	72.612	286.3	1280.8	14.9
S66	72.567	271.5	1192.0	14.9
S67	34.132	551.6	3569.4	27.4
S68	34.132	551.6	3569.4	13.7
S69	32.589	551.0	3569.4	13.7
S70	32.482	297.5	2979.9	13.7
S71	32.177	297.1	2979.9	13.7
S72	32.177	237.8	1026.9	51.6
S73	32.131	211.8	908.4	51.6
S74	19.534	460.2	3381.2	15.9
S75	19.534	460.2	3381.2	8.0
S76	18.710	459.8	3381.2	8.0
S77	18.710	273.5	2966.0	30.0
S78	18.710	273.5	2966.0	12.5
S79	18.710	209.0	893.3	64.0
S80	18.664	186.9	793.9	64.0
S81	18.710	273.5	2966.0	17.5
S82	0.040	28.8	2111.5	17.5
S83	0.040	20.8	87.2	35.0
S84	9.773	358.4	3176.4	29.0
S85	9.773	358.4	3176.4	14.5
S86	9.304	358.0	3176.4	14.5
S87	4.695	263.8	2990.6	22.4
S88	4.475	263.4	2990.6	22.4
S89	4.475	147.7	622.3	22.4
S90	12.605	147.8	623.4	22.4
S91	4.695	263.8	2990.6	40.2
S92	4.695	257.5	2977.6	43.1
S93	3.910	102.9	131.4	43.1
S94	1.113	110.5	2696.1	75.8
S95	1.313	129.6	2733.0	37.9
S96	2.017	175.5	2821.2	13.0
S97	1.620	175.2	2821.2	13.0
S98	1.620	118.9	499.2	13.0
S99	1.873	92.6	387.9	13.0
S100	0.740	91.4	2652.8	12.6
S101	0.704	90.1	2652.8	12.6
S102	0.704	90.1	377.4	25.6
S103	14.021	90.2	379.0	25.6
S104	0.224	62.5	2487.2	11.3
S105	0.213	61.4	2487.2	11.3
S106	0.213	61.4	257.2	11.3
S107	0.167	30.7	155.1	11.3
S108	0.035	15.0	63.0	10.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	84.6
F2	1.013	15.0	45.1	37.7
F3	1.013	15.0	45.1	46.9
F4	1.013	20.0	20.2	322.3
F5	1.039	22.5	22.8	322.3
F6	1.034	120.9	122.8	322.3
F7	1.032	296.7	304.9	306.2
F8	1.032	296.7	304.9	220.6
F9	1.032	296.7	304.9	85.6
F10	4.000	90.2	180.8	19.1
F11	1.011	1050.0	1299.1	546.6
F12	1.011	1050.0	1299.1	487.3
F13	1.011	1050.0	1299.1	59.3
F14	1.011	872.6	1057.8	487.3
F15	1.011	802.5	954.4	487.3
F16	1.010	689.9	815.7	487.3
F17	1.010	570.8	665.1	487.3
F18	1.009	424.4	484.3	487.3
F19	1.009	323.1	363.5	487.3
F20	1.009	318.9	360.1	487.3
F21	1.005	316.8	360.2	500.2
F22	1.00			

B.3.22 Scenario FPP-M-EFG-MTG-H2MAX-F2 (Doubled Annex Plant)

Table 58: Stream report of FPP-M-EFG-MTG-H2MAX-F2

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	119.2
F2	1.013	15.0	45.1	39.0
F3	1.013	15.0	45.1	80.3
F4	1.013	20.0	20.2	449.5
F5	1.056	24.0	24.3	449.5
F6	1.046	115.5	117.3	449.5
F7	1.041	319.9	329.4	427.0
F8	1.041	319.9	329.4	273.0
F9	1.041	319.9	329.4	154.0
F10	4.000	90.2	180.9	19.7
F11	1.003	1116.1	1402.6	787.2
F12	1.003	1116.1	1402.6	708.5
F13	1.003	1116.1	1402.6	78.6
F14	1.003	985.9	1221.4	708.5
F15	1.002	916.9	1126.8	708.5
F16	1.001	797.3	865.6	708.5
F17	1.000	677.0	807.0	708.5
F18	0.999	475.2	550.7	708.5
F19	0.998	348.8	397.0	708.5
F20	0.998	344.2	393.2	719.3
F21	0.989	342.8	393.3	743.3
F22	0.989	342.8	393.3	485.3
F23	0.974	179.8	200.9	507.7
F24	0.989	342.8	393.3	239.0
F25	0.984	230.0	259.8	239.0
F26	0.979	160.0	179.1	239.0
F27	0.974	173.5	193.9	746.8
F28	0.964	172.8	193.5	742.1
F29	0.964	172.8	193.5	331.6
F30	1.023	180.6	202.4	100.6
F31	0.964	172.8	193.5	641.4
F32	1.044	174.4	195.3	641.4
F33	1.034	172.1	193.2	284.1
F34	1.011	58.2	-17.3	649.6
S1	0.031	24.4	106.1	115.9
S2	6.663	25.4	107.1	115.9
S3	6.663	25.4	107.1	0.0
S4	6.663	25.4	107.1	115.9
S5	6.332	47.4	198.9	115.9
S6	6.112	73.1	306.6	115.9
S7	6.112	73.3	307.4	126.9
S8	5.790	100.3	420.8	126.9
S9	5.790	102.8	431.3	173.8
S10	5.790	102.8	431.3	97.0
S11	0.031	24.4	107.1	115.9
S12	5.790	105.0	440.6	143.9
S13	5.584	127.1	534.4	173.8
S14	5.584	135.0	567.9	278.0
S15	5.774	157.3	1155.6	0.0
S16	5.584	135.0	567.9	278.0
S17	5.584	135.0	567.9	278.0
S18	5.790	149.5	630.3	97.0
S19	5.065	152.3	642.3	331.8
S20	317.135	156.6	679.9	331.8
S21	317.135	156.6	679.9	264.1
S22	317.135	156.6	679.9	19.2
S23	317.135	156.6	679.9	48.5
S24	314.135	172.8	747.7	284.1
S25	311.135	203.1	879.3	264.1
S26	309.135	239.6	1040.9	264.1
S27	306.135	250.0	1088.4	264.1
S28	303.135	256.3	1117.2	264.1
S29	303.135	263.6	1151.5	312.6
S30	316.218	302.0	1337.9	48.5
S31	295.506	263.6	1151.5	312.6
S32	291.245	263.6	1151.5	312.6
S33	293.322	424.1	2631.3	312.6
S34	276.450	605.0	3484.4	328.4
S35	266.380	598.5	3473.9	328.4
S36	266.380	598.5	3473.9	328.4
S37	34.989	288.3	2946.5	321.9
S38	34.989	288.3	2946.5	5.0
S39	34.989	282.2	2929.3	338.5
S40	34.989	282.2	2929.3	338.5
S41	32.199	275.2	2920.5	338.5
S42	27.883	620.0	3729.9	341.9
S43	25.261	614.2	3718.7	341.9
S44	25.261	614.2	3718.7	341.9
S45	2.485	272.1	3014.3	279.2
S46	2.453	272.0	3014.3	279.2
S47	0.031	24.4	239.1	87.9
S48	0.031	24.4	239.1	87.9
S49	0.031	24.4	239.1	87.9
S50	0.031	23.0	96.3	92.3
S51	0.031	23.0	96.3	87.9
S52	0.031	23.0	96.3	87.9
S53	2.850	18.3	77.1	37812.6
S54	2.850	18.3	77.1	1267.5
S55	2.350	24.0	100.7	1267.5
S56	2.350	22.2	93.9	37812.6
S57	1.013	18.3	76.9	37812.6
S58	34.989	288.3	2946.5	22.4
S59	34.989	288.3	2946.5	22.4
S60	34.987	287.5	2946.5	22.4
S61	34.987	241.6	1045.0	28.9
S62	41.296	309.0	2982.6	6.5
S63	41.296	309.0	2982.6	6.5
S64	41.126	308.8	2982.6	6.5
S65	41.126	292.0	1095.5	6.5
S66	41.076	244.6	1059.4	6.5
S67	17.688	552.8	3587.2	12.0
S68	17.688	552.8	3587.2	12.0
S69	17.372	552.7	3587.2	12.0
S70	17.342	265.3	2951.4	12.0
S71	17.285	265.2	2951.4	12.0
S72	17.265	205.1	875.6	40.9
S73	17.235	177.6	752.9	40.9
S74	9.954	460.7	3394.3	18.5
S75	9.954	460.7	3394.3	18.5
S76	8.835	460.1	3394.3	18.5
S77	8.835	460.1	3394.3	18.5
S78	8.835	460.1	3394.3	5.5
S79	8.835	174.6	739.3	46.4
S80	8.785	161.6	682.6	46.4
S81	8.835	460.1	3394.3	12.9
S82	0.040	29.0	2429.7	12.9
S83	0.040	21.2	88.9	12.9
S84	5.100	364.1	3197.1	7.5
S85	5.100	364.1	3197.1	7.5
S86	5.065	364.1	3197.1	7.5
S87	2.485	272.1	3014.3	7.2
S88	2.462	272.0	3014.3	7.2
S89	2.462	126.9	533.2	7.2
S90	5.790	127.0	533.8	7.2
S91	2.485	272.1	3014.3	17.6
S92	2.485	256.9	2983.6	20.4
S93	1.141	63.4	265.3	20.4
S94	1.113	110.5	2696.0	38.4
S95	1.313	129.5	2732.8	19.2
S96	1.082	184.1	2843.7	5.7
S97	1.083	184.1	2843.7	5.7
S98	1.083	101.3	424.7	5.7
S99	1.054	77.4	324.0	5.7
S100	0.397	93.7	2671.4	5.3
S101	0.390	93.7	2671.4	5.3
S102	0.390	75.3	315.1	11.0
S103	0.612	75.4	316.0	11.0
S104	0.121	49.5	2506.1	4.5
S105	0.119	49.2	2506.1	4.5
S106	0.119	49.2	2506.1	4.5
S107	0.112	28.6	120.1	4.5
S108	0.031	15.0	63.0	5.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	83.3
F2	1.013	15.0	45.1	35.0
F3	1.013	15.0	45.1	48.3
F4	1.013	20.0	20.2	293.4
F5	1.037	22.3	22.6	313.4
F6	1.032	121.4	123.3	313.4
F7	1.030	298.3	306.5	297.8
F8	1.030	298.3	306.5	207.9
F9	1.030	298.3	306.5	92.0
F10	4.000	90.2	180.6	17.7
F11	1.010	1050.0	1302.4	573.9
F12	1.010	1050.0	1302.4	513.0
F13	1.010	1050.0	1302.4	69.9
F14	1.010	891.9	1086.5	513.0
F15	1.009	834.6	1009.6	513.0
F16	1.009	723.9	863.4	513.0
F17	1.008	647.3	764.1	513.0
F18	1.008	453.5	521.0	513.0
F19	1.007	320.3	361.0	513.0
F20	1.007	316.2	357.8	520.7
F21	1.009	314.3	357.9	352.7
F22	1.003	314.3	357.9	352.2
F23	0.995	177.9	198.1	367.9
F24	1.003	314.3	357.9	173.5
F25	1.008	230.0	259.9	173.5
F26	0.998	160.0	178.4	173.5
F27	0.995	172.2	191.8	541.4
F28	0.990	171.5	191.3	538.4
F29	0.990	171.5	191.3	241.6
F30	1.020	175.5	195.9	93.4
F31	0.990	171.5	191.3	445.0
F32	1.024	167.5	188.7	445.0
F33	1.013	172.1	115.8	445.0
F34	1.011	60.7	24.5	453.1
S1	0.031	24.3	101.7	56.1
S2	4.333	24.4	102.7	56.1
S3	4.333	24.4	102.7	0.0
S4	4.333	24.4	102.7	56.1
S5	4.266	43.7	183.2	56.1
S6	4.204	68.6	287.6	56.1
S7	4.204	68.7	287.6	61.2
S8	4.129	94.6	396.7	61.2
S9	4.129	101.6	426.3	123.1
S10	4.129	101.6	426.3	66.0
S11	0.031	24.4	103.1	127.9
S12	4.129	105.0	440.4	127.9
S13	4.026	118.4	497.2	123.1
S14	4.026	129.7	545.3	192.5
S15	4.074	157.3	1044.0	0.0
S16	4.026	129.7	545.3	192.5
S17	4.026	129.7	545.3	192.5
S18	4.129	144.8	637.8	66.0
S19	3.778	147.6	595.9	224.1
S20	208.749	144.4	621.2	224.1
S21	208.749	144.4	621.2	180.3
S22	208.749	144.4	621.2	10.8
S23	208.749	144.4	621.2	33.0
S24	207.383	164.7	704.6	180.3
S25	205.955	190.0	817.0	180.3
S26	205.023	223.2	963.7	180.3
S27	203.631	231.3	1000.6	180.3
S28	202.232	231.3	1029.4	180.3
S29	202.232	241.3	1046.0	213.3
S30	208.326	261.7	1141.9	

B.3.23 Scenario FPP-D-EFG-MTG-H2MAX-SH100 (100 K Superheating)

Table 59: Stream report of FPP-D-EFG-MTG-H2MAX-SH100

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	122.7
F2	1.013	15.0	45.1	39.3
F3	1.013	15.0	45.1	83.4
F4	1.013	20.0	129.2	494.3
F5	1.057	24.1	24.4	464.3
F6	1.047	115.4	117.1	464.3
F7	1.042	322.3	331.8	441.1
F8	1.042	322.3	331.8	291.2
F9	1.042	322.3	331.8	149.9
F10	4.000	90.2	180.8	19.9
F11	1.004	1076.6	1348.0	802.2
F12	1.004	1076.6	1348.0	719.0
F13	1.004	1076.6	1348.0	83.3
F14	1.004	925.3	1139.0	719.0
F15	1.003	845.5	1030.7	719.0
F16	1.002	725.9	871.4	719.0
F17	1.001	584.7	688.5	719.0
F18	1.000	432.6	498.5	719.0
F19	0.999	352.0	401.0	719.0
F20	0.999	347.3	397.1	730.0
F21	0.990	345.9	397.2	730.0
F22	0.990	345.9	397.2	492.5
F23	0.975	178.2	199.1	515.7
F24	0.990	345.9	397.2	242.6
F25	0.985	230.0	259.9	242.6
F26	0.980	160.0	179.1	242.6
F27	0.975	172.3	192.7	758.3
F28	0.965	171.7	192.3	753.4
F29	0.965	171.7	192.3	100.5
F30	1.023	179.4	201.1	100.5
F31	0.965	171.7	192.3	653.0
F32	1.044	173.2	194.0	653.0
F33	1.034	115.2	128.0	653.0
F34	1.011	58.2	-17.3	660.7
S1	0.035	26.6	126.9	244.2
S2	16.388	30.4	129.0	244.2
S3	16.388	30.4	129.0	306.3
S4	16.388	30.4	129.0	244.2
S5	14.968	56.6	238.1	244.2
S6	14.021	85.2	358.0	244.2
S7	14.021	85.7	360.9	270.3
S8	12.603	114.1	479.5	270.3
S9	12.603	109.2	458.9	381.3
S10	12.603	109.2	458.9	200.0
S11	0.035	26.6	126.9	244.2
S12	12.602	105.0	441.1	311.0
S13	11.674	143.0	602.8	381.3
S14	11.674	147.2	620.7	604.4
S15	13.395	165.4	696.5	610.0
S16	11.674	147.2	620.7	302.2
S17	11.674	147.2	620.7	302.2
S18	12.603	155.1	654.9	200.0
S19	9.297	176.7	748.8	380.8
S20	333.408	181.9	788.8	309.3
S21	333.408	181.9	788.8	309.3
S22	333.408	181.9	788.8	21.5
S23	333.408	181.9	788.8	50.0
S24	330.586	206.9	1049.7	309.3
S25	327.789	235.9	1024.9	309.3
S26	325.915	266.7	1106.3	309.3
S27	323.107	286.4	1260.6	309.3
S28	320.297	291.9	1287.3	309.3
S29	320.297	296.6	1310.6	359.3
S30	332.409	324.5	1455.1	50.0
S31	309.945	296.5	1310.6	359.3
S32	315.313	276.7	1450.7	359.3
S33	305.373	427.3	2612.8	359.3
S34	285.000	605.0	3476.5	377.4
S35	272.079	597.7	3496.1	377.4
S36	272.079	597.7	3496.1	754.9
S37	56.489	342.5	3032.0	724.4
S38	56.489	342.5	3032.0	5.0
S39	56.489	342.5	3032.0	867.4
S40	56.489	342.5	3032.0	333.7
S41	53.545	336.5	3022.9	333.7
S42	51.114	620.0	3712.5	337.1
S43	48.732	614.4	3701.4	337.1
S44	48.732	614.4	3701.4	74.1
S45	4.692	263.7	2990.4	518.1
S46	4.577	263.5	2990.4	518.1
S47	0.035	26.6	2297.6	160.2
S48	0.035	26.6	2297.6	160.2
S49	0.035	26.6	2297.6	160.2
S50	0.035	25.1	105.1	171.6
S51	0.035	25.1	105.1	160.2
S52	0.035	25.1	105.1	160.2
S53	2.850	17.9	75.4	38574.9
S54	2.850	17.9	75.4	2756.7
S55	2.350	23.7	99.4	2756.7
S56	2.350	23.7	99.4	38574.9
S57	1.013	17.9	75.2	38574.9
S58	56.489	342.5	3032.0	47.5
S59	56.489	342.5	3032.0	23.0
S60	53.833	340.0	3023.7	23.0
S61	53.833	286.6	1178.0	38.7
S62	76.213	385.0	3104.7	70.5
S63	76.213	385.0	3104.7	15.2
S64	72.629	382.2	3104.7	15.2
S65	72.629	382.2	3104.7	15.2
S66	72.583	271.5	1192.1	15.2
S67	34.131	551.6	3569.3	28.0
S68	34.131	551.6	3569.3	14.0
S69	32.486	550.9	3569.3	14.0
S70	32.486	297.6	2980.2	14.0
S71	32.161	297.2	2980.2	14.0
S72	32.161	247.7	1026.8	52.7
S73	32.115	211.7	622.2	52.7
S74	19.525	460.1	3381.0	32.8
S75	19.525	460.1	3381.0	16.4
S76	18.620	459.6	3381.0	16.4
S77	18.620	410.8	3274.0	26.4
S78	18.620	410.8	3274.0	11.1
S79	18.620	208.8	892.2	63.8
S80	18.620	186.8	793.6	63.8
S81	18.620	410.8	3274.0	15.3
S82	0.040	28.8	2280.0	15.3
S83	0.040	20.8	87.2	30.6
S84	9.708	358.3	3176.2	29.6
S85	9.708	358.3	3176.2	14.8
S86	9.297	357.9	3176.2	14.8
S87	4.692	263.7	2990.4	23.1
S88	4.472	263.3	2990.4	23.1
S89	4.472	147.7	622.2	23.1
S90	12.602	147.8	623.3	23.1
S91	4.692	263.7	2990.4	42.5
S92	4.692	260.6	2994.1	43.9
S93	3.995	102.8	431.3	43.9
S94	1.113	110.5	2686.1	77.8
S95	1.313	129.6	2733.0	38.7
S96	2.015	175.4	2821.0	13.3
S97	1.918	175.2	2821.0	13.3
S98	1.918	118.9	490.1	13.3
S99	1.871	92.6	387.8	13.3
S100	0.739	91.4	2652.6	12.8
S101	0.704	90.1	2652.6	12.8
S102	0.704	90.1	377.3	26.1
S103	14.021	90.2	378.9	26.1
S104	0.224	62.5	2487.0	11.4
S105	0.213	61.4	2487.0	11.4
S106	0.213	61.4	257.2	11.4
S107	0.166	37.2	156.0	11.4
S108	0.035	15.0	63.0	10.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	87.3
F2	1.013	15.0	45.1	38.4
F3	1.013	15.0	45.1	49.0
F4	1.013	20.0	129.2	513.3
F5	1.039	22.5	22.8	333.3
F6	1.034	120.8	122.6	333.3
F7	1.032	297.9	306.1	316.6
F8	1.032	297.9	306.1	230.4
F9	1.032	297.9	306.1	86.2
F10	4.000	90.2	180.8	19.4
F11	1.011	1050.0	1299.7	564.8
F12	1.011	1050.0	1299.7	503.0
F13	1.011	1050.0	1299.7	61.8
F14	1.011	875.1	1061.6	503.0
F15	1.010	805.6	989.0	503.0
F16	1.010	684.9	810.9	503.0
F17	1.010	567.8	681.3	503.0
F18	1.009	425.1	485.3	503.0
F19	1.009	324.1	364.8	503.0
F20	1.009	319.7	361.2	511.1
F21	1.004	317.7	361.3	516.1
F22	1.004	317.7	361.	

B.3.24 Scenario FPP-M-EFG-MTG-H2MAX-SH100 (100 K Superheating)

Table 60: Stream report of FPP-M-EFG-MTG-H2MAX-SH100

Related boiler capacity: 100 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	124.8
F2	1.013	15.0	45.1	39.9
F3	1.013	15.0	45.1	84.9
F4	1.013	20.0	102.2	472.3
F5	1.057	24.0	24.4	472.3
F6	1.047	115.0	116.8	472.3
F7	1.042	322.4	332.0	448.7
F8	1.042	322.4	332.0	290.3
F9	1.042	322.4	332.0	158.4
F10	4.000	90.2	180.9	20.2
F11	1.003	1113.6	1399.7	814.6
F12	1.003	1113.6	1399.7	734.3
F13	1.003	1113.6	1399.7	891.3
F14	1.002	983.7	1218.9	734.3
F15	1.002	911.9	1120.5	734.3
F16	1.001	799.1	988.3	734.3
F17	1.000	673.4	802.6	734.3
F18	0.998	485.2	563.3	734.3
F19	0.997	352.0	401.0	734.3
F20	0.997	347.3	397.1	745.6
F21	0.987	345.9	397.2	750.6
F22	0.987	345.9	397.2	502.9
F23	0.972	178.5	199.4	526.5
F24	0.967	345.9	397.2	247.7
F25	0.962	230.0	290.9	247.7
F26	0.977	160.0	179.1	247.7
F27	0.972	172.5	192.9	774.2
F28	0.962	171.9	192.5	769.3
F29	0.965	171.9	192.5	78.3
F30	1.023	180.0	201.8	102.4
F31	0.962	171.9	192.5	666.9
F32	1.045	173.9	194.8	666.9
F33	1.038	116.3	124.4	666.9
F34	1.011	58.0	-20.6	675.1
S1	0.031	24.4	105.6	127.4
S2	6.771	25.3	106.6	127.4
S3	6.771	25.3	106.6	0.0
S4	6.771	25.3	106.6	127.4
S5	6.385	46.6	195.7	127.4
S6	6.128	72.2	302.9	127.4
S7	6.128	72.5	303.8	139.3
S8	5.752	99.4	416.8	139.3
S9	5.752	102.3	429.0	186.6
S10	5.752	102.3	429.0	100.0
S11	0.031	24.4	107.1	0.0
S12	5.752	105.0	440.5	147.3
S13	5.529	126.3	530.9	186.6
S14	5.529	134.1	564.3	294.3
S15	5.529	134.1	564.3	0.0
S16	5.529	134.1	564.3	294.3
S17	5.529	134.1	564.3	294.3
S18	5.752	149.2	629.1	100.0
S19	4.873	151.6	636.3	351.0
S20	327.588	156.0	678.1	281.0
S21	327.588	156.0	678.1	281.0
S22	327.588	156.0	678.1	20.1
S23	327.588	156.0	678.1	50.0
S24	324.688	176.3	758.8	281.0
S25	321.588	201.9	874.6	281.0
S26	319.588	237.3	1031.2	281.0
S27	316.588	248.9	1083.5	281.0
S28	313.588	254.3	1108.6	281.0
S29	311.588	262.5	1146.2	331.0
S30	326.615	306.1	1358.5	50.0
S31	305.302	262.5	1146.2	331.0
S32	311.000	297.7	1481.3	331.0
S33	302.480	427.2	2624.5	331.0
S34	285.000	605.0	3476.5	347.7
S35	274.118	598.3	3496.1	347.7
S36	274.118	598.3	3496.1	347.7
S37	33.683	279.7	2927.3	340.1
S38	33.683	279.7	2927.3	5.0
S39	33.683	283.4	2937.6	331.9
S40	33.683	283.4	2937.6	331.9
S41	31.056	276.6	2928.8	331.9
S42	26.892	620.0	3730.7	335.2
S43	24.458	614.3	3719.5	335.2
S44	24.458	614.3	3719.5	335.2
S45	2.433	273.7	3017.6	268.3
S46	2.401	273.6	3017.6	268.3
S47	0.031	24.4	2397.4	83.8
S48	0.031	24.4	2397.5	83.8
S49	0.031	24.4	2397.5	83.8
S50	0.031	22.9	96.2	88.6
S51	0.031	22.9	96.2	83.8
S52	0.031	22.9	96.2	21.8
S53	2.850	18.2	76.8	37164.5
S54	2.850	18.2	76.8	1346.3
S55	2.350	24.0	100.7	1346.3
S56	2.350	22.2	93.2	37164.5
S57	1.013	18.2	76.6	37164.5
S58	33.683	279.7	2927.3	23.2
S59	33.683	279.7	2927.3	23.2
S60	33.085	279.3	2923.3	23.2
S61	33.085	238.3	1034.4	30.8
S62	40.572	302.7	2967.2	7.7
S63	40.572	302.7	2967.2	7.7
S64	40.536	302.7	2967.2	7.7
S65	40.356	250.9	1090.0	7.7
S66	40.306	242.3	1048.8	7.7
S67	17.200	553.7	3589.6	11.0
S68	17.200	553.7	3589.6	11.0
S69	16.944	553.5	3589.6	11.0
S70	16.914	264.1	2950.0	11.0
S71	16.868	264.0	2950.0	11.0
S72	16.868	203.9	870.2	41.8
S73	16.818	190.3	764.7	41.8
S74	9.793	463.4	3400.2	21.1
S75	9.793	463.4	3400.2	21.1
S76	9.413	463.2	3400.2	21.1
S77	9.413	463.2	3400.2	21.1
S78	9.413	463.2	3400.2	7.1
S79	9.413	177.3	751.2	48.9
S80	9.363	161.0	580.1	48.9
S81	9.413	463.2	3400.2	14.0
S82	0.040	29.0	2424.6	14.0
S83	0.040	21.0	87.9	14.0
S84	5.010	366.3	3201.9	7.9
S85	5.010	366.3	3201.9	7.9
S86	4.973	366.3	3201.9	7.9
S87	2.433	273.7	3017.6	7.6
S88	2.408	273.6	3017.6	7.6
S89	2.408	128.2	530.1	7.6
S90	5.752	126.3	530.8	7.6
S91	2.433	273.7	3017.6	19.3
S92	2.433	266.1	3002.3	20.7
S93	1.055	61.1	255.9	20.7
S94	1.113	110.5	2696.0	39.4
S95	1.313	129.5	2732.8	19.7
S96	1.057	185.4	2846.3	6.2
S97	1.035	185.5	2846.3	6.2
S98	1.035	100.6	421.5	6.2
S99	1.025	76.5	320.5	6.2
S100	0.387	94.6	2673.3	5.8
S101	0.387	84.0	2673.3	2.8
S102	0.380	74.6	312.3	12.0
S103	6.128	74.7	313.2	12.0
S104	0.117	49.0	2507.7	4.8
S105	0.116	48.7	2507.7	4.8
S106	0.116	48.7	203.8	4.8
S107	0.108	28.5	119.3	4.8
S108	0.031	15.0	63.0	5.1

Related boiler capacity: 70 %				
Stream number	p (bar)	T (°C)	h (kJ/kg)	m (kg/s)
F1	1.013	15.0	45.1	88.4
F2	1.013	15.0	45.1	37.1
F3	1.013	15.0	45.1	51.3
F4	1.013	20.0	102.2	333.9
F5	1.038	22.4	22.2	333.9
F6	1.033	120.8	122.6	333.9
F7	1.031	301.0	309.4	317.2
F8	1.031	301.0	309.4	218.7
F9	1.031	301.0	309.4	97.5
F10	4.000	90.2	180.7	18.8
F11	1.010	1050.0	1302.3	601.9
F12	1.010	1050.0	1302.3	538.4
F13	1.010	1050.0	1302.3	63.5
F14	1.009	907.7	1107.7	538.4
F15	1.009	848.5	1028.0	538.4
F16	1.009	737.1	880.5	538.4
F17	1.008	638.0	752.0	538.4
F18	1.007	465.0	535.0	538.4
F19	1.007	323.8	365.1	538.4
F20	1.007	319.7	361.8	546.5
F21	1.002	317.8	362.0	551.6
F22	1.002	317.8	362.0	369.5
F23	0.994	176.8	196.7	386.2
F24				

Table 61: Key performance parameters of EPP-EFG-MTG

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	50
Boiler capacity	%	100	95	90	85	79	74	70	64	59	54	52
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	345	330
Net electricity generation	MW	606	577	548	519	488	457	426	393	360	327	312
Gross plant energy efficiency	%	37.6	37.3	37.2	36.9	36.6	36.2	35.9	35.3	34.8	34.1	33.8
Net plant energy efficiency	%	35.1	34.9	34.9	34.7	34.5	34.1	33.9	33.4	32.9	32.3	32.0
Thermodynamic mean temperature	K	621	619	617	614	611	608	605	601	597	592	590
CO2 emissions	kg/s	185.5	176.9	168.2	159.4	150.7	142.2	133.3	124.0	114.9	105.8	101.9
Specific CO2 emissions	g/kWh	1102	1105	1105	1106	1112	1120	1126	1137	1149	1166	1174
Auxiliary power	MW	43.7	39.6	36.0	32.9	30.0	27.5	25.2	22.8	20.8	18.8	18.1
• Ancillary units	MW	0.932	0.835	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819
• Cooling water pump	MW	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.381	3.381	3.381
• Condensate pump	MW	1.091	0.985	0.886	0.797	0.716	0.644	0.573	0.509	0.451	0.398	0.376
• Boiler feed water pump	MW	16.012	14.364	12.878	11.540	10.317	9.203	8.231	7.178	6.271	5.431	5.099
• Flue gas treatment	MW	4.012	3.956	3.906	3.865	3.824	3.784	3.739	3.675	3.530	3.306	3.288
• Coal mills	MW	5.041	4.807	4.568	4.328	4.091	3.859	3.617	3.362	3.048	2.702	2.563
• Forced draft fan	MW	2.940	2.593	2.266	1.971	1.714	1.490	1.250	1.068	0.998	0.895	0.847
• Induced draft fan	MW	10.301	8.637	7.320	6.159	5.183	4.339	3.541	2.801	2.348	1.874	1.676
Specific auxiliary power	%	6.7	6.4	6.2	6.0	5.8	5.7	5.6	5.5	5.5	5.4	5.5

Table 62: Key performance parameters of EPP-EFG-FT

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	50
Boiler capacity	%	100	95	90	84	79	74	69	64	59	54	51
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	345	330
Net electricity generation	MW	606	576	548	518	488	457	426	392	360	327	311
Gross plant energy efficiency	%	37.4	37.1	36.9	36.8	36.5	36.1	35.7	35.2	34.6	34.0	33.6
Net plant energy efficiency	%	34.8	34.7	34.6	34.6	34.3	34.0	33.7	33.2	32.7	32.1	31.8
Thermodynamic mean temperature	K	621	619	617	614	611	609	605	601	596	592	590
CO2 emissions	kg/s	187.0	178.4	169.6	160.2	151.5	142.8	134.1	124.8	115.7	106.5	102.3
Specific CO2 emissions	g/kWh	1111	1115	1115	1112	1118	1125	1133	1144	1157	1174	1183
Auxiliary power	MW	44.3	40.1	36.5	33.0	30.2	27.7	25.3	23.0	21.0	19.0	18.1
• Ancillary units	MW	0.931	0.831	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819
• Cooling water pump	MW	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.381	3.381	3.381
• Condensate pump	MW	1.068	0.971	0.883	0.784	0.706	0.634	0.569	0.509	0.456	0.408	0.391
• Boiler feed water pump	MW	16.281	14.595	13.082	11.576	10.348	9.273	8.257	7.203	6.292	5.446	5.097
• Flue gas treatment	MW	4.032	3.978	3.928	3.884	3.845	3.806	3.764	3.704	3.562	3.340	3.320
• Coal mills	MW	5.091	4.857	4.618	4.360	4.123	3.885	3.649	3.395	3.079	2.731	2.584
• Forced draft fan	MW	3.012	2.673	2.334	2.038	1.774	1.496	1.298	1.113	1.041	0.936	0.875
• Induced draft fan	MW	10.500	8.805	7.465	6.203	5.220	4.363	3.573	2.831	2.375	1.896	1.682
Specific auxiliary power	%	6.8	6.5	6.3	6.0	5.8	5.7	5.6	5.5	5.5	5.5	5.5

Table 63: Key performance parameters of EPP-FBG-MTG

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	50
Boiler capacity	%	100	95	90	85	80	74	70	64	59	54	51
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	345	326
Net electricity generation	MW	606	576	548	518	488	457	426	393	360	327	308
Gross plant energy efficiency	%	37.6	37.3	37.2	36.9	36.6	36.2	35.8	35.4	34.8	34.2	33.7
Net plant energy efficiency	%	35.1	34.9	34.9	34.7	34.5	34.1	33.8	33.4	32.9	32.3	31.9
Thermodynamic mean temperature	K	621	619	617	614	612	609	605	601	597	593	590
CO2 emissions	kg/s	186.3	177.8	169.0	160.1	151.4	142.9	134.2	124.7	115.6	106.5	101.4
Specific CO2 emissions	g/kWh	1107	1110	1110	1112	1117	1126	1134	1143	1156	1174	1187
Auxiliary power	MW	44.1	39.9	36.2	33.0	30.1	27.6	25.2	22.8	20.8	18.8	17.8
• Ancillary units	MW	0.961	0.875	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818	0.818
• Cooling water pump	MW	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.381	3.381	3.381
• Condensate pump	MW	1.097	0.990	0.890	0.801	0.720	0.647	0.577	0.510	0.452	0.399	0.371
• Boiler feed water pump	MW	16.299	14.611	13.100	11.744	10.505	9.378	8.351	7.324	6.408	5.562	5.105
• Flue gas treatment	MW	3.983	3.926	3.871	3.825	3.780	3.734	3.685	3.618	3.471	3.254	3.204
• Coal mills	MW	5.013	4.779	4.538	4.297	4.059	3.827	3.590	3.329	3.038	2.693	2.503
• Forced draft fan	MW	2.800	2.484	2.158	1.874	1.624	1.408	1.211	1.000	0.913	0.816	0.769
• Induced draft fan	MW	10.521	8.821	7.417	6.243	5.240	4.390	3.605	2.835	2.349	1.877	1.630
Specific auxiliary power	%	6.8	6.5	6.2	6.0	5.8	5.7	5.6	5.5	5.5	5.4	5.5

Table 64: Key performance parameters of EPP-FBG-FT

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	50
Boiler capacity	%	100	95	90	84	79	74	69	64	59	54	51
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	345	327
Net electricity generation	MW	606	576	548	518	488	457	426	392	360	327	309
Gross plant energy efficiency	%	37.3	37.0	36.8	36.8	36.5	36.0	35.6	35.2	34.6	34.0	33.5
Net plant energy efficiency	%	34.8	34.6	34.5	34.6	34.3	34.0	33.6	33.2	32.7	32.1	31.7
Thermodynamic mean temperature	K	621	619	617	614	612	609	605	601	597	593	590
CO2 emissions	kg/s	187.8	179.2	170.4	160.8	152.1	143.5	134.9	125.3	116.2	107.0	102.3
Specific CO2 emissions	g/kWh	1116	1120	1120	1117	1122	1131	1139	1149	1162	1180	1192
Auxiliary power	MW	44.5	40.3	36.6	33.1	30.2	27.7	25.3	22.9	21.0	18.9	18.0
• Ancillary units	MW	0.943	0.851	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819
• Cooling water pump	MW	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.381	3.381	3.381
• Condensate pump	MW	1.080	0.983	0.896	0.787	0.709	0.640	0.575	0.514	0.461	0.416	0.399
• Boiler feed water pump	MW	16.431	14.722	13.193	11.712	10.474	9.348	8.325	7.302	6.386	5.537	5.100
• Flue gas treatment	MW	4.011	3.955	3.903	3.857	3.814	3.772	3.726	3.663	3.515	3.294	3.262
• Coal mills	MW	5.074	4.839	4.600	4.338	4.099	3.866	3.630	3.370	3.076	2.728	2.546
• Forced draft fan	MW	2.964	2.631	2.296	1.954	1.695	1.471	1.270	1.052	0.963	0.861	0.825
• Induced draft fan	MW	10.602	8.895	7.526	6.247	5.240	4.389	3.606	2.838	2.350	1.875	1.653
Specific auxiliary power	%	6.8	6.5	6.3	6.0	5.8	5.7	5.6	5.5	5.5	5.5	5.5

Table 65: Key performance parameters of EPP-EFG-MTG-H2AVG

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	50
Boiler capacity	%	100	95	90	85	79	74	70	64	59	54	52
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	345	331
Net electricity generation	MW	606	577	548	519	488	457	426	393	360	327	313
Gross plant energy efficiency	%	37.6	37.3	37.1	36.9	36.6	36.2	35.8	35.3	34.8	34.1	33.8
Net plant energy efficiency	%	35.1	34.9	34.8	34.7	34.5	34.1	33.8	33.4	32.9	32.2	31.9
Thermodynamic mean temperature	K	621	619	617	614	611	608	605	601	597	592	590
CO ₂ emissions	kg/s	185.4	176.8	168.1	159.3	150.6	142.1	133.4	123.8	114.8	105.6	101.9
Specific CO ₂ emissions	g/kWh	1101	1104	1104	1105	1111	1119	1126	1135	1148	1164	1173
Auxiliary power	MW	43.7	39.5	36.0	32.8	30.0	27.5	25.1	22.8	20.8	18.8	18.0
• Ancillary units	MW	0.933	0.837	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819
• Cooling water pump	MW	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.381	3.381	3.381
• Condensate pump	MW	1.086	0.981	0.883	0.794	0.714	0.641	0.573	0.507	0.449	0.396	0.375
• Boiler feed water pump	MW	16.001	14.353	12.869	11.531	10.309	9.196	8.182	7.172	6.266	5.425	5.099
• Flue gas treatment	MW	4.006	3.950	3.900	3.857	3.816	3.775	3.729	3.663	3.517	3.290	3.275
• Coal mills	MW	5.038	4.804	4.565	4.324	4.087	3.855	3.618	3.358	3.044	2.698	2.562
• Forced draft fan	MW	2.930	2.586	2.258	1.964	1.707	1.484	1.283	1.063	0.993	0.890	0.844
• Induced draft fan	MW	10.294	8.627	7.307	6.147	5.171	4.328	3.552	2.793	2.339	1.867	1.677
Specific auxiliary power	%	6.7	6.4	6.2	6.0	5.8	5.7	5.6	5.5	5.5	5.4	5.5

Table 66: Key performance parameters of EPP-EFG-MTG-H2MAX

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	50
Boiler capacity	%	100	95	90	85	79	74	70	64	59	54	52
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	345	331
Net electricity generation	MW	606	577	548	519	488	457	426	393	360	327	313
Gross plant energy efficiency	%	37.6	37.3	37.1	36.9	36.6	36.1	35.7	35.3	34.7	34.0	33.7
Net plant energy efficiency	%	35.1	34.9	34.8	34.7	34.4	34.1	33.8	33.4	32.8	32.2	31.9
Thermodynamic mean temperature	K	621	619	617	614	611	608	605	601	597	592	590
CO ₂ emissions	kg/s	185.3	176.7	168.0	159.1	150.5	141.9	133.3	123.7	114.7	105.3	101.8
Specific CO ₂ emissions	g/kWh	1100	1103	1103	1105	1110	1118	1125	1134	1146	1160	1171
Auxiliary power	MW	43.6	39.5	35.9	32.8	30.0	27.4	25.1	22.7	20.8	18.7	18.0
• Ancillary units	MW	0.934	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819
• Cooling water pump	MW	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.381	3.381	3.381
• Condensate pump	MW	1.084	0.979	0.880	0.792	0.712	0.640	0.571	0.506	0.448	0.394	0.374
• Boiler feed water pump	MW	15.992	14.346	12.862	11.525	10.303	9.190	8.177	7.168	6.261	5.406	5.099
• Flue gas treatment	MW	4.002	3.945	3.895	3.852	3.810	3.768	3.722	3.654	3.507	3.269	3.266
• Coal mills	MW	5.035	4.800	4.561	4.320	4.084	3.851	3.615	3.355	3.040	2.688	2.560
• Forced draft fan	MW	2.921	2.576	2.249	1.955	1.700	1.477	1.281	1.058	0.986	0.875	0.841
• Induced draft fan	MW	10.281	8.604	7.301	6.142	5.166	4.323	3.535	2.789	2.336	1.845	1.679
Specific auxiliary power	%	6.7	6.4	6.2	5.9	5.8	5.7	5.6	5.5	5.5	5.4	5.4

Table 67: Key performance parameters of EPP-EFG-MTG-H2MAX-F2

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	
Boiler capacity	%	100	95	89	84	79	74	69	63	58	53	
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	353	
Net electricity generation	MW	608	579	550	520	489	458	427	393	360	334	
Gross plant energy efficiency	%	37.1	36.8	36.6	36.3	36.0	35.6	35.2	34.6	34.0	34.4	
Net plant energy efficiency	%	34.7	34.5	34.4	34.3	34.0	33.6	33.2	32.7	32.2	32.5	
Thermodynamic mean temperature	K	621	618	616	613	610	607	604	599	594	591	
CO ₂ emissions	kg/s	180.2	171.6	162.8	154.0	145.4	136.6	128.0	118.7	109.6	107.3	
Specific CO ₂ emissions	g/kWh	1066	1068	1066	1066	1070	1074	1079	1088	1094	1156	
Auxiliary power	MW	41.6	37.8	34.5	31.6	29.0	26.6	24.4	22.4	20.4	19.2	
• Ancillary units	MW	0.914	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	
• Cooling water pump	MW	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.381	
• Condensate pump	MW	1.033	0.934	0.841	0.757	0.681	0.609	0.546	0.487	0.433	0.393	
• Boiler feed water pump	MW	14.980	13.458	12.063	10.789	9.621	8.570	7.641	6.638	5.765	5.100	
• Flue gas treatment	MW	4.328	4.302	4.292	4.293	4.299	4.311	4.326	4.294	4.161	4.102	
• Coal mills	MW	4.878	4.644	4.404	4.163	3.928	3.689	3.453	3.179	2.825	2.469	
• Forced draft fan	MW	2.679	2.338	2.036	1.766	1.531	1.319	1.097	1.015	0.913	0.944	
• Induced draft fan	MW	9.387	7.887	6.661	5.592	4.698	3.876	3.156	2.601	2.106	1.970	
Specific auxiliary power	%	6.4	6.1	5.9	5.7	5.6	5.5	5.4	5.4	5.4	5.4	

Table 68: Key performance parameters of EPP-EFG-MTG-H2MAX-SH100

Parameter	Unit	Related boiler capacity (%)										
		100	95	90	85	80	75	70	65	60	55	50
Boiler capacity	%	100	95	90	85	79	74	70	64	59	54	51
Gross electricity generation	MW	650	616	584	551	518	484	451	415	381	345	329
Net electricity generation	MW	606	577	548	519	488	457	426	393	360	327	311
Gross plant energy efficiency	%	37.6	37.3	37.1	36.9	36.6	36.2	35.8	35.3	34.8	34.1	33.8
Net plant energy efficiency	%	35.1	34.9	34.9	34.7	34.5	34.1	33.8	33.4	32.9	32.2	31.9
Thermodynamic mean temperature	K	621	619	617	614	611	608	605	601	596	592	590
CO ₂ emissions	kg/s	185.1	176.5	167.8	158.9	150.3	141.7	133.1	123.5	114.4	105.1	101.1
Specific CO ₂ emissions	g/kWh	1099	1102	1102	1103	1108	1117	1124	1132	1144	1158	1169
Auxiliary power	MW	43.6	39.5	36.0	32.8	30.0	27.5	25.1	22.7	20.8	18.7	17.9
• Ancillary units	MW	0.910	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.819
• Cooling water pump	MW	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.382	3.381	3.381	3.381
• Condensate pump	MW	1.089	0.983	0.885	0.796	0.715	0.643	0.574	0.508	0.450	0.396	0.373
• Boiler feed water pump	MW	16.080	14.421	12.928	11.584	10.357	9.239	8.222	7.208	6.298	5.440	5.100
• Flue gas treatment	MW	3.999	3.944	3.894	3.851	3.810	3.767	3.721	3.650	3.502	3.269	3.266
• Coal mills	MW	5.027	4.794	4.555	4.314	4.078	3.846	3.609	3.349	3.035	2.683	2.541
• Forced draft fan	MW	2.901	2.567	2.242	1.950	1.695	1.472	1.272	1.054	0.983	0.872	0.819
• Induced draft fan	MW	10.176	8.561	7.261	6.107	5.136	4.297	3.524	2.767	2.316	1.828	1.626
Specific auxiliary power	%	6.7	6.4	6.2	5.9	5.8	5.7	5.6	5.5	5.5	5.4	5.4

Table 69: Key performance parameters of FPP-D-EFG-MTG

Parameter	Unit	Related boiler capacity (%)													
		100	95	90	85	80	75	70	65	60	55	50	45	40	
Boiler capacity	%	100	95	90	85	80	75	70	64	59	54	49	44	40	
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	445	
Net electricity generation	MW	1047	1000	951	901	850	798	746	688	633	578	521	464	423	
Gross plant energy efficiency	%	47.1	47.0	46.9	46.8	46.6	46.5	46.3	46.2	45.9	45.5	45.0	44.3	43.7	
Net plant energy efficiency	%	44.8	44.8	44.7	44.7	44.5	44.4	44.3	44.2	43.9	43.5	42.9	42.1	41.5	
Thermodynamic mean temperature	K	679	674	668	663	657	650	644	637	631	624	617	609	602	
CO2 emissions	kg/s	254.0	242.7	230.7	218.7	206.5	193.8	181.1	167.0	154.2	141.5	128.7	116.0	106.9	
Specific CO2 emissions	g/kWh	874	873	873	874	875	874	874	873	877	882	889	900	910	
Auxiliary power	MW	53.4	49.9	46.5	43.2	39.8	36.6	33.7	30.9	29.0	27.1	25.4	23.7	22.6	
• Ancillary units	MW	3.322	3.170	3.028	2.858	2.597	2.352	2.141	1.968	1.796	1.661	1.558	1.476	1.424	
• Cooling water pump	MW	8.318	8.317	8.318	8.317	8.319	8.319	8.318	8.318	8.319	8.320	8.317	8.318	8.318	
• Condensate pump	MW	0.627	0.544	0.463	0.393	0.331	0.279	0.231	0.183	0.166	0.148	0.129	0.111	0.098	
• Cooling tower fan	MW	7.725	7.371	7.017	6.663	6.309	5.955	5.601	5.176	4.822	4.468	4.114	3.760	3.476	
• Flue gas treatment	MW	4.905	4.869	4.833	4.797	4.763	4.729	4.696	4.662	4.633	4.606	4.582	4.563	4.552	
• Coal mills	MW	4.783	4.474	4.142	3.808	3.471	3.129	2.788	2.426	2.238	2.049	1.862	1.676	1.542	
• Fluidized-bed dryer	MW	3.109	3.075	3.052	3.027	3.001	2.966	2.932	2.871	2.857	2.439	2.221	2.006	1.854	
• Forced draft fan	MW	4.050	3.691	3.293	2.919	2.562	2.231	1.935	1.599	1.409	1.214	1.012	0.721	0.545	
• Induced draft fan	MW	16.541	14.427	12.370	10.386	8.417	6.628	5.106	3.697	2.912	2.214	1.614	1.112	0.795	
Specific auxiliary power	%	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.3	4.4	4.5	4.7	4.9	5.1	

Table 70: Key performance parameters of FPP-M-EFG-MTG

Parameter	Unit	Related boiler capacity (%)											
		100	95	90	85	80	75	70	65	60	55	50	45
Boiler capacity	%	100	95	90	84	79	74	70	64	59	53	48	45
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	255
Net electricity generation	MW	517	493	468	442	417	391	365	336	309	282	255	238
Gross plant energy efficiency	%	44.9	44.8	44.6	44.4	44.1	44.0	43.6	43.1	42.8	42.5	42.1	41.8
Net plant energy efficiency	%	42.3	42.1	42.0	41.8	41.6	41.4	41.1	40.6	40.2	39.8	39.3	39.0
Thermodynamic mean temperature	K	700	693	686	679	670	662	655	647	639	631	621	616
CO ₂ emissions	kg/s	129.7	123.7	117.5	111.2	104.9	98.2	92.1	85.4	78.7	72.0	65.3	60.9
Specific CO ₂ emissions	g/kWh	903	904	904	905	906	905	909	914	916	919	922	923
Auxiliary power	MW	32.7	30.8	29.0	27.2	25.5	23.9	22.5	20.9	19.8	18.7	17.7	17.1
• Ancillary units	MW	1.972	1.894	1.813	1.727	1.656	1.580	1.496	1.374	1.257	1.162	1.083	1.049
• Cooling water pump	MW	8.008	8.009	8.008	8.008	8.008	8.008	8.008	8.009	8.008	8.008	8.009	8.008
• Condensate pump	MW	0.165	0.147	0.130	0.115	0.101	0.088	0.078	0.069	0.061	0.054	0.047	0.042
• Cooling tower fan	MW	5.185	4.948	4.710	4.472	4.187	3.949	3.712	3.474	3.236	2.999	2.714	2.571
• Flue gas treatment	MW	2.524	2.508	2.492	2.477	2.464	2.451	2.441	2.430	2.421	2.416	2.414	2.415
• Coal mills	MW	2.436	2.276	2.104	1.931	1.744	1.568	1.462	1.353	1.245	1.137	1.029	0.959
• Fluidized-bed dryer	MW	1.421	1.407	1.397	1.387	1.388	1.375	1.303	1.215	1.125	1.035	0.944	0.886
• Forced draft fan	MW	2.071	1.881	1.671	1.474	1.311	1.129	0.953	0.764	0.671	0.575	0.493	0.428
• Induced draft fan	MW	8.945	7.746	6.628	5.569	4.618	3.755	3.019	2.259	1.777	1.349	0.995	0.785
Specific auxiliary power	%	6.0	5.9	5.8	5.8	5.8	5.8	5.8	5.9	6.0	6.2	6.5	6.7

Table 71: Key performance parameters of FPP-D-EFG-FT

Parameter	Unit	Related boiler capacity (%)													
		100	95	90	85	80	75	70	65	60	55	50	45	40	
Boiler capacity	%	100	95	90	85	80	75	70	64	59	54	49	44	40	
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	441	
Net electricity generation	MW	1046	1000	951	901	850	798	746	688	633	577	521	464	419	
Gross plant energy efficiency	%	47.1	47.0	46.9	46.7	46.6	46.4	46.2	46.1	45.7	45.3	44.8	44.1	43.4	
Net plant energy efficiency	%	44.8	44.7	44.7	44.6	44.5	44.3	44.2	44.1	43.7	43.3	42.7	41.9	41.2	
Thermodynamic mean temperature	K	679	674	668	663	657	650	644	637	630	624	616	608	602	
CO2 emissions	kg/s	254.5	243.1	231.2	219.1	206.7	194.2	181.6	167.7	154.9	142.1	129.4	116.7	106.6	
Specific CO2 emissions	g/kWh	876	875	875	876	876	877	877	877	881	886	894	906	917	
Auxiliary power	MW	53.5	50.1	46.6	43.2	39.8	36.7	33.8	31.0	29.0	27.2	25.5	23.8	22.6	
• Ancillary units	MW	3.336	3.181	3.034	2.855	2.591	2.349	2.139	1.955	1.785	1.652	1.550	1.467	1.411	
• Cooling water pump	MW	8.348	8.348	8.349	8.348	8.349	8.350	8.349	8.349	8.350	8.351	8.348	8.349	8.349	
• Condensate pump	MW	0.625	0.542	0.461	0.391	0.330	0.278	0.229	0.184	0.166	0.148	0.130	0.111	0.097	
• Cooling tower fan	MW	7.750	7.395	7.040	6.685	6.329	5.974	5.619	5.193	4.837	4.482	4.127	3.772	3.488	
• Flue gas treatment	MW	4.913	4.878	4.842	4.807	4.773	4.739	4.708	4.676	4.647	4.621	4.599	4.580	4.570	
• Coal mills	MW	4.799	4.490	4.157	3.822	3.483	3.143	2.801	2.442	2.254	2.065	1.877	1.692	1.544	
• Fluidized-bed dryer	MW	3.122	3.088	3.066	3.041	3.013	2.981	2.948	2.891	2.677	2.458	2.241	2.026	1.858	
• Forced draft fan	MW	4.066	3.705	3.308	2.935	2.579	2.247	1.951	1.620	1.429	1.233	1.030	0.736	0.544	
• Induced draft fan	MW	16.545	14.427	12.365	10.359	8.353	6.610	5.098	3.685	2.902	2.206	1.607	1.107	0.758	
Specific auxiliary power	%	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.3	4.4	4.5	4.7	4.9	5.1	

Table 72: Key performance parameters of FPP-M-EFG-FT

Parameter	Unit	Related boiler capacity (%)											
		100	95	90	85	80	75	70	65	60	55	50	45
Boiler capacity	%	100	95	89	84	79	74	69	64	58	53	48	45
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	255
Net electricity generation	MW	517	493	468	442	416	391	365	336	309	282	255	238
Gross plant energy efficiency	%	44.7	44.5	44.4	44.2	43.9	43.8	43.4	42.9	42.5	42.2	41.7	41.5
Net plant energy efficiency	%	42.0	41.9	41.8	41.6	41.4	41.2	40.8	40.4	40.0	39.5	39.0	38.7
Thermodynamic mean temperature	K	700	693	686	677	670	662	654	646	639	630	621	616
CO ₂ emissions	kg/s	130.5	124.5	118.1	111.8	105.4	98.9	92.8	86.0	79.3	72.7	65.9	61.6
Specific CO ₂ emissions	g/kWh	908	910	909	910	911	911	916	921	924	928	931	933
Auxiliary power	MW	32.9	31.0	29.1	27.3	25.6	24.1	22.6	21.1	19.9	18.8	17.9	17.3
• Ancillary units	MW	1.963	1.902	1.815	1.734	1.657	1.582	1.490	1.368	1.251	1.150	1.079	1.046
• Cooling water pump	MW	8.065	8.065	8.064	8.065	8.065	8.067	8.064	8.066	8.065	8.064	8.066	8.065
• Condensate pump	MW	0.166	0.148	0.130	0.114	0.100	0.087	0.076	0.067	0.060	0.053	0.046	0.042
• Cooling tower fan	MW	5.205	4.967	4.728	4.442	4.203	3.965	3.726	3.487	3.249	2.963	2.724	2.581
• Flue gas treatment	MW	2.532	2.517	2.500	2.486	2.473	2.460	2.451	2.440	2.433	2.428	2.427	2.429
• Coal mills	MW	2.458	2.298	2.122	1.936	1.761	1.584	1.479	1.369	1.261	1.154	1.045	0.976
• Fluidized-bed dryer	MW	1.434	1.419	1.408	1.411	1.400	1.388	1.316	1.228	1.139	1.049	0.958	0.900
• Forced draft fan	MW	2.114	1.925	1.704	1.526	1.342	1.159	0.980	0.790	0.695	0.616	0.515	0.450
• Induced draft fan	MW	8.990	7.791	6.637	5.584	4.625	3.765	3.017	2.259	1.777	1.368	0.997	0.789
Specific auxiliary power	%	6.0	5.9	5.9	5.8	5.8	5.8	5.8	5.9	6.1	6.3	6.5	6.8

Table 73: Key performance parameters of FPP-D-FBG-MTG

Parameter	Unit	Related boiler capacity (%)													
		100	95	90	85	80	75	70	65	60	55	50	45	40	
Boiler capacity	%	100	95	90	85	80	75	70	64	59	54	49	44	40	
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	441	
Net electricity generation	MW	1047	1000	951	901	850	798	746	689	634	578	521	464	419	
Gross plant energy efficiency	%	47.1	47.0	46.9	46.8	46.6	46.5	46.3	46.2	45.9	45.4	45.0	44.3	43.6	
Net plant energy efficiency	%	44.9	44.8	44.8	44.7	44.6	44.4	44.3	44.2	43.9	43.4	42.9	42.1	41.4	
Thermodynamic mean temperature	K	679	674	668	663	657	650	644	637	630	624	616	609	602	
CO2 emissions	kg/s	254.8	243.4	231.5	219.4	207.0	194.5	181.9	167.9	155.1	142.6	129.5	116.9	106.8	
Specific CO2 emissions	g/kWh	876	876	876	877	877	878	878	878	881	889	895	907	917	
Auxiliary power	MW	53.2	49.8	46.4	43.1	39.6	36.5	33.7	30.8	28.8	27.0	25.3	23.6	22.4	
• Ancillary units	MW	3.331	3.182	3.035	2.882	2.615	2.370	2.156	1.974	1.801	1.666	1.561	1.478	1.426	
• Cooling water pump	MW	8.283	8.283	8.283	8.283	8.283	8.284	8.283	8.285	8.285	8.287	8.283	8.283	8.285	
• Condensate pump	MW	0.636	0.552	0.472	0.401	0.339	0.286	0.237	0.190	0.172	0.152	0.134	0.116	0.101	
• Cooling tower fan	MW	7.690	7.338	6.985	6.633	6.280	5.928	5.575	5.152	4.800	4.448	4.095	3.743	3.461	
• Flue gas treatment	MW	4.884	4.847	4.810	4.774	4.738	4.703	4.669	4.633	4.602	4.573	4.546	4.523	4.508	
• Coal mills	MW	4.761	4.453	4.121	3.788	3.450	3.111	2.770	2.411	2.223	2.039	1.846	1.661	1.513	
• Fluidized-bed dryer	MW	3.096	3.061	3.038	3.013	2.983	2.950	2.915	2.855	2.640	2.427	2.204	1.990	1.821	
• Forced draft fan	MW	4.029	3.665	3.267	2.897	2.541	2.211	1.916	1.584	1.393	1.207	0.997	0.707	0.543	
• Induced draft fan	MW	16.512	14.423	12.362	10.416	8.408	6.659	5.136	3.721	2.930	2.250	1.628	1.124	0.717	
Specific auxiliary power	%	4.8	4.7	4.6	4.6	4.5	4.4	4.3	4.3	4.4	4.5	4.6	4.8	5.1	

Table 74: Key performance parameters of FPP-M-FBG-MTG

Parameter	Unit	Related boiler capacity (%)											
		100	95	90	85	80	75	70	65	60	55	50	45
Boiler capacity	%	100	95	90	85	79	74	69	64	59	54	49	45
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	252
Net electricity generation	MW	517	493	468	442	417	391	365	336	309	282	255	235
Gross plant energy efficiency	%	44.9	44.7	44.6	44.3	44.1	44.0	43.6	43.1	42.8	42.5	42.1	41.8
Net plant energy efficiency	%	42.3	42.1	42.0	41.8	41.6	41.5	41.0	40.6	40.3	39.9	39.4	39.0
Thermodynamic mean temperature	K	700	693	686	678	671	662	655	646	639	631	623	616
CO ₂ emissions	kg/s	130.5	124.5	118.3	112.0	105.6	99.0	93.0	86.2	79.5	72.8	66.0	61.1
Specific CO ₂ emissions	g/kWh	908	909	910	911	912	912	917	922	925	928	931	934
Auxiliary power	MW	32.5	30.7	28.8	27.0	25.4	23.8	22.4	20.8	19.7	18.6	17.6	16.9
• Ancillary units	MW	1.961	1.902	1.807	1.732	1.656	1.587	1.522	1.384	1.265	1.168	1.094	1.050
• Cooling water pump	MW	7.967	7.967	7.967	7.967	7.967	7.967	7.966	7.967	7.967	7.968	7.967	7.967
• Condensate pump	MW	0.170	0.152	0.134	0.119	0.105	0.091	0.081	0.072	0.064	0.056	0.049	0.044
• Cooling tower fan	MW	5.155	4.919	4.683	4.446	4.210	3.927	3.737	3.454	3.218	2.981	2.745	2.556
• Flue gas treatment	MW	2.503	2.486	2.470	2.454	2.439	2.425	2.411	2.400	2.390	2.382	2.376	2.375
• Coal mills	MW	2.416	2.257	2.084	1.912	1.739	1.550	1.446	1.335	1.227	1.119	1.010	0.931
• Fluidized-bed dryer	MW	1.411	1.396	1.386	1.375	1.363	1.362	1.290	1.200	1.111	1.020	0.929	0.862
• Forced draft fan	MW	2.026	1.835	1.627	1.433	1.254	1.093	0.913	0.737	0.644	0.550	0.456	0.393
• Induced draft fan	MW	8.901	7.765	6.615	5.585	4.627	3.775	3.080	2.288	1.801	1.370	0.998	0.766
Specific auxiliary power	%	5.9	5.9	5.8	5.8	5.7	5.7	5.8	5.8	6.0	6.2	6.5	6.7

Table 75: Key performance parameters of FPP-D-FBG-FT

Parameter	Unit	Related boiler capacity (%)													
		100	95	90	85	80	75	70	65	60	55	50	45	40	
Boiler capacity	%	100	95	90	85	80	75	70	64	59	54	49	44	40	
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	439	
Net electricity generation	MW	1047	1000	951	901	850	798	746	688	633	578	521	464	416	
Gross plant energy efficiency	%	47.0	47.0	46.8	46.7	46.5	46.4	46.2	46.1	45.7	45.3	44.7	44.0	43.3	
Net plant energy efficiency	%	44.8	44.7	44.7	44.6	44.5	44.3	44.2	44.1	43.7	43.3	42.7	41.9	41.1	
Thermodynamic mean temperature	K	679	674	668	663	657	650	644	638	630	623	616	608	601	
CO2 emissions	kg/s	255.1	243.7	231.8	219.8	207.4	194.9	182.2	168.2	155.6	142.8	130.1	117.4	106.8	
Specific CO2 emissions	g/kWh	878	877	878	878	879	880	880	880	885	890	899	911	923	
Auxiliary power	MW	53.5	50.0	46.5	43.2	39.8	36.6	33.8	31.0	29.0	27.2	25.4	23.8	22.5	
• Ancillary units	MW	3.344	3.183	3.031	2.869	2.604	2.361	2.149	1.973	1.788	1.654	1.551	1.469	1.415	
• Cooling water pump	MW	8.331	8.330	8.331	8.332	8.331	8.332	8.331	8.332	8.332	8.333	8.331	8.331	8.331	
• Condensate pump	MW	0.631	0.548	0.467	0.396	0.335	0.282	0.233	0.187	0.170	0.152	0.133	0.114	0.099	
• Cooling tower fan	MW	7.735	7.381	7.026	6.672	6.317	5.963	5.608	5.254	4.828	4.474	4.119	3.764	3.481	
• Flue gas treatment	MW	4.900	4.864	4.828	4.792	4.757	4.723	4.690	4.657	4.628	4.601	4.576	4.556	4.542	
• Coal mills	MW	4.784	4.475	4.143	3.808	3.470	3.130	2.789	2.429	2.243	2.054	1.867	1.681	1.525	
• Fluidized-bed dryer	MW	3.112	3.078	3.055	3.031	3.002	2.970	2.936	2.875	2.665	2.446	2.229	2.014	1.836	
• Forced draft fan	MW	4.046	3.694	3.292	2.921	2.576	2.233	1.938	1.609	1.419	1.223	1.020	0.727	0.527	
• Induced draft fan	MW	16.571	14.429	12.365	10.398	8.363	6.640	5.124	3.707	2.918	2.220	1.618	1.116	0.748	
Specific auxiliary power	%	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.3	4.4	4.5	4.7	4.9	5.1	

Table 76: Key performance parameters of FPP-M-FBG-FT

Parameter	Unit	Related boiler capacity (%)											
		100	95	90	85	80	75	70	65	60	55	50	45
Boiler capacity	%	100	95	90	84	79	74	69	64	59	54	48	45
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	254
Net electricity generation	MW	517	493	468	442	417	391	365	336	309	282	255	237
Gross plant energy efficiency	%	44.7	44.5	44.3	44.1	43.9	43.7	43.3	42.8	42.5	42.1	41.7	41.4
Net plant energy efficiency	%	42.0	41.8	41.7	41.6	41.3	41.2	40.8	40.3	39.9	39.5	39.0	38.6
Thermodynamic mean temperature	K	700	692	685	677	669	662	654	646	639	631	622	615
CO ₂ emissions	kg/s	131.2	125.2	119.0	112.5	106.1	99.5	93.5	86.7	80.0	73.3	66.6	62.0
Specific CO ₂ emissions	g/kWh	913	915	916	916	917	917	923	929	932	936	940	943
Auxiliary power	MW	32.9	31.0	29.1	27.2	25.6	24.0	22.6	21.0	19.9	18.8	17.8	17.2
• Ancillary units	MW	1.972	1.902	1.813	1.735	1.658	1.584	1.499	1.376	1.258	1.162	1.088	1.047
• Cooling water pump	MW	8.054	8.055	8.054	8.054	8.054	8.054	8.054	8.055	8.054	8.054	8.055	8.054
• Condensate pump	MW	0.169	0.151	0.133	0.116	0.102	0.089	0.078	0.069	0.062	0.054	0.047	0.043
• Cooling tower fan	MW	5.195	4.957	4.719	4.433	4.195	3.957	3.719	3.481	3.243	3.005	2.766	2.576
• Flue gas treatment	MW	2.519	2.503	2.488	2.471	2.457	2.444	2.433	2.422	2.413	2.407	2.404	2.404
• Coal mills	MW	2.444	2.284	2.112	1.923	1.748	1.572	1.466	1.357	1.249	1.141	1.032	0.958
• Fluidized-bed dryer	MW	1.426	1.412	1.402	1.402	1.391	1.378	1.306	1.218	1.129	1.038	0.947	0.885
• Forced draft fan	MW	2.092	1.904	1.692	1.504	1.322	1.140	0.963	0.774	0.680	0.583	0.486	0.429
• Induced draft fan	MW	9.047	7.812	6.677	5.604	4.643	3.783	3.046	2.283	1.797	1.367	0.996	0.783
Specific auxiliary power	%	6.0	5.9	5.9	5.8	5.8	5.8	5.8	5.9	6.0	6.3	6.5	6.8

Table 77: Key performance parameters of FPP-D-EFG-MTG-H2AVG

Parameter	Unit	Related boiler capacity (%)												
		100	95	90	85	80	75	70	65	60	55	50	45	40
Boiler capacity	%	100	95	90	85	80	75	70	64	59	54	49	44	40
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	446
Net electricity generation	MW	1047	1000	951	901	850	798	746	688	633	578	521	464	423
Gross plant energy efficiency	%	47.1	47.0	46.9	46.7	46.6	46.4	46.3	46.2	45.9	45.5	44.9	44.2	43.6
Net plant energy efficiency	%	44.8	44.8	44.7	44.6	44.5	44.4	44.3	44.2	43.9	43.4	42.9	42.1	41.4
Thermodynamic mean temperature	K	679	674	668	663	657	650	644	637	631	624	617	609	602
CO ₂ emissions	kg/s	253.9	242.5	230.6	218.5	206.1	193.6	181.0	166.8	154.1	141.3	128.5	115.9	106.8
Specific CO ₂ emissions	g/kWh	873	873	873	873	873	874	873	872	876	881	888	899	909
Auxiliary power	MW	53.2	49.9	46.5	43.1	39.7	36.6	33.7	30.9	28.9	27.1	25.4	23.7	22.6
• Ancillary units	MW	3.326	3.184	3.042	2.860	2.595	2.351	2.141	1.967	1.796	1.661	1.558	1.476	1.425
• Cooling water pump	MW	8.326	8.326	8.326	8.326	8.326	8.327	8.326	8.327	8.327	8.328	8.326	8.326	8.327
• Condensate pump	MW	0.626	0.544	0.463	0.393	0.332	0.279	0.231	0.183	0.166	0.148	0.129	0.111	0.098
• Cooling tower fan	MW	7.570	7.376	7.022	6.667	6.313	5.959	5.604	5.179	4.825	4.471	4.116	3.762	3.479
• Flue gas treatment	MW	4.902	4.865	4.829	4.794	4.759	4.725	4.692	4.657	4.628	4.600	4.576	4.556	4.546
• Coal mills	MW	4.780	4.471	4.139	3.804	3.466	3.126	2.785	2.423	2.235	2.047	1.859	1.673	1.541
• Fluidized-bed dryer	MW	3.107	3.073	3.050	3.025	2.996	2.964	2.929	2.868	2.654	2.436	2.218	2.004	1.853
• Forced draft fan	MW	4.047	3.689	3.294	2.914	2.555	2.227	1.932	1.595	1.406	1.210	1.008	0.718	0.544
• Induced draft fan	MW	16.503	14.416	12.355	10.357	8.367	6.603	5.091	3.682	2.899	2.203	1.604	1.105	0.794
Specific auxiliary power	%	4.8	4.8	4.7	4.6	4.5	4.4	4.3	4.3	4.4	4.5	4.6	4.9	5.1

Table 78: Key performance parameters of FPP-M-EFG-MTG-H2AVG

Parameter	Unit	Related boiler capacity (%)												
		100	95	90	85	80	75	70	65	60	55	50	45	
Boiler capacity	%	100	95	90	84	79	74	69	64	59	53	48	45	
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	255	
Net electricity generation	MW	517	493	468	442	417	391	365	336	309	282	255	238	
Gross plant energy efficiency	%	44.9	44.7	44.5	44.3	44.1	43.9	43.5	43.1	42.7	42.4	42.0	41.7	
Net plant energy efficiency	%	42.2	42.1	41.9	41.7	41.5	41.4	41.0	40.5	40.2	39.7	39.2	38.9	
Thermodynamic mean temperature	K	700	693	686	679	670	662	655	647	639	631	621	616	
CO ₂ emissions	kg/s	129.5	123.6	117.4	111.0	104.7	98.1	92.0	85.2	78.6	71.9	65.2	60.9	
Specific CO ₂ emissions	g/kWh	902	902	903	904	904	904	908	913	915	917	920	921	
Auxiliary power	MW	33.2	30.8	28.9	27.1	25.4	23.9	22.4	20.9	19.8	18.7	17.7	17.1	
• Ancillary units	MW	1.959	1.899	1.817	1.727	1.659	1.583	1.496	1.373	1.256	1.161	1.083	1.049	
• Cooling water pump	MW	8.017	8.017	8.017	8.017	8.017	8.017	8.016	8.018	8.017	8.016	8.018	8.017	
• Condensate pump	MW	0.165	0.147	0.130	0.115	0.101	0.087	0.077	0.069	0.061	0.054	0.047	0.042	
• Cooling tower fan	MW	5.090	4.952	4.714	4.477	4.191	3.953	3.715	3.477	3.240	3.002	2.716	2.573	
• Flue gas treatment	MW	3.317	2.505	2.489	2.474	2.460	2.447	2.437	2.425	2.417	2.411	2.409	2.409	
• Coal mills	MW	2.433	2.273	2.101	1.928	1.742	1.565	1.460	1.350	1.242	1.134	1.027	0.958	
• Fluidized-bed dryer	MW	1.419	1.405	1.396	1.385	1.386	1.373	1.301	1.213	1.123	1.033	0.942	0.885	
• Forced draft fan	MW	2.170	1.872	1.662	1.467	1.303	1.122	0.947	0.760	0.667	0.571	0.490	0.427	
• Induced draft fan	MW	8.590	7.692	6.579	5.517	4.577	3.723	2.989	2.235	1.757	1.333	0.982	0.779	
Specific auxiliary power	%	6.0	5.9	5.8	5.8	5.8	5.8	5.8	5.9	6.0	6.2	6.5	6.7	

Table 79: Key performance parameters of FPP-D-EFG-MTG-H2MAX

Parameter	Unit	Related boiler capacity (%)												
		100	95	90	85	80	75	70	65	60	55	50	45	40
Boiler capacity	%	100	95	90	85	80	75	70	64	59	54	49	44	40
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	446
Net electricity generation	MW	1047	1000	951	901	850	798	746	688	633	578	521	464	423
Gross plant energy efficiency	%	47.1	47.0	46.9	46.7	46.6	46.4	46.3	46.2	45.8	45.4	44.9	44.2	43.6
Net plant energy efficiency	%	44.8	44.8	44.7	44.6	44.5	44.4	44.3	44.2	43.8	43.4	42.8	42.0	41.4
Thermodynamic mean temperature	K	679	674	668	663	657	650	644	637	631	624	617	609	602
CO ₂ emissions	kg/s	253.8	242.4	230.5	218.4	206.0	193.5	180.8	166.7	154.0	141.2	128.4	115.8	106.8
Specific CO ₂ emissions	g/kWh	873	873	872	873	873	873	873	872	875	880	887	898	908
Auxiliary power	MW	53.2	49.9	46.5	43.1	39.7	36.6	33.7	30.9	28.9	27.1	25.4	23.7	22.6
• Ancillary units	MW	3.347	3.184	3.030	2.860	2.594	2.351	2.141	1.967	1.796	1.661	1.558	1.476	1.425
• Cooling water pump	MW	8.331	8.331	8.331	8.331	8.331	8.332	8.331	8.332	8.333	8.333	8.331	8.331	8.332
• Condensate pump	MW	0.627	0.544	0.463	0.393	0.332	0.280	0.231	0.184	0.166	0.148	0.129	0.111	0.099
• Cooling tower fan	MW	7.570	7.381	7.026	6.672	6.317	5.963	5.608	5.183	4.828	4.474	4.119	3.764	3.481
• Flue gas treatment	MW	4.899	4.863	4.827	4.791	4.756	4.722	4.689	4.654	4.624	4.597	4.572	4.552	4.541
• Coal mills	MW	4.777	4.468	4.136	3.802	3.463	3.123	2.783	2.421	2.233	2.045	1.857	1.671	1.540
• Fluidized-bed dryer	MW	3.105	3.071	3.048	3.023	2.994	2.962	2.927	2.865	2.651	2.433	2.216	2.002	1.852
• Forced draft fan	MW	4.044	3.686	3.284	2.911	2.551	2.224	1.929	1.592	1.403	1.208	1.006	0.716	0.541
• Induced draft fan	MW	16.537	14.399	12.328	10.350	8.352	6.597	5.084	3.675	2.894	2.200	1.602	1.103	0.799
Specific auxiliary power	%	4.8	4.8	4.7	4.6	4.5	4.4	4.3	4.3	4.4	4.5	4.6	4.9	5.1

Table 80: Key performance parameters of FPP-M-EFG-MTG-H2MAX

Parameter	Unit	Related boiler capacity (%)												
		100	95	90	85	80	75	70	65	60	55	50	45	
Boiler capacity	%	100	95	90	84	79	74	69	64	59	53	48	45	
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	255	
Net electricity generation	MW	517	493	468	442	417	391	365	336	309	282	255	238	
Gross plant energy efficiency	%	44.9	44.7	44.5	44.3	44.0	43.9	43.5	43.0	42.7	42.3	41.9	41.6	
Net plant energy efficiency	%	42.2	42.0	41.9	41.7	41.5	41.3	41.0	40.5	40.1	39.7	39.2	38.9	
Thermodynamic mean temperature	K	700	693	686	679	670	662	655	647	639	631	621	616	
CO ₂ emissions	kg/s	129.4	123.5	117.2	110.9	104.5	98.0	91.9	85.1	78.5	71.7	65.1	60.8	
Specific CO ₂ emissions	g/kWh	902	901	902	903	903	903	907	912	914	915	918	919	
Auxiliary power	MW	33.2	30.8	28.9	27.1	25.4	23.9	22.4	20.9	19.8	18.7	17.7	17.1	
• Ancillary units	MW	1.978	1.896	1.814	1.731	1.655	1.579	1.496	1.374	1.257	1.161	1.084	1.050	
• Cooling water pump	MW	8.022	8.022	8.021	8.021	8.022	8.022	8.021	8.022	8.022	8.021	8.022	8.022	
• Condensate pump	MW	0.165	0.147	0.130	0.115	0.101	0.087	0.077	0.068	0.061	0.053	0.047	0.043	
• Cooling tower fan	MW	5.090	4.957	4.719	4.481	4.195	3.957	3.719	3.481	3.243	3.005	2.719	2.576	
• Flue gas treatment	MW	3.316	2.502	2.486	2.471	2.457	2.444	2.434	2.422	2.413	2.407	2.405	2.405	
• Coal mills	MW	2.431	2.271	2.098	1.926	1.739	1.563	1.458	1.348	1.240	1.132	1.024	0.957	
• Fluidized-bed dryer	MW	1.418	1.404	1.394	1.384	1.385	1.371	1.299	1.211	1.121	1.031	0.941	0.884	
• Forced draft fan	MW	2.166	1.870	1.658	1.463	1.300	1.119	0.944	0.758	0.665	0.569	0.488	0.426	
• Induced draft fan	MW	8.637	7.701	6.591	5.541	4.581	3.724	2.996	2.241	1.761	1.335	0.984	0.783	
Specific auxiliary power	%	6.0	5.9	5.8	5.8	5.8	5.8	5.8	5.9	6.0	6.2	6.5	6.7	

Table 81: Key performance parameters of FPP-D-EFG-MTG-H2MAX-F2

Parameter	Unit	Related boiler capacity (%)													
		100	95	90	85	80	75	70	65	60	55	50	45	40	
Boiler capacity	%	100	95	90	85	79	74	69	63	58	53	47	42	40	
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	462	
Net electricity generation	MW	1047	1000	951	901	850	798	746	688	633	578	521	464	439	
Gross plant energy efficiency	%	46.6	46.5	46.4	46.2	46.0	45.9	45.7	45.4	45.1	44.6	44.0	43.2	42.8	
Net plant energy efficiency	%	44.3	44.3	44.2	44.1	44.0	43.9	43.7	43.5	43.1	42.6	41.9	41.1	40.6	
Thermodynamic mean temperature	K	679	674	668	662	656	649	643	636	630	622	615	607	603	
CO2 emissions	kg/s	248.8	237.4	225.4	213.3	200.9	188.2	175.6	161.6	148.8	136.1	123.5	110.9	105.4	
Specific CO2 emissions	g/kWh	856	854	853	852	851	849	847	845	846	849	853	861	864	
Auxiliary power	MW	53.4	49.9	46.4	43.0	39.6	36.4	33.5	30.9	29.0	27.1	25.4	23.8	23.1	
• Ancillary units	MW	3.368	3.204	3.038	2.836	2.568	2.326	2.090	1.956	1.789	1.648	1.549	1.472	1.448	
• Cooling water pump	MW	8.507	8.506	8.507	8.507	8.507	8.507	8.507	8.509	8.508	8.509	8.510	8.507	8.508	
• Condensate pump	MW	0.614	0.532	0.453	0.384	0.324	0.269	0.220	0.178	0.161	0.145	0.127	0.109	0.102	
• Cooling tower fan	MW	7.900	7.538	7.176	6.814	6.452	6.017	5.655	5.221	4.859	4.424	4.062	3.700	3.555	
• Flue gas treatment	MW	5.035	5.004	4.973	4.944	4.917	4.891	4.873	4.847	4.831	4.822	4.819	4.825	4.832	
• Coal mills	MW	4.671	4.364	4.034	3.702	3.367	3.000	2.665	2.338	2.149	1.961	1.776	1.591	1.511	
• Fluidized-bed dryer	MW	3.029	2.993	2.967	2.938	2.906	2.898	2.862	2.768	2.552	2.337	2.123	1.912	1.820	
• Forced draft fan	MW	3.931	3.588	3.174	2.799	2.441	2.155	1.857	1.540	1.343	1.177	0.918	0.637	0.533	
• Induced draft fan	MW	16.377	14.190	12.111	10.069	8.090	6.351	4.800	3.564	2.775	2.115	1.527	1.039	0.834	
Specific auxiliary power	%	4.9	4.8	4.7	4.6	4.4	4.4	4.3	4.3	4.4	4.5	4.7	4.9	5.0	

Table 82: Key performance parameters of FPP-M-EFG-MTG-H2MAX-F2

Parameter	Unit	Related boiler capacity (%)											
		100	95	90	85	80	75	70	65	60	55	50	
Boiler capacity	%	100	95	89	84	78	73	68	63	57	52	46	
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	
Net electricity generation	MW	518	494	468	443	417	391	365	336	309	282	255	
Gross plant energy efficiency	%	44.1	43.8	43.6	43.3	43.0	42.7	42.2	41.7	41.2	40.7	40.2	
Net plant energy efficiency	%	41.5	41.3	41.1	40.9	40.6	40.3	39.8	39.3	38.8	38.3	37.6	
Thermodynamic mean temperature	K	697	690	682	674	667	659	651	642	635	626	618	
CO ₂ emissions	kg/s	124.1	118.2	112.0	105.7	99.4	93.0	87.1	80.2	73.6	67.0	60.3	
Specific CO ₂ emissions	g/kWh	862	861	860	859	858	856	859	858	857	854	851	
Auxiliary power	MW	31.9	30.1	28.2	26.5	24.9	23.4	22.1	20.7	19.6	18.3	17.7	
• Ancillary units	MW	1.936	1.868	1.786	1.702	1.632	1.557	1.462	1.332	1.224	1.139	1.076	
• Cooling water pump	MW	8.170	8.170	8.171	8.170	8.170	8.171	8.170	8.170	8.171	8.170	8.170	
• Condensate pump	MW	0.155	0.138	0.122	0.107	0.094	0.081	0.074	0.066	0.059	0.052	0.045	
• Cooling tower fan	MW	5.159	4.916	4.624	4.381	4.138	3.895	3.652	3.360	3.117	2.874	2.630	
• Flue gas treatment	MW	2.645	2.635	2.627	2.619	2.614	2.612	2.612	2.616	2.623	2.600	2.659	
• Coal mills	MW	2.294	2.127	1.945	1.774	1.603	1.431	1.371	1.259	1.153	1.046	0.939	
• Fluidized-bed dryer	MW	1.383	1.376	1.378	1.367	1.356	1.344	1.233	1.141	1.052	0.962	0.872	
• Forced draft fan	MW	1.911	1.714	1.535	1.351	1.181	0.983	0.833	0.714	0.617	0.531	0.422	
• Induced draft fan	MW	8.224	7.143	6.058	5.044	4.153	3.349	2.680	2.073	1.609	1.164	0.857	
Specific auxiliary power	%	5.8	5.7	5.7	5.6	5.6	5.6	5.7	5.8	6.0	6.1	6.5	

Table 83: Key performance parameters of FPP-D-EFG-MTG-H2MAX-SH100

Parameter	Unit	Related boiler capacity (%)													
		100	95	90	85	80	75	70	65	60	55	50	45	40	
Boiler capacity	%	100	95	90	85	80	75	70	64	59	54	49	44	40	
Gross electricity generation	MW	1100	1050	998	944	890	834	780	719	662	605	546	488	444	
Net electricity generation	MW	1047	1000	951	901	850	798	746	689	634	578	521	464	421	
Gross plant energy efficiency	%	47.1	47.0	46.9	46.8	46.6	46.4	46.3	46.2	45.9	45.4	45.0	44.3	43.6	
Net plant energy efficiency	%	44.8	44.8	44.7	44.6	44.5	44.4	44.3	44.2	43.9	43.4	42.9	42.1	41.4	
Thermodynamic mean temperature	K	679	674	668	663	657	650	644	637	631	624	617	609	602	
CO2 emissions	kg/s	253.7	242.2	230.3	218.2	206.0	193.3	180.7	166.5	153.8	141.3	128.2	115.5	106.0	
Specific CO2 emissions	g/kWh	872	872	872	872	873	872	872	870	874	881	886	896	906	
Auxiliary power	MW	53.1	49.9	46.5	43.1	39.7	36.5	33.7	30.8	28.9	27.1	25.3	23.7	22.5	
• Ancillary units	MW	3.319	3.182	3.030	2.857	2.595	2.350	2.140	1.951	1.783	1.651	1.549	1.467	1.415	
• Cooling water pump	MW	8.318	8.318	8.318	8.318	8.320	8.319	8.318	8.319	8.319	8.322	8.318	8.318	8.318	
• Condensate pump	MW	0.628	0.545	0.465	0.395	0.332	0.281	0.232	0.185	0.167	0.148	0.131	0.112	0.099	
• Cooling tower fan	MW	7.570	7.381	7.026	6.672	6.317	5.963	5.608	5.183	4.828	4.474	4.119	3.764	3.481	
• Flue gas treatment	MW	4.899	4.863	4.826	4.792	4.756	4.722	4.689	4.656	4.626	4.599	4.574	4.554	4.542	
• Coal mills	MW	4.773	4.465	4.133	3.799	3.463	3.121	2.781	2.418	2.230	2.046	1.854	1.668	1.529	
• Fluidized-bed dryer	MW	3.103	3.069	3.046	3.021	2.995	2.960	2.925	2.861	2.647	2.436	2.212	1.998	1.839	
• Forced draft fan	MW	4.040	3.682	3.281	2.922	2.557	2.222	1.927	1.590	1.401	1.214	1.004	0.714	0.534	
• Induced draft fan	MW	16.470	14.403	12.337	10.321	8.374	6.597	5.087	3.647	2.867	2.196	1.580	1.082	0.754	
Specific auxiliary power	%	4.8	4.8	4.7	4.6	4.5	4.4	4.3	4.3	4.4	4.5	4.6	4.9	5.1	

Table 84: Key performance parameters of FPP-M-EFG-MTG-H2MAX-SH100

Parameter	Unit	Related boiler capacity (%)											
		100	95	90	85	80	75	70	65	60	55	50	45
Boiler capacity	%	100	95	90	85	79	74	69	64	59	54	49	45
Gross electricity generation	MW	550	524	497	469	442	415	387	357	329	301	273	253
Net electricity generation	MW	517	493	468	442	417	391	365	336	309	282	255	236
Gross plant energy efficiency	%	44.9	44.7	44.5	44.3	44.1	43.9	43.5	43.1	42.8	42.4	42.0	41.8
Net plant energy efficiency	%	42.2	42.1	41.9	41.8	41.6	41.4	41.0	40.6	40.2	39.8	39.3	39.0
Thermodynamic mean temperature	K	701	693	686	679	670	662	656	647	639	631	622	616
CO ₂ emissions	kg/s	129.3	123.3	117.0	110.7	104.4	97.8	91.7	84.9	78.2	71.5	64.8	60.1
Specific CO ₂ emissions	g/kWh	899	900	901	901	902	901	905	909	911	912	915	915
Auxiliary power	MW	32.6	30.7	28.9	27.1	25.4	23.8	22.5	20.9	19.7	18.7	17.7	17.1
• Ancillary units	MW	1.981	1.893	1.811	1.724	1.652	1.578	1.503	1.356	1.241	1.148	1.073	1.039
• Cooling water pump	MW	8.027	8.028	8.028	8.027	8.028	8.028	8.027	8.028	8.028	8.027	8.028	8.028
• Condensate pump	MW	0.167	0.149	0.131	0.116	0.102	0.088	0.079	0.069	0.062	0.054	0.048	0.042
• Cooling tower fan	MW	5.090	4.957	4.719	4.481	4.195	3.957	3.766	3.481	3.243	3.005	2.719	2.576
• Flue gas treatment	MW	2.520	2.504	2.488	2.473	2.459	2.446	2.434	2.424	2.415	2.409	2.407	2.407
• Coal mills	MW	2.427	2.267	2.095	1.922	1.736	1.560	1.455	1.345	1.236	1.128	1.021	0.944
• Fluidized-bed dryer	MW	1.416	1.402	1.392	1.381	1.382	1.369	1.297	1.207	1.118	1.028	0.938	0.873
• Forced draft fan	MW	2.053	1.866	1.655	1.460	1.297	1.116	0.932	0.753	0.659	0.564	0.485	0.410
• Induced draft fan	MW	8.898	7.683	6.571	5.512	4.562	3.708	2.998	2.202	1.726	1.305	0.952	0.732
Specific auxiliary power	%	5.9	5.9	5.8	5.8	5.7	5.8	5.8	5.8	6.0	6.2	6.5	6.7

Table 85: Selected flue gas compositions at related boiler capacity of EPP reference

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	50 %		100 %	75 %	50 %	100 %	75 %	50 %
N ₂	vol %	79.3	79.3	79.2	0.0	79.3	79.3	79.3	59.8	59.7	59.6
O ₂	vol %	2.5	2.4	3.5	0.0	2.7	2.5	2.5	2.6	2.5	3.2
CO ₂	vol %	17.2	17.3	16.3	0.0	17.0	17.1	17.1	12.3	12.4	11.7
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	24.8
Ar	vol %	0.9	0.9	0.9	0.0	0.9	0.9	0.9	0.7	0.7	0.7
SO ₂	ppmv	899	903	851	0	891	896	896	64	65	61
CO	ppmv	135	136	128	0	134	135	135	97	97	92
NO	ppmv	74	74	70	0	73	74	74	53	53	50
Volume flow	m ³ /s	845	864	491	0.0	709	532	382	813	619	450
Mass flow	kg/s	1179	927	683	0.0	990	743	533	1005	766	555

Table 86: Selected flue gas compositions at related boiler capacity of EPP-EFG-MTG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	50 %		100 %	75 %	50 %	100 %	75 %	50 %
N ₂	vol %	79.3	79.3	79.3	84.6	79.3	79.3	79.3	59.8	59.7	59.6
O ₂	vol %	2.5	2.4	3.5	2.9	2.6	2.5	2.5	2.5	2.5	3.2
CO ₂	vol %	17.1	17.2	16.2	9.4	17.0	17.1	17.1	12.3	12.4	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	24.8
Ar	vol %	1.0	1.0	1.0	1.8	1.0	1.0	1.0	0.7	0.7	0.7
SO ₂	ppmv	965	990	965	13943	957	981	981	69	71	69
CO	ppmv	135	136	128	0	134	135	135	97	97	92
NO	ppmv	74	74	70	0	73	74	74	53	53	50
Volume flow	m ³ /s	826	642	492	3.2	688	515	384	790	599	453
Mass flow	kg/s	1153	897	684	4.4	960	718	536	978	741	558

Table 87: Selected flue gas compositions at related boiler capacity of EPP-EFG-FT

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	50 %		100 %	75 %	50 %	100 %	75 %	50 %
N ₂	vol %	79.3	79.3	79.2	70.3	79.3	79.3	79.3	59.7	59.7	59.6
O ₂	vol %	2.5	2.4	3.5	2.5	2.6	2.5	2.5	2.5	2.5	3.2
CO ₂	vol %	17.2	17.3	16.3	15.4	17.0	17.1	17.1	12.4	12.4	11.7
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	24.8
Ar	vol %	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.7	0.7	0.7
SO ₂	ppmv	968	994	971	109382	960	986	986	69	71	69
CO	ppmv	135	136	128	0	134	135	135	97	97	91
NO	ppmv	74	74	70	0	73	74	74	53	53	50
Volume flow	m ³ /s	829	643	494	0.4	692	515	384	795	600	453
Mass flow	kg/s	1158	898	687	0.6	966	720	536	984	742	559

Table 88: Selected flue gas compositions at related boiler capacity of EPP-FBG-MTG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	50 %		100 %	75 %	50 %	100 %	75 %	50 %
N ₂	vol %	79.3	79.3	79.3	82.0	79.3	79.3	79.3	59.8	59.7	59.6
O ₂	vol %	2.5	2.4	3.4	2.2	2.6	2.5	2.5	2.5	2.5	3.2
CO ₂	vol %	17.1	17.2	16.2	14.2	17.0	17.1	17.1	12.3	12.4	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	24.8
Ar	vol %	1.0	1.0	1.0	1.2	1.0	1.0	1.0	0.7	0.7	0.7
SO ₂	ppmv	955	977	950	4544	947	969	969	68	70	68
CO	ppmv	135	135	128	0	134	134	134	97	97	91
NO	ppmv	74	74	70	0	73	73	73	53	53	50
Volume flow	m ³ /s	828	642	486	9.4	694	517	382	794	602	450
Mass flow	kg/s	1156	896	676	12.9	968	721	532	982	745	555

Table 89: Selected flue gas compositions at related boiler capacity of EPP-FBG-FT

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	50 %		100 %	75 %	50 %	100 %	75 %	50 %
N ₂	vol %	79.3	79.3	79.2	77.5	79.3	79.3	79.3	59.7	59.7	59.6
O ₂	vol %	2.5	2.4	3.4	1.4	2.6	2.5	2.5	2.5	2.5	3.2
CO ₂	vol %	17.2	17.3	16.3	19.2	17.0	17.1	17.1	12.4	12.4	11.7
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	24.8
Ar	vol %	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.7	0.7
SO ₂	ppmv	962	986	962	9391	954	978	978	69	71	69
CO	ppmv	135	136	128	0	134	134	134	97	97	91
NO	ppmv	74	74	70	0	73	73	73	53	53	50
Volume flow	m ³ /s	831	644	490	4.2	695	517	383	798	602	452
Mass flow	kg/s	1161	899	681	6.0	969	722	534	987	745	557

Table 90: Selected flue gas compositions at related boiler capacity of EPP-EFG-MTG-H2AVG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	50 %		100 %	75 %	50 %	100 %	75 %	50 %
N ₂	vol %	79.3	79.3	79.3	84.9	79.3	79.3	79.3	59.8	59.7	59.6
O ₂	vol %	2.5	2.4	3.5	2.9	2.6	2.5	2.5	2.5	2.5	3.2
CO ₂	vol %	17.1	17.2	16.2	9.2	17.0	17.1	17.1	12.3	12.4	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	24.8
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.7
SO ₂	ppmv	963	988	962	12914	955	980	980	69	71	69
CO	ppmv	135	136	128	0	134	135	135	97	97	92
NO	ppmv	74	74	70	0	73	74	74	53	53	50
Volume flow	m ³ /s	826	641	492	3.4	688	514	384	790	598	453
Mass flow	kg/s	1153	896	684	4.7	959	718	536	977	740	558

Table 91: Selected flue gas compositions at related boiler capacity of EPP-EFG-MTG-H2MAX

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	50 %		100 %	75 %	50 %	100 %	75 %	50 %
N ₂	vol %	79.3	79.3	79.3	85.2	79.3	79.3	79.3	59.8	59.7	59.6
O ₂	vol %	2.5	2.4	3.5	2.9	2.6	2.5	2.5	2.5	2.5	3.2
CO ₂	vol %	17.1	17.2	16.2	9.0	17.0	17.1	17.1	12.3	12.4	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	24.8
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.7
SO ₂	ppmv	962	986	961	12024	954	978	978	69	71	69
CO	ppmv	135	136	128	0	134	135	135	97	97	92
NO	ppmv	74	74	70	0	73	74	74	53	53	50
Volume flow	m ³ /s	825	641	492	3.7	687	514	384	790	598	453
Mass flow	kg/s	1152	895	684	4.9	959	717	536	977	740	558

Table 92: Selected flue gas compositions at related boiler capacity of EPP-EFG-MTG-H2MAX-F2

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	55 %		100 %	75 %	55 %	100 %	75 %	55 %
N ₂	vol %	79.4	79.4	79.3	85.2	79.3	79.4	79.4	59.8	59.7	59.5
O ₂	vol %	2.5	2.4	4.0	2.9	2.6	2.5	2.5	2.5	2.5	3.2
CO ₂	vol %	17.1	17.1	15.6	9.0	17.0	17.0	17.0	12.3	12.3	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	25.0
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.7
SO ₂	ppmv	1029	1076	1036	12024	1021	1067	1067	74	77	77
CO	ppmv	135	136	124	0	134	135	135	97	97	92
NO	ppmv	74	74	68	0	73	74	74	53	53	50
Volume flow	m ³ /s	806	619	505	7.3	667	495	402	768	576	478
Mass flow	kg/s	1125	864	701	9.9	930	691	561	950	713	588

Table 93: Selected flue gas compositions at related boiler capacity of EPP-EFG-MTG-H2MAX-SH100

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	75 %	50 %		100 %	75 %	50 %	100 %	75 %	50 %
N ₂	vol %	79.3	79.3	79.3	85.2	79.3	79.3	79.3	59.8	59.7	59.6
O ₂	vol %	2.5	2.4	3.5	2.9	2.6	2.5	2.5	2.5	2.5	3.2
CO ₂	vol %	17.1	17.2	16.2	9.0	17.0	17.1	17.1	12.3	12.4	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	24.6	24.7	24.8
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.7
SO ₂	ppmv	962	987	962	12024	955	978	978	69	71	69
CO	ppmv	135	136	128	0	134	135	135	97	97	92
NO	ppmv	74	74	70	0	73	74	74	53	53	50
Volume flow	m ³ /s	822	641	489	3.7	684	513	381	789	597	449
Mass flow	kg/s	1148	895	679	4.9	955	716	532	975	739	554

Table 94: Selected flue gas compositions at related boiler capacity of FPP-D reference

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N ₂	vol %	79.3	79.3	79.1	0.0	79.3	79.3	79.1	61.4	61.8	63.2
O ₂	vol %	2.7	2.7	4.6	0.0	2.9	2.9	4.8	2.8	2.8	4.4
CO ₂	vol %	17.0	17.0	15.2	0.0	16.8	16.8	15.0	12.6	12.6	11.5
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.0	20.1
Ar	vol %	0.9	0.9	0.9	0.0	0.9	0.9	0.9	0.7	0.7	0.8
SO ₂	ppmv	887	887	792	0	878	878	783	7	7	6
CO	ppmv	127	124	110	0	125	123	109	93	92	83
NO	ppmv	85	83	73	0	84	82	73	58	57	53
Volume flow	m ³ /s	526	370	207	0.0	535	376	211	539	382	246
Mass flow	kg/s	733	516	287	0.0	745	524	292	673	478	308

Table 95: Selected flue gas compositions at related boiler capacity of FPP-M reference

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	45 %		100 %	70 %	45 %	100 %	70 %	45 %
N ₂	vol %	79.3	79.3	79.2	57.5	79.3	79.3	79.2	61.4	61.4	62.6
O ₂	vol %	2.7	2.7	4.2	8.6	2.9	2.9	4.4	2.8	2.8	4.1
CO ₂	vol %	17.0	17.0	15.5	33.2	16.8	16.8	15.4	12.6	12.6	11.7
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.5	20.9
Ar	vol %	0.9	0.9	0.9	0.7	0.9	0.9	0.9	0.7	0.7	0.7
SO ₂	ppmv	886	886	811	0	878	877	802	7	7	6
CO	ppmv	126	124	114	0	125	123	113	93	92	85
NO	ppmv	84	83	76	0	84	82	75	58	57	54
Volume flow	m ³ /s	545	405	255	0.0	553	411	259	562	401	281
Mass flow	kg/s	759	564	353	0.0	771	573	359	702	501	352

Table 96: Selected flue gas compositions at related boiler capacity of FPP-D-EFG-MTG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N ₂	vol %	79.3	79.3	79.2	84.6	79.3	79.3	79.2	61.4	61.7	63.1
O ₂	vol %	2.7	2.7	4.6	2.9	2.9	2.9	4.8	2.8	2.8	4.4
CO ₂	vol %	17.0	17.0	15.1	9.4	16.8	16.8	14.9	12.5	12.6	11.5
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.1	20.3
Ar	vol %	1.0	1.0	1.0	1.8	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	934	954	893	13943	925	944	883	7	7	7
CO	ppmv	127	124	110	0	125	123	109	93	92	83
NO	ppmv	85	83	73	0	84	82	73	58	57	53
Volume flow	m ³ /s	517	362	207	3.2	525	368	211	530	374	244
Mass flow	kg/s	720	504	287	4.4	731	512	292	662	468	306

Table 97: Selected flue gas compositions at related boiler capacity of FPP-M-EFG-MTG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	45 %		100 %	70 %	45 %	100 %	70 %	45 %
N ₂	vol %	79.3	79.3	79.2	84.6	79.3	79.3	79.2	61.4	61.4	62.5
O ₂	vol %	2.7	2.7	4.2	2.9	2.9	2.9	4.4	2.8	2.7	4.0
CO ₂	vol %	16.9	16.9	15.4	9.4	16.7	16.7	15.3	12.5	12.5	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.6	21.1
Ar	vol %	1.0	1.0	1.0	1.8	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	978	1017	992	13943	969	1007	981	7	7	7
CO	ppmv	126	124	114	0	125	123	113	93	92	85
NO	ppmv	84	83	76	0	84	82	75	58	57	54
Volume flow	m ³ /s	528	387	252	3.2	536	393	256	543	383	274
Mass flow	kg/s	735	538	349	4.4	746	547	355	677	478	343

Table 98: Selected flue gas compositions at related boiler capacity of FPP-D-EFG-FT

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N ₂	vol %	79.3	79.3	79.1	70.3	79.3	79.3	79.1	61.4	61.8	63.1
O ₂	vol %	2.7	2.7	4.6	2.5	2.9	2.9	4.8	2.8	2.8	4.4
CO ₂	vol %	17.0	17.0	15.2	15.4	16.8	16.8	15.0	12.6	12.6	11.5
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.1	20.2
Ar	vol %	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.7	0.7	0.8
SO ₂	ppmv	936	958	899	109383	927	948	888	7	7	7
CO	ppmv	127	124	110	0	125	123	109	93	92	83
NO	ppmv	85	83	73	0	84	82	73	58	57	53
Volume flow	m ³ /s	518	362	204	0.4	526	368	209	531	374	242
Mass flow	kg/s	721	504	283	0.6	732	512	288	662	468	304

Table 99: Selected flue gas compositions at related boiler capacity of FPP-M-EFG-FT

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	45 %		100 %	70 %	45 %	100 %	70 %	45 %
N ₂	vol %	79.3	79.3	79.2	70.3	79.2	79.2	79.1	61.4	61.4	62.5
O ₂	vol %	2.7	2.7	4.2	2.5	2.9	2.9	4.4	2.8	2.8	4.0
CO ₂	vol %	17.0	17.0	15.5	15.4	16.8	16.8	15.4	12.6	12.6	11.7
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.5	21.0
Ar	vol %	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.7	0.7	0.7
SO ₂	ppmv	983	1024	1000	109383	973	1014	989	7	8	7
CO	ppmv	126	124	114	0	125	123	113	93	92	85
NO	ppmv	84	83	76	0	84	82	75	58	57	54
Volume flow	m ³ /s	528	386	252	0.4	537	393	256	544	384	275
Mass flow	kg/s	736	538	349	0.6	747	547	355	679	479	344

Table 100: Selected flue gas compositions at related boiler capacity of FPP-D-FBG-MTG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N ₂	vol %	79.3	79.3	79.2	82.0	79.3	79.3	79.2	61.4	61.8	63.1
O ₂	vol %	2.7	2.7	4.6	2.2	2.9	2.9	4.8	2.8	2.8	4.3
CO ₂	vol %	16.9	16.9	15.1	14.2	16.8	16.8	15.0	12.5	12.6	11.5
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.1	20.3
Ar	vol %	1.0	1.0	1.0	1.2	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	927	945	881	4544	918	935	871	7	7	7
CO	ppmv	126	124	110	0	125	123	109	93	92	83
NO	ppmv	84	83	73	0	84	82	73	58	57	53
Volume flow	m ³ /s	518	364	207	9.4	526	370	211	532	375	243
Mass flow	kg/s	722	507	287	12.9	733	515	292	664	469	305

Table 101: Selected flue gas compositions at related boiler capacity of FPP-M-FBG-MTG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	45 %		100 %	70 %	45 %	100 %	70 %	45 %
N ₂	vol %	79.3	79.4	79.3	82.0	79.3	79.3	79.3	61.4	61.4	62.5
O ₂	vol %	2.7	2.7	4.2	2.2	2.9	2.9	4.4	2.8	2.7	3.9
CO ₂	vol %	16.9	16.9	15.5	14.2	16.7	16.7	15.3	12.5	12.5	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.6	21.1
Ar	vol %	1.0	1.0	1.0	1.2	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	965	997	969	4544	956	988	958	7	7	7
CO	ppmv	126	124	114	0	125	123	113	93	92	85
NO	ppmv	84	83	76	0	83	82	75	58	57	54
Volume flow	m ³ /s	529	392	252	9.4	538	398	257	546	386	274
Mass flow	kg/s	738	546	349	12.9	749	554	355	681	482	342

Table 102: Selected flue gas compositions at related boiler capacity of FPP-D-FBG-FT

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N ₂	vol %	79.3	79.3	79.1	77.5	79.2	79.2	79.1	61.4	61.8	63.2
O ₂	vol %	2.7	2.7	4.6	1.4	2.9	2.9	4.8	2.8	2.8	4.4
CO ₂	vol %	17.0	17.0	15.2	19.2	16.8	16.8	15.0	12.6	12.7	11.5
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.0	20.1
Ar	vol %	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.7	0.8
SO ₂	ppmv	932	952	891	9391	923	942	881	7	7	7
CO	ppmv	126	124	110	0	125	123	109	93	92	83
NO	ppmv	84	83	73	0	84	82	72	58	57	53
Volume flow	m ³ /s	518	363	205	4.2	527	369	209	531	375	242
Mass flow	kg/s	722	506	283	6.0	734	514	289	663	469	303

Table 103: Selected flue gas compositions at related boiler capacity of FPP-M-FBG-FT

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	45 %		100 %	70 %	45 %	100 %	70 %	45 %
N ₂	vol %	79.2	79.2	79.1	77.5	79.2	79.2	79.1	61.4	61.5	62.6
O ₂	vol %	2.7	2.7	4.2	1.4	2.9	2.9	4.4	2.8	2.7	4.0
CO ₂	vol %	17.0	17.0	15.6	19.2	16.8	16.8	15.4	12.6	12.6	11.8
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.4	20.9
Ar	vol %	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.7	0.7
SO ₂	ppmv	975	1012	986	9391	966	1002	975	7	7	7
CO	ppmv	126	124	114	0	125	123	112	93	92	85
NO	ppmv	84	83	76	0	83	82	75	58	57	54
Volume flow	m ³ /s	530	388	252	4.2	538	395	257	546	385	275
Mass flow	kg/s	738	541	349	6.0	750	550	356	682	481	344

Table 104: Selected flue gas compositions at related boiler capacity of FPP-D-EFG-MTG-H2AVG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N ₂	vol %	79.3	79.3	79.2	84.9	79.3	79.3	79.2	61.4	61.7	63.1
O ₂	vol %	2.7	2.7	4.6	2.9	2.9	2.9	4.8	2.8	2.8	4.4
CO ₂	vol %	16.9	17.0	15.1	9.2	16.8	16.8	14.9	12.5	12.6	11.4
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.1	20.3
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	933	953	891	12914	924	943	880	7	7	7
CO	ppmv	127	124	110	0	125	123	109	93	92	83
NO	ppmv	85	83	73	0	84	82	73	58	57	53
Volume flow	m ³ /s	517	361	207	3.4	525	368	211	530	374	244
Mass flow	kg/s	720	504	287	4.7	731	512	292	662	467	306

Table 105: Selected flue gas compositions at related boiler capacity of FPP-M-EFG-MTG-H2AVG

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	45 %		100 %	70 %	45 %	100 %	70 %	45 %
N ₂	vol %	79.3	79.3	79.3	84.9	79.3	79.3	79.2	61.4	61.4	62.5
O ₂	vol %	2.7	2.7	4.2	2.9	2.9	2.9	4.4	2.8	2.7	4.0
CO ₂	vol %	16.9	16.9	15.4	9.2	16.7	16.7	15.3	12.5	12.5	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.6	21.2
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	976	1014	988	12914	967	1004	977	7	7	7
CO	ppmv	126	124	114	0	125	123	113	93	92	85
NO	ppmv	84	83	76	0	84	82	75	58	57	54
Volume flow	m ³ /s	527	386	252	3.4	535	392	256	542	382	274
Mass flow	kg/s	734	538	349	4.7	745	546	355	676	477	343

Table 106: Selected flue gas compositions at related boiler capacity of FPP-D-EFG-MTG-H2MAX

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N ₂	vol %	79.3	79.3	79.2	85.2	79.3	79.3	79.2	61.4	61.7	63.1
O ₂	vol %	2.7	2.7	4.6	2.9	2.9	2.9	4.8	2.8	2.8	4.4
CO ₂	vol %	16.9	16.9	15.1	9.0	16.8	16.8	14.9	12.5	12.6	11.4
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.1	20.3
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	932	952	889	12024	923	942	879	7	7	7
CO	ppmv	127	124	110	0	125	123	109	93	92	83
NO	ppmv	85	83	73	0	84	82	73	58	57	53
Volume flow	m ³ /s	518	361	207	3.7	526	367	211	530	374	244
Mass flow	kg/s	721	503	287	4.9	732	512	292	661	467	306

Table 107: Selected flue gas compositions at related boiler capacity of FPP-M-EFG-MTG-H2MAX

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	45 %		100 %	70 %	45 %	100 %	70 %	45 %
N ₂	vol %	79.3	79.3	79.3	85.2	79.3	79.3	79.2	61.4	61.4	62.5
O ₂	vol %	2.7	2.7	4.2	2.9	2.9	2.9	4.4	2.8	2.7	4.0
CO ₂	vol %	16.9	16.9	15.4	9.0	16.7	16.7	15.3	12.5	12.5	11.6
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.6	21.2
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	975	1012	985	12024	965	1002	974	7	7	7
CO	ppmv	126	124	114	0	125	123	113	93	92	85
NO	ppmv	84	83	76	0	84	82	75	58	57	54
Volume flow	m ³ /s	528	386	252	3.7	536	392	256	542	382	274
Mass flow	kg/s	735	538	349	4.9	746	546	355	676	477	342

Table 108: Selected flue gas compositions at related boiler capacity of FPP-D-EFG-MTG-H2MAX-F2

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N ₂	vol %	79.3	79.3	79.2	85.2	79.3	79.3	79.2	61.4	61.8	63.0
O ₂	vol %	2.7	2.7	4.6	2.9	2.9	2.9	4.8	2.8	2.8	4.4
CO ₂	vol %	16.9	16.9	15.1	9.0	16.7	16.7	14.9	12.5	12.6	11.4
H ₂ O	vol %	-	-	-	-	-	-	-	22.5	22.1	20.5
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.8
SO ₂	ppmv	979	1019	988	12024	969	1009	977	7	8	7
CO	ppmv	127	124	110	0	125	123	109	93	92	83
NO	ppmv	84	83	74	0	84	82	73	58	57	53
Volume flow	m ³ /s	510	350	207	7.3	518	356	211	520	364	242
Mass flow	kg/s	711	487	287	9.9	721	495	292	649	454	303

Table 109: Selected flue gas compositions at related boiler capacity of FPP-M-EFG-MTG-H2MAX-F2

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	50 %		100 %	70 %	50 %	100 %	70 %	50 %
N2	vol %	79.4	79.4	79.4	85.2	79.4	79.4	79.3	61.5	61.5	62.4
O2	vol %	2.7	2.7	4.2	2.9	2.9	2.9	4.4	2.8	2.7	4.0
CO2	vol %	16.8	16.8	15.3	9.0	16.7	16.6	15.1	12.5	12.5	11.5
H2O	vol %	-	-	-	-	-	-	-	22.5	22.6	21.4
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.8
SO2	ppmv	1071	1151	1159	12024	1061	1140	1147	8	8	9
CO	ppmv	126	125	114	0	125	123	113	93	92	85
NO	ppmv	84	83	76	0	84	82	75	58	57	54
Volume flow	m ³ /s	509	369	255	7.3	517	374	260	521	363	274
Mass flow	kg/s	709	513	353	9.9	719	521	359	650	453	342

Table 110: Selected flue gas compositions at related boiler capacity of FPP-D-EFG-MTG-H2MAX-SH100

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	40 %		100 %	70 %	40 %	100 %	70 %	40 %
N2	vol %	79.3	79.3	79.2	85.2	79.3	79.3	79.2	61.4	61.7	63.1
O2	vol %	2.7	2.7	4.6	2.9	2.9	2.9	4.8	2.8	2.8	4.4
CO2	vol %	16.9	16.9	15.1	9.0	16.8	16.8	14.9	12.5	12.6	11.4
H2O	vol %	-	-	-	-	-	-	-	22.5	22.1	20.3
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.8
SO2	ppmv	932	952	890	12024	923	942	880	7	7	7
CO	ppmv	127	124	110	0	125	123	109	93	92	83
NO	ppmv	85	83	73	0	84	82	73	58	57	53
Volume flow	m ³ /s	516	361	205	3.7	524	367	209	529	373	242
Mass flow	kg/s	719	503	283	4.9	730	511	289	661	467	304

Table 111: Selected flue gas compositions at related boiler capacity of FPP-M-EFG-MTG-H2MAX-SH100

Composition (at STP)	Unit	Furnace			SG&RG flue gas	Boiler outlet			FGD outlet		
		100 %	70 %	45 %		100 %	70 %	45 %	100 %	70 %	45 %
N2	vol %	79.3	79.3	79.3	85.2	79.3	79.3	79.2	61.4	61.4	62.5
O2	vol %	2.7	2.7	4.2	2.9	2.9	2.9	4.4	2.8	2.7	4.0
CO2	vol %	16.9	16.9	15.4	9.0	16.7	16.7	15.3	12.5	12.5	11.6
H2O	vol %	-	-	-	-	-	-	-	22.5	22.6	21.2
Ar	vol %	1.0	1.0	1.0	1.7	1.0	1.0	1.0	0.7	0.7	0.8
SO2	ppmv	975	1012	988	12024	965	1002	977	7	7	7
CO	ppmv	126	124	114	0	125	123	113	93	92	85
NO	ppmv	84	83	76	0	84	82	75	58	57	54
Volume flow	m ³ /s	527	387	247	3.7	536	393	251	541	382	271
Mass flow	kg/s	734	538	341	4.9	746	547	347	675	476	338

C. Modeling Evaluation

C.1 Efficiency Calculations

C.1.1 Power Plant Efficiency

$$\text{Energy basis:} \quad \eta_{PP,gross} = \frac{P_{el}}{\dot{Q}_L} \cdot 100 \% \quad \eta_{PP,net} = \frac{P_{el} - P_{el,aux}}{\dot{Q}_L} \cdot 100 \%$$

$$\text{Exergy basis:} \quad \eta_{PP,gross} = \frac{P_{el}}{\dot{E}_L} \cdot 100 \% \quad \eta_{PP,net} = \frac{P_{el} - P_{el,aux}}{\dot{E}_L} \cdot 100 \%$$

C.1.2 Specific Operation Parameters

$$\text{Net heat rate:} \quad NHR = \frac{1}{\eta_{PP,net}} \cdot 3600 \frac{s}{h} \quad (\text{in kJ/kWh})$$

$$\text{CO}_2 \text{ emissions:} \quad \varepsilon_{CO2} = \frac{\dot{m}_{CO2}}{P_{el} - P_{el,aux}} \quad (\text{in g/kWh})$$

C.1.3 Water-Steam Circuit

$$\text{Steam cycle efficiency:} \quad \eta_{ST} = \frac{P_{el}}{\dot{m}_{LS} (h_{LS} - h_{BFW})} \cdot 100 \%$$

$$\text{ST heat consumption:} \quad STHC = \frac{1}{\eta_{ST}} \cdot 3600 \frac{s}{h} \quad (\text{in kJ/kWh})$$

$$\text{ST steam consumption:} \quad STSC = \frac{\dot{m}_{LS}}{P_{el}} \quad (\text{in kg/kWh})$$

C.2 Exergy Calculations

C.2.1 Rhenish Lignite

Determination of the lignite's chemical exergy based on the coal analysis (→ Section 3.1.1, Table 2) and the approach by Baehr [171] using the following equations and properties.

$$e = HHV + T_0 \cdot \Delta_r S + \Delta e$$

$$\Delta_r S = 3.6641 \cdot x_C s_{CO_2} + 8.9366 \cdot x_H s_{H_2O} + 1.9980 \cdot x_S s_{SO_2} + x_N s_{N_2} - O_{min} s_{O_2} - 1.7 \cdot (1 - x_W - x_{Ash})$$

$$\Delta e = 3.6641 \cdot x_C e_{CO_2} + (8.9366 \cdot x_H + x_W) \cdot e_{H_2O} + 1.9980 \cdot x_S e_{SO_2} + x_N s_{N_2} - O_{min} e_{O_2}$$

$$O_{min} = 2.6641 \cdot x_C + 7.9366 \cdot x_H + 0.9980 \cdot x_S - x_O$$

Table 112: Properties of coal-related compounds at 298 K and 1.013 bar [171]

Compound	Molar mass (kg·kmol ⁻¹)	Standard molar exergy (kJ·kmol ⁻¹)	Standard molar entropy (kJ·kmol ⁻¹ ·K ⁻¹)
C	12.011	405,552	5.740
CO ₂	44.010	16,150	213.785
O	15.999	234,230	161.059
O ₂	31.999	4,967	205.152
N	14.007	455,900	153.301
N ₂	28.013	0,743	191.609
H	1.079	320,618	114.717
H ₂	2.016	234,683	130.680
S	32.065	531,524	32.054
SO ₂	64.064	236,400	248.220
H ₂ O (l)	18.015	0,022	69.930
H ₂ O (g)	18.015	8,580	188.835

$$HHV = 10,974 \text{ kJ} \cdot \text{kg}^{-1}$$

$$T_0 = 298.15 \text{ K}$$

$$O_{min} = 0.8185$$

$$\Delta_r S = -4.689 \text{ kJ} \cdot \text{kg}^{-1} \cdot \text{K}^{-1}$$

$$\Delta e = 34.666 \text{ kJ} \cdot \text{g}^{-1}$$

$$e = 9,576 \text{ kJ} \cdot \text{kg}^{-1}$$

C.2.2 Sour and Residual Gases

Determination of the gas' chemical exergy based on their compositions (→ Section 5.2.2, Table 16) and – as a simplification due to very minor deviation – the related molar reaction exergies [172] using the following equation. A conversion into volume specific values is possible via the molar volume at STP.

$$e = \sum (x_i \cdot e_{Ri})$$

Table 113: Reaction exergies of common compounds at 298 K and 1.013 bar [172]

Compound	Reaction exergy (kJ·kmol ⁻¹)	Compound	Reaction exergy (kJ·kmol ⁻¹)
H ₂	234,405	CH ₄	807,630
H ₂ S	501,121	C ₂ H ₆	1,446,118
NH ₃	332,580	C ₂ H ₄	1,313,319
C	388,304	C ₂ H ₂	1,225,331
CO	254,337	C ₃ H ₈	2,078,396
COS	785,861	C ₃ H ₆	1,941,934
N ₂	743	C ₄ H ₁₀	2,709,267
O ₂	4,967	C ₅ H ₁₂	3,338,302
CO ₂	16,150	C ₅ H ₁₀	3,149,429
H ₂ O	8,580	C ₆ H ₁₄	3,965,229
CH ₃ OH	694,066	C ₆ H ₁₂	3,762,279
C ₂ H ₅ OH	1,307,761	C ₆ H ₆	3,157,481

SG-EFG-MTG/FT: $e = 9,713 / 10,104 \text{ kJ} \cdot \text{m}^{-3}$

SG-FBG-MTG/FT: $e = 10,255 / 10,583 \text{ kJ} \cdot \text{m}^{-3}$

SG-EFG-MTG-H2AVG/H2MAX: $e = 10,015 / 10,290 \text{ kJ} \cdot \text{m}^{-3}$

RG-EFG/FBG-M1: $e = 8,981 / 13,060 \text{ kJ} \cdot \text{m}^{-3}$

RG-EFG/FBG-M2: $e = 12,855 / 16,711 \text{ kJ} \cdot \text{m}^{-3}$

RG-EFG/FBG-MTG: $e = 61,401 / 61,401 \text{ kJ} \cdot \text{m}^{-3}$

RG-EFG-M1-H2AVG/H2MAX: $e = 9,050 / 9,107 \text{ kJ} \cdot \text{m}^{-3}$

RG-EFG-M2-H2AVG/H2MAX: $e = 13,174 / 13,372 \text{ kJ} \cdot \text{m}^{-3}$

RG-EFG-MTG-H2AVG/H2MAX: $e = 61,401 / 61,401 \text{ kJ} \cdot \text{m}^{-3}$

C.2.3 Water/Steam

Determination of the water's/steam's physical exergy based on enthalpy and entropy [171] using the following equation.

$$e = h - h_0 - T_0 \cdot (s - s_0)$$

The steam cycle's frame of reference has the subsequent parameters.

$$T_0 = 298.15 \text{ K}$$

$$p_0 = 1.01325 \text{ bar}$$

$$h_0 = 105 \text{ kJ} \cdot \text{kg}^{-1}$$

$$s_0 = 0.367 \text{ kJ} \cdot \text{kg}^{-1} \cdot \text{K}^{-1}$$

Coupling Power Generation with Syngas-Based
Chemical Synthesis

A Process Chain Evaluation from a Power Plant
Viewpoint

Forman, C.

2019, XXV, 147 p. 46 illus., 10 illus. in color., Softcover

ISBN: 978-3-658-22608-4