

300487

100.5

74.96

400

6

200 200

100

46%

2021H1

38

PCT

5

46

2030

139-268

45-174

80

12

(12)

110.48/37.45

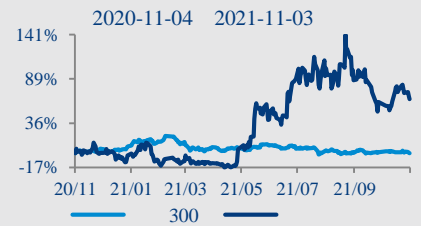
+ +

+

2018 2019 2020 2021H1

1/3.85/1.95/0.94

SQM Ansson Vulkan



2019

66.2
47%
264.09/1204.81

Verified markrt research
2027 114.1
2025

2934.36/13386.78

50% 3

80%

239 2020

356.2

583

2018

10%

310

70%

2025

40-60%

+

5.3

2021-2023

3.4 4.4

2022 EPS 50

1.56

2.01

2.41

/

100.5

/

PE

TTM

	2020	2021E	2022E	2023E
()	923	1,390	1,843	2,196
(%)	-8.8%	50.6%	32.6%	19.2%
()	203	343	441	530
(%)	-19.6%	69.9%	28.5%	20.1%
()	0.94	1.56	2.01	2.41
()	80	48	37	31
()	10	9	7	6

2021 11 3

	.....	8
	.....	12
	.....	15
	.....	15
	.....	18
+	.....	25
	.....	25
+	.....	26
+	.....	33
	.....	36
	400	36
	.....	39
	.....	42
	.....	42

1	.....	8
2	.....	8
3	.....	9
4	.....	9
5	.....	9
6	.....	9
7	.....	10
8	.....	10
9	.....	10
10	.....	10
11	.....	11
12	.....	11
13	.....	11
14	.....	12
15	.....	12
16	.....	12
17	/	12
18	.....	13
19	.....	13
20	.....	44
21	.....	14
22	.....	14
23	.....	14
24	.....	15
25	.....	15
26	2021 10 4	

34	.....	20
35	.....	21
36	.....	21
37	.....	21
38	.....	21
39	2018	21
40	.....	21
41	.....	22
42	.....	22
43	.....	23
44	.....	23
45	.....	23
46	.....	24
47	.....	24
48	.....	24
49	.....	25
50	ASTM	26
51	.....	27
52	.....	28
53	.....	28
54	2015-2025 8 ,K wpm	28
55	2015-2025 8 ,K wpm	28
56	.....	28
57	.....	29
58	.....	29
59	.....

68	.....	34
69	.....	34
70	.....	35
71	.....	35
72	.....	35
73	.....	35
74	.....	35
75	.....	35
76	.....	36
77	.....	36
78	.....	36
79	.....	38
80	.....	39
81	.....	39
82	.....	40
83	.....	40
84	.....	41
85	.....	41
86	2016	41
87	2016	41
88	2019	41
89	2019	42
90	PE(TTM)	42

2001 4 5
4 / 100
30 100

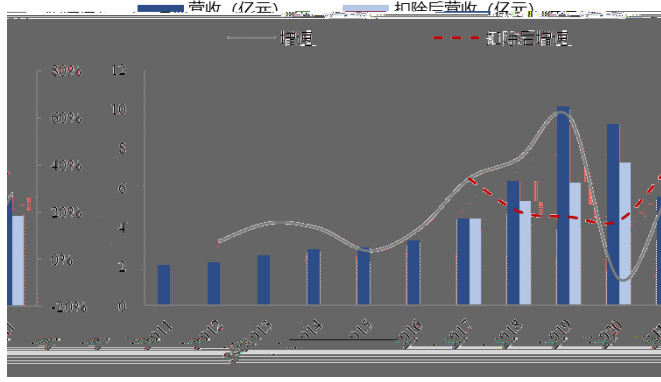
1

25.02% 9
2018 2019
Lonex Puritech
2019

2020

1/3.85/1.95/0.94
2021H1 4.6

3

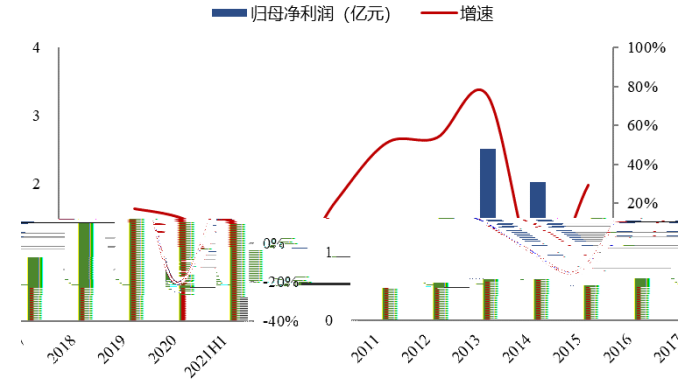


2020

2018 2019 2020 2021H1
2020 18%

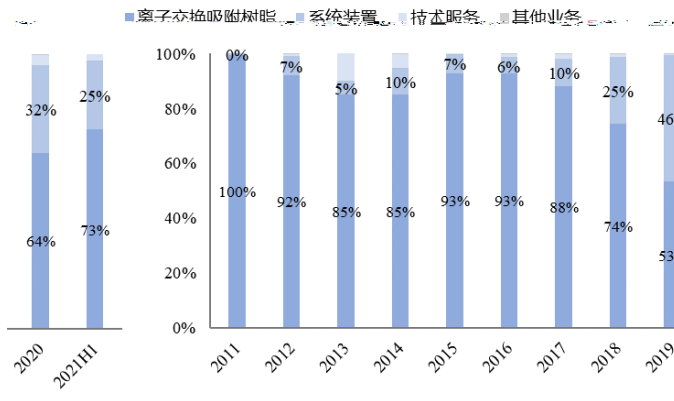
38%

4



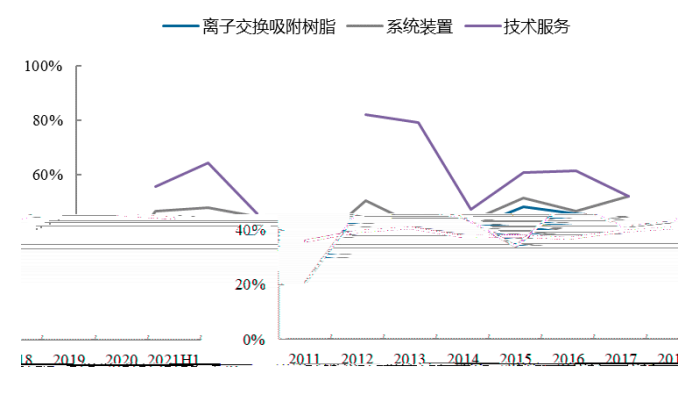
25.19% 2011 2021H1
27% 2021H1
31pct 52%

5

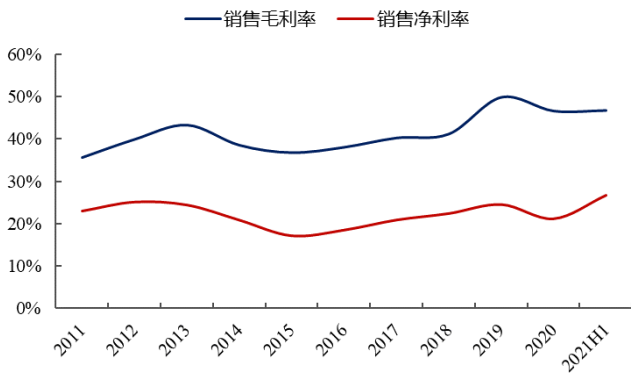


24.7% 2011 2021H1
36% 2021
73% 2020
11pct 47% 4pct
3% 40% 2011

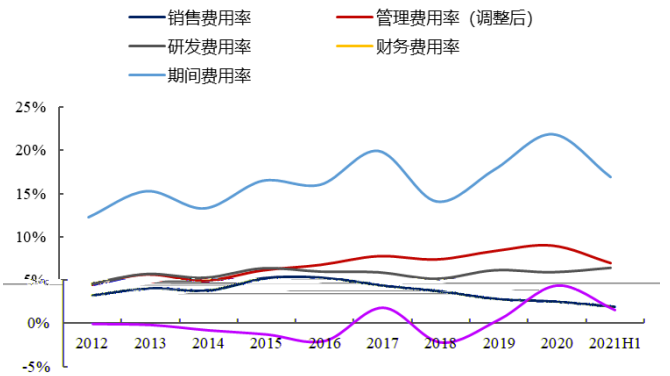
6



7



8

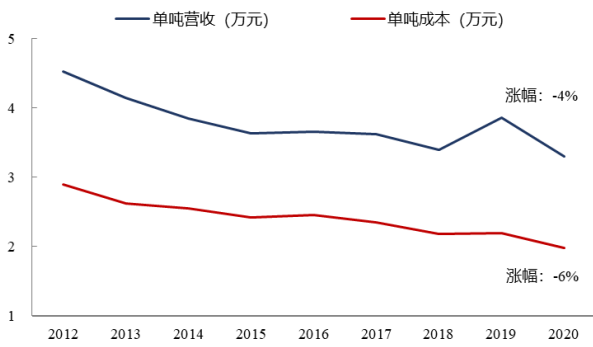


2017

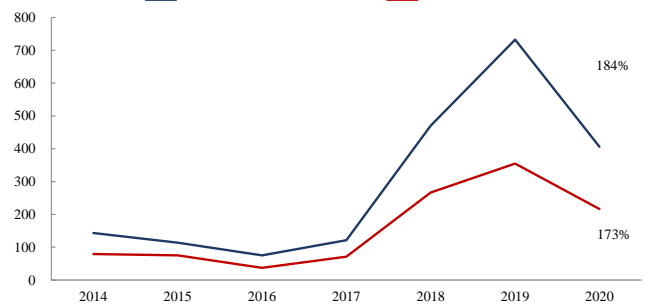
1.57 / 184% 173%

2012-2020 2018 6% 2020 2014-2020

9



10



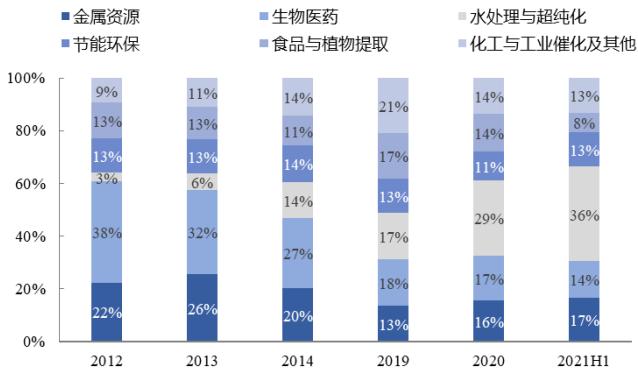
2021H1

35%

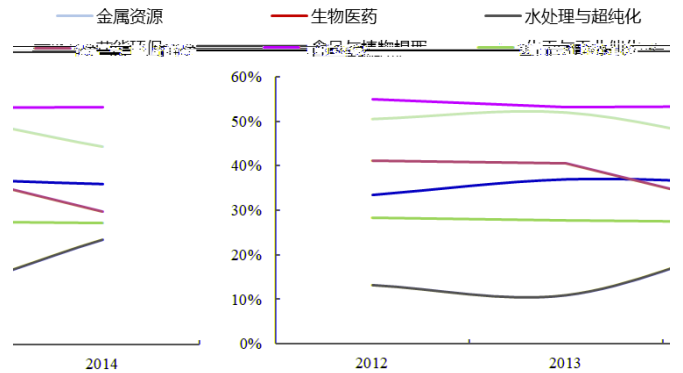
40%-60%

50%-55%

11



12



2015-2018

2015

13

	2020		2021Q1		2020		2021Q1	
	Value	Value	Value	Value	Value	Value	Value	
	7996	2740	-	-	-	-	7135	
	680	88	408	53	60.00%	60.23%	1013	
	45	167	22	129	48.89%	77.25%	6446	
	823	771	425	421	51.64%	54.60%	1341	
	533	164	451	151	84.62%	92.07%	644	
							1169	

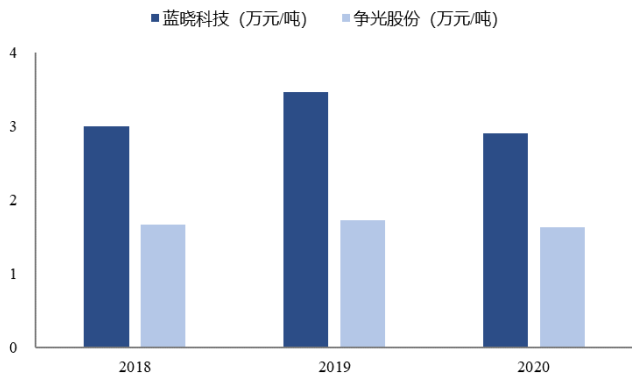
1.3-1.7

66%

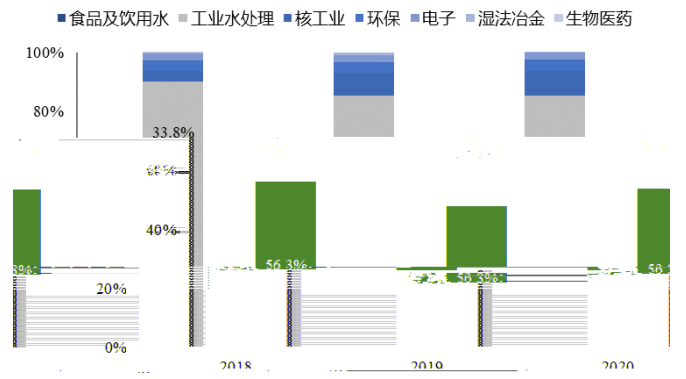
45%

10%

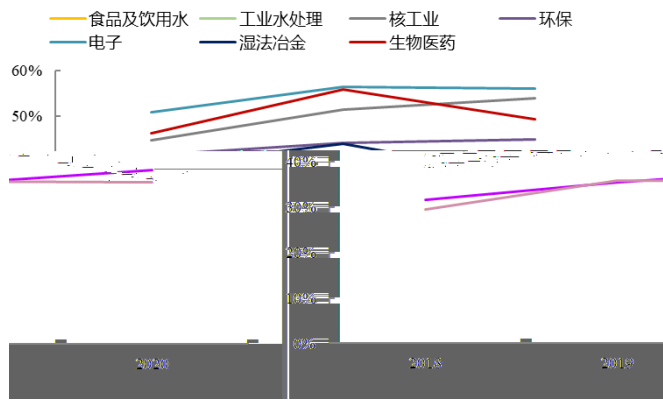
14



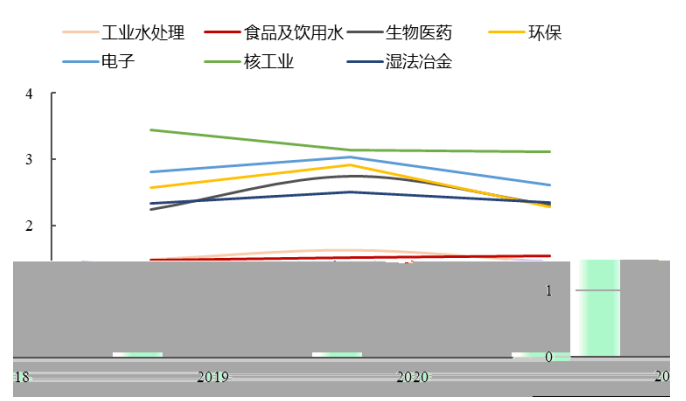
15



16



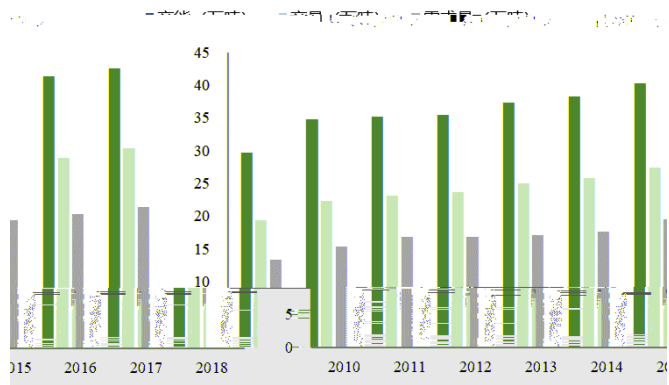
17



18

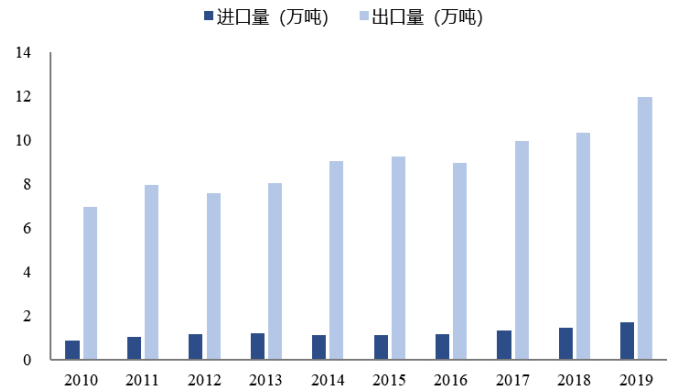
19

20



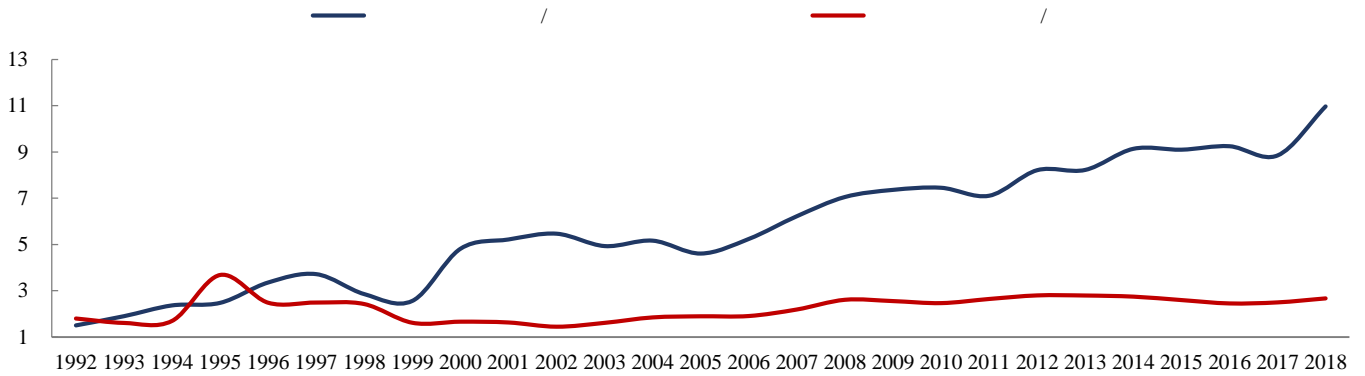
2019

21



2019

22



2018

21.56

47%

15

46%

3-5%

47%

53%

46%

23

				6	
				400	

1

10-30%

3

2

2021Q1

1

1
5.78/4.68/0.23
600

3
2021H1

10000 / ED

Vulkan

2020

2021Q1

SQM

Ansson

60%/60.2% 2020

7.4%

680/88

26

2021 9 31

	2018 3 24	1	10	5.78	5.09
	2018 6	3kt/a	2021 3	4.68	3.26

2019

+

4.68 6.24

3000

3

4000

		-		+		
		3		-		
		4		-		
		600		+		

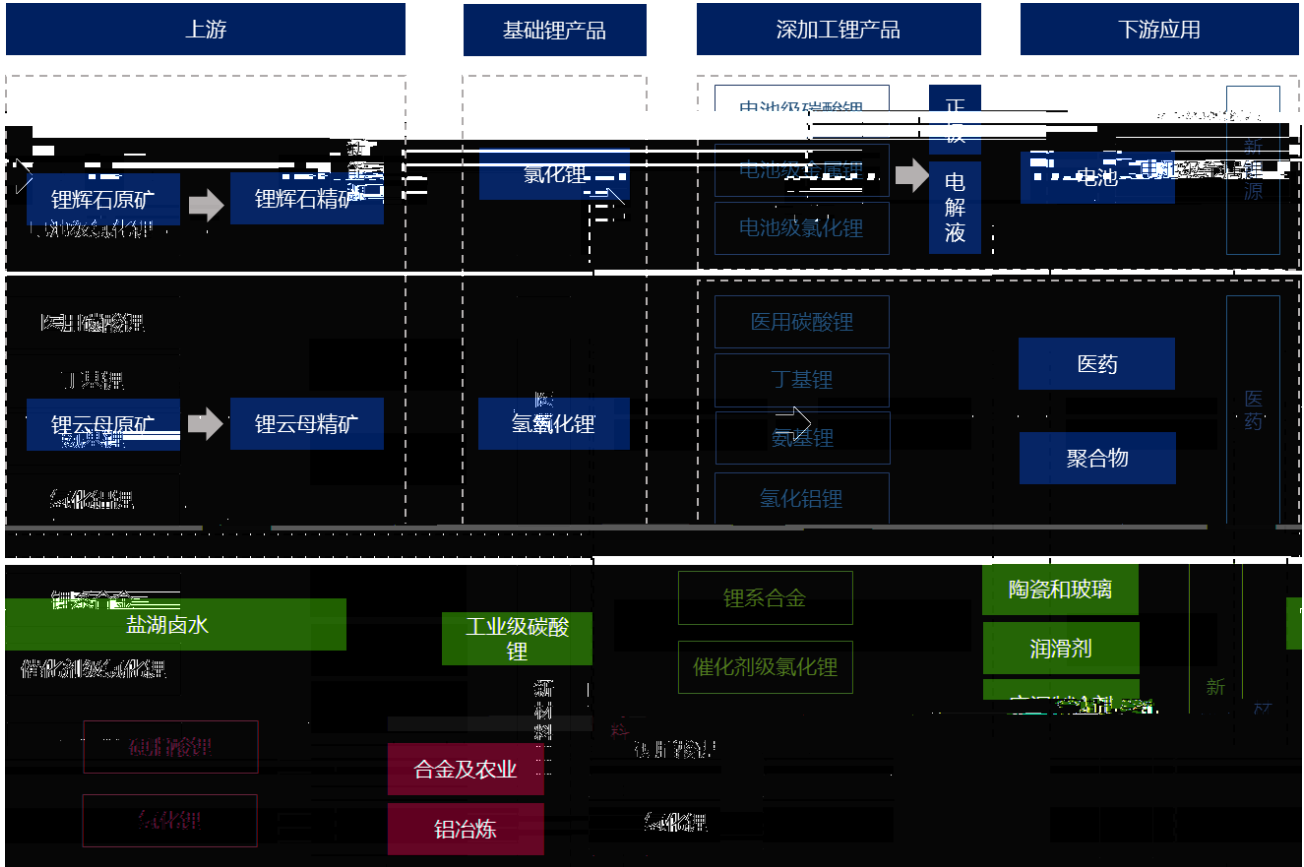
1

w(NaCl)_{eq}>3.5%

200

64%/29%/7%

28



29 2020

30 2021

2

7-9k \$/t

64%

18-24

÷ [" 6 ä , " 6] ¼ ' 0t]

31

	, Li ₂ O 0.3%-2.4%	, Li ₂ O 0.09%-0.32%
LCE	7000-9000 \$/t	2000-4000 \$/t
	1 -3	18-24

2

32

33

WIND, USGS,

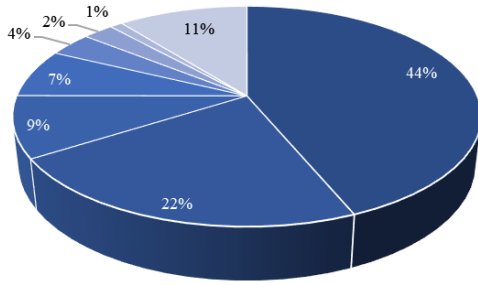
65% ,

34

		Li/%	Li/10 ⁶ t	2018	LCE
Uyuni		0.053	10.2		
Atacama		0.157	6.3	SQM 7 t/a,ALB	4.4 t/a
Antofalla		0.035	2.22	Advantagelithium Orocobre	2019 2 t/a
Centenario		0.032	1.86	Eramet 2022 2 t/a	
Rincon		0.033	1.56	Rincon 2022	2.8 t/a
SaldeVida		0.063	1.36	Galaxy 2018	2.5 t/a
Olaroz		0.06	1.21	Orocobre	1.25 t/a
Cauchari		0.052	1.06		

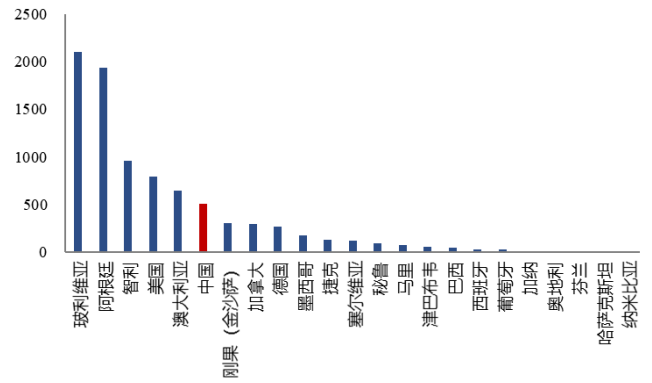
35

智利 澳大利亚 阿根廷 中国 美国 加拿大 津巴布韦 其他国家



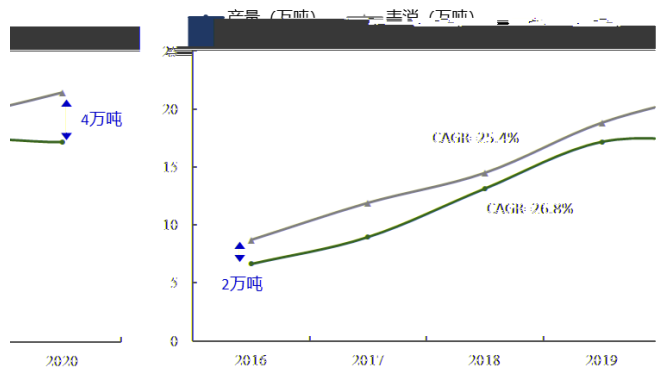
USGS

36

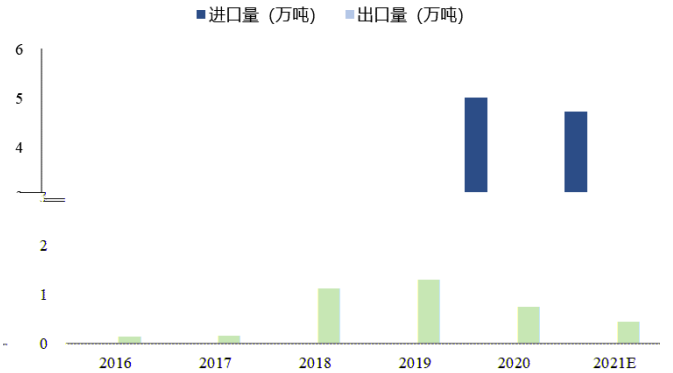


USGS

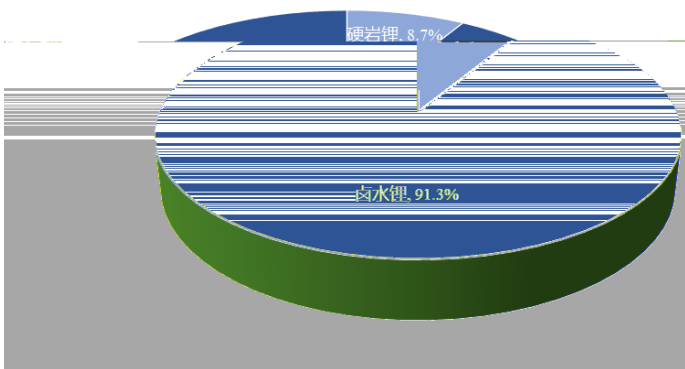
37



38



39 2018



40

方法	投入/成本	代表企业
沉淀法	1.5-2	西藏珠峰, 西藏矿业成本较高(3万左右)
吸附法	3.1-3.6	蓝科锂业, 藏格控股
盐湖卤水 萃取法	2-3	大华化工, 兴华锂盐
电渗析膜法	2 (1万吨总投入4亿)	青海锂业
纳滤膜分离法	6 (1万吨膜系统的投入在6-7亿)	恒信融

20:1-1600:1

0.01:1

41

		359.96	1073.23	427.19	1545.42	LiCl
		2348.8	-	--	2348.8	Li ₂ CO ₃
		-	-	309.09	309.09	LiCl
		1.42	36.14	153.11	189.25	Li ₂ O
		0.08	2.71	11.56	14.27	Li ₂ O
		2.2	-	-	2.2	Li ₂ CO ₃
		0.2	-	-	0.2	Li ₂ CO ₃
		32.99	37.15	5.61	42.76	Li ₂ O
		-	-	7.02	7.02	Li ₂ O
		0.01	0.01	35.53	35.54	Li ₂ O
		-	-	4.14	4.14	Li ₂ O
		-	-	16.94	16.94	Li ₂ O

42

			(mg/L)					
		284.78	850	35.2:1		2		
						1		
		308	220	90.5:1		2	(+
		1623.47	310	1577:1		3		+
						1		+
		178.39	210	100n-US				

2

								2020	
	299		2025	2030			1143	2243	10
7			22%			2020			137
	2025	2030	2035	600	1200	1500	15		10
	17%								

43

44

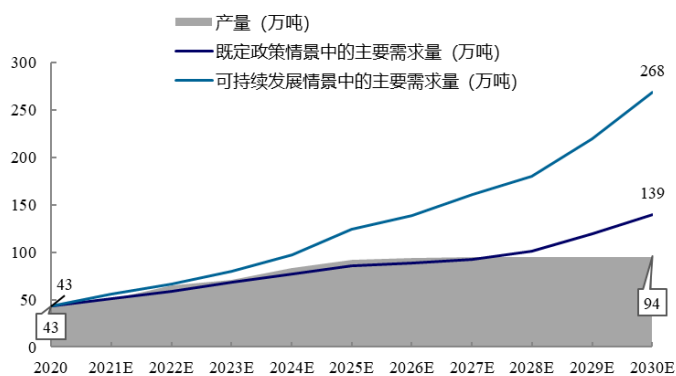
IEA

45

						0.105kg	2021
	18.9	7.8	2025	2025	65	20.9	2021

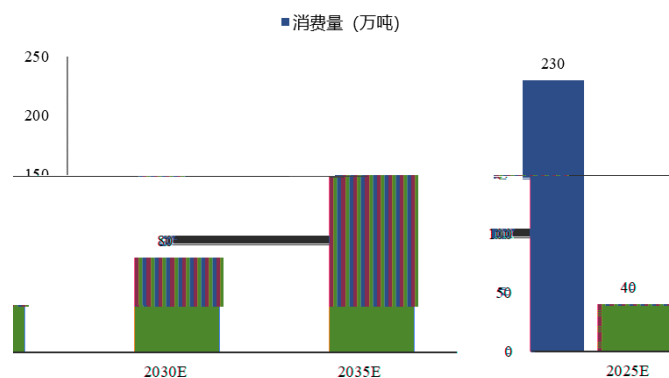
		2021	2022	2023	2024	2025
	/GWh	113	153	207	279	374

46



IEA,

47



3

2

2021

+

48

			Li2CO3	
			75-85%	15%-20%
	Mg2+/Li+			
		40		
			1	2

			3	
			4	

SMM,

49

	+		
	+		
	+		
	+		

1

2 2

3

20% 40%

20 30-50%

90% 70-85%

2020 1.70 -9.24%

28.7% 2021H1 1.45 +85% 36%

2015 2019 7

2020 ASTM

2020 2021Q1

823/771 51.6%/54.6% 2020

4.8%

+

1

25

18.25 cm

TOC

: (GB/T
(ASTM-D5127-13)

11446.1-2013)

ASTM

50 ASTM

Parameter	TypeE-1	TypeE-1.1	TypeE-1.2	Sunresin
Linewidth (microns)	1.0-0.5	0.35-0.25	0.18-0.09	-
Application	PCP LED	OLED	Mircons	OLED/Microns
Resistivity,25	18.1	18.2	18.2	18.2
-line)	5	2	1	0.45-0.70
)	25	10	3	0.9
On-line particles/L(micron range)				
0.05-0.1	-	1000	200	30-50
0.1-0.2	1000	350	<100	10-25
	3	1	0.5	0.10-0.12
	0.1	0.1	0.05	<0.05
	0.05	0.02	0.005	<0.005

1 Resistivity H+ OH- 18.20

2 TOC :

3 Dissolvedoxygen

4 On-lineparticles/L(micronrange)

5 SilicaDissolved

6 AnionsandAmmonium

7 MetalsbyICP/MS

51

	Dupont				
	AmberTec™UP6040		Monojet®6040U		-
	(H)	(OH)	(H)	(OH)	-
	525±50	630±50	600±50	630±50	
(%)	45-51	54-60	43-51	50-60	
(%)		-		-	
(%)	-		-		
Delta TOC(ppb)					

1

1

2

3

4

 5 *H+*

 6 *OH-*

 7 *DeltaTOC* *TOC* *1ppb*
2

Verified markrt research 2019 66.2
 2027 114.1 2020-2027 CAGR 7.6%

47%/18%/10%/9%/8%

1 Technavio
 2018-2022 8% 2022 41.7

1/3

	2015	2020E	2025E
/			
	141.12	290.16	400.14
	1266.48	1338.39	1425.33
	1407.60	1628.55	1825.47
/			
	93.14	191.51	264.09
	835.88	883.34	940.72
	929.02	1074.84	1204.81
/			
	1034.88	2127.84	2934.36
	9287.52	9814.86	10452.42
	10322.40	11942.70	13386.78

SEMI

2

2021 7 5326 2.3%

2035

7000

2025

2020

7000/3000 1 2035

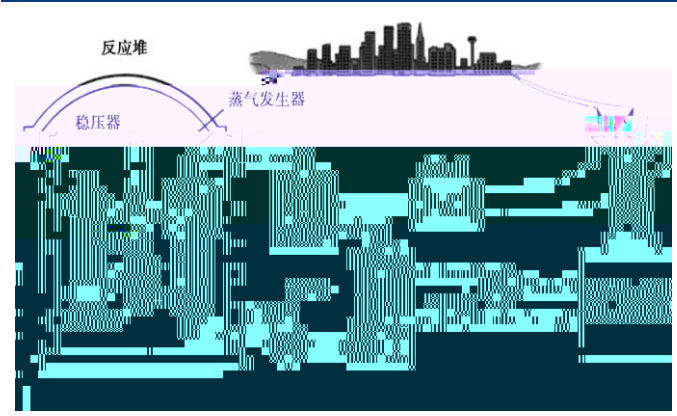
2 5 1 10 2 2021 9

18/37/168

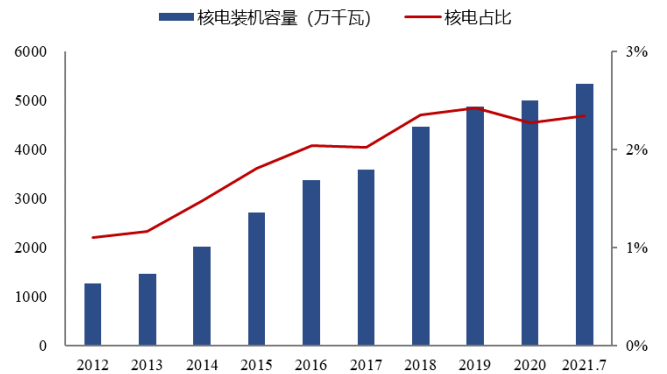
51

6-8

57



58



WIND

59

60

2035

WIND

2020

2020

3926

2553

9.5%

2030 2050

496/715GWe

5.1% 5.2%

366/371GWe

3.7% 2.7%

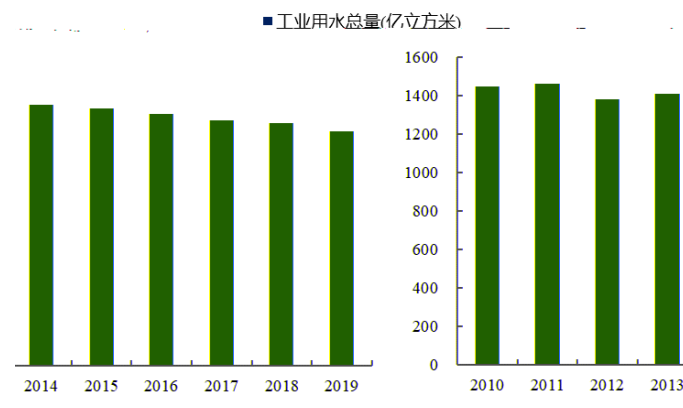
		75%		1.3×10 ³
MCDI	+			18

4

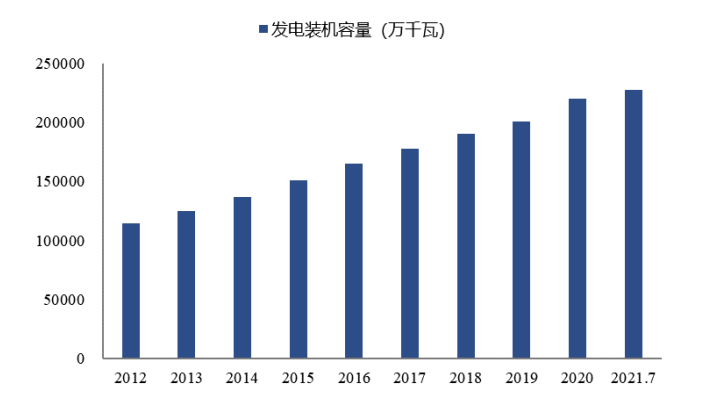
65

				40-100m/h
		H OH		
	H 6	OH	DOW Rohm & Hass	3 ,

68



69



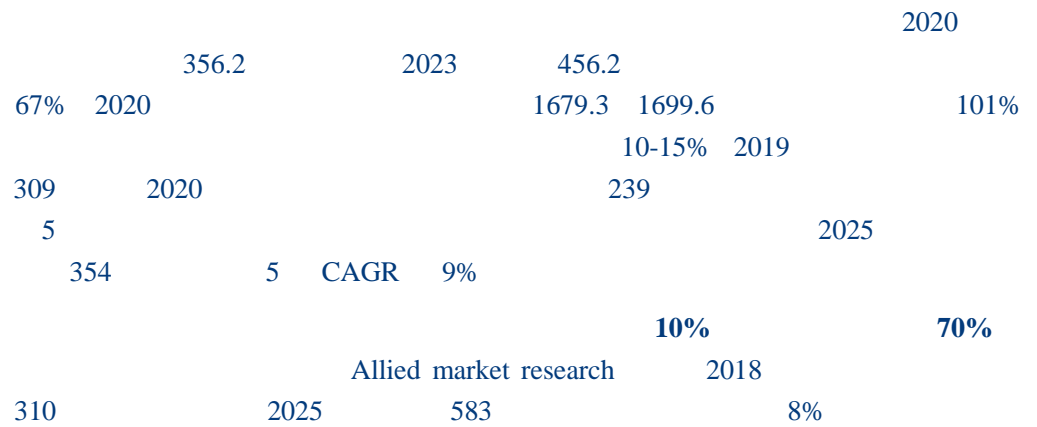
WIND,

2

80%

25% 2012-2020 CAGR

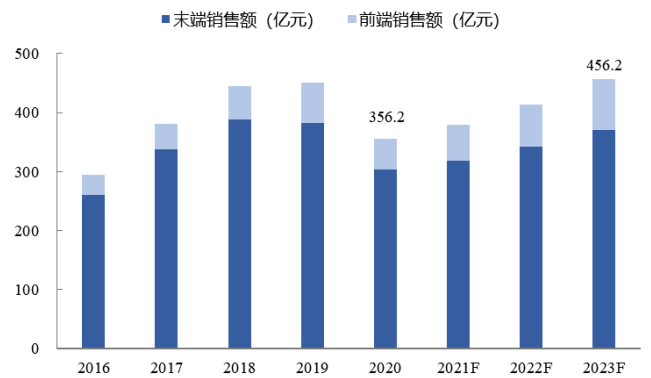
5



70

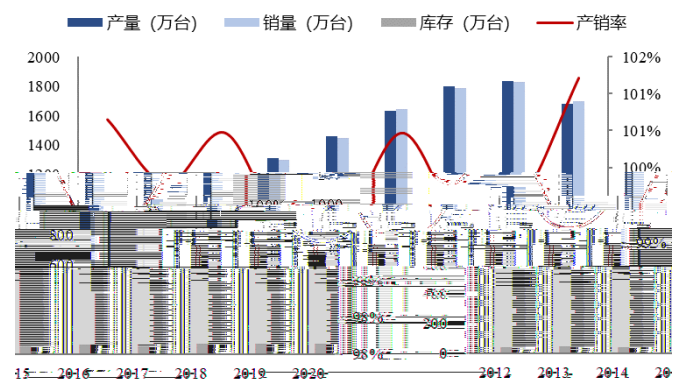


71

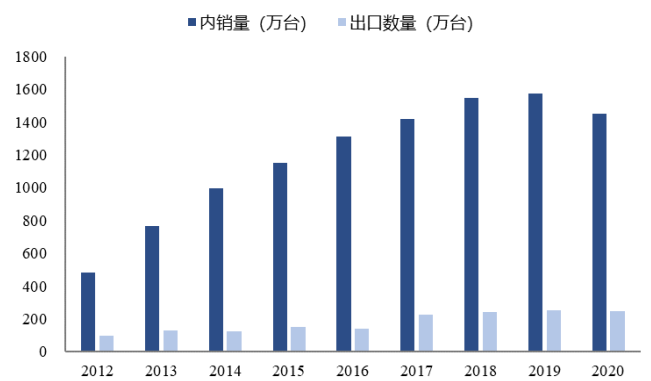


2020

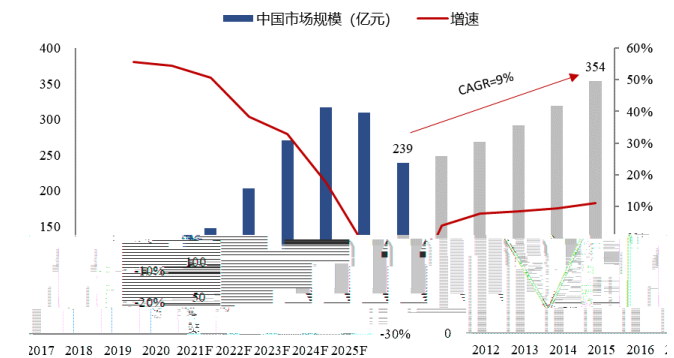
72



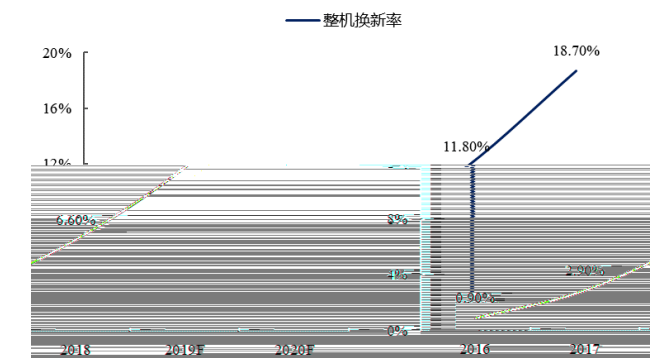
73



74



75



	Oligonucleotide		
		S-	
			1. 2. 3. 600 4. 1 / ED 5. SQM Ansson Vulkan 6. 4000 7. 8. 9. 10. 11.
		BDO	BYD
			CO2

			1. 90 95
			2.
			3.
			CBD

79

Sepsolut®		C- E		
Puritech®				
		MTBE		
SMB				
SSMB				
	1 2 3 /	CBD		
EPC			-	1 2

			3
	EPC	-	

+

+ +

2018

2020

2021

2021

			010-66500809	zhangyujie@hcyjs.com
			010-66500817	zhangfeifei@hcyjs.com
			010-63214670	houchunyu@hcyjs.com
			010-63214683	houbin@hcyjs.com
			010-63214683	guoyunlong@hcyjs.com
			010-66500867	liuyi@hcyjs.com
			010-63214683	dana@hcyjs.com
				cheyizhe@hcyjs.com
			0755-82828570	zhangjuan@hcyjs.com

(300)

6	20%		
6	10%	20%	
6		-10%	10%
6	10%	20%	
3-6			5%
3-6		-5%	5%
3-6			5%

	26		1061		33
C 3A		A 19		12	
100033		518034		200120	
010-66500801		0755-82027731		021-20572500	
010-66500900		0755-82828562		021-20572522	