



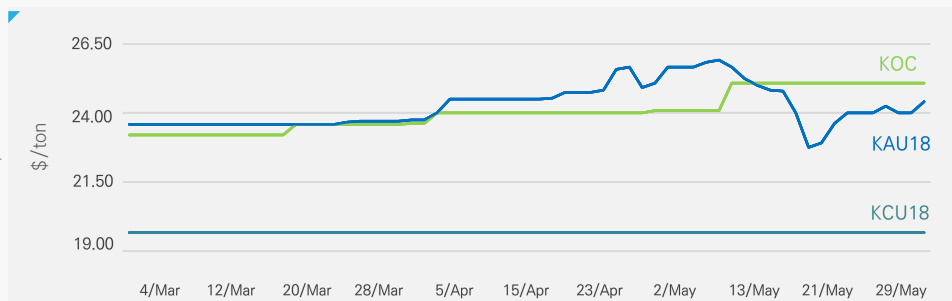
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- 02/ Korean Offset Status
- 03/ Q & A
- Hot Topic

K-ETS Summary

May 2019

KAU18			KCU18			KOC		
	▼ 24.42 \$/ton	After May,2019 ▼ \$ 0.71		19.36 \$/ton	After May,2019 \$ 0.00		▲ 25.13 \$/ton	After May,2019 \$ 1.07
	Avg. Price (\$)	Volume (1K ton)		Avg. Price (\$)	Volume (1K ton)		Avg. Price (\$)	Volume (1K ton)
KRX	24.42	1,292	KRX	24.73	0	KRX	19.36	25
OTC	-	970	OTC	-	0	OTC	-	632



'#2' Insight Hot Topic

- Revision on K-ETS Allocation Plan Revealed at Public Hearing on 21st of May.
- GHG reduction and energy transition is the basic concept of the national emission trading scheme.
- 'Banking Limit' draft will be released soon after embracing opinions from heavy emitting industries.

Market Summary

ETS

- Since the last session of auction, emission price downward on May 2019.
- Auction response is above the bid quantity.
 - Total transaction volume to 2,000 higher than last month.
 - The market fluctuation is 1.4% below compare to April.

Offset

- The approval of KOP and Offset project are 357 cases.
- 17 cases are newly approved in industrial power and agriculture sector.
 - Issued KOC by KOP and CDM converts to 58,329 MtCO₂eq GHG reduction.

Upcoming Key Issues

Policy

Ministry of Environment confirmed a revised regulatory law scheduled to be effective next year.

- Stringent emission limit regulation enforces emitters to reduce 30% lower than current level.

Policy

Energy transition driven by reducing coal-powered plants and increasing nuclear leads new Korean energy balance.

- First quarter in 2019, electricity generation by different energy types; Coal: 38.5%, LNG: 26.4%, Nuclear: 25.8%, Renewables: 7.5%.

Emission Transaction Korea Exchange

GIR GHG Inventory & Research Center of Korea

NGMS National GHG Management System

HOME

01

K-ETS Status

Transaction status



Korea ETS Status & Market Trends

May 2019

KAU18

Q1-2019 average exchange rate from BoK(\$1= W1,126)
(Unit: tCO₂-eq : ton)

Closings	24.42 \$/ton
Average	24.42 \$/ton
Highest	26.02 \$/ton
Lowest	22.65 \$/ton
Total Volume	1,292 1K ton
Total Transaction Amount	31.6 \$ 1M

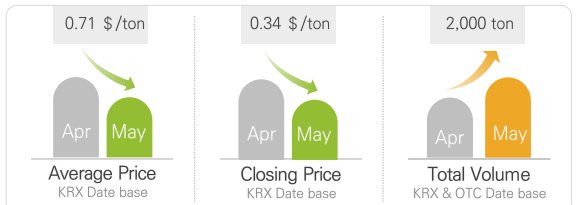
KRX	
Average	24.42 \$/ton
Transaction	1,292 1K ton
Fluctuation	▼ 1.36 %
※ Pre-month/Average price base	

OTC	
Transaction Volume	970 1K ton
※ OTC information is not disclose.	

Auction	
Bid Quantity	1,000 1K ton
Bid Response	1,285 1K ton
Winning Price(\$)	24.73 \$/ton

Comparison of the same period(May, 2019) in 2018

Transaction	400 1K ton
Average	19.14 \$/ton
※ KRX Date base	

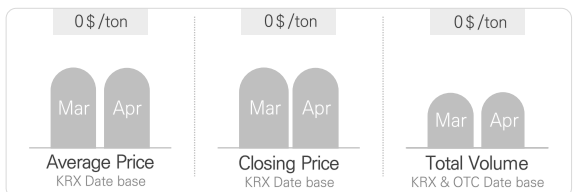


KCU18

Closings	19.38 \$/ton
Average	19.38 \$/ton
Highest	19.38 \$/ton
Lowest	19.38 \$/ton
Total Volume	0 ton
Total Transaction Amount	0 \$
※ KRX Date base	

KRX	
Average	19.38 \$/ton
Transaction	0 ton
Fluctuation	0 %
※ Pre-Month/Average Price base	

OTC	
Transaction Volume	0 ton
※ OTC information is not disclosed.	

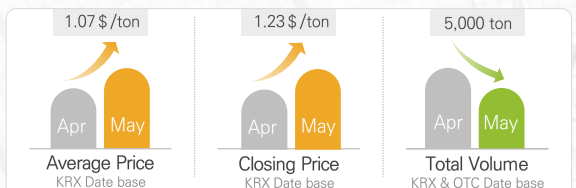


KOC

Closings	25.13 \$/ton
Average	25.13 \$/ton
Highest	25.13 \$/ton
Lowest	24.07 \$/ton
Total Volume	25 1K ton
Total Transaction Amount	7.25 \$ 1M
※ KRX Date base	

KRX	
Average	25.13 \$/ton
Transaction	25 1K ton
Fluctuation	▲ 5.13 %
※ Pre-Month/Average Price base	

OTC	
Transaction Volume	632.3 1K ton
※ OTC information is not disclosed.	



Reference

- Tradable Emissions by KRX
- KAU 18, KAU 19, KAU 20
- KCU 18
- KOC





01

K-ETS Status

Transaction data

- Information on K-ETS Market date are available at Korea Exchange (KRX) website. (<http://global.krx.co.kr/main/main.jsp>)



Korea ETS Status & Market Trends

May 2019

KAU18 / KAU19 / KAU20

Q1-2019 average exchange rate from BoK (\$ 1 = ₩1,126)

Transaction Date	Closing Price (\$)	Trade Volume (Unit: tCO ₂ -eq)	Bilateral Trade (ton)	Total Transaction Price (\$)	Bilateral Transaction Price (\$)
KAU18					
2/May	25.77	16,252	0	418,568	0
3/May	25.77	106,129	100,000	2,622,328	24.64
7/May	25.77	5,119	0	131,839	0
8/May	25.95	14,990	0	387,707	0
9/May	26.04	66,881	10,000	1,734,825	25.93
10/May	25.77	94,500	3,000	2,449,689	35.93
13/May	25.33	25,600	0	647,957	0
14/May	25.95	43,100	0	1,075,311	0
15/May	24.88	3,590	0	89,272	0
16/May	24.84	39,978	0	994,022	0
17/May	24.00	123,191	0	2,991,747	0
20/May	22.66	41,799	1,099	971,827	24.96
21/May	22.84	114,579	80,000	2,599,441	22.65
22/May	23.60	16,000	16,000	365,187	22.82
23/May	24.00	37,500	0	899,201	0
24/May	24.00	60,400	50,400	1,448,313	23.98
27/May	24.00	1,576	0	37,790	0
28/May	24.26	12,652	0	305,790	0
29/May	24.00	41,452	0	999,336	0
30/May	24.00	415,000	400,000	10,093,250	23.98
31/May	24.44	12,552	0	306,288	0
KAU19					
21/May	24.80	40,000	40,000	103,020	24.78
30/May	24.44	500	0	12,211	0
KAU20					
Transaction data are not available					

KCU18 / KOC

Transaction Date	Closing Price (\$)	Trade Volume (Unit: tCO ₂ -eq)	Bilateral Trade (ton)	Total Transaction Price (\$)	Bilateral Transaction Price (\$)
KCU18 / Transaction data are not available					
KOC					
20/May	25.13	25,000	0	643,872	0

KAU18

Auction Date	Bid Qnty.	Bid Response	Bidders	Low Bid Price (\$)	High Bid Price (\$)	Winning Price (\$)	Successful Bid Qnty.	Total Price Amount (\$)
23/Jan	550,000	1,070,000	7	20.52	24.42	22.65	550,000	12,455,595
13/Feb	550,000	1,105,600	9	22.78	26.60	24.02	550,000	13,212,256
13/Mar	550,000	740,200	9	22.20	24.87	23.49	409,500	9,619,005
10/Apr	1,590,000	2,279,800	10	22.20	29.57	23.45	1,590,000	37,278,863
08/May	1,000,000	1,285,300	10	24.11	27.04	24.73	1,000,000	24,733,570



02

Korean Offset Status

Korea Offset Program(KOP)

- Information on Approved KOP project are available at Offset Registry System (ORS, <http://ors.gir.go.kr>) 'Public Information'.



KOP, Offset Project(External Project) Status

May 2019

Total Approved Project **357** Cases

• KOP 264 cases, CDM 93 cases (compare to last KETS Insight #1)

Sector	Cases	KOP / CDM
Waste	47 cases	1/46
Industrial Power	265 cases	218/47 ▲ 1 ▲ 3
Building	16 cases	16/0
Transportation	1 cases	1/0
Agriculture	24 cases	24/0 ▲ 13
Forestry	4 cases	4/0

Approved KOP project by applied methodology (excluding CDM)

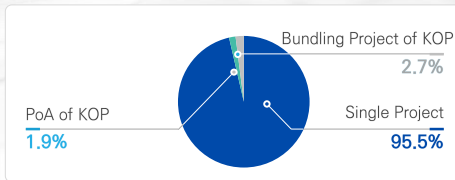
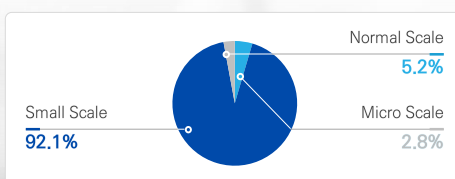
Sector	Methodology	Approval Cases
Waste	· Methodology of injecting bio-methane into city gas supply chain	1
Industrial Power	· Fuel switch methodology	118
	· Fuel switch by wood pellet methodology	40
	· High efficiency equipment replacement methodology	42
	· Waste energy recovery & utilize methodology	17 ▲ 1
	· Installation of Electric saving facility methodology	1
Building	· Converting building heating from central heating to district heating	15
	· High efficiency lighting equipment replacement in building	1
Transportation	· Methodology for producing bio-CNG for automobile fuel use.	1
Agriculture	· Reducing fossil fuel consumption using waste energy in rural	2 ▲ 1
	· Reducing fossil fuel consumption using geothermal energy in rural	18 ▲ 11
	· Fuel conversion using wood pellets in rural	1
	· Energy use methodology of 'gardening facility' using 'high efficiency heat-conservation material'	2
	· Heat production using solar heat energy in rural area	1 ▲ 1
Forestry	· Afforestation & Reforestation methodology	2
	· Forestry recovery methodology	2

Approved KOP project by scale type (excluding CDM)

Project Type	Cases
Normal Scale	13 ▲ 2
Small Scale	232 ▲ 9
Micro Scale	7

※ Single Project (Total 264 cases)

Project Type	Cases
Single Project	252 ▲ 11
Bundling Project of KOP	7 ▲ 3
PoA of KOP	5



Reference

Available public information on KOP
- PP, Project name, Crediting period, Applied methodology, PPD etc.





02

Korean Offset Status

Korea Offset Program(KOP)

- Information on issued KOCs of KOP are available at Offset Registry System (ORS, <http://ors.gjr.go.kr>) 'Public Information'.

KOP, KOCs Issued Status May 2019

Total Issued KOC **24,122** ^{1,000 ton} • KOP 3 cases, CDM 272 cases (compare to last KETS Insight #1)

Waste 6,246 ^{1,000 ton}	Industrial Power 17,873 ^{1,000 ton}	Building 0 ton	Transportation 0 ton	Agriculture 3 ^{1,000 ton}	Forestry 0 ton
KOP / CDM Issued Cases 2/47 ▲ 2	KOP / CDM Issued Cases 0/225	KOP / CDM Issued Cases 0/0	KOP / CDM Issued Cases 0/0	KOP / CDM Issued Cases 1/0 ▲ 1	KOP / CDM Issued Cases 0/0

Status of Issued KOC by KOP and CDM CER Convert

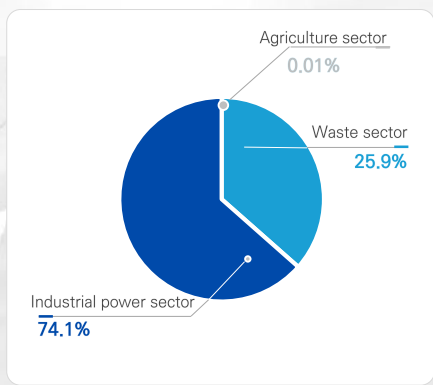
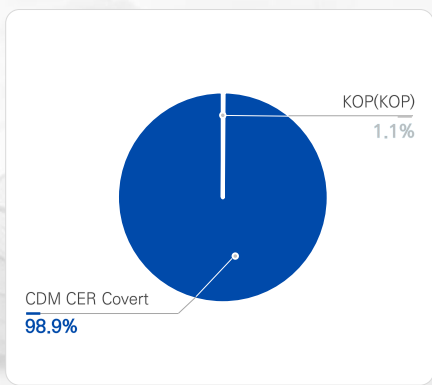
No.	Sector	Detail Sector	Issued KOC	Sub-total
KOP (KOP)	Waste	Waste treatment	25,708 ton	25,708 ton
	Agriculture	Energy demand	2,651 ton	2,651 ton ▲ 2,651
KOP (CDM)	Industrial Power	Thermal energy through fossil fuel and biomass	216,999 ton	17,873,912 ton
		Renewable Energy	2,141,479 ton	
		Energy demand	2,887 ton	
		Chemical industry	11,148,643 ton	
	GHG capture & destruction	4,361,273 ton		
	Waste	Waste treatment	6,220,556 ton	6,220,556 ton ▲ 53,678
Building	-	-	-	
Transportation	-	-	-	
Agriculture	-	-	-	
Forestry	-	-	-	
Total			24,122,000 (Unit: tCO ₂ -eq)	Since Last Month ▲ 56,329 ton

Reference

Available open source data for KOP (KOP, CDM CERs converts)

- PP, Project name, Crediting period, KOC serial number, ER, MR, Monitoring period, VR etc.

Status of Issued KOC





02

Korean Offset Status

Korea Offset Program(KOP)



03

QUESTION

Q&A



KOP, Approval Methodology Status

May 2019

Since October 2016

CDM Methodologies that utilizable for KOP **211** Methodologies

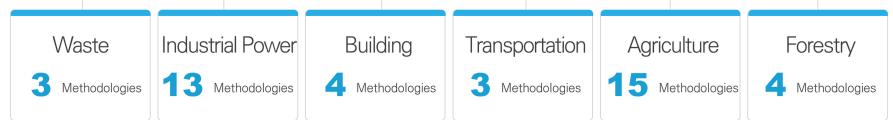
Since May 2019

Approved KOP Methodology **42** Methodologies

From May 2019
Methodologies
utilizable

Total **253** Methodologies

Total Approval **42** Methodologies



If you have any questions or comments regarding our 'KETS INSIGHT' or any questions about 'K-ETS and Korea Carbon Market', please contact us by email.

Q & A



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ETS



Climate Change & Carbon Market
INSIGHT

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Ministry of Environment



Korea Environment Corporation

KRIC

Korea Research Institute
on Climate Change



Hot Topic
Climate Change & Carbon Market

Hot Topic

Korean Government Released a Draft of Revision on K-ETS Allocation Plan

News covered on 21st of May

South Korean Ministry of Environment held a public hearing about a new allocation plan for the second compliance period (2018 – 2020) of Korea Emission Trading Scheme (K-ETS). On 21st of May, the public hearing was once quite suggesting since the government’s engagement in the emission allowance market has been reviewed controversial. However, concerns about lacking emission allowances in the current market situation is high up since the government had already allocated the allowances for 2019. Under the circumstances Korean government has come up with the idea of limiting the amount of transaction of 'banking', that incentivizes companies to sell their allowances to the market.

<Table 1> Over and shorts on allowances by Korean compliances in 2018

Contents	Demand side	Supply side	Total
Number of compliances	190	400	590
Number of allowances	-1,357	4,628	3,271

The newly released allocation plan, still needs to embrace the public opinions until the last days of May, lays out different perspective on it. For example, the plan disturbs company's will to hold their allowances to set the market value high but to sell it deliberately, unwillingly. Experts say the series of the actions supplying allowances would lower its price and hinder market flux leading companies to find other ways but emission trading scheme. In fact, the size of K-ETS has grown by its total amount of transaction reached 42.8 MtCO₂eq in 2018, only 7.2% of 592 MtCO₂eq of yearly average allowance allocated in the second compliance period 2018 to 2020.

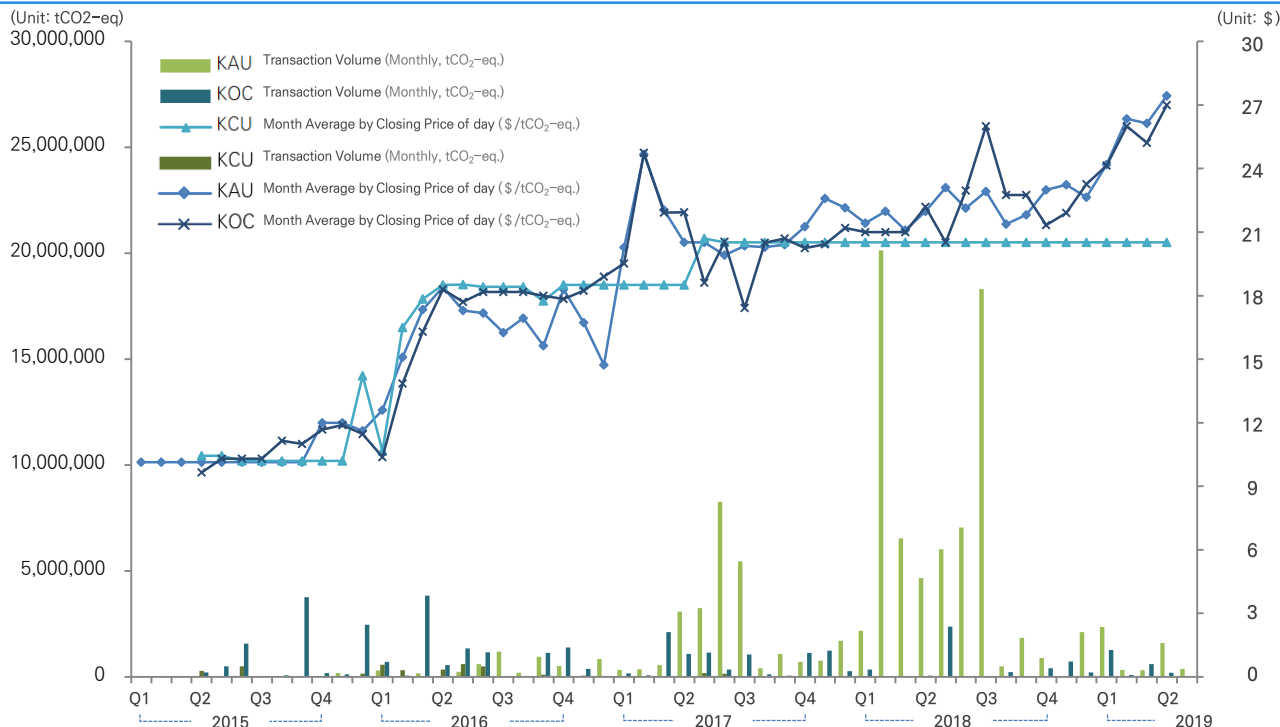
But there are still windows to open for companies and individual investors to trade in the K-ETS. Once the new allocation plan take place the carbon market will be supplied at least 591 MtCO₂eq of allowances alleviating concerns from companies with lack of emission allowances. Also the regulated companies still can trade and bank the previous allowances which they are holding now until the newly adopted allocation plan go into effect from June. The government will announce a confirmation and guidance for regulated companies to adapt to the new allocation plan by delaying the allocation schedule.

Source: Ministry of Environment, 2019



[Annex 1] Total Transaction of KAU, KCU, KOC in K-ETS

Since Jan. 2015 to Apr. 2019
Average Exchange rate from BoK(\$1= ₩1,131)



[Annex 2] Total Transaction Volume of K-ETS since 2015

(Unit: tCO₂-eq)

No.	KAU			KCU			KOC			Total
	KRX	OTC	Sub-total	KRX	OTC	Sub-total	KRX	OTC	Sub-total	
2015 Q1	1,140	-	1,140	-	-	-	-	-	-	1,140
2015 Q2	-	-	-	779,658	-	779,658	-	1,130,000	1,130,000	1,909,658
2015 Q3	-	-	-	-	-	-	-	1,912,774	1,912,774	1,912,774
2015 Q4	320,000	78,315	398,315	141,059	-	141,059	-	1,370,613	1,370,613	1,909,987
2016 Q1	23,600	78,000	101,600	326,829	286,149	612,978	-	2,293,723	2,293,723	3,008,301
2016 Q2	1,275,244	371,787	1,647,031	1,398,306	10,000	1,408,306	2,413	1,523,552	1,525,965	4,581,302
2016 Q3	858,224	468,300	1,326,524	100,000	-	100,000	200,000	462,570	662,570	2,089,094
2016 Q4	405,000	642,867	1,047,867	58,632	-	58,632	459,409	654,044	1,113,453	2,219,952
2017 Q1	2,532,760	1,179,500	3,712,260	-	-	-	149,500	1,539,348	1,688,848	5,401,108
2017 Q2	6,994,034	4,993,317	11,987,351	323,276	-	23,276	317,695	678,636	996,331	13,306,958
2017 Q3	1,394,764	397,651	1,792,415	-	-	-	90,820	565,592	656,412	2,448,827
2017 Q4	2,786,270	934,000	3,720,270	-	-	-	145,017	1,242,220	1,387,237	5,107,507
2018 Q1	3,651,884	14,619,517	18,271,401	-	-	-	-	150,000	150,000	18,421,401
2018 Q2	12,296,566	8,916,128	21,212,694	-	-	-	144,771	1,151,674	1,296,445	22,509,139
2018 Q3	865,042	1,034,915	1,899,957	-	-	-	13,218	103,409	116,627	2,016,584
2018 Q4	687,642	2,336,868	3,024,510	-	-	-	141,593	915,413	1,057,006	4,081,516
2019 Q1	975,232	630,000	1,605,232	-	-	-	692,146	600,000	1,292,146	2,897,378
Total	35,067,402	36,681,165	71,748,567	3,127,760	296,149	3,423,909	2,356,582	16,293,568	18,650,150	93,822,626