

香港交易及結算所有限公司及香港聯合交易所有限公司對本公告的內容概不負責，  
對其準確性或完整性亦不發表任何聲明，並明確表示，概不對因本公告全部或任  
何部份內容而產生或因倚賴該等內容而引致的任何損失承擔任何責任。



**Beijing Jingneng Clean Energy Co., Limited**

**北京京能清潔能源電力股份有限公司**

(於中華人民共和國註冊成立的股份有限公司)

(股份代號：00579)

## 海外監管公告

本公告乃根據香港聯合交易所有限公司證券上市規則第13.10B條作出。

茲載列北京京能清潔能源電力股份有限公司在上海證券交易所網站刊登的《北京  
京能清潔能源電力股份有限公司2020年公開發行公司債券(第一期)募集說明書摘  
要(面向合格投資者)》，僅供參閱。

特此公告

承董事會命  
北京京能清潔能源電力股份有限公司  
康健  
公司秘書

中國·北京  
2020年4月13日

於本公告刊發日期，本公司的非執行董事為劉海峽先生、任啟貴先生、李娟女士及  
王邦宜先生；本公司的執行董事為張鳳陽先生、朱軍先生及曹滿勝先生；而本公司  
的獨立非執行董事為黃湘先生、張福生先生、陳彥聰先生及韓曉平先生。

北京京能清洁能源电力股份有限公司

2022年公开发行公司债券（第一期）

## 募集说明书摘要 (面向合格投资者)

发行人：北京京能清洁能源电力股份有限公司

**BJE**

(住所：北京市延庆区八达岭经济开发区紫光东路1号118室)

牵头承销商、受托管理人、簿记管理人

**国信证券**



国信证券股份有限公司

GUOSEN SECURITIES CO., LTD.



AAA

AAA

2,276,261.27

2019 9 30

197,234.03

2016

2017

2018

1.5

			395,615.21	393,560.81	392,273.62	
				-343,544.03	-357,867.48	-
344,621.50	2019	1-9			358,356.01	
			-345,552.03			
					128,953.01	
120,051.40	84,660.12	64,753.52				49.09%
48.43%	31.86%	30.60%				

		2018	68,449	
8.49%		18.97	6.57%	

2009



<http://www.lianhecreditrating.com.cn/>

<http://www.sse.com.cn>

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.....	125
.....	126

8,244,508,144.00

8,244,508,144.00

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010-64469988

010-87407009

010-64469736

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010-64469736



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010-58137799

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010-88095588

010-88091190

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22

010-85665588



010-85665120

100004

38

508

010-85172818

010-85171273

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010-68311546

010-68311546

528

021-68808888

021-68804868

166

3

021-38874800

021-58754185

2019 9

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2020

[www.sse.com.cn](http://www.sse.com.cn)

[www.lianhecreditrating.com.cn](http://www.lianhecreditrating.com.cn)

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**1**

2018 7

**2**

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2018 7

**3**

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2019 9

144.12

603.35

459.23

## 4-1

% 18

1	16	SCP001		10	270	2016-01-27	2016-10-23	2.97
2	16	SCP002		10	270	2016-02-25	2016-11-21	2.70
3	16	SCP003		10	270	2016-05-11	2017-02-05	3.02
4	16	SCP004		10	270	2016-06-17	2017-03-14	3.08
5	16	CP001		10	1	2016-07-07	2017-07-07	2.80
6	16	CP002		10	1	2016-08-23	2017-08-23	2.70
7	16	CP003		10	1	2016-10-28	2017-10-28	3.03
8	16	SCP005		10	270	2016-11-16	2017-08-13	3.27
9	17	SCP001		20	270	2017-03-09	2017-12-04	4.30
10	17	SCP002		20	270	2017-08-18	2018-05-15	4.58
11	17	SCP003		20	270	2017-11-13	2018-08-10	4.90
12	17	MTN001		20	5	2017-12-01	2022-12-01	5.50
13	17	SCP004		20	120	2017-12-14	2018-04-13	5.15
14	18	SCP001		10	240	2018-03-07	2018-11-02	4.98
15	18	MTN001		15	5	2018-04-03	2023-04-03	5.19
16	18	CP001		15	1	2018-04-27	2019-04-27	4.65

17 18

20                      2019    9

227.63

8.79%                  40%

**4-2**

	<b>2019    9</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
	0.73	0.75	0.48	0.35
	0.72	0.74	0.47	0.35

8,244,508,144.00

8,244,508,144.00

1993 2 3

91110000101718150E

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2010

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2 2006 6

2006 10 26

[2006]333

50,000

2006 11 16

11000012224112

3 2009 5

2009 5 12

40,000

10,000

50,000

100,000

2009 5 25

110000002224112

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4	2009	12			
	2009	12			
2009	9	30			
5,000			644.1224		4,355.8876
					100,000
100,644.1224					100,000
99.36%			644.1224		0.64%
			2009	12	29
			110000002224112		2006 11 16
2056	11	15			1 118
5	2010	1			
2009	12	15			
2010	1	21			
	2009	9	30		
125,000			15,977.1088		109,022.8912
					100,644.1224
			116,621.2312		100,000
			85.748%		644.1224

0.552%		5,368.0753		4.603%	
		383.6839		0.329%	
	1,533.5692			1.315%	
	5,112.6748			4.384%	
3,579.1056				3.069%	
2010	3	19			
			[2010]366	2010	
3	25				
			[2010]214		
			2010	4	29
			110000002224112		

1		100,000	100,000	85.748%
2		5,368.0753	5,368.0753	4.603%
3		644.1224	644.1224	0.552%
4		383.6839	383.6839	0.329%
5		1,533.5692	1,533.5692	1.315%
6		5,112.6748	5,112.6748	4.384%
7		3,579.1056	3,579.1056	3.069%
		<b>116,621.2312</b>	<b>116,621.2312</b>	<b>100%</b>

**2010**

2010 6 13

2010 6 30

[2010]99 2010 8 3

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H 1,032,200,000

H 103,220,000      2011 12 22      H

00579

2012 1 13      H

129,476,000      H 117,705,454

H 11,770,546      6,149,905,454

614,990.5454      6,149,905,454

2012 8 21

110000002224112

1			417,932.1592	67.958%
2			22,434.8291	3.648%
3			2,690.4249	0.437%
4			1,603.5322	0.261%
5			6,575	1.069%
6		H	21,920	3.564%
7		H	15,345	2.495%
8		H	126,489.6	20.568%
		/	<b>614,990.5454</b>	<b>100%</b>

**2013 10**

2013 5 24

[2013]99      2013 10 8

[2013]1278      327,508,000      H      2013

10 23      H      1,965,054,000      H

6,47,741.3454

6,477,413,454

2014 6 9

[2014]425

65,750,000

2013 12 17

2014 7 14

2014 7 14

110000002224112

1			417,932.1592	64.521%
2			22,434.8291	3.464%
3			9,265.4249	1.43%
4			1,603.5322	0.248%
5		H	196,505.4	30.337%
			<b>647,741.3454</b>	<b>100%</b>

**2014 10**

2014 6 16

[2014]98 2014 9 23

[2014]992

393,010,000 H

2014 10 7

H

2,358,064,000

H

687,042.3454

6,870,423,454

2016 9 22

91110000101718150E

1			417,932.1592	60.831%
2			22,434.8291	3.265%
3			9,265.4249	1.349%
4			1,603.5322	0.233%
5		H	235,806.4	34.322%
			<b>687,042.3454</b>	<b>100%</b>

2018 7

2017 8 9

[2017]105 2017 12 27

[2017]2448

902,471,890

471,612,800 H 2018 7 12

8,244,508,144

824,450.8144

8,244,508,144

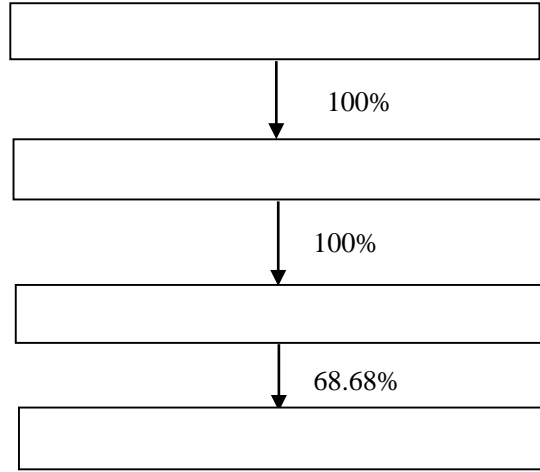
2018 8 29

9111000010171850E

1			508,179.3482	61.639%
2			22,434.8291	2.721%
3			9,265.4249	1.124%
4			1,603.5322	0.194%
5		H	47,161.28	5.720%
6		H	235,806.4	28.602%
			<b>824,450.8144</b>	<b>100%</b>

2019 9

**6-1      2019   9**



2019   9

**1**

2004   12   8

21,338,060,000

110000007832879

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100022

010-85218888

010-85218832

www.powerbeijing.com

[2004]4



2004 12 8

			4
			2018 12
31	27,530,070.77	17,494,220.20	
2018	6,647,765.66	299,489.00	2019
9 30	28,734,907.62	18,422,678.26	
2019 1-9	4,409,405.98	321,711.49	

**2**

[2009]2

2008 12

[2008]76

74.24%

20%

5,000

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2019 9 30

66

3

1

**6-1 2019 9**

%

1		74,729.73	6	74.00	
2		87,678.00	29	100.00	
3		32,577.00	15	100.00	

2020

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4		76,051.20		100.00	
5		101,000.00	1	100.00	

2018		211,313.01	82,335.56
128,977.45	2018		223,357.81
30,402.74			

2019	9	187,499.60	35,963.76
151,535.84	2019	1-9	151,141.70
22,558.38			

**2**

		2003	9	10
32,577.00				
		100%		

2018		92,680.28	49,008.57
43,671.71	2018	102,050.88	4,107.13

2019	9	74,085.80	28,513.77
45,572.04	2019	1-9	69,483.77
1,900.32			

**3**

		2003	12	29
87,678.00				
100%				

-

2018		276,335.13		148,152.05
128,183.08	2018		242,122.26	
27,448.77				
2019	9	269,679.09		145,537.62
124,141.47	2019	1-9	171,912.01	
20,662.28				
<b>4</b>				
		2010	12	30
76,051.20				
100%				
2018		277,877.67		162,714.18
115,163.49	2018		235,188.73	
30,750.06				
2019	9	252,591.35		144,885.03
107,706.31	2019	1-9	159,247.94	
20,217.88				
<b>5</b>				
		2012	4	11
101,000.00				
100%				
2018		390,531.06		225,928.17
164,602.89	2018		389,111.95	45,643.90
2019	9	324,434.50		128,349.34
196,085.16	2019	1-9	253,904.15	

31,482.26

**6**

2013 4 23

29,189.86

100%

2018

171,190.72

119,049.65

52,141.07

2018

67,809.77

2,532.08

2019 9

173,481.00

120,

2018		60,600.41	25,605.61
34,994.80	2018	16,997.32	8,077.83

2019	9	63,216.51	22,087.62
41,128.89	2019	1-9	11,976.72
6,134.09			

**9**

		2002	3	20
9,000.00				
100%				

2018		26,622.39	6,448.35
20,174.04	2018	9,568.09	4,009.93
2019	9	27,485.20	4,470.48
23,014.72	2019	1-9	6,515.97

2,840.67

**10**

			2008	5	12
		79,235.00			
		100%			

2018		251,913.41	150,828.31
101,085.10	2018	36,355.51	
14,503.98			
2019	9	256,570.29	146,569.06



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110,001.23	2019	1-9	25,397.97
8,916.13			

**11**

	2010	10	10	
41,132.70				
100%				
2018	144,462.63		94,452.04	
50,010.59	2018	19,839.92	6,284.57	

2019	9	151,269.38	97,716.78
53,552.60	2019	1-9	13,276.96
3,542.01			

**12**

	2010	5	19	
25,924.80				100%

2018	98,397.35	65,112.42	
33,284.93	2018	14,583.32	4,997.70

2019	9	95,887.07	59,644.76
36,242.31	2019	1-9	9,529.68
2,957.38			

**13**

	2011	3	15
41,514.00			
100%			

2018 69,712.04 37,048.37  
 32,663.67 2018 9,741.59 4,116.42  
 2019 9 114,430.19 66,242.95  
 48,187.24 2019 1-9 6,974.92 2,523.57

**14**

2014 3 25  
 33,005.00  
 100%  
 2018 140,493.13 99,987.93  
 40,505.20 2018 17,323.19 6,185.22  
 2019 9 173,814.95 114,086.32  
 59,728.64 2019 1-9 12,993.56  
 5,118.81

**6-2 2019 9**

					%	
32		2	806	63,000.00	24.21	
11			2,500.00	40.00		
2			6,000.00	50.00		
CBD		22	16	340,000.00	20.00	

**1**

2007 8 1

63,000

24.21%

2018

256,026.88

197,611.04

58,415.84

2018

0

0

**2**

2004 9 23

2,500

40.00%

~~2018~~ 181%

18,549.97

2018		6,783,259.17
4,095,086.84	2,688,172.33	2018
1,267,436.48	80,639.92	

3

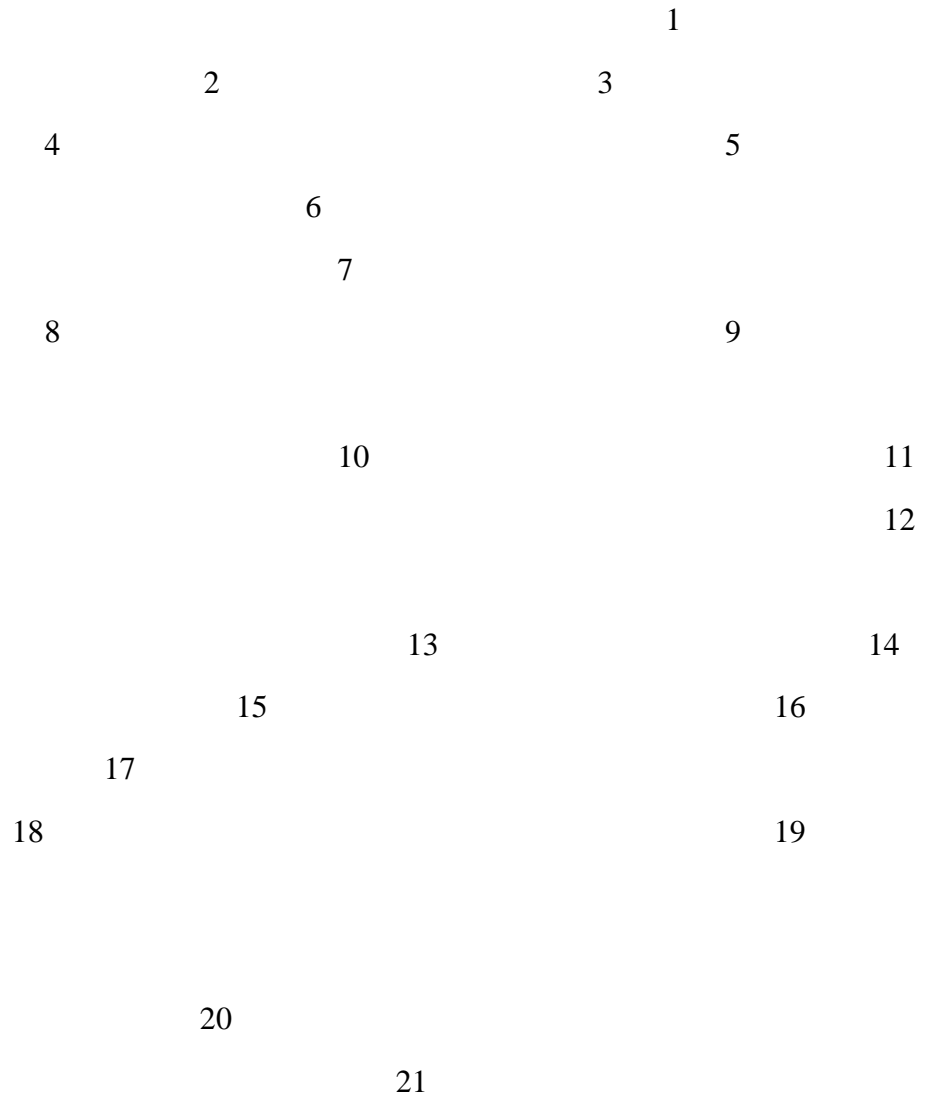
1

30%

3%

3%

**2**



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**3**

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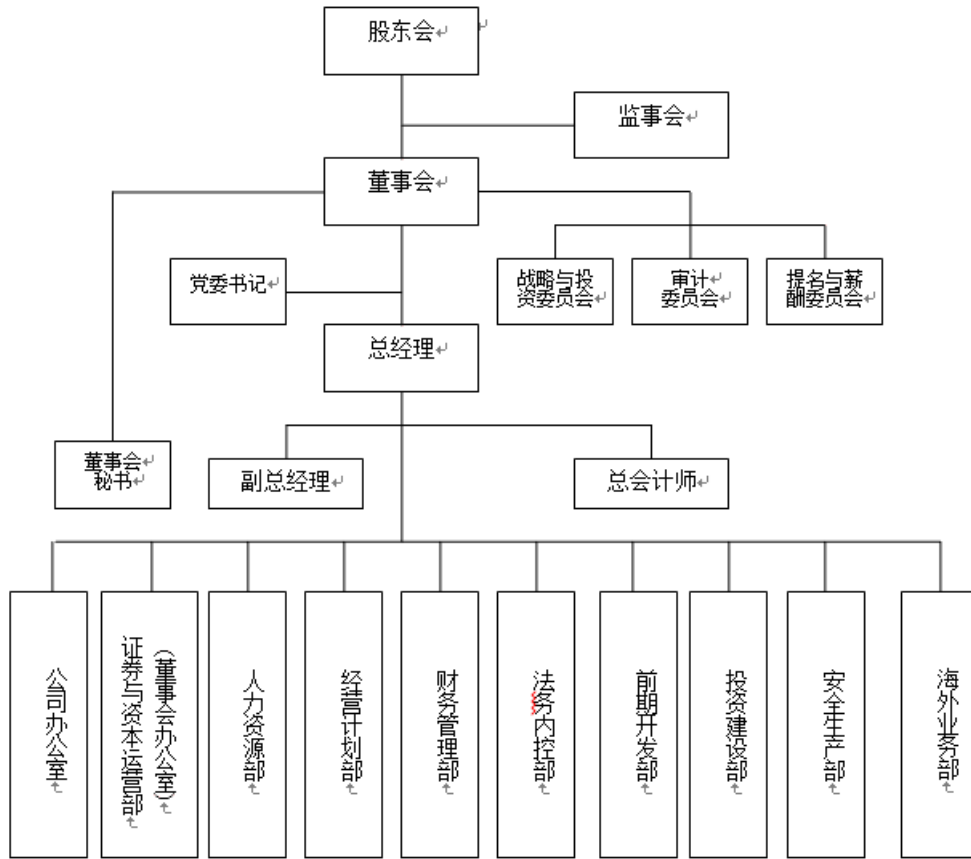
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10%

**6-3**

			2018 6 28	

2019 6 20

			2019 6 20	-
			2019 6 20	-
			2016 12 29	-
			2015 6 25	-
			2016 12 29	
			2014 10 28	
			2019 6 20	
			2019 6 20	
			2010 1	-
			2018 5 25	-
			2018 5 25	
			2010 3	-

2018 5 25

2018

2018 6 28

2019 1 30

2019 6 20

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**1**

1961 7

2018 6

1983 7 1985 8

1985 8 1991 5

1991 5 1994 3

1994 3 1998 8

1995 9 1998 7

1998 8 2000 2

2000 2 2000 4

2000 4 2004 3

2004 3 2004 12

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2014 12

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991

601991

1962 5 1986 8 1995 6

1995 6 2006 7

2006 7

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2011 6 2012 8

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11 2017 3

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1986 7

2008 6

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2018 6

2010 1 2015 1

2015 1 2016 11

2016 11 2017 8

2017 8 2018 3

2018

2007 9

2009 6

1973 8

2019 1 30

2000 8 2001 8

2005 7 2008 9

2008 9 2010 9

2010 9 2011 6

2011 7 2012 3

2012 4 2013 12

2013 12 2017 10

2014 2 2015 7

2015 7 2017 10

2017 4

1995 7

2000 6

2005 6

2008 11

**2**

1970 1

2018 2

1994 7 2000 9

2000 9 2003 10

2003 10 2004 7

2004 7 2007 4

2007 4 2009 7

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2013 11 2018 6 2018

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1968 2 1990 7 1998 12

1998 12 2003 4

2003 4 2004 12

2004 12 2009 3 2009

3 2010 3 2010 3

2017 11

2017 11 2018 1

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1 2018 5

2018 5 2018 6

2018 6 2019 6

1990 6

2010 12

1970 8 1993 7 2001 12

2001 12

2005 2

2005 2 2012 8

2012 8 2017 11

2017 11 2018 1

2018 1 2018 5

2018 5 2019 6

1993 7

2003 6

3

1956 6

2016 12

1982 7 1991 1

1991 1 1993 8

1993 8 2001 11

2001 11 2014 3

2004 3 2016 6

2016 6 1982 7

1955 5 2015 6

1990 6 1994 6

1994

1994 7 1997 4

1997 4 2001 1

2001 1

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1979 11

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2003 11 2010 7

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2011 6 2012 7  
2012 7 2013 8  
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1957 9 2014 10  
1986 1988  
1988 2000  
  
2016 6  
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2018 4  
1671 2019 6 18  
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1964 8 1986 7 1988 7  
1987 6 1988 6  
1988 7 1994 9  
1994 9 1997 5 1997 5

1998 12  
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 1986 7  
 2004 7  
 2008 1  
 1972 11  
 1995 7  
 1998 1  
 1998 1  
 2007 7  
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 2018 6  
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 2015 5  
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 2017 12  
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 1995 7  
 2007 7

1968 8 16  
2010 1 1993 12  
2010 8  
2010 8 2018 6  
2018 6  
**3**  
1969 12 20  
2018 5 1992 7 2003 8  
2003 11 2004 11  
2004 12 2007 9  
2007 9 2009 7  
2009 7 2012 3 2009 5  
2012 3  
2012 3 2014 10  
2014 10 2016 8  
2016 8 2017 3  
2017 3 2018 1  
1970 7  
20 2018 5 1996  
3 2004 12  
2004  
12 2018 5  
2013 6  
2015 11

1963 5 20  
2010 3  
1999 7 2000 2  
2000 4 2003 3 Tucows  
2004 1 2009 7  
2009 8 2009 12 2009 12

2016-2018 2019 1-9 1,484,882.35  
1,452,084.89 1,658,446.04 1,178,002.93

90.49% 88.95% 90.42%

9.38% 10.63% 9.31%

**6-4**

%

	2016		2017		2018		2019 1-9	
	1,343,622.14	90.49	1,291,609.75	88.95	1,469,497.77	88.61	1,065,173.46	90.42
	139,222.48	9.38	154,310.60	10.63	183,647.87	11.07	109,674.04	9.31
	496.70	0.03	154.73	0.01	388.91	0.02	104.97	0.01
	1,541.03	0.10	6,009.81	0.41	4,911.49	0.30	3,050.47	0.26
	<b>1,484,882.35</b>	<b>100.00</b>	<b>1,452,084.89</b>	<b>100.00</b>	<b>1,658,446.04</b>	<b>100.00</b>	<b>1,178,002.93</b>	<b>100.00</b>

2016-2018 1,202,044.16 1,158,334.81  
 1,274,555.87 2017 2016 3.64%  
 2017 9 29 2.51 / 2.41 / 2018  
 10.03% 2018

**6-5**

	2016		2017		2018		2019 1-9	
	1,047,394.17	87.13	979,741.26	84.58	1,060,056.50	83.17	796,874.30	86.98
	153,730.09	12.79	177,289.79	15.31	212,964.33	16.71	119,046.16	12.99
	403.11	0.03	125.83	0.01	326.46	0.03	49.31	0.01
	919.90	0.08	1,177.93	0.10	1,208.58	0.09	211.34	0.02
	<b>1,202,044.16</b>	<b>100.00</b>	<b>1,158,334.81</b>	<b>100.00</b>	<b>1,274,555.87</b>	<b>100.00</b>	<b>916,181.11</b>	<b>100.00</b>

19.05% 20.23%  
 23.15% 22.23% 2018 2017 2.92 2019 1-  
 9 117.80 4.53%  
 2018  
 2019 9 25.19%  
 22.23%

**6-6**

%

	2016		2017		2018		2019 1-9	
	296,227.97	22.05	311,868.49	24.15	409,441.27	27.86	268,299.16	25.19
	-14,507.61	-10.42	-22,979.19	-14.89	-29,316.46	-15.96	-9,372.12	-8.55
	93.59	18.84	28.90	18.68	62.45	16.06	55.66	53.02
	621.13	40.31	4,831.88	80.40	3,702.91	75.39	2,839.13	93.07
	<b>282,435.08</b>	<b>19.05</b>	<b>293,750.08</b>	<b>20.23</b>	<b>383,890.17</b>	<b>23.15</b>	<b>261,821.82</b>	<b>22.23</b>

**6-7 2019 9**

		2019 1-9	2019 1-9	%
	4,702	14,107,627.49	770,426.84	65.40
	2,348	3,465,572.40	150,969.32	12.82
	450	1,410,890.17	28,118.81	2.39
	1,415	1,472,501.58	115,658.49	9.82
	<b>8,915</b>	<b>20,456,591.64</b>	<b>1,065,173.46</b>	<b>90.42</b>

**1**

7

**1**

80%

2017 9 1

0.1 /

2.41 /

2017 11 15 2018 3 15

0.16 /

2.57 /

2017

2016

2.50 /

2018 7 10

2.39 /

2018 11 15

2019 3 15

0.23 /

2.62 /

2018

2017

2.47 /

2019 1-9

2.43 /

**6-8**

/

	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019 1-9</b>
	39.52	36.44	40.45	29.33
	2.51	2.50	2.47	2.43

**6-9 2018**

				/
	410	4,005	160,679	0.65
	780	4,315	326,225	0.65

0.495 /

4,702  
838  
255  
2018  
1308  
780  
266  
845  
410  
2019 1-9

2005

2011 5 27

29  
0.528 /  
0.538 /  
2011 11  
2011 12 1  
0.573 /  
2014 1 20



0.65	2018		0.495
/		0.65 /	
2016		4,436	2016
18,970,194.26			1,672,104.39
	4,078	3,364,295	
4,313		3,610,765.95	4,309
	1,080,922.59		4,239
	3,630,252.78	4,296	
5,611,853.55		4,290	
2017		4,436	2017
17,091,025.05			1,547,874.90
	3,866	2,959,418	
3,917		3,495,374.85	4,262
	946,942.15		3,833
	3,165,805.5	3,835	4,975,609.65
	3,896		
2018		4,702	2018
18,871,155			1,606,787
	4,005	3,262,248	4,315
	3,541,250		4,323
	1,060,477	4,281	
3,459,994		4,191	5,574,257
	4,363	366,142	1,407

2

60 °C

130 °C

24

11 15

3 15

24

11 15                      3 15

**2**

2005

2007

2009

2018

2018

2,348.25

2018

50.43

2,177

82

2019 1-9

34.22

8.38%

**6-10**

	2018	2017	2016
--	------	------	------

**3**

2010    2020

2018

370

1,168

2018

15.00

33.33%

1,441

229

**6-11 2018**

%

		1,096,710.00	66.13
		170,148.21	10.26
		106,473.52	6.42
		59,386.40	3.58
		37,288.66	2.25
		<b>1,470,006.79</b>	<b>88.64</b>

**1**

2018

4,702

1,308

845

838

780

410

255

266

2019 1-9

**1**

90%

**6-12**

		/
2016-01-01	2017-08-31	2.51
2017-09-01	2017-11-14	2.41
2017-11-15	2018-03-15	2.57
2018-03-16	2018-07-09	2.41
2018-07-10	2018-11-14	2.39
2018-11-15	2019-03-15	2.62
2019-03-16	2019-04-30	2.39
2019-05-01	2019-06-30	2.31
2019-07-01	2019-09-30	2.31

**2**

2005

2011 5 27

2011 4 10 528.00

/MW 538.00 /MW 2011 11 29

2011 12 1 573.00 /MW 2014 1 20

2014 1 20

0.65 650.00 /MW

2

2005 2007  
2018 2,348.25 62%

1

2018 1 1 2017 1 1  
2018

0.75 0.85

2019 5 21

2019 882

2019 I

0.34 0.39 0.43 0.52





2019 9

1

1

GDP  
GDP

2008~2009

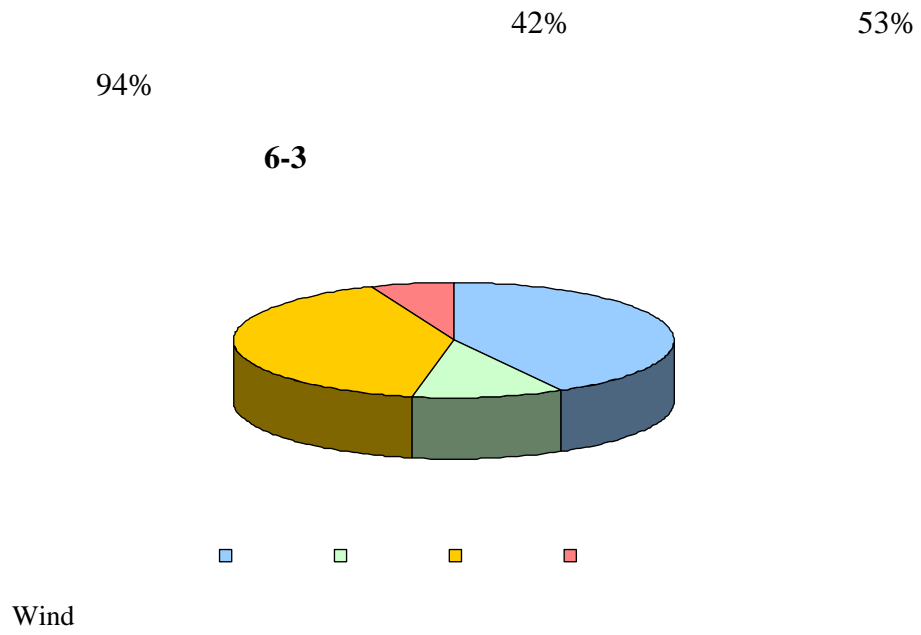
2010  
14.56% 2011

	2017		6.31		6.6%
2016	1.6				
	40%				
			2017		6.31
	6.6%				
			2017		
17.8	7.6%	2016	0.6	2017	
					1,287
		13,372			
	3.41		4,578	2015	
1,822					
2018	68,449		8.49%		
728	9.80%		47,235		
7.17%	10,801		12.75%		
9,685	10.35%				
2019	72255		4.5%		
780	4.5%		49362		
3.1%	11863		9.5%		
10250	5.7%	2019			
10173	417	4092		2019	

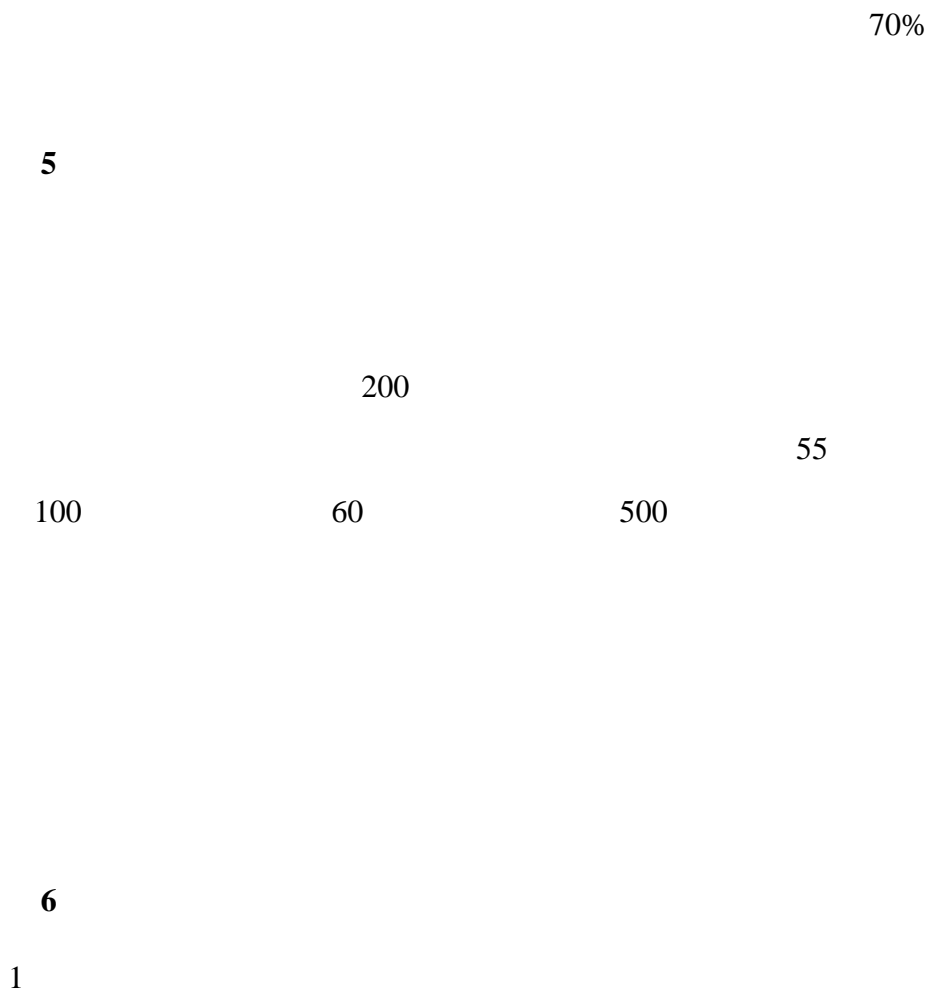
2

GDP

3



4





2020

15%

8

1

2

2020

2020







2016 12

1

2

3

4

5

6

7

2017 6

1  
2020 7600 2.1% 2  
2020 500  
95% 8% 2017  
2020  
3 2020  
2020 2015 17% 4  
500  
3,500 100%  
15% 5  
99.995% 27  
5  
10  
9.5 7,000  
95% 5  
280 14  
99.99% 7  
9

**6-13**

类别	指标名称	单位	2015年		2020年		属性
			2015年	2020年	年均增长(%)		
总量与结构	★能源消费总量	万吨标准煤	6852.6	7600	2.1	约束性	
	★煤炭消费量	万吨	1165.2	500	-15.6	约束性	
	★煤炭消费比重	%	13.7	4.7	[-9]	约束性	
	油品消费量	万吨	1583.8	1600	0.2	预期性	
	油品消费比重	%	33.5	30.5	[-3]	预期性	
	天然气消费量	亿立方米	145.4	190	5.5	预期性	
	天然气消费比重	%	29	31.6	[2.6]	预期性	
	★可再生能源消费量	万吨标准煤	450	620	6.6	约束性	
	★可再生能源消费比重	%	6.6	8以上	-	约束性	
	全社会用电量	亿千瓦时	952.7	1100	2.9	预期性	
电力发展	电力装机容量	万千瓦	1071	1300	3.95	预期性	
	其中:燃气装机容量	万千瓦	846.7	994.4	3.3	预期性	
	可再生能源装机容量	万千瓦	47	200	33.6	预期性	
	全市供电可靠率	%	99.9886	99.995	[0.0064]	预期性	
★单位地区生产总值能耗降低					17	约束性	
★单位地区生产总值二氧化碳排放降低					29.1	约束性	
电网综合线损率			6.80	6.78	0.18	预期性	
居民人均生活用电量	千瓦时	808.7	1000	4.3	预期性		
农网户均变电容	千伏安	2.5左右	3	0	预期性		
农网供电可靠率			99.97	99.99	0.01	预期性	

注:★为五年累计数;★主要指标共计20项,其中“★”为约束性指标,共计7项。

## 6-14 2020

能源品种	2015年			2020年		
	实物量	标准量 (万吨标准煤)	比重(%)	实物量	标准量 (万吨标准煤)	比重(%)
煤炭 (万吨)	1165.2	937.7	13.7	500	360	4.7
调入电 (亿千瓦时)	537	1504.1	21.9	770(含外调 绿色电力 100亿千瓦时)	2300	30.3
天然气 (亿立方米)	145.4	1984.9	29	190	2400	31.6
油品 (万吨)	1583.8	2298.3	33.5	1600	2320	30.5
其他能源 (万吨标准煤)	127.6	100	1.9	200	220	2.9
合计		6852.6	100		7600	100

根据国家第二次经济普查统计口径平衡测算。

3

1

2023

51.3GW

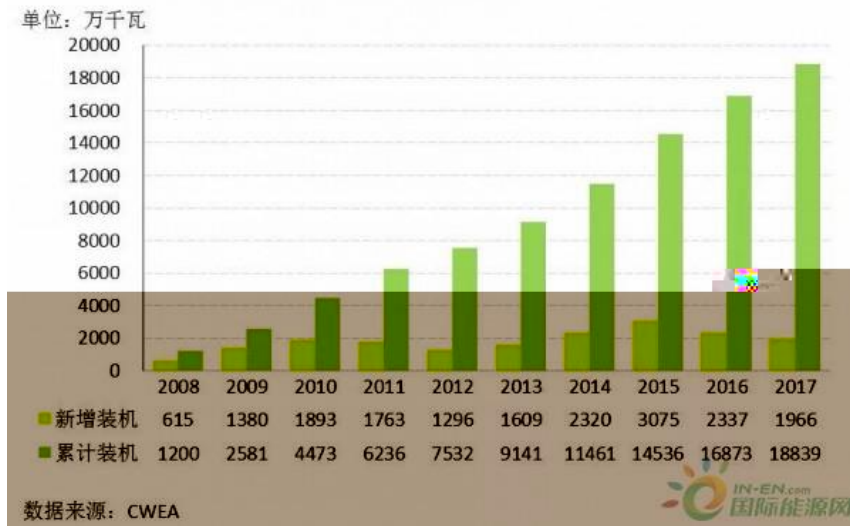
2017

55GW

2018

GWEC

6-4 2008-2017

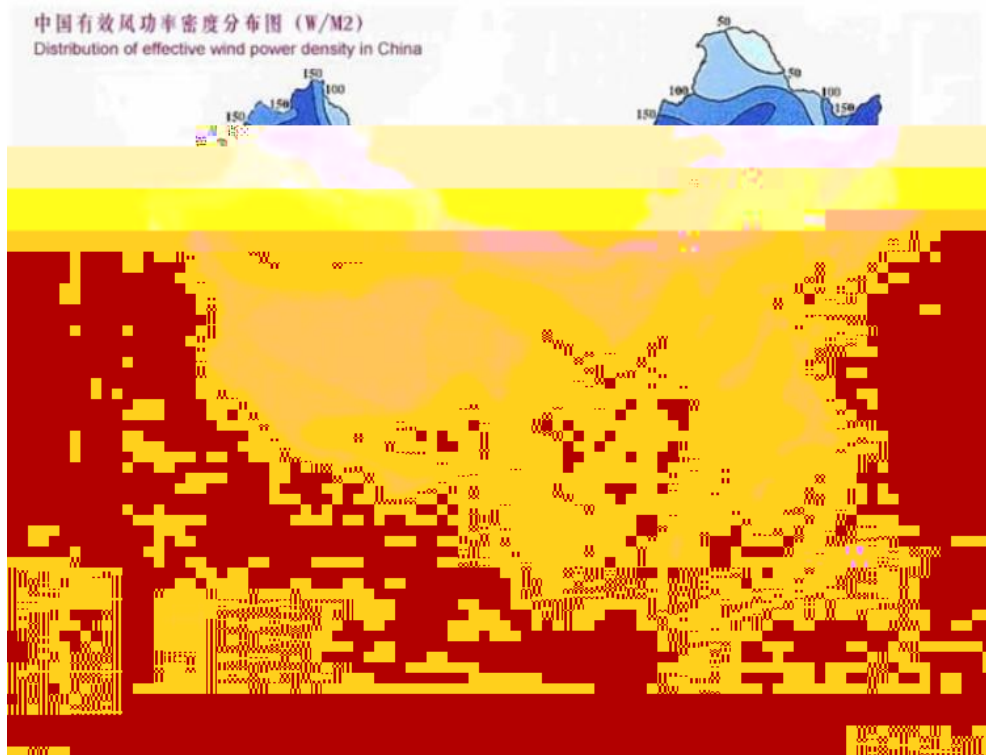


2

1

900  
10 100 /  
32.26 2.53  
7.5 10  
2,000 5,000  
2,500 1.8 2.3  
3,000 50

6-5



			/	200	
	200-300	/	500	/	
	2		79%		
		1,800		6,000	
			200	/	
			500	/	
	7,000-8,000				
		50			
				100	/
	3,000				
		10		7	
	20%	70%		20	

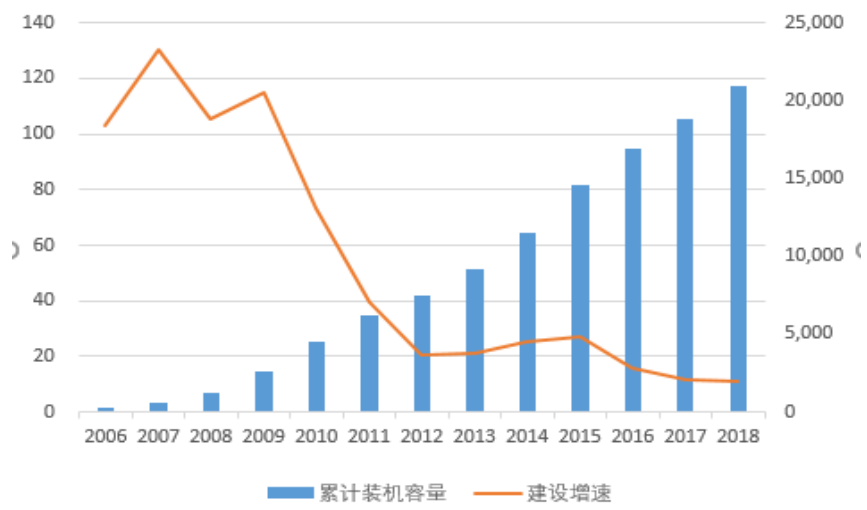


25 30

2

2018		1.84
2018	2,059	9.7%

6-6 2006-2018



Wind

3

2016 11

2020 2.1

500	4,200
-----	-------

6%

2005

2006 1



[2015]3044

2016 12

26

[2016]2729 2018 1 1

0.4

0.45 0.49 0.57

2019 5 21

[2019]882

1

2 2019 I

0.34 0.39 0.43

0.52 2020

0.29 0.34

0.38 0.47

3

4 2018

2020

2019 1 1 2020

2021

2021 1 1

4

2020

2015	14%	10%	2015	26%	33%
		50%			8%
					92%

1

2017	2352	17%	2010	75	2010
13%	20%				

2

63

2015

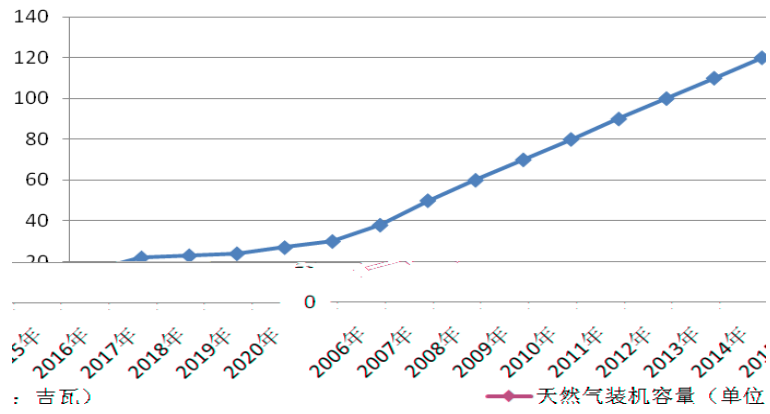
3

4

2015 8.5  
20% 70%  
3%  
100

5,000  
2015 2020  
100 300  
4,000

6-7



2

		2018		4,702
		1,308		845
838		780		410
	255	266		
				2018
		2,348.25	2018	
50.43		2,177		82
2019	1-9	34.22		8.38%

3

20% 2020 25% 2015

4

9F



**5**

**6**

**1**

1

20% 2020 25% 2015

2

3

**2**

[2010]30

1:1

63

2015

5.3

2

87.20

2019

2019 9

51.46

2019 9

**6-16**

**2019 9**

					<b>2019 9</b>
	50.00	3.92	0.78	3.14	1.13

					2019 9
	150.00	10.55	2.11	8.44	3.44
	200.00	13.00	2.60	10.40	3.45
50MW	50.00	3.54	0.71	2.83	1.19
	200.00	22.64	4.53	18.11	0.97
49.5MW	49.50	4.43	0.89	3.54	0.04
	<b>699.50</b>	<b>58.08</b>	<b>11.62</b>	<b>46.46</b>	<b>10.22</b>
50MWp	50.00	3.74	0.75	2.99	3.74
	20.00	1.47	0.29	1.18	1.05
	30.00	2.50	0.50	2.00	1.77
	100.00	6.34	1.27	5.07	5.62
	100.00	5.99	1.20	4.79	5.12
	110.00	7.04	1.41	5.63	7.51
	30.00	2.04	0.41	1.63	0.71
	<b>440.00</b>	<b>29.12</b>	<b>5.83</b>	<b>23.29</b>	<b>25.52</b>
	<b>1,139.50</b>	<b>87.20</b>	<b>17.45</b>	<b>69.75</b>	<b>35.74</b>



2020


2016-2018

**1**

**1** /

**6-18**

%

	2018		2017		2016	
	11,459.43	93.13	10,441.19	98.40	12,340.56	79.05

	2018		2017		2016	
	3,581.10	15.71	3,677.70	16.95	5,856.01	31.34
	2,065.61	9.06	1,989.49	9.17	2,018.13	10.80
	2.73	0.01	-	-	-	-
	82.86	0.36	-	-	-	-
	7,482.08	32.83	6,691.06	30.84	6,587.70	35.26
	-	-	5.26	0.02	-	-
	6.89	0.03	159.30	0.73	192.96	1.03
	1,764.15	7.74	1,824.80	8.41	14.20	0.08
	7.42	0.03	9.86	0.05	-	-
	1,665.73	7.31	-	-	-	-
	699.06	3.07	1,905.57	8.78	1,889.18	10.11
	-	-		0.00	1.39	0.01
	4,923.19	21.60	4,557.64	21.01	2,105.49	11.27
	6.87	0.03	78.23	0.36	5.08	0.03
	242.15	1.06	592.45	2.73	-	-
	109.05	0.48	192.37	0.89	-	-
	-	-	11.61	0.05	14.86	0.08

%

	2018		2017		2016	
	-	-	58.67	4.82	-	-
	14.99	57.63	1,157.84	95.18	1,345.24	95.51
	-	-	-	-	49.53	3.52
	-	-	-	-	13.70	0.97
	11.02	42.37	-	-	-	-
	<b>26.01</b>	<b>100.00</b>	<b>1,216.51</b>	<b>100.00</b>	<b>1,408.47</b>	<b>100.00</b>

2

1

**6-22 2016**

		220,000.00	2013/8/15	2017/8/15
		80,000.00	2012/12/21	2017/12/20
		120,000.00	2012/7/3	2017/6/30

**6-23 2017**

		676.00	2015/3/23	2025/12/23
		1,332.00	2014/12/4	2025/12/23
		520.00	2015/6/8	2025/12/23
		1,016.00	2015/8/10	2025/12/23
		908.00	2015/11/12	2025/12/23
		680.00	2015/12/3	2025/12/23
		2,376.00	2016/6/6	2025/12/23
		560.00	2016/6/7	2025/12/23
		1,656.00	2016/12/1	2025/12/23



**6-24 2018**


2

**6-25**

	2018	
	12,700.00	
	1,200.00	
	-	

**6-26**

	2018	
	-	
	169,925.00	90.

106,TET@MC q79.5

2020

---

			<b>2018</b>	<b>2017</b>	<b>2016</b>
			27.27	27.02	49.53

%

		2018	12	31	2017	12	31	2016	12	31
		790.27		4.80	723.91		1.55	-		-
		12,643.62		76.82	42,780.29		91.83	35,859.73		96.58
		1,292.54		7.85	1,292.54		2.77	751.38		2.02
		954.51		5.80	25.28		0.05	29.45		0.08
		-		-	1,377.57		2.96	-		-
		-		-	1.15		0.00	-		-
		775.72		4.71	252.05		0.54	471.22		1.27
		-		-	131.61		0.28	18.19		0.05
		1.75		0.01	-		-	-		-
		<b>16,458.41</b>		<b>100.00</b>	<b>46,584.40</b>		<b>100.00</b>	<b>37,129.97</b>		<b>100.00</b>



2019 1-9

2016 2017 2018

2016 2018

2019 1-9 5

2016 2017 ~~2018~~ 2019 1

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	<b>2019 9 30</b>	<b>2018 12 31</b>	<b>2017 12 31</b>	<b>2016 12 31</b>
	435,878.80	556,907.79	339,210.07	186,931.11
			24,717.48	26,575.02

	2019 9 30	2018 12 31	2017 12 31	2016 12 31
	322,445.19	325,108.36	296,680.40	354,085.47
	-	310.10	8,923.32	5,150.11
	7,362.49	8,889.94	-	-
	8,973.67	9,071.21	9,103.39	8,142.85
	14,526.45	30,616.66	26,583.59	23,589.76
	40,074.62	42,331.97	25,500.89	25,947.29
	138,459.92	147,025.61	225,621.58	750,044.66
	660,646.34	600,790.53	600,623.43	600,569.51
	<b>1,654,238.69</b>	<b>1,696,714.90</b>	<b>1,981,474.56</b>	<b>2,016,429.65</b>
	1,185,646.29	1,164,035.02	905,948.81	896,501.28
	349,009.43	349,009.43	200,000.00	-
	21,458.13			
	29,476.11	29,597.97	29,958.36	40,847.53
	81,769.95	62,653.43	56,926.77	47,956.56
	12,510.13	12,542.40	14,154.18	9,618.13
	7,318.99	7,911.87	3,924.27	20,297.07
	<b>1,687,189.03</b>	<b>1,625,750.12</b>	<b>1,210,912.39</b>	<b>1,015,220.57</b>
	<b>3,341,427.72</b>	<b>3,322,465.02</b>	<b>3,192,386.94</b>	<b>3,031,650.22</b>
	824,450.81	824,450.81	687,042.35	687,042.35
	-	-	148,650.00	148,650.00
	388,085.79	388,085.79	223,570.67	223,027.87
	-17,988.63	-16,275.73	3,122.78	-13,593.38
	99,879.37	99,879.37	80,892.92	62,211.49
	935,765.04	827,599.26	711,209.47	599,856.29
	2,230,192.39	2,123,739.51	1,854,488.19	1,707,194.62
	46,068.88	39,747.58	56,912.14	48,780.77
	<b>2,276,261.27</b>	<b>2,163,487.09</b>	<b>1,911,400.32</b>	<b>1,755,975.39</b>
	<b>5,617,688.99</b>	<b>5,485,952.11</b>	<b>5,103,787.27</b>	<b>4,787,625.61</b>

2

7-2

	2019 1-9	2018	2017	2016
	<b>1,178,002.93</b>	<b>1,658,446.04</b>	<b>1,452,084.89</b>	<b>1,484,882.35</b>
	916,181.11	1,274,555.87	1,158,334.81	1,202,044.16
	13,290.77	21,897.83	17,094.30	11,216.68
	-	-	-	-
	34,762.09	53,295.84	46,379.94	41,217.03
	-	97.10	26.71	-
	83,661.47	119,903.52	105,162.53	99,813.17
	-	11,333.41	2,396.11	9,732.11
	-	1,387.62	-	-
	1,462.94	-6,074.52	-120.98	-10,199.25
	12,599.68	11,438.81	5,420.20	23,574.17
	10,383.19	7,887.97	4,795.86	21,283.53



	<b>2018</b>	<b>2017</b>	<b>2016</b>		
	97,664.09	1,640,270.43	1,687,323.95		
	11,966.84	14,066.03	11,541.08		
	98,659.06	134,056.75	108,406.89		
	<b>108,289.99</b>	<b>1,788,393.22</b>	<b>1,807,271.92</b>		
	54,089.20	1,031,718.53	1,096,392.85		
	76,920.74	69,423.23	61,404.94		
	9,128.35	167,158.09	139,702.90		
	38,202.17	28,136.62	27,168.21		
	<b>78,340.47</b>	<b>1,296,436.48</b>	<b>1,324,668.90</b>		
	<b>29,949.52</b>	<b>491,956.74</b>	<b>482,603.02</b>		
	14,200.00	600.00	27,000.00		
	5,977.08	9,967.83	13,202.28		
	192.11	95.51	14.67		
	-	-	-		
		7,269.31	27,282.93	25,030.00	11,854.23
		<b>12,803.98</b>	<b>47,652.12</b>	<b>35,693.34</b>	<b>52,071.18</b>
		338,263.07	349,790.82	354,576.10	374,558.06

	2019 1-9	2018	2017	2016
	1,289,765.91	2,718,745.67	2,753,466.00	1,726,512.81
	149,151.15	159,020.83	180,276.87	167,148.72
	14,967.89	89,272.37	80,124.77	45,059.14
	<b>1,453,884.95</b>	<b>2,967,038.87</b>	<b>3,013,867.65</b>	<b>1,938,720.66</b>
	<b>-174,134.95</b>	<b>86,913.86</b>	<b>-43,566.61</b>	<b>-175,370.44</b>
	-855.34	<b>6,388.31</b>	<b>162.97</b>	<b>813.25</b>
	<b>-122,704.22</b>	<b>278,630.18</b>	<b>90,685.62</b>	<b>-35,498.20</b>
	551,187.02	272,556.84	181,871.22	217,369.42
	<b>428,482.80</b>	<b>551,187.02</b>	<b>272,556.84</b>	<b>181,871.22</b>

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7-4

	2019 9 30	2018 12 31	2017 12 31	2016 12 31
	89,815.53	168,047.75	151,365.77	24,344.34
	56,443.35	50,083.47	37,279.17	22,624.77
	2,710.15	1,284.04	338.26	301.76
	384,235.70	526,186.10	344,843.80	236,699.65
	215.80	283.71	78.85	88.35
	1,500.00	2,000.00	114,000.00	134,600.00
	918,375.86	765,400.51	426,817.90	476,870.96
	<b>1,453,296.39</b>	<b>1,513,285.58</b>	<b>1,074,723.75</b>	<b>895,529.84</b>
	-	-	12,802.75	12,802.75
	13,624.09	13,624.09	-	-
	1,863,509.33	1,802,351.21	1,706,236.69	1,672,162.35
	124,175.81	131,437.26	141,904.88	91,064.05
	3,717.44	3,662.51	2,833.57	75,934.53

	<b>2019 9 30</b>	<b>2018 12 31</b>	<b>2017 12 31</b>	<b>2016 12 31</b>
	687.44	736.74	474.02	512.81
	-	-	-	1,156.23
	4,131.91	4,131.91	4,389.62	1,795.32
	228,347.19	234,314.07	156,084.44	134,830.09
	<b>2,238,193.22</b>	<b>2,190,257.79</b>	<b>2,024,725.97</b>	<b>1,990,258.13</b>
	<b>3,691,489.60</b>	<b>3,703,543.36</b>	<b>3,099,449.72</b>	<b>2,885,787.97</b>
	266,900.00	406,970.52	393,000.00	104,000.00
	2,152.22	3,303.76	4,444.73	3,202.83
	-	-	-	-
	1,033.83			



**7-6**

	<b>2019</b>	<b>1-9</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
		14,126.25	28,037.42	33,754.52	21,634.74
		1,456.31	1,672.92	1,713.74	1,766.45

	<b>2019 1-9</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
	1,319.05	119,178.24	64,201.61	2,540.95
	<b>1,129,922.76</b>	<b>2,278,242.89</b>	<b>2,439,628.38</b>	<b>1,359,236.73</b>
	<b>-111,022.76</b>	<b>403,393.84</b>	<b>-85,228.38</b>	<b>-42,355.41</b>
	1.39	1,056.78	-27.10	24.14
	<b>-78,232.22</b>	<b>77,941.98</b>	<b>66,021.43</b>	<b>4,940.62</b>
	168,047.75	90,105.77	24,084.34	19,143.71
	<b>89,815.53</b>	<b>168,047.75</b>	<b>90,105.77</b>	<b>24,084.33</b>

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		84,294,957.79
		-84,294,957.79
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**2018 12 31**

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	-
	88,899,423.12



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	-88,899,423.12

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**7-9**

		247,174,808.69			247,174,808.69
		-			-
		-			-
		128,027,500.00			-
					142,347,500.00
		4,313,479,265.31			4,313,479,265.31
					-
		232,095,284.26			-
					232,095,284.26
		-			-
					-

					-

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**7-10**

	<b>2017 12 31</b>			<b>2018 1 1</b>
	247,174,808.69	-247,174,808.69	-	-
	-	247,174,808.69	-	247,174,808.69
	4,313,479,265.31	-	-	4,313,479,265.31
	232,095,284.26	-	-	232,095,284.26
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	524,101,608.36	-	-	524,101,608.36
	128,027,500.00	-128,027,500.00	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	128,027,500.00	14,320,000.00	142,347,500.00
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

2019

	<b>2017 12 31</b>			<b>2018 1 1</b>
	-	-	-	-
	31,227,846.88	-	10,740,000.00	41,967,846.88
	808,929,170.12	-	-	808,929,170.12
	7,112,094,654.64	-	-	7,112,094,654.64
	569,121,375.72	-	-	569,121,375.72

2017

2018

7-11

	<b>2017 12 31</b>			<b>2018 1 1</b>
	-	-	-	-
	3,319,878.77	-	-	3,319,878.77
	10,814,017.56	-	-	10,814,017.56
	-	-	-	-

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42 2017 5 28		1,970,180,860.93 0.00
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2017 30		60,073.60 23,129,594.46 3,903,697.05

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	<b>2019</b> <b>2019</b>	<b>1-9</b> / <b>9</b>	<b>2018</b> / <b>2018</b>	<b>2017</b> / <b>2017</b>	<b>2016</b> / <b>2016</b>
		561.77	548.60	510.38	478.76
		334.14	332.25	319.24	303.17
		281.25	282.50	275.35	257.98
		227.63	216.35	191.14	175.60
		117.80	165.84	145.21	148.49
		21.16	26.58	24.79	26.27
		16.95	20.24	19.70	21.87
		16.80	20.55	19.52	22.58
		16.32	19.39	18.86	20.92
		39.78	52.99	49.20	48.26
		-34.56	-34.46	-35.79	-34.35
		-17.41	8.69	-4.36	-17.54
		0.73	0.75	0.48	0.35
		0.72	0.74	0.47	0.35
<b>%</b>		59.48	60.56	62.55	63.32
<b>%</b>		55.27	56.63	59.03	59.50
<b>%</b>		22.23	23.15	20.23	19.05



	2019 2019	1-9 9	/	2018 2018	/	2017 2017	/	2016 2016	/
%		5.31		7.06		7.08		7.49	
%		7.63		9.93		10.74		12.96	
%		10.09		10.09		10.64		13.39	
<b>EBITDA</b>		47.76		60.05		57.61		54.55	
<b>EBITDA</b>		0.17		0.21		0.21		0.21	
<b>EBITDA</b>		5.27		4.92		5.22		5.53	
		2.11		3.40		3.65		4.24	
		74.57		103.56		89.55		91.58	

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