

B-2019-14292416101

2019



CO ₂		0tCO ₂ e		10324.59 tCO ₂ e	
		14792.34 tCO ₂ e		28462tCO ₂ e	
2019					
		t	tCO ₂ e	tCO ₂ e	
		151.33	151.33	151.33	-
		-	-	-	-
CH ₄		152.08	3193.59	3193.59	-
CH ₄	CH ₄	-	-	-	-
	CH ₄	-	-	-	-
	CH ₄	-	-	-	-
CO ₂		-	-	-	-
		10324.59	10324.59	10324.59	-
		14792.34	14792.34	14792.34	-
tCO ₂ e	CO ₂	3345		3345	-
	CO ₂	28462		28462	-

2.2

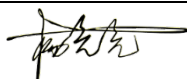
2740

3.

2018

4.

2019

					2020.9.30
					2020.9.30

			蒋忠伟		2020.9.30
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		6.....
1.1		6.....
1.2		6.....
1.3		7.....
		9.....
2.1		9.....
2.2		9.....
2.3		10.....
2.4		11.....
		12.....
3.1		12.....
3.1.1		12.....
3.1.2		14.....
3.1.3		18.....
3.1.4		19.....
3.2		19.....
3.2.1		19.....
3.2.2		20.....
3.3		21.....
3.3.1	CO ₂	21.....
3.3.2	CO ₂	22.....
3.3.3	CH ₄	22.....
3.3.4	CH ₄	22.....
3.3.5	CO ₂	24.....
3.3.6	CO ₂	24.....
3.4		25.....
3.4.1		25.....
3.4.2		33.....

3.4.3		35.....
3.4.4		38...
3.5		38.....
3.6		38.....
3.7		38.....
		39.....
4.1		39.
4.2		39.....
4.2.1		39.....
4.2.2		40.
4.3		40.....
4.4		40
		41.....
1		41.....
2		42.....
3		43.....

1.1

17

2014 63

2016 57

(“ ”)

“ ” 2019

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1.2

- 2019

1

1 CO₂

2 CO₂

3 CH₄

4 CH₄

5 CO₂

6

- 2019

1.3

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17

- “ ” [2016]61
- MRV - /
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- GB/T25892020
- GB171672006

2.1

2-1

	18721914620	1 2 3 4 5	
	18676625841	1 2 3	
	15057120365		

2.2

2020 9 15

2019

“ ” 2020 9 16

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2020 9 25

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9 25				- -
9 25				- - -

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2020

9 25 0

2020 9 30

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3.1.1

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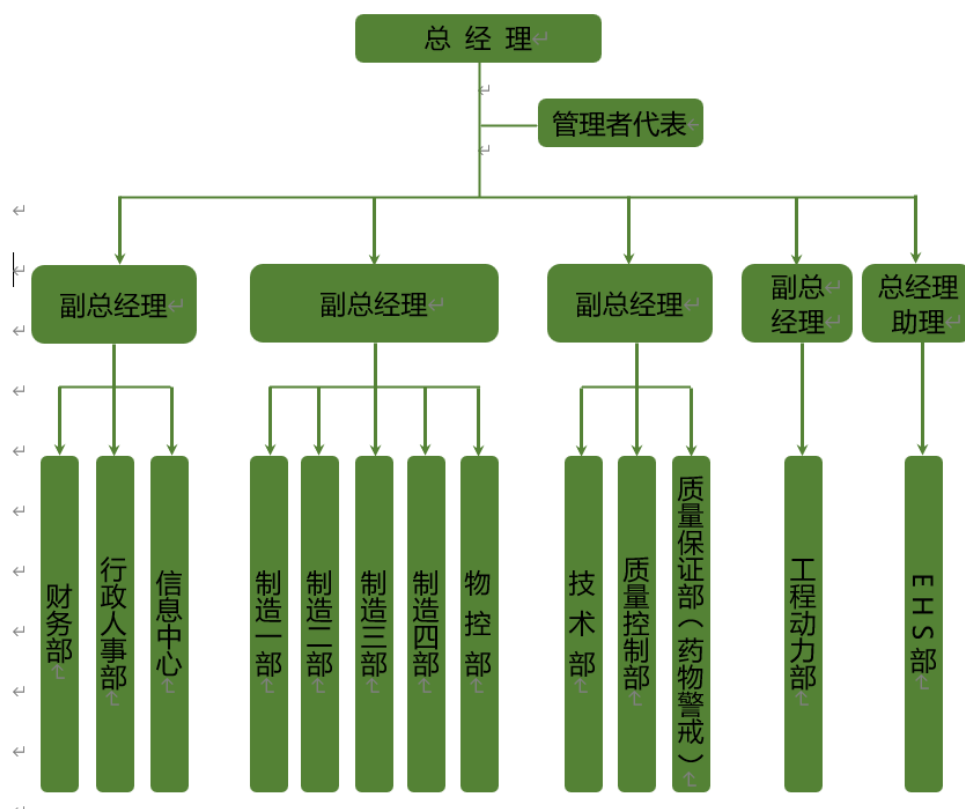
057988271217

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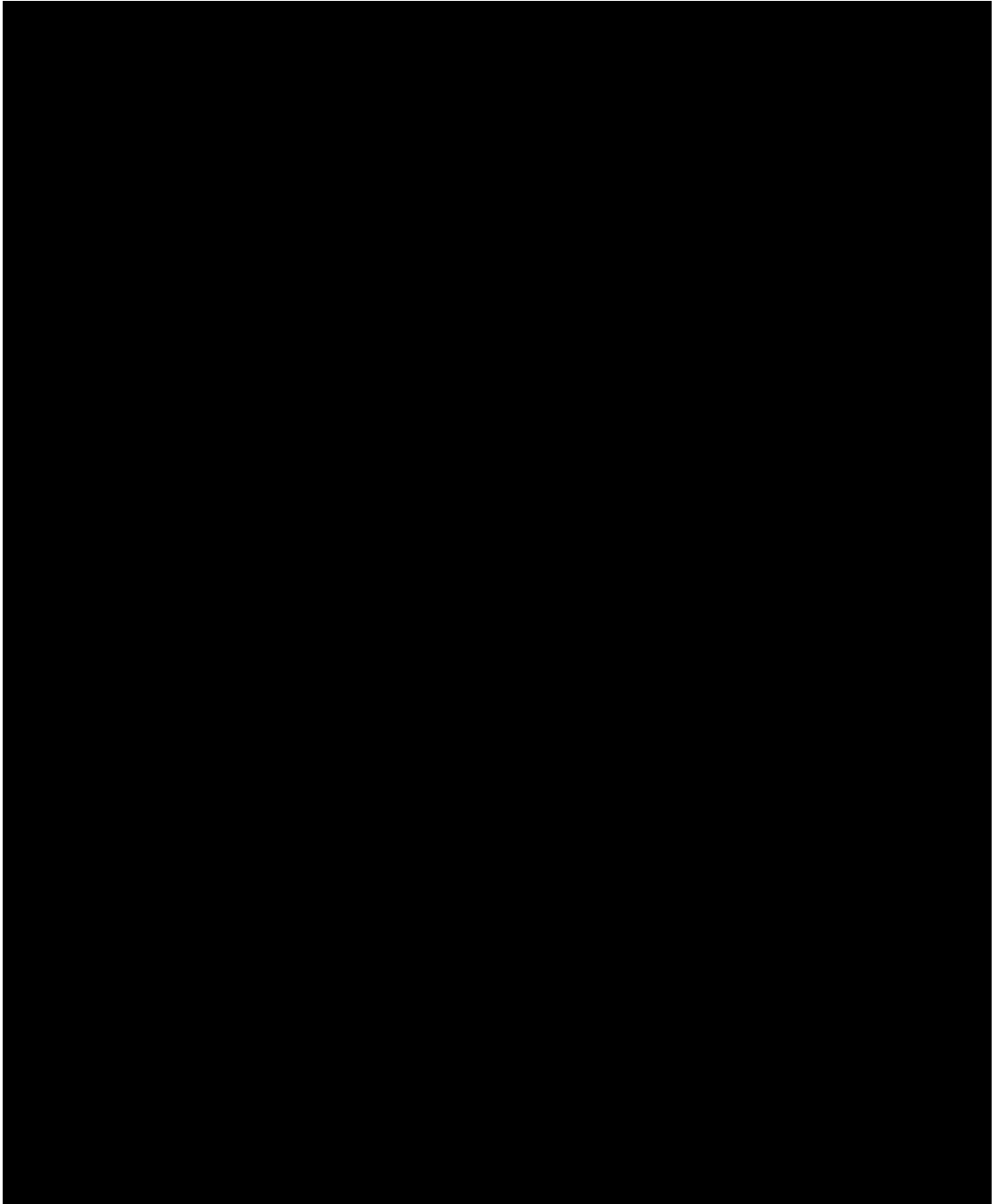
3.1



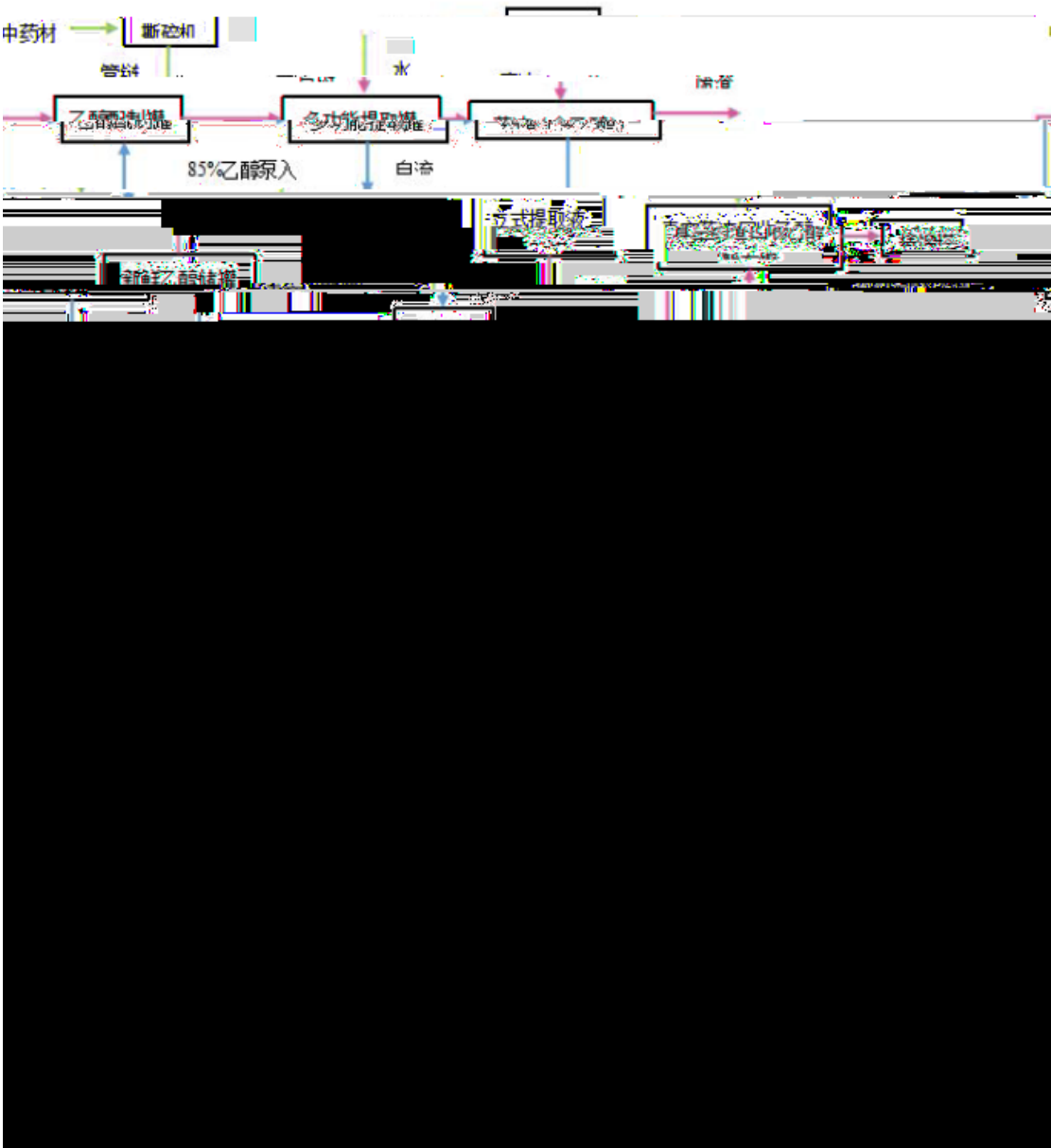
3.2

3.1.2

2.



3.



3.3

2

3-1

		/		
1		HLS400	2	48kW/
2	—		2	48.5kW/

3		FG300	1	37kW
4		KPU-40EPH	1	105kW
5		DSZG-1300BQ	1	67
6		SZA620	1	70
7		ASMR620/38	1	46.55
8		SZA600/43	1	51
9		CG/B7560M-B	1	75KW
10		LW450*1800N	2	37KW/
11		SSR150HB	3	30KW/
12		TH-90L	1	9KW
13		KFR-26GW	48	2kW/
14		KFR-356GW	78	2.5kW/
15		KFR-50LW	21	3.96W/
16		TC-50	3	40KW
17		ZXTZ40	1	0.1KW
18		CSA2H3000D	1	67KW
19		CYJ900	1	50KW
20		SQW-100DF	1	30KW
21		TQ6	10	7.5kw/
22		JB-16-D	2	5.5kw/
23		BVD6-38	1	65KW
24		LPG-5	1	162.5KW
25		TQ6/6m³	16	7.5kw/
26		2000L/h	4	
27		1000L/h	2	11.9kw/
28		600	2	
29		800	4	
30		BVD690	1	82KW
31		200I×28032	7	37KW
32		CM132BV	1	132KW
33		SM200BV	1	200KW
34		KQW200/370	1	55KW
35		KQW200/345	2	45KW
36		CM110BV	1	110KW
37		IX125-380	2	37KW
38		KQW150/40045/4	3	45KW
39		KQW250/31575/4	5	75KW
40		KQW150/40045/4T	2	45KW
41		KQW200-370-55/4	6	55KW
42		AA2-75W	1	75KW
43		RTHDD3D2E2	3	234.7KW

44		30HXC	1	252KW
45		TCA201CH	12	20.5KW
46		RTHDD3G2G1	1	217.7KW
47		LSBLX350SVE	2	194KW
48		LSBLX275SVE	2	160KW
49		CC510MH2JH2	1	288.2KW
50		SG101250/100.4	1	
51		SG101600/100.5	1	
52		SCB101600	1	
53		SCB10630kva	1	
54		SCB101000/10	2	
55			2	
56		CM110PV	1	110KW
57		LSQWRF130/C	6	231KW

3

3-2

				/			
1		XS2	/	1-600g			
2		DY200	/	1.5			
3		EJA430A 0~1.6 Mpa	/	/		/	
4		VX2404R	/	0.5			

5 DSZ532 / 0.2s

3-3

60s/120s/150s (kg)	454096.5192
19.2mg 4.8mg(kg)	77759.25
(kg)	48811.96

3.1.4

2019

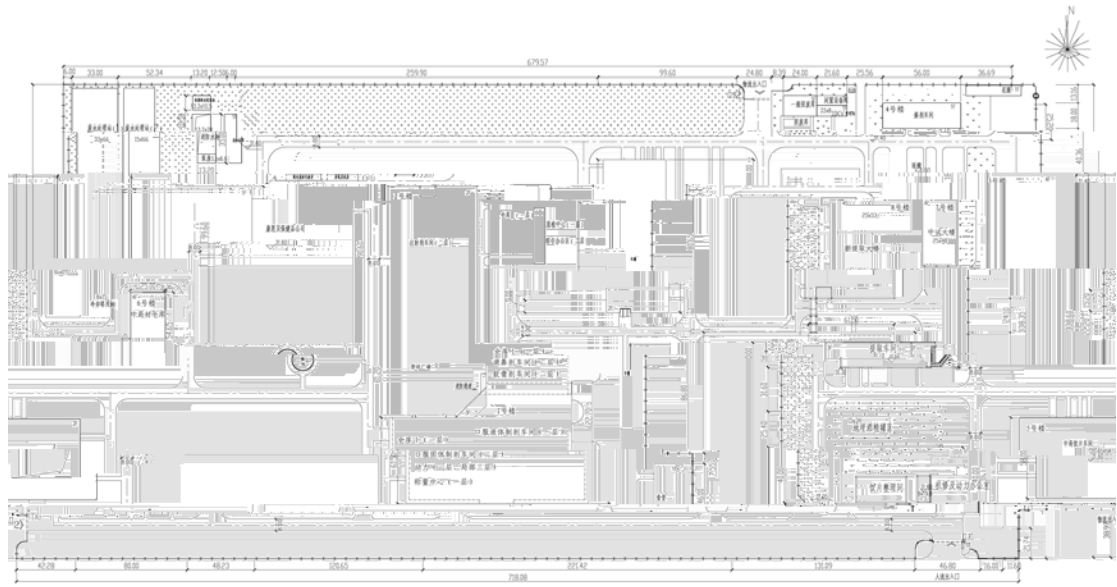
2019

2773401

63174.7

15674.62

â < à [î Ap@ D 57 T 0 SQ84 Tm q 0 0 595.36EMC /Spa [ž083C0FEB!c7Ap@3.1.4-



3.4

3.2.2

3-4

	-	-	-	1
CH ₄				2
CH ₄	-	-	-	3
CO ₂	-	-	-	
CO ₂				

2

F_g/C

EGSB MBBR

3

CH₄

CO₂

3.3

$$E_{\text{GHG}} = E_{\text{CO}_2-} + E_{\text{CO}_2-} + E_{\text{CH}_4-} - R_{\text{CH}_4-} \times \text{GWP}_{\text{CH}_4-} - R_{\text{CO}_2} + E_{\text{CO}_2-} + E_{\text{CO}_2-} \quad 1$$

$$\begin{aligned} E_{\text{GHG}} &= \text{CO}_2 \quad \text{tCO}_2\text{e} \\ E_{\text{CO}_2} &= \text{CO}_2 \\ E_{\text{CO}_2} &= \text{CO}_2 \\ E_{\text{CH}_4} &= \text{CH}_4 \\ R_{\text{CH}_4} &= \text{CH}_4 \\ \text{GWP}_{\text{CH}_4} &= \text{CH}_4 \quad \text{CO}_2 \quad (\text{GWP} \quad 21 \\ R_{\text{CO}_2} &= \text{CO}_2 \\ E_{\text{CO}_2} &= \text{CO}_2 \\ E_{\text{CO}_2} &= \text{CO}_2 \end{aligned}$$

3. fi'\ " "

$$R_{CH_4-} = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

$$R_{CH_4-} = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

$$R_{CH_4-} = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

$$R_{CH_4-} = \eta \times Q_{CH_4} \times PUR_{CH_4} \times 7.17 \quad 6$$

$$\eta = \frac{R_{CH_4-}}{Q_{CH_4} \times PUR_{CH_4} \times 7.17} \quad \%$$

$$Q_{CH_4} = \frac{R_{CH_4-}}{\eta \times PUR_{CH_4} \times 7.17} \quad Nm^3$$

$$PUR_{CH_4} = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

$$7.17 = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

$$R_{CH_4-} = Q_{CH_4} \times PUR_{CH_4} \times 7.17 \quad 7$$

$$Q_{CH_4} = \frac{R_{CH_4-}}{PUR_{CH_4} \times 7.17} \quad Nm^3$$

$$PUR_{CH_4} = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

$$7.17 = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

$$R_{CH_4} = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

$$R_{CH_4-} = \eta \times \sum_{h=1}^H \left(\frac{FR_h \times V\%_h}{22.4} \times 16 \times 10^{-3} \right) \quad 8$$

$$\eta = \frac{R_{CH_4-}}{\sum_{h=1}^H \left(\frac{FR_h \times V\%_h}{22.4} \times 16 \times 10^{-3} \right)} \quad \%$$

H

h

$$FR_h = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4} \quad Nm^3/h$$

0°C 101.325KPa

$$V\%_h = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4} \quad \%$$

$$22.4 = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4} \quad Nm^3/kmol$$

$$16 = \frac{Q_{CH_4}}{Q_{CH_4-}} \times \frac{CH_4}{CH_4}$$

3.3.5 CO₂

$$R_{\text{CO}_2-} = Q \times \text{PUR}_{\text{CO}_2-} + Q \times \text{PUR}_{\text{CO}_2-} \times 19.77 \quad 9$$

$$\begin{aligned} R_{\text{CO}_2-} & \quad \text{CO}_2 \quad \text{CO}_2 \\ Q & \quad \text{CO}_2 \quad \text{Nm}^3 \\ \text{PUR}_{\text{CO}_2-} & \quad \text{CO}_2 \quad \text{CO}_2 \quad 0\sim1 \\ Q & \quad \text{CO}_2 \quad \text{Nm}^3 \\ \text{PUR}_{\text{CO}_2-} & \quad \text{CO}_2 \quad \text{CO}_2 \\ 0\sim1 & \\ 19.77 & \quad \text{CO}_2 \quad \text{CO}_2/\text{Nm}^3 \\ & \quad \text{CO}_2 \end{aligned}$$

3.3.6 CO₂

$$E_{\text{CO}_2-} = \text{AD}$$

3.4

	8.76

3-7

t

1	0
2	1.65
3	0.68
4	0.6
5	0.47
6	0
7	1.66
8	0
9	1.62
10	0
11	1.4
12	0.68
t	8.76

3.4.1.2

3-8

	/	
	29.02	29.02
	t	

	29.02

3-9

t

1	0
2	4.64
3	1.97
4	3.09
5	1.84
6	0
7	5.43
8	0
9	5.05
10	0
11	4.83
12	2.17
t	29.02

3.4.1.3

3-10

	/

15448

15448

	15448 m ³
--	----------------------

3-11

m³

1	6
2	0
3	15
4	26
5	1353
6	2070
7	1848
8	2139
9	1843
10	1621
11	2349
12	2178
m ³	15448

3.4.1.4

3.4.1.5

3-12

	m ³	COD _{in} (kgCOD/m ³)	COD _{out} (kgCOD/m ³)	(kgCOD)
	/	/	/	/
	106124	8.22	1.055	0

	COD
	COD
	COD COD

3-13

COD_{in}

COD_{in}

		COD _{in}	COD _{out}
	m ³	kgCOD/m ³	kgCOD/m ³
1	106124	8.22	1.055
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
/	106124	8.22	1.055

3.4.1.6 CH₄

CH₄

3.4.1.7 CO₂

CO₂

3.4.1.8

3-14

	14676.030	14676.030
	MWh	
	DTZY6	0.5S
	BDK1—GK1	
	100%	
	1 = - 15230.9900 MWh 595.6300 MWh 14635.3600 MWh 14689.2000 MWh 0.3665% 2 554.9600 MWh = - 15795.910 MWh 3 14676.030 MWh	

3-15

	A	B	C=A-B
1	1068320	16800	1051520
2	628880	12918	615962
3	1085269	13029	1072240

4	1292560	30882	1261678
5	1086960	46511	1040449
6	1329600	57106	1272494
7	1512200	78169	1434031
8	1454600	124851	1329749
9	1225840	55226	1170614
10	1979360	82316	1897044
11	1387920	20300	1367620
12	1179480	16847	1162633
kwh	15230989	554955	14676034
MWh	15230.9900	554.9600	14676.0300

3.4.1.9

0.7MPa, 200°C

EasyQuery V2.6

2843.86kJ/kg

3-16

°C	MPa	kJ/kg
200	0.7	2843.86

3-17

	134475.81	134475.81
	GJ	

	100%
	1 49296 49310 0.0277% 2 575 = - 48721 3 0.7MPa, 200 EasyQuery V2.6 2843.86kJ/kg $AD = Ma_{st} \times (En_{st} - 83.74) \times 10^3$ 134475.81GJ
	134475.81 GJ

3-18

	A	B	C	D=A-C
1	4342	5214	65	4277
2	4000	2887	22	3978
3	7360	7492	89	7271
4	3600	3711	21	3579
5	1780	1777	17	1763
6	1850	1837	32	1818
7	1860	1830	34	1826
8	1060	1077	52	1008
9	4850	5038	95	4755
10	5437	5290	47	5390
11	7450	7450	60	7390

12	5707	5706.93	41	5666
t	49296	49310	575	48721
°C	200	/		
MPa	0.7	/		
kJ/kg	2843.86	/		
GJ	134475.81	/		

3.4.2

3.4.2.1

	2012
	2012

3.4.2.6

	tCO ₂ / GJ	tCO ₂ / GJ
	0.11	0.11

3.4.3

3.4.3.1

	t Nm ³	GJ/t GJ/ Nm ³	tC/GJ	%		tCO ₂
	A	B	C	D	E	F=A*B*C*D*E
	-	-	-	-	-	151.33
	8.76	44.8	0.0189	98	44/12	26.65
	29.02	43.33	0.0202	98	44/12	91.27
	1.5448	389.31	0.0153	99	44/12	33.40

3.4.3.2

3.4.3.3

CH₄

	TOW		CODin	CODout	COD	BO	MCF		CH ₄		
	KgCOD	)	(/	(/	COD	KgCH ₄ / KgCOD	/	KgCH ₄)	KgCH ₄	GWP	tCO ₂
	760378.46	106124	8.22	1.055	0	0.25	0.8	0	152075.69	21	3193.59

3.4.3.4CH₄

CH₄

3.4.3.5CO₂

CO₂

3.4.3.6

CO₂

3-19

CO₂

	(MWh GJ)	(tCO ₂ /MWh tCO ₂ /GJ)	tCO ₂	tCO ₂
	A	B	C=A*B	
	14676.030	0.7035	10324.59	25116.93
	134475.81	0.11	14792.34	

3.4.3.7

3-20

		t	tCO ₂ e	tCO ₂ e	
		151.33	151.33	151.33	-
		-	-	-	-
CH ₄		152.08	3193.59	3193.59	-
CH ₄	CH ₄	-	-	-	-
	CH ₄	-	-	-	-
	CH ₄	-	-	-	-
CO ₂		-	-	-	-
		10324.59	10324.59	10324.59	-
		14792.34	14792.34	14792.34	-
tCO ₂ e	CO ₂	3345		3345	-
	CO ₂	28462		28462	-

3.4.4

2740

3.5

1 EHS

2

3

4

EHS

EHS

3.6

3.7

4.1

2019

4.2

4.2.1

2019

			151.33 tCO ₂ e
	0tCO ₂ e		3193.59 tCO ₂ e
CH ₄	0tCO ₂ e	CO ₂	0tCO ₂ e
	10324.59 tCO ₂ e		14792.34 tCO ₂ e
	28462tCO ₂ e		

2019

		t	tCO ₂ e	tCO ₂ e	
		151.33	151.33	151.33	-
		-	-	-	-
CH ₄		152.08	3193.59	3193.59	-
CH ₄	CH ₄	-	-	-	-
	CH ₄	-	-	-	-
	CH ₄	-	-	-	-
CO ₂		-	-	-	-
		10324.59	10324.59	10324.59	-

		14792.34	14792.34	14792.34	-
tCO ₂ e	CO ₂		3345	3345	-
	CO ₂		28462	28462	-

4.2.2

2740

4.3

2019 2019 12.22%

2019 21.56%

4.4

2018

1

1	/	/	/

2

1	
2	
3	

3

1	
2	
3	
4	
5	
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7	
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10	
11	
12	
13	
14	