

## CME Group Exchange Volume Comparison Report - Monthly

|                              | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG    | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG   | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG    | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|------------------------------|----------------------------|----------------------------|----------|------------------|------------------|---------|------------------------------|------------------------------|----------|--------------------|-----------------------|----------|
| <b>Interest Rate Futures</b> |                            |                            |          |                  |                  |         |                              |                              |          |                    |                       |          |
| 10-YR NOTE                   | 96,179                     | 76,859                     | 25.1%    | 30,554,892       | 22,481,895       | 35.91%  | 1,624,474                    | 1,463,005                    | 11.0%    | 442,415,411        | 363,525,662           | 21.7%    |
| 10-YR SWAP RATE              | 0                          | 0                          | 0.0%     | 80,616           | 65,695           | 22.71%  | 0                            | 0                            | 0.0%     | 489,472            | 528,048               | -7.3%    |
| 15-YR SWAP RATE              | 0                          | -                          | -        | 0                | -                | -       | 0                            | -                            | -        | 0                  | -                     | -        |
| 1-MONTH EURODOLLAR           | 0                          | 0                          | 0.0%     | 595              | 11,747           | -94.93% | 0                            | 0                            | 0.0%     | 31,937             | 63,522                | -49.7%   |
| 20-YR SWAP RATE              | 0                          | -                          | -        | 0                | -                | -       | 0                            | -                            | -        | 0                  | -                     | -        |
| 2-YR NOTE                    | 1,713                      | 871                        | 96.7%    | 7,927,444        | 5,731,653        | 38.31%  | 33,971                       | 20,416                       | 66.4%    | 125,079,260        | 89,664,036            | 39.5%    |
| 2-YR SWAP RATE               | 0                          | 0                          | 0.0%     | 21,774           | 0                | 0.00%   | 0                            | 0                            | 0.0%     | 21,774             | 0                     | 0.0%     |
| 30-YR BOND                   | 13,704                     | 18,420                     | -25.6%   | 6,822,531        | 4,976,636        | 37.09%  | 245,835                      | 200,619                      | 22.5%    | 90,825,705         | 71,694,519            | 26.7%    |
| 30-YR SWAP RATE              | 0                          | 0                          | 0.0%     | 300              | 376              | -20.21% | 0                            | 0                            | 0.0%     | 1,283              | 10,759                | -88.1%   |
| 3-YR SWAP RATE               | 0                          | -                          | -        | 1,628            | -                | -       | 0                            | -                            | -        | 1,628              | -                     | -        |
| 4-YR SWAP RATE               | 0                          | -                          | -        | 3,016            | -                | -       | 0                            | -                            | -        | 3,016              | -                     | -        |
| 5-YR NOTE                    | 19,442                     | 18,277                     | 6.4%     | 19,200,636       | 13,851,168       | 38.62%  | 398,088                      | 262,852                      | 51.4%    | 273,755,486        | 215,031,434           | 27.3%    |
| 5-YR SWAP RATE               | 0                          | 0                          | 0.0%     | 98,742           | 58,306           | 69.35%  | 0                            | 0                            | 0.0%     | 347,046            | 521,161               | -33.4%   |
| 7-YR SWAP                    | -                          | 0                          | 0.0%     | -                | 0                | 0.00%   | -                            | 0                            | 0.0%     | -                  | 0                     | 0.0%     |
| 7-YR SWAP RATE               | 0                          | -                          | -        | 3,304            | -                | -       | 0                            | -                            | -        | 3,304              | -                     | -        |
| EURODOLLARS                  | 619,962                    | 642,085                    | -3.4%    | 70,723,083       | 45,454,095       | 55.59%  | 9,289,882                    | 7,649,506                    | 21.4%    | 743,785,327        | 623,495,814           | 19.3%    |
| FED FUND                     | 0                          | 0                          | 0.0%     | 7,920,464        | 2,895,858        | 173.51% | 0                            | 30                           | -100.0%  | 64,783,693         | 47,510,315            | 36.4%    |
| SOFR                         | 0                          | -                          | -        | 274,162          | -                | -       | 0                            | -                            | -        | 1,050,064          | -                     | -        |
| SONIA                        | 0                          | -                          | -        | 112,287          | -                | -       | 0                            | -                            | -        | 298,611            | -                     | -        |
| Ultra 10-Year Note           | 0                          | 0                          | 0.0%     | 3,517,424        | 2,244,964        | 56.68%  | 0                            | 8                            | -100.0%  | 45,280,233         | 28,042,518            | 61.5%    |
| ULTRA T-BOND                 | 41                         | 0                          | 0.0%     | 2,851,699        | 1,942,406        | 46.81%  | 271                          | 15                           | 1,706.7% | 43,606,964         | 31,422,795            | 38.8%    |
| <b>Interest Rate Options</b> |                            |                            |          |                  |                  |         |                              |                              |          |                    |                       |          |
| 10-YR NOTE                   | 2,220,981                  | 1,489,285                  | 49.1%    | 10,639,285       | 6,038,413        | 76.19%  | 28,708,991                   | 25,824,325                   | 11.2%    | 135,689,546        | 100,017,231           | 35.7%    |
| 2-YR NOTE                    | 87,004                     | 129,635                    | -32.9%   | 282,098          | 138,925          | 103.06% | 1,604,134                    | 854,698                      | 87.7%    | 4,319,719          | 1,433,809             | 201.3%   |
| 30-YR BOND                   | 260,127                    | 266,538                    | -2.4%    | 2,496,958        | 1,861,637        | 34.13%  | 3,792,397                    | 3,077,606                    | 23.2%    | 31,514,925         | 24,035,392            | 31.1%    |
| 5-YR NOTE                    | 795,561                    | 391,781                    | 103.1%   | 2,747,555        | 1,348,502        | 103.75% | 8,798,046                    | 6,425,242                    | 36.9%    | 32,244,968         | 22,801,602            | 41.4%    |
| EURODOLLARS                  | 8,450,205                  | 6,581,550                  | 28.4%    | 4,724,306        | 3,758,222        | 25.71%  | 105,779,959                  | 95,633,923                   | 10.6%    | 54,216,247         | 46,782,381            | 15.9%    |
| EURO MIDCURVE                | 8,543,713                  | 7,475,241                  | 14.3%    | 4,926,969        | 3,835,511        | 28.46%  | 106,131,436                  | 105,942,974                  | 0.2%     | 64,765,997         | 67,671,055            | -4.3%    |
| FED FUND                     | 1,000                      | 0                          | 0.0%     | 39               | 0                | 0.00%   | 3,250                        | 15,398                       | -78.9%   | 16,007             | 1,482                 | 980.1%   |
| Ultra 10-Year Note           | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 100                          | 1,652                        | -93.9%   | 28                 | 6,835                 | -99.6%   |
| ULTRA T-BOND                 | 25,486                     | 1,897                      | 1,243.5% | 1,134            | 3,857            | -70.60% | 89,254                       | 14,340                       | 522.4%   | 31,181             | 25,964                | 20.1%    |

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| <b>Equity Index Futures</b> |                            |                            |        |                  |                  |           |                              |                              |        |                    |                       |          |
| BITCOIN FUTURES             | 0                          | 0                          | 0.0%   | 80,055           | 9,498            | 742.86%   | 0                            | 0                            | 0.0%   | 922,957            | 9,498                 | 9,617.4% |
| DJ US REAL ESTATE           | 0                          | 0                          | 0.0%   | 56,355           | 28,884           | 95.11%    | 0                            | 0                            | 0.0%   | 311,793            | 203,329               | 53.3%    |
| E-mini (\$5) Dow            | 0                          | 0                          | 0.0%   | 6,919,613        | 2,839,516        | 143.69%   | 0                            | 0                            | 0.0%   | 60,199,477         | 32,762,878            | 83.7%    |
| E-mini FTSE 100 (USD)       | 0                          | 0                          | 0.0%   | 748              | 958              | -21.92%   | 0                            | 0                            | 0.0%   | 16,286             | 3,030                 | 437.5%   |
| E-mini FTSE China 50        | 0                          | 0                          | 0.0%   | 1,038            | 2,422            | -57.14%   | 0                            | 0                            | 0.0%   | 12,287             | 21,713                | -43.4%   |
| E-MINI MIDCAP               | 0                          | 0                          | 0.0%   | 605,951          | 436,225          | 38.91%    | 0                            | 0                            | 0.0%   | 4,783,212          | 4,196,882             | 14.0%    |
| E-MINI NASDAQ 100           | 0                          | 0                          | 0.0%   | 14,580,088       | 6,467,768        | 125.43%   | 0                            | 0                            | 0.0%   | 123,516,402        | 68,947,756            | 79.1%    |
| E-MINI RUSSELL 1000         | 0                          | 0                          | 0.0%   | 10,648           | 9,081            | 17.26%    | 0                            | 0                            | 0.0%   | 106,925            | 37,426                | 185.7%   |
| E-MINI RUSSELL 1000 GROWT   | 0                          | 0                          | 0.0%   | 7,519            | 4,788            | 57.04%    | 0                            | 0                            | 0.0%   | 93,846             | 22,473                | 317.6%   |
| E-MINI RUSSELL 1000 VALUE   | 0                          | 0                          | 0.0%   | 15,290           | 5,925            | 158.06%   | 0                            | 0                            | 0.0%   | 121,408            | 32,143                | 277.7%   |
| E-MINI RUSSELL 2000         | 0                          | 0                          | 0.0%   | 4,832,933        | 3,306,804        | 46.15%    | 0                            | 0                            | 0.0%   | 36,976,096         | 10,517,084            | 251.6%   |
| E-MINI S&P500               | 0                          | 0                          | 0.0%   | 52,762,929       | 30,200,611       | 74.71%    | 0                            | 0                            | 0.0%   | 441,659,466        | 363,956,513           | 21.3%    |
| E-MINI S&P REAL ESTATE SEL  | 0                          | 0                          | 0.0%   | 21,052           | 2,537            | 729.80%   | 0                            | 0                            | 0.0%   | 65,906             | 29,232                | 125.5%   |
| FT-SE 100                   | 0                          | 0                          | 0.0%   | 989              | 1,126            | -12.17%   | 0                            | 0                            | 0.0%   | 14,801             | 7,829                 | 89.1%    |
| FTSE Emerging               | 0                          | 0                          | 0.0%   | 3,528            | 215              | 1,540.93% | 0                            | 0                            | 0.0%   | 11,558             | 937                   | 1,133.5% |
| IBOVESPA INDEX              | 0                          | 0                          | 0.0%   | 673              | 1,124            | -40.12%   | 0                            | 0                            | 0.0%   | 12,148             | 8,112                 | 49.8%    |
| NASDAQ BIOTECH              | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 0                     | 0.0%     |
| NIFTY 50                    | 0                          | 0                          | 0.0%   | 0                | 11,288           | -100.00%  | 0                            | 0                            | 0.0%   | 54,444             | 142,778               | -61.9%   |
| NIKKEI 225 (\$) STOCK       | 0                          | 0                          | 0.0%   | 367,761          | 348,348          | 5.57%     | 0                            | 0                            | 0.0%   | 3,790,647          | 3,371,643             | 12.4%    |
| NIKKEI 225 (YEN) STOCK      | 0                          | 0                          | 0.0%   | 1,141,049        | 751,579          | 51.82%    | 0                            | 0                            | 0.0%   | 10,959,790         | 10,818,523            | 1.3%     |
| S&P 500                     | 62,484                     | 118,124                    | -47.1% | 4,170            | 2,695            | 54.73%    | 488,281                      | 816,606                      | -40.2% | 53,261             | 50,785                | 4.9%     |
| S&P 500/GI                  | 0                          | 0                          | 0.0%   | 20               | 34               | -41.18%   | 0                            | 0                            | 0.0%   | 93                 | 285                   | -67.4%   |
| S&P 500/VALUE               | 0                          | 0                          | 0.0%   | 9,483            | 7,792            | 21.70%    | 0                            | 0                            | 0.0%   | 63,516             | 81,530                | -22.1%   |
| S&P 600 SMALLCAP EMINI      | 0                          | -                          | -      | 0                | -                |           | 0                            | -                            | -      | 1                  | -                     | -        |
| S&P CONSUMER DSCRTNRY S     | 0                          | 0                          | 0.0%   | 14,737           | 8,131            | 81.24%    | 0                            | 0                            | 0.0%   | 188,403            | 53,565                | 251.7%   |
| S&P CONSUMER STAPLES SE     | 0                          | 0                          | 0.0%   | 50,811           | 16,029           | 216.99%   | 0                            | 0                            | 0.0%   | 208,891            | 103,263               | 102.3%   |
| S&P ENERGY SECTOR           | 0                          | 0                          | 0.0%   | 48,434           | 13,964           | 246.85%   | 0                            | 0                            | 0.0%   | 286,037            | 121,411               | 135.6%   |
| S&P FINANCIAL SECTOR        | 0                          | 0                          | 0.0%   | 52,646           | 29,630           | 77.68%    | 0                            | 0                            | 0.0%   | 393,072            | 194,012               | 102.6%   |
| S&P HEALTH CARE SECTOR      | 0                          | 0                          | 0.0%   | 58,710           | 8,421            | 597.19%   | 0                            | 0                            | 0.0%   | 222,356            | 101,161               | 119.8%   |
| S&P INDUSTRIAL SECTOR       | 0                          | 0                          | 0.0%   | 46,680           | 8,532            | 447.12%   | 0                            | 0                            | 0.0%   | 192,340            | 60,414                | 218.4%   |
| S&P MATERIALS SECTOR        | 0                          | 0                          | 0.0%   | 20,058           | 6,930            | 189.44%   | 0                            | 0                            | 0.0%   | 114,069            | 69,673                | 63.7%    |
| S&P TECHNOLOGY SECTOR       | 0                          | 0                          | 0.0%   | 85,286           | 12,300           | 593.38%   | 0                            | 0                            | 0.0%   | 399,766            | 70,983                | 463.2%   |
| S&P UTILITIES SECTOR        | 0                          | 0                          | 0.0%   | 39,170           | 27,983           | 39.98%    | 0                            | 0                            | 0.0%   | 317,902            | 179,104               | 77.5%    |
| YEN DENOMINATED TOPIX       | 0                          | -                          | -      | 7,631            | -                |           | 0                            | -                            | -      | 13,365             | -                     | -        |

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|-----------------------------|----------------------------|----------------------------|---------|------------------|------------------|---------|------------------------------|------------------------------|---------|--------------------|-----------------------|----------|
| <b>Equity Index Options</b> |                            |                            |         |                  |                  |         |                              |                              |         |                    |                       |          |
| E-mini (\$5) Dow            | 0                          | 0                          | 0.0%    | 18,658           | 10,288           | 81.36%  | 0                            | 0                            | 0.0%    | 125,334            | 74,244                | 68.8%    |
| E-MINI MIDCAP               | -                          | 0                          | 0.0%    | -                | 0                | 0.00%   | -                            | 0                            | 0.0%    | -                  | 0                     | 0.0%     |
| E-MINI NASDAQ 100           | 0                          | 0                          | 0.0%    | 195,152          | 181,848          | 7.32%   | 0                            | 0                            | 0.0%    | 2,878,414          | 2,873,368             | 0.2%     |
| E-MINI RUSSELL 2000         | 0                          | 0                          | 0.0%    | 10,319           | 6,543            | 57.71%  | 0                            | 0                            | 0.0%    | 153,575            | 47,902                | 220.6%   |
| E-MINI S&P500               | 0                          | 4,240                      | -100.0% | 8,289,340        | 4,257,471        | 94.70%  | 14,660                       | 9,375                        | 56.4%   | 73,350,074         | 51,046,149            | 43.7%    |
| EOM E-MINI RUSSELL 2000 EN  | 0                          | 0                          | 0.0%    | 3,019            | 7,031            | -57.06% | 0                            | 0                            | 0.0%    | 77,407             | 22,049                | 251.1%   |
| EOM EMINI S&P               | 0                          | 0                          | 0.0%    | 2,198,100        | 2,555,559        | -13.99% | 0                            | 0                            | 0.0%    | 31,194,081         | 24,790,850            | 25.8%    |
| EOM S&P 500                 | 178,063                    | 237,026                    | -24.9%  | 0                | 0                | 0.00%   | 2,168,061                    | 2,347,874                    | -7.7%   | 0                  | 0                     | 0.0%     |
| EOW1 E-MINI RUSSELL 2000 W  | 0                          | 0                          | 0.0%    | 1,292            | 844              | 53.08%  | 0                            | 0                            | 0.0%    | 23,913             | 7,420                 | 222.3%   |
| EOW1 E-MINI RUSSELL 2000 W  | 0                          | 0                          | 0.0%    | 1,835            | 725              | 153.10% | 0                            | 0                            | 0.0%    | 29,895             | 7,350                 | 306.7%   |
| EOW1 EMINI S&P 500          | 0                          | 0                          | 0.0%    | 1,682,057        | 863,745          | 94.74%  | 0                            | 0                            | 0.0%    | 14,069,450         | 12,669,333            | 11.1%    |
| EOW1 S&P 500                | 130,946                    | 109,985                    | 19.1%   | 0                | 0                | 0.00%   | 1,009,555                    | 1,092,049                    | -7.6%   | 0                  | 0                     | 0.0%     |
| EOW2 E-MINI RUSSELL 2000 W  | 0                          | 0                          | 0.0%    | 4,504            | 2,352            | 91.50%  | 0                            | 0                            | 0.0%    | 59,808             | 13,997                | 327.3%   |
| EOW2 EMINI S&P 500          | 0                          | 0                          | 0.0%    | 1,503,724        | 903,260          | 66.48%  | 0                            | 0                            | 0.0%    | 15,832,156         | 12,649,778            | 25.2%    |
| EOW2 S&P 500                | 290,407                    | 185,468                    | 56.6%   | 0                | 0                | 0.00%   | 2,011,224                    | 2,097,086                    | -4.1%   | 0                  | 0                     | 0.0%     |
| EOW3 E-MINI RUSSELL 2000 W  | 0                          | 0                          | 0.0%    | 6,926            | 9,657            | -28.28% | 0                            | 0                            | 0.0%    | 214,429            | 65,039                | 229.7%   |
| EOW3 EMINI S&P 500          | 0                          | 0                          | 0.0%    | 2,850,668        | 2,262,927        | 25.97%  | 0                            | 3,000                        | -100.0% | 43,285,692         | 39,317,303            | 10.1%    |
| EOW3 S&P 500                | 110,937                    | 310,077                    | -64.2%  | 0                | 0                | 0.00%   | 3,079,428                    | 4,294,574                    | -28.3%  | 0                  | 0                     | 0.0%     |
| EOW4 E-MINI RUSSELL 2000 W  | 0                          | 0                          | 0.0%    | 2,853            | 5,031            | -43.29% | 0                            | 0                            | 0.0%    | 60,829             | 16,589                | 266.7%   |
| EOW4 EMINI S&P 500          | 0                          | 0                          | 0.0%    | 1,490,642        | 898,012          | 65.99%  | 0                            | 0                            | 0.0%    | 13,910,378         | 11,434,439            | 21.7%    |
| S&P 500                     | 510,200                    | 318,751                    | 60.1%   | 0                | 0                | 0.00%   | 3,955,748                    | 3,892,488                    | 1.6%    | 0                  | 0                     | 0.0%     |

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|----------------------------|----------------------------|----------------------------|-------|------------------|------------------|-----------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Metals Futures</b>      |                            |                            |       |                  |                  |           |                              |                              |       |                    |                       |          |
| ALUMINUM                   | 0                          | 0                          | 0.0%  | 435              | 348              | 25.00%    | 0                            | 0                            | 0.0%  | 8,931              | 7,592                 | 17.6%    |
| COMEX COPPER               | 0                          | 0                          | 0.0%  | 1,384,254        | 2,330,870        | -40.61%   | 0                            | 0                            | 0.0%  | 32,393,775         | 26,740,515            | 21.1%    |
| COMEX E-Mini GOLD          | 0                          | 0                          | 0.0%  | 4,651            | 4,992            | -6.83%    | 0                            | 0                            | 0.0%  | 96,481             | 92,442                | 4.4%     |
| COMEX E-Mini SILVER        | 0                          | 0                          | 0.0%  | 847              | 814              | 4.05%     | 0                            | 0                            | 0.0%  | 13,401             | 9,704                 | 38.1%    |
| COMEX GOLD                 | 0                          | 0                          | 0.0%  | 3,944,681        | 4,930,301        | -19.99%   | 0                            | 0                            | 0.0%  | 77,451,789         | 70,283,909            | 10.2%    |
| COMEX MINY COPPER          | 0                          | 0                          | 0.0%  | 262              | 627              | -58.21%   | 0                            | 0                            | 0.0%  | 5,195              | 8,269                 | -37.2%   |
| COMEX SILVER               | 0                          | 0                          | 0.0%  | 1,262,271        | 1,329,346        | -5.05%    | 0                            | 0                            | 0.0%  | 23,318,975         | 22,472,132            | 3.8%     |
| COPPER                     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| E-MICRO GOLD               | 0                          | 0                          | 0.0%  | 155,462          | 83,042           | 87.21%    | 0                            | 0                            | 0.0%  | 1,801,078          | 1,141,590             | 57.8%    |
| FERROUS PRODUCTS           | 0                          | 0                          | 0.0%  | 140              | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 1,263              | 85                    | 1,385.9% |
| GOLD                       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 1                     | -100.0%  |
| Gold Kilo                  | 0                          | 0                          | 0.0%  | 0                | 104              | -100.00%  | 0                            | 0                            | 0.0%  | 136                | 3,665                 | -96.3%   |
| IRON ORE 62 CHINA PLATTS F | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| IRON ORE 62 CHINA TSI FUTU | 0                          | 0                          | 0.0%  | 2                | 3                | -33.33%   | 0                            | 0                            | 0.0%  | 174                | 2,843                 | -93.9%   |
| LNDN ZINC                  | 0                          | 0                          | 0.0%  | 582              | 16               | 3,537.50% | 0                            | 0                            | 0.0%  | 14,057             | 141                   | 9,869.5% |
| METALS                     | -                          | 0                          | 0.0%  | -                | 0                | 0.00%     | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| NYMEX HOT ROLLED STEEL     | 0                          | 0                          | 0.0%  | 1,663            | 912              | 82.35%    | 0                            | 0                            | 0.0%  | 35,596             | 5,654                 | 529.6%   |
| NYMEX PLATINUM             | 0                          | 0                          | 0.0%  | 480,850          | 548,310          | -12.30%   | 0                            | 0                            | 0.0%  | 5,310,653          | 4,699,934             | 13.0%    |
| PALLADIUM                  | 0                          | 0                          | 0.0%  | 71,523           | 69,953           | 2.24%     | 0                            | 0                            | 0.0%  | 1,376,227          | 1,335,280             | 3.1%     |
| SILVER                     | 0                          | 0                          | 0.0%  | 10,730           | 4,848            | 121.33%   | 0                            | 0                            | 0.0%  | 100,519            | 71,118                | 41.3%    |
| URANIUM                    | 0                          | 0                          | 0.0%  | 6                | 3                | 100.00%   | 0                            | 0                            | 0.0%  | 799                | 432                   | 85.0%    |

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## CME Group Exchange Volume Comparison Report - Monthly

|                             | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG     | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|-----------------------------|----------------------------|----------------------------|-------|------------------|------------------|-----------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Metals Options</b>       |                            |                            |       |                  |                  |           |                              |                              |       |                    |                       |          |
| COMEX COPPER                | 0                          | 0                          | 0.0%  | 17,812           | 18,434           | -3.37%    | 0                            | 0                            | 0.0%  | 257,957            | 100,675               | 156.2%   |
| COMEX GOLD                  | 0                          | 0                          | 0.0%  | 830,990          | 640,398          | 29.76%    | 0                            | 0                            | 0.0%  | 9,379,120          | 7,717,773             | 21.5%    |
| COMEX SILVER                | 0                          | 0                          | 0.0%  | 98,597           | 94,237           | 4.63%     | 0                            | 0                            | 0.0%  | 1,514,305          | 1,255,526             | 20.6%    |
| COPPER                      | 0                          | -                          | -     | 34               | -                |           | 0                            | -                            | -     | 540                | -                     | -        |
| GOLD                        | 0                          | 0                          | 0.0%  | 56,344           | 30,412           | 85.27%    | 0                            | 0                            | 0.0%  | 517,983            | 183,031               | 183.0%   |
| HOT ROLLED COIL STEEL CAL   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| IRON ORE 62 CHINA TSI CALL  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| IRON ORE 62 CHINA TSI PUT O | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYMEX PLATINUM              | 0                          | 0                          | 0.0%  | 1,003            | 2,855            | -64.87%   | 0                            | 0                            | 0.0%  | 21,021             | 15,863                | 32.5%    |
| PALLADIUM                   | 0                          | 0                          | 0.0%  | 545              | 870              | -37.36%   | 0                            | 0                            | 0.0%  | 15,555             | 14,183                | 9.7%     |
| SILVER                      | 0                          | 0                          | 0.0%  | 3,114            | 139              | 2,140.29% | 0                            | 0                            | 0.0%  | 27,218             | 1,811                 | 1,402.9% |
| <b>Energy Futures</b>       |                            |                            |       |                  |                  |           |                              |                              |       |                    |                       |          |
| 3.5% FUEL OIL CID MED SWA   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| 3.5% FUEL OIL CIF BALMO S   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| AEP-DAYTON HUB DAILY        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| AEP-DAYTON HUB MTHLY        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| AEP-DAYTON HUB OFF-PEAK     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ALGON CITY GATES NAT GAS    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ALGONQUIN CITYGATES BASI    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ANR LOUISIANA BASIS SWAP    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ANR OKLAHOMA                | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| APPALACHIAN COAL (PHY)      | -                          | 0                          | 0.0%  | -                | 0                | 0.00%     | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| ARGUS LLS VS. WTI (ARG) T   | 0                          | 0                          | 0.0%  | 0                | 300              | -100.00%  | 0                            | 0                            | 0.0%  | 30                 | 360                   | -91.7%   |
| ARGUS PROPAN FAR EST IND    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ARGUS PROPAN(SAUDI ARAM     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| AUSTRIALIAN COKE COAL       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| BRENT BALMO SWAP            | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| BRENT CALENDAR SWAP         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| BRENT CFD SWAP              | 0                          | -                          | -     | 0                | -                |           | 0                            | -                            | -     | 0                  | -                     | -        |
| BRENT FINANCIAL FUTURES     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                            | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG    | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|----------------------------|----------------------------|----------------------------|-------|------------------|------------------|----------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>      |                            |                            |       |                  |                  |          |                              |                              |       |                    |                       |          |
| BRENT OIL LAST DAY         | 0                          | 0                          | 0.0%  | 1,611,129        | 1,251,113        | 28.78%   | 0                            | 0                            | 0.0%  | 21,345,574         | 21,532,029            | -0.9%    |
| CAISO SP15 EZGNHUB5 MW P   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CAISO SP15 EZGNHUB5 PEAK   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CANADIAN LIGHT SWEET OIL   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CENTERPOINT BASIS SWAP     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CENTERPOINT EAST INDEX     | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| CEU ENERGY                 | 0                          | -                          | -     | 4,515            | -                |          | 0                            | -                            | -     | 75,327             | -                     | -        |
| CHICAGO ETHANOL SWAP       | 0                          | 0                          | 0.0%  | 44               | 325              | -86.46%  | 0                            | 0                            | 0.0%  | 2,115              | 4,529                 | -53.3%   |
| CHICAGO ULSD (PLATTS) SWA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CHICAGO ULSD PL VS HO SPR  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CHICAGO UNL GAS PL VS RBO  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CIG BASIS                  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CIG ROCKIES NG INDEX SWA   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CINERGY HUB OFF-PEAK MON   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CINERGY HUB PEAK MONTH     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CIN HUB 5MW D AH O PK      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CIN HUB 5MW D AH PK        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CIN HUB 5MW REAL TIME O P  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CIN HUB 5MW REAL TIME PK   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| COAL SWAP                  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| COLUMB GULF MAINLINE NG B  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| COLUMBIA GULF MAIN NAT G   | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| COLUMBIA GULF ONSHORE      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CONWAY NATURAL GASOLINE    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 5                  | 0                     | 0.0%     |
| CONWAY NORMAL BUTANE (O    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CONWAY PROPANE 5 DECIMA    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 48                 | 58                    | -17.2%   |
| CRUDE OIL                  | 0                          | 0                          | 0.0%  | 0                | 126              | -100.00% | 0                            | 0                            | 0.0%  | 89                 | 633                   | -85.9%   |
| CRUDE OIL OUTRIGHTS        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CRUDE OIL PHY              | 0                          | 0                          | 0.0%  | 22,460,352       | 19,752,879       | 13.71%   | 0                            | 0                            | 0.0%  | 300,948,428        | 303,456,331           | -0.8%    |
| CRUDE OIL SPRDS            | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 50                    | -100.0%  |
| CRUDE OIL TRADE AT MARKE   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DAILY PJM                  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DATED BRENT (PLATTS) DAILY | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DATED TO FRONTLINE BRENT   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|-------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>     |                            |                            |       |                  |                  |       |                              |                              |       |                    |                       |          |
| DEMARC INDEX FUTURE       | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| DEMARC SWING SWAP         | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| DIESEL 10P BRG FOB RDM VS | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DIESEL 10PPM BARGES FOB B | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DLY GAS EURO-BOB OXY      | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| DOMINION TRAN INC - APP I | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DOMINION TRANSMISSION INC | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DUBAI CRUDE OIL BALMO     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DUBAI CRUDE OIL CALENDAR  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| DY EURO 3.5% FUEL OI RDA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EASTERN RAIL DELIVERY CSX | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EAST/WEST FUEL OIL SPREAD | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EIA FLAT TAX ONHWAY DIESE | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELEC ERCOT DLY OFF PK     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELEC ERCOT DLY PEAK       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELEC ERCOT OFF PEAK       | 0                          | -                          | -     | 0                | -                |       | 0                            | -                            | -     | 0                  | -                     | -        |
| ELEC FINSETTLED           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELEC MISO PEAK            | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELEC NYISO OFF-PEAK       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELECTRICITY ERCOT PEAK    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELECTRICITY OFF PEAK      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELEC WEST POWER OFF-PEA   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ELEC WEST POWER PEAK      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EL PASO PERMIAN INDEX SWA | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| ERCOT DAILY 5MW PEAK      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ERCOT HOUSTON Z MCPE 5M   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ERCOT NORTH ZMCPE 5MW O   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ERCOT NORTH ZMCPE 5MW O   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ERCOT NORTH ZMCPE 5MW P   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ETHANOL                   | 0                          | 0                          | 0.0%  | 11,051           | 10,670           | 3.57% | 0                            | 0                            | 0.0%  | 112,320            | 148,863               | -24.5%   |
| ETHANOL FWD               | -                          | -                          | -     | -                | -                |       | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| ETHANOL SWAP              | 0                          | -                          | -     | 0                | -                |       | 0                            | -                            | -     | 0                  | -                     | -        |
| ETHANOL T2 FOB ROTT INCL  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EURO 1% FUEL OIL NEW BALM | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG   | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|---------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>     |                            |                            |       |                  |                  |         |                              |                              |       |                    |                       |          |
| EURO 3.5% FUEL OIL RDAM B | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EURO 3.5% FUEL OIL SPREAD | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EURO-DENOMINATED PETRO    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EURO GASOIL 10 CAL SWAP   | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| EURO GASOIL 10PPM VS ICE  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPE 1% FUEL OIL NWE CA | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPE 1% FUEL OIL RDAM C | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPE 3.5% FUEL OIL MED  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPE 3.5% FUEL OIL RDAM | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPEAN GASOIL (ICE)     | 0                          | 0                          | 0.0%  | 176              | 601              | -70.72% | 0                            | 0                            | 0.0%  | 7,105              | 31,363                | -77.3%   |
| EUROPEAN NAPHTHA BALMO    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPEAN NAPHTHA CRACK S  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPE DATED BRENT SWAP   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPE JET KERO NWE CALS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EUROPE NAPHTHA CALSWAP    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EURO PROPANE CIF ARA SW   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| FL GAS ZONE 3 NAT GAS IND | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| FLORIDA GAS ZONE3 BASIS S | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| FREIGHT MARKETS           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| FUEL OIL CRACK VS ICE     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| FUEL OIL NWE CRACK VS ICE | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| FUEL OIL (PLATS) CAR CM   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| FUEL OIL (PLATS) CAR CN   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| FUELOIL SWAP:CARGOES VS.  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GAS EURO-BOB OXY NWE BA   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GAS EURO-BOB OXY NWE BA   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL 0.1 BRGS FOB VS IC | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| GASOIL 0.1 CIF MED SWAP   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL 0.1CIF MED VS ICE  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL 0.1 CIF NWE VS ISE | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL 0.1 CIF VS ICE GAS | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL 0.1 CRG CIF NW VS  | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| GASOIL 0.1 RDAM BRGS VS I | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL 0.1 ROTTERDAM BAR  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG    | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|----------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>     |                            |                            |       |                  |                  |          |                              |                              |       |                    |                       |          |
| GASOIL 10P CRG CIF NW VS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL 10PPM CARGOES CIF  | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| GASOIL 10PPM VS ICE SWAP  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL BULLET SWAP        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL CALENDAR SWAP      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL CRACK SPREAD CALE  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOIL MINI CALENDAR SWA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOLINE UP-DOWN BALMO S  | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| GROUP THREE ULSD (PLATTS) | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GROUP THREE UNLEAD GAS (  | 0                          | -                          | -     | 0                | -                |          | 0                            | -                            | -     | 0                  | -                     | -        |
| GRP THREE ULSD(PLT)VS HEA | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GRP THREE UNL GS (PLT) VS | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GULF COAST 3% FUEL OIL BA | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GULF COAST GASOLINE CLND  | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| GULF COAST JET FUEL CLNDR | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GULF COAST JET VS NYM 2 H | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GULF COAST NO.6 FUEL OIL  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GULF COAST ULSD CALEND    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GULF COAST ULSD CRACK SP  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| HEATING OIL BALMO CLNDR S | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| HEATING OIL CRCK SPRD BAL | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| HEATING OIL PHY           | 0                          | 0                          | 0.0%  | 3,077,909        | 3,313,013        | -7.10%   | 0                            | 0                            | 0.0%  | 44,043,254         | 40,801,119            | 7.9%     |
| HENRY HUB BASIS SWAP      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 2,996                 | -100.0%  |
| HENRY HUB FINANCIAL LAST  | 0                          | 0                          | 0.0%  | 0                | 1,363            | -100.00% | 0                            | 0                            | 0.0%  | 27,703             | 6,507                 | 325.7%   |
| HENRY HUB INDEX SWAP FUT  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 2,996                 | -100.0%  |
| HENRY HUB SWAP            | 0                          | 0                          | 0.0%  | 614              | 9,242            | -93.36%  | 0                            | 0                            | 0.0%  | 69,345             | 74,411                | -6.8%    |
| HENRY HUB SWING FUTURE    | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| HOUSTON SHIP CHANNEL BAS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| HOUSTON SHIP CHANNEL IND  | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| HTG OIL                   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 144                   | -100.0%  |
| HUSTN SHIP CHNL PIPE SWP  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ICE BRENT DUBAI SWAP      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ICE GASOIL BALMO SWAP     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| IN DELIVERY MONTH EUA     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                              | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG   | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|------------------------------|----------------------------|----------------------------|-------|------------------|------------------|---------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>        |                            |                            |       |                  |                  |         |                              |                              |       |                    |                       |          |
| INDIANA MISO                 | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| INDONESIAN COAL              | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| INDONESIAN COAL ICI4         | 0                          | -                          | -     | 0                | -                |         | 0                            | -                            | -     | 0                  | -                     | -        |
| ISO NEW ENGLAND OFF-PEAK     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ISO NEW ENGLAND PK LMP       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| JAPAN C&F NAPHTHA CRACK      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| JAPAN C&F NAPHTHA SWAP       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| JAPAN NAPHTHA BALMO SWA      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| JET AV FUEL (P) CAR FM ICE G | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| JET BARGES VS ICE GASOIL     | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| JET CIF NWE VS ICE           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| JET FUEL BRG FOB RDM VS I    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| JET FUEL CRG CIF NEW VS I    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| JET FUEL UP-DOWN BALMO C     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| LA CARB DIESEL (OPIS)        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| LA CARB DIESEL (OPIS) SWA    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| LA CARBOB GASOLINE(OPIS)S    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| LA JET FUEL VS NYM NO 2 H    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| LA JET (OPIS) SWAP           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| LLS (ARGUS) CALENDAR SWA     | 0                          | -                          | -     | 0                | -                |         | 0                            | -                            | -     | 0                  | -                     | -        |
| LLS (ARGUS) VS WTI SWAP      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 15                    | -100.0%  |
| LOS ANGELES CARB GASOLIN     | 0                          | -                          | -     | 0                | -                |         | 0                            | -                            | -     | 0                  | -                     | -        |
| LTD NAT GAS                  | 0                          | 0                          | 0.0%  | 196,954          | 164,086          | 20.03%  | 0                            | 0                            | 0.0%  | 2,561,557          | 1,572,338             | 62.9%    |
| MARS (ARGUS) VS WTI SWAP     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 70                    | -100.0%  |
| MARS (ARGUS) VS WTI TRD M    | 0                          | 0                          | 0.0%  | 75               | 100              | -25.00% | 0                            | 0                            | 0.0%  | 650                | 1,050                 | -38.1%   |
| MARS BLEND CRUDE OIL         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 200                   | -100.0%  |
| MCCLOSKEY ARA ARGS COAL      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 731                | 0                     | 0.0%     |
| MCCLOSKEY RCH BAY COAL       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MGF FUT                      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MGN1 SWAP FUT                | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MICHCON NG INDEX SWAP        | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| MICHIGAN BASIS               | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MICHIGAN MISO                | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MINI GAS EUROBOB OXY NWE     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                            | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG   | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|----------------------------|----------------------------|----------------------------|-------|------------------|------------------|---------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>      |                            |                            |       |                  |                  |         |                              |                              |       |                    |                       |          |
| MINI RBOB V. EBOBARG NWE   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MINI RBOB V. EBOB(ARGUS) N | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MINY HTG OIL               | 0                          | 0                          | 0.0%  | 3                | 3                | 0.00%   | 0                            | 0                            | 0.0%  | 47                 | 35                    | 34.3%    |
| MINY NATURAL GAS           | 0                          | 0                          | 0.0%  | 45,578           | 40,333           | 13.00%  | 0                            | 0                            | 0.0%  | 433,003            | 311,933               | 38.8%    |
| MINY RBOB GAS              | 0                          | 0                          | 0.0%  | 4                | 4                | 0.00%   | 0                            | 0                            | 0.0%  | 47                 | 51                    | -7.8%    |
| MINY WTI CRUDE OIL         | 0                          | 0                          | 0.0%  | 617,691          | 167,645          | 268.45% | 0                            | 0                            | 0.0%  | 4,692,563          | 3,001,906             | 56.3%    |
| MJC FUT                    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MNC FUT                    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MONT BELVIEU ETHANE 5 DEC  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MONT BELVIEU ETHANE OPIS   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MONT BELVIEU LDH PROPANE   | 0                          | 0                          | 0.0%  | 25               | 97               | -74.23% | 0                            | 0                            | 0.0%  | 237                | 498                   | -52.4%   |
| MONT BELVIEU LDH PROPANE   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MONT BELVIEU NATURAL GAS   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 20                    | -100.0%  |
| MONT BELVIEU NATURAL GAS   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MONT BELVIEU NORMAL BUTA   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MONT BELVIEU NORMAL BUTA   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NAT GAS BASIS SWAP         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS                | 0                          | 0                          | 0.0%  | 25,883           | 64,002           | -59.56% | 0                            | 0                            | 0.0%  | 586,524            | 457,801               | 28.1%    |
| NATURAL GAS FIXED PRICE S  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS INDEX          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS PEN SWP        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 62                    | -100.0%  |
| NATURAL GAS PHY            | 0                          | 0                          | 0.0%  | 7,553,218        | 10,161,798       | -25.67% | 0                            | 0                            | 0.0%  | 110,844,207        | 104,831,796           | 5.7%     |
| NEPOOL CNCTCT 5MW D AH O   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEPOOL CONECTIC 5MW D AH   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEPOOL INTR HUB 5MW D AH   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEPOOL NE MASS 5MW D AH    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEPOOL NE MASS 5MW D AH    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEPOOL NEW HAMP 5MW D A    | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| NEPOOL RHD ISLD 5MW D AH   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEPOOL RHODE IL 5MW D AH   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEPOOL SE MASS 5MW D AH    | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| NEPOOL SE MASS 5MW D AH    | -                          | 0                          | 0.0%  | -                | 0                | 0.00%   | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| NEPOOL W CNT MASS 5MW D    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEPOOL W CNTR M 5MW D AH   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|-------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>     |                            |                            |       |                  |                  |       |                              |                              |       |                    |                       |          |
| NEW ENGLAND HUB PEAK DAI  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEW YORK ETHANOL SWAP     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEW YORK HUB ZONE G PEAK  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NEW YORK HUB ZONE J PEAK  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NGPL MID-CONTINENT        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NGPL MIDCONTINENT INDEX   | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| NGPL MIDCONTINENT SWING   | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| NGPL TEX/OK               | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NGPL TEXOK INDEX          | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| N ILLINOIS HUB DAILY      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| N ILLINOIS HUB MTHLY      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NO 2 UP-DOWN SPREAD CALE  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NORTHEN NATURAL GAS DEM   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NORTHEN NATURAL GAS VEN   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NORTHERN ILLINOIS OFF-PEA | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NORTHWEST ROCKIES BASIS   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| N ROCKIES PIPE SWAP       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY1% VS GC SPREAD SWAP    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY 2.2% FUEL OIL (PLATTS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY 3.0% FUEL OIL (PLATTS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY HARBOR 1% FUEL OIL BAL | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY HARBOR HEAT OIL SWP    | 0                          | 0                          | 0.0%  | 4                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 81                 | 3                     | 2,600.0% |
| NY HARBOR LOW SULPUR GA   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY HARBOR RESIDUAL FUEL 1 | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY HARBOR RESIDUAL FUEL   | 0                          | -                          | -     | 0                | -                |       | 0                            | -                            | -     | 0                  | -                     | -        |
| NYH NO 2 CRACK SPREAD CA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY H OIL PLATTS VS NYMEX  | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| NYISO A                   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO A OFF-PEAK          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO CAPACITY            | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO G                   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO G OFF-PEAK          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO J                   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO J OFF-PEAK          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                             | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|-----------------------------|----------------------------|----------------------------|-------|------------------|------------------|-------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>       |                            |                            |       |                  |                  |       |                              |                              |       |                    |                       |          |
| NYISO ZONE A 5MW D AH O P   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO ZONE A 5MW D AH PK    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO ZONE C 5MW D AH O P   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO ZONE C 5MW D AH PK    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO ZONE G 5MW D AH O P   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO ZONE G 5MW D AH PK    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO ZONE J 5MW D AH O P   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYISO ZONE J 5MW D AH PK    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY JET FUEL (PLATTS) HEAT C | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| NYMEX ALUMINUM FUTURES      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYMEX ULSD VS NYMEX HO      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY ULSD (ARGUS) VS HEATIN   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ONEOK OKLAHOMA NG BASIS     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ONTARIO POWER SWAPS         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PANHANDLE BASIS SWAP FUT    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PANHANDLE INDEX SWAP FUT    | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| PANHANDLE PIPE SWAP         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PERMIAN BASIS SWAP          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETROCHEMICALS              | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETRO CRCKS & SPRDS ASIA    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETRO CRCKS & SPRDS NA      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETRO CRK&SPRD EURO         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETROLEUM PRODUCTS          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETROLEUM PRODUCTS ASIA     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETRO OUTRIGHT EURO         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETRO OUTRIGHT NA           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM AD HUB 5MW REAL TIME    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM AECO DA OFF-PEAK        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM AECO DA PEAK            | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM APS ZONE DA OFF-PEAK    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM APS ZONE DA PEAK        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM ATSI ELEC               | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM BGE DA OFF-PEAK         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM BGE DA PEAK             | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|-------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>     |                            |                            |       |                  |                  |       |                              |                              |       |                    |                       |          |
| PJM COMED 5MW D AH O PK   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM COMED 5MW D AH PK     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM DAILY                 | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM DAYTON DA OFF-PEAK    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM DAYTON DA PEAK        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM JCPL DA OFF-PEAK      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM JCPL DA PEAK          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM MONTHLY               | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM NI HUB 5MW REAL TIME  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM NILL DA OFF-PEAK      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM NILL DA PEAK          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM OFF-PEAK LMP SWAP FU  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM PECO ZONE5MW PEAK C   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM PPL DA OFF-PEAK       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM PPL DA PEAK           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM PSEG DA OFF-PEAK      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM PSEG DA PEAK          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM WES HUB PEAK LMP 50 M | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| PJM WESTH DA OFF-PEAK     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM WESTHDA PEAK          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM WESTH RT OFF-PEAK     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM WESTH RT PEAK         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PLASTICS                  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PREMIUM UNLD 10P FOB MED  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PREMIUM UNLEAD 10PPM FOB  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PREM UNL GAS 10PPM RDAM   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PREM UNL GAS 10PPM RDAM   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PROPANE NON-LDH MB (OPIS) | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PROPANE NON-LDH MT. BEL ( | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| RBOB CALENDAR SWAP        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 5                     | -100.0%  |
| RBOB CRACK SPREAD         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| RBOB CRACK SPREAD BALMO   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| RBOB GAS                  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| RBOB GASOLINE BALMO CLNC  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|-------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>     |                            |                            |       |                  |                  |       |                              |                              |       |                    |                       |          |
| RBOB PHY                  | 0                          | 0                          | 0.0%  | 3,260,755        | 3,182,391        | 2.46% | 0                            | 0                            | 0.0%  | 47,134,720         | 46,507,031            | 1.3%     |
| RBOB (PLATTS) CAL SWAP    | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| RBOB SPREAD (PLATTS) SWA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| RBOB UP-DOWN CALENDAR S   | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| RBOB VS HEATING OIL SWAP  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ROCKIES KERN OPAL - NW IN | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| SAN JUAN BASIS SWAP       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SAN JUAN PIPE SWAP        | 0                          | -                          | -     | 0                | -                |       | 0                            | -                            | -     | 0                  | -                     | -        |
| SINGAPORE 180CST BALMO    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE 380CST BALMO    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE 380CST FUEL OIL | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE FUEL 180CST CAL | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE FUEL OIL SPREA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE GASOIL          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE GASOIL CALEND A | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE GASOIL SWAP     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 2                  | 36                    | -94.4%   |
| SINGAPORE GASOIL VS ICE   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE JET KERO BALMO  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE JET KERO GASOI  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE JET KEROSENE S  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE JET KERO VS. GA | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE MOGAS 92 UNLEA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE MOGAS 92 UNLEA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 2                  | 5                     | -60.0%   |
| SINGAPORE NAPHTHA BALMO   | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| SINGAPORE NAPHTHA SWAP    | 0                          | -                          | -     | 0                | -                |       | 0                            | -                            | -     | 0                  | -                     | -        |
| SING FUEL                 | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SOCAL PIPE SWAP           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SONAT BASIS SWAP FUTURE   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SOUTHERN NAT LA NAT GAS   | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| SOUTH STAR TEX OKLHM KNS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| Sumas Basis Swap          | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SUMAS NAT GAS PLATTS FIXE | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TC2 ROTTERDAM TO USAC 37  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TC5 RAS TANURA TO YOKOHA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|-------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Futures</b>     |                            |                            |       |                  |                  |       |                              |                              |       |                    |                       |          |
| TCO BASIS SWAP            | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TCO NG INDEX SWAP         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TD3 MEG TO JAPAN 250K MT  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TENN 800 LEG NAT GAS INDE | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| TENNESSEE 500 LEG BASIS S | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TENNESSEE 800 LEG NG BASI | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TENNESSEE ZONE 0 BASIS S  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TETCO M-3 INDEX           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| Tetco STX Basis           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TEXAS EASTERN ZONE M-3 BA | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TEXAS GAS ZONE1 NG BASIS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| Transco Zone 3 Basis      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TRANSCO ZONE 3 NG INDEX S | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TRANSCO ZONE4 BASIS SWAP  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TRANSCO ZONE 4 NAT GAS IN | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TRANSCO ZONE 6 BASIS SWA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| TRANSCO ZONE 6 INDEX      | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| UCM FUT                   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ULSD 10PPM CIF MED BALMO  | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| ULSD 10PPM CIF MED SWAP   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ULSD 10PPM CIF MED VS ICE | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ULSD 10PPM CIF NW BALMO S | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ULSD 10PPM CIF VS ICE GAS | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| ULSD UP-DOWN BALMO SWP    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| UP DOWN GC ULSD VS NMX H  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| USGC UNL 87 CRACK SPREAD  | -                          | 0                          | 0.0%  | -                | 0                | 0.00% | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| WAHA BASIS                | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| WAHA INDEX SWAP FUTURE    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| WESTERN RAIL DELIVERY PR  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| WTI-BRENT BULLET SWAP     | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| WTI-BRENT CALENDAR SWAP   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 6                  | 120                   | -95.0%   |
| WTI CALENDAR              | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| WTS (ARGUS) VS WTI SWAP   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| WTS (ARGUS) VS WTI TRD MT | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00% | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG    | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|----------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Options</b>     |                            |                            |       |                  |                  |          |                              |                              |       |                    |                       |          |
| 12 MO GASOIL CAL SWAP SPR | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| 1 MO GASOIL CAL SWAP SPR  | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| BRENT 1 MONTH CAL         | 0                          | -                          | -     | 0                | -                | -        | 0                            | -                            | -     | 0                  | -                     | -        |
| BRENT CALENDAR SWAP       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 24                 | 0                     | 0.0%     |
| BRENT CRUDE OIL 12 M CSO  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| BRENT CRUDE OIL 1 M CSO   | 0                          | -                          | -     | 0                | -                | -        | 0                            | -                            | -     | 3,000              | -                     | -        |
| BRENT CRUDE OIL 6 M CSO   | 0                          | -                          | -     | 0                | -                | -        | 0                            | -                            | -     | 0                  | -                     | -        |
| BRENT OIL LAST DAY        | 0                          | 0                          | 0.0%  | 70,777           | 19,986           | 254.13%  | 0                            | 0                            | 0.0%  | 875,426            | 149,597               | 485.2%   |
| COAL API2 INDEX           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| COAL API4 INDEX           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| COAL SWAP                 | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CRUDE OIL 1MO             | 0                          | 0                          | 0.0%  | 7,400            | 16,950           | -56.34%  | 0                            | 0                            | 0.0%  | 196,385            | 402,140               | -51.2%   |
| CRUDE OIL APO             | 0                          | 0                          | 0.0%  | 0                | 28               | -100.00% | 0                            | 0                            | 0.0%  | 336                | 163                   | 106.1%   |
| CRUDE OIL CALNDR STRIP    | 0                          | -                          | -     | 0                | -                | -        | 0                            | -                            | -     | 0                  | -                     | -        |
| CRUDE OIL OUTRIGHTS       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| CRUDE OIL PHY             | 0                          | 0                          | 0.0%  | 2,786,709        | 1,946,456        | 43.17%   | 0                            | 0                            | 0.0%  | 37,322,852         | 34,980,827            | 6.7%     |
| ELEC FINSETTLED           | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| ELEC MISO PEAK            | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ETHANOL                   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| ETHANOL SWAP              | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| EURO-DENOMINATED PETRO    | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| EUROPEAN JET KEROSENE N   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| GASOLINE                  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| HEATING OIL CRACK OPTIONS | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| HEATING OIL CRK SPD AVG P | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| HEATING OIL PHY           | 0                          | 0                          | 0.0%  | 4,643            | 6,351            | -26.89%  | 0                            | 0                            | 0.0%  | 63,035             | 60,270                | 4.6%     |
| HENRY HUB FINANCIAL LAST  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 5                  | 0                     | 0.0%     |
| HO 1 MONTH CLNDR OPTIONS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| HUSTN SHIP CHNL PIPE SWP  | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| LLS CRUDE OIL             | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MCCLOSKEY ARA ARGS COAL   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| MCCLOSKEY RCH BAY COAL    | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS               | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS 1 M CSO FIN   | 0                          | 0                          | 0.0%  | 1,705            | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 4,334              | 3,920                 | 10.6%    |

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## CME Group Exchange Volume Comparison Report - Monthly

|                           | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG    | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------|----------------------------|----------------------------|-------|------------------|------------------|----------|------------------------------|------------------------------|-------|--------------------|-----------------------|----------|
| <b>Energy Options</b>     |                            |                            |       |                  |                  |          |                              |                              |       |                    |                       |          |
| NATURAL GAS 2 M CSO FIN   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS 3 M CSO FIN   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 1                  | 0                     | 0.0%     |
| NATURAL GAS 5 M CSO FIN   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS 6 M CSO FIN   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS OPTION ON CA  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NATURAL GAS PHY           | 0                          | 0                          | 0.0%  | 1,151,827        | 2,613,386        | -55.93%  | 0                            | 0                            | 0.0%  | 16,336,410         | 16,836,154            | -3.0%    |
| NATURAL GAS WINTER STRIP  | 0                          | -                          | -     | 0                | -                |          | 0                            | -                            | -     | 0                  | -                     | -        |
| NG HH 3 MONTH CAL         | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| N ROCKIES PIPE SWAP       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NY HARBOR HEAT OIL SWP    | 0                          | 0                          | 0.0%  | 8                | 3                | 166.67%  | 0                            | 0                            | 0.0%  | 610                | 512                   | 19.1%    |
| NYISO ZONE G 5MW PEAK OP  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYMEX EUROPEAN GASOIL A   | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| NYMEX EUROPEAN GASOIL O   | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| PANHANDLE PIPE SWAP       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETROCHEMICALS            | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 23                 | 16                    | 43.8%    |
| PETRO OUTRIGHT EURO       | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PETRO OUTRIGHT NA         | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM MONTHLY               | -                          | 0                          | 0.0%  | -                | 0                | 0.00%    | -                            | 0                            | 0.0%  | -                  | 0                     | 0.0%     |
| PJM WES HUB PEAK CAL MTH  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| PJM WES HUB PEAK LMP 50M  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| RBOB 1MO CAL SPD OPTIONS  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| RBOB CALENDAR SWAP        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 10                    | -100.0%  |
| RBOB CRACK                | 0                          | -                          | -     | 0                | -                |          | 0                            | -                            | -     | 2                  | -                     | -        |
| RBOB PHY                  | 0                          | 0                          | 0.0%  | 2,543            | 4,539            | -43.97%  | 0                            | 0                            | 0.0%  | 39,205             | 80,535                | -51.3%   |
| ROTTERDAM 3.5%FUEL OIL CL | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SAN JUAN PIPE SWAP        | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SHORT TERM                | 0                          | 0                          | 0.0%  | 0                | 661              | -100.00% | 0                            | 0                            | 0.0%  | 996                | 1,195                 | -16.7%   |
| SHORT TERM NATURAL GAS    | 0                          | 0                          | 0.0%  | 0                | 1,377            | -100.00% | 0                            | 0                            | 0.0%  | 1,005              | 5,014                 | -80.0%   |
| SINGAPORE GASOIL CALEND A | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SINGAPORE JET FUEL CALEN  | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| SOCAL PIPE SWAP           | 0                          | 0                          | 0.0%  | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%  | 0                  | 0                     | 0.0%     |
| WTI-BRENT BULLET SWAP     | 0                          | 0                          | 0.0%  | 1,710            | 14,666           | -88.34%  | 0                            | 0                            | 0.0%  | 150,045            | 69,294                | 116.5%   |
| WTI CRUDE OIL 1 M CSO FI  | 0                          | 0                          | 0.0%  | 0                | 200              | -100.00% | 0                            | 0                            | 0.0%  | 15,050             | 7,900                 | 90.5%    |

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|                        | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG   | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG   | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG   | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|------------------------|----------------------------|----------------------------|---------|------------------|------------------|---------|------------------------------|------------------------------|---------|--------------------|-----------------------|----------|
| <b>FX Futures</b>      |                            |                            |         |                  |                  |         |                              |                              |         |                    |                       |          |
| AD/CD CROSS RATES      | 0                          | 0                          | 0.0%    | 1                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 56                 | 38                    | 47.4%    |
| AD/JY CROSS RATES      | 0                          | 0                          | 0.0%    | 3,978            | 3,775            | 5.38%   | 0                            | 0                            | 0.0%    | 49,499             | 29,884                | 65.6%    |
| AD/NE CROSS RATES      | 0                          | 0                          | 0.0%    | 103              | 56               | 83.93%  | 0                            | 0                            | 0.0%    | 898                | 996                   | -9.8%    |
| AUSTRALIAN DOLLAR      | 0                          | 0                          | 0.0%    | 2,130,362        | 1,947,977        | 9.36%   | 0                            | 1,537                        | -100.0% | 27,898,666         | 23,899,523            | 16.7%    |
| BDI                    | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 0                  | 6,243                 | -100.0%  |
| BP/JY CROSS RATES      | 0                          | 0                          | 0.0%    | 2,873            | 5,147            | -44.18% | 0                            | 0                            | 0.0%    | 35,632             | 37,284                | -4.4%    |
| BP/SF CROSS RATES      | 0                          | 0                          | 0.0%    | 129              | 191              | -32.46% | 0                            | 0                            | 0.0%    | 3,982              | 1,103                 | 261.0%   |
| BRAZIL REAL            | 0                          | 0                          | 0.0%    | 75,352           | 80,904           | -6.86%  | 0                            | 0                            | 0.0%    | 1,185,543          | 731,733               | 62.0%    |
| BRITISH POUND          | 4                          | 14                         | -71.4%  | 2,532,253        | 3,068,950        | -17.49% | 14                           | 263                          | -94.7%  | 32,297,331         | 31,048,707            | 4.0%     |
| CANADIAN DOLLAR        | 0                          | 32                         | -100.0% | 1,978,823        | 1,734,996        | 14.05%  | 45                           | 2,716                        | -98.3%  | 20,933,526         | 19,080,203            | 9.7%     |
| CD/JY CROSS RATES      | 0                          | 0                          | 0.0%    | 100              | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 1,049              | 554                   | 89.4%    |
| CHINESE RENMINBI (CNH) | 0                          | 0                          | 0.0%    | 18,953           | 2,247            | 743.48% | 0                            | 0                            | 0.0%    | 117,390            | 19,769                | 493.8%   |
| CZECK KORUNA (EC)      | 0                          | -                          | -       | 0                | -                |         | 0                            | -                            | -       | 8                  | -                     | -        |
| CZECK KORUNA (US)      | 0                          | -                          | -       | 3                | -                |         | 0                            | -                            | -       | 18                 | -                     | -        |
| EC/AD CROSS RATES      | 0                          | 0                          | 0.0%    | 6,977            | 6,004            | 16.21%  | 0                            | 0                            | 0.0%    | 27,892             | 31,051                | -10.2%   |
| EC/CD CROSS RATES      | 0                          | 0                          | 0.0%    | 8,092            | 8,137            | -0.55%  | 0                            | 0                            | 0.0%    | 41,167             | 53,911                | -23.6%   |
| EC/NOK CROSS RATES     | 0                          | 0                          | 0.0%    | 275              | 253              | 8.70%   | 0                            | 0                            | 0.0%    | 4,440              | 3,029                 | 46.6%    |
| EC/SEK CROSS RATES     | 0                          | 0                          | 0.0%    | 1,726            | 996              | 73.29%  | 0                            | 0                            | 0.0%    | 9,816              | 8,498                 | 15.5%    |
| EFX/BP CROSS RATES     | 0                          | 0                          | 0.0%    | 116,309          | 142,062          | -18.13% | 0                            | 0                            | 0.0%    | 990,009            | 913,898               | 8.3%     |
| EFX/JY CROSS RATES     | 0                          | 0                          | 0.0%    | 103,848          | 102,242          | 1.57%   | 0                            | 0                            | 0.0%    | 949,458            | 800,666               | 18.6%    |
| EFX/SF CROSS RATES     | 0                          | 0                          | 0.0%    | 41,137           | 48,767           | -15.65% | 0                            | 0                            | 0.0%    | 354,750            | 399,260               | -11.1%   |
| E-MICRO AUD/USD        | 0                          | 0                          | 0.0%    | 111,221          | 65,633           | 69.46%  | 0                            | 0                            | 0.0%    | 1,313,037          | 1,012,132             | 29.7%    |
| E-MICRO CAD/USD        | 0                          | 0                          | 0.0%    | 17,294           | 21,505           | -19.58% | 0                            | 0                            | 0.0%    | 206,791            | 244,321               | -15.4%   |
| E-MICRO CHF/USD        | 0                          | 0                          | 0.0%    | 2,009            | 936              | 114.64% | 0                            | 0                            | 0.0%    | 18,276             | 11,952                | 52.9%    |
| E-MICRO EUR/USD        | 0                          | 0                          | 0.0%    | 285,833          | 217,510          | 31.41%  | 0                            | 0                            | 0.0%    | 4,323,117          | 2,987,367             | 44.7%    |
| E-MICRO GBP/USD        | 0                          | 0                          | 0.0%    | 36,417           | 49,472           | -26.39% | 0                            | 0                            | 0.0%    | 545,675            | 681,701               | -20.0%   |
| E-MICRO INR/USD        | 0                          | 0                          | 0.0%    | 8,109            | 1,985            | 308.51% | 0                            | 0                            | 0.0%    | 62,787             | 31,089                | 102.0%   |
| E-MICRO JPY/USD        | 0                          | 0                          | 0.0%    | 25,860           | 22,521           | 14.83%  | 0                            | 0                            | 0.0%    | 356,863            | 450,068               | -20.7%   |
| E-MICRO USD/CAD        | -                          | 0                          | 0.0%    | -                | 0                | 0.00%   | -                            | 0                            | 0.0%    | -                  | 0                     | 0.0%     |
| E-MICRO USD/CHF        | -                          | 0                          | 0.0%    | -                | 0                | 0.00%   | -                            | 0                            | 0.0%    | -                  | 0                     | 0.0%     |
| E-MICRO USD/CNH        | -                          | 0                          | 0.0%    | -                | 0                | 0.00%   | -                            | 0                            | 0.0%    | -                  | 0                     | 0.0%     |
| E-MICRO USD/JPY        | -                          | 0                          | 0.0%    | -                | 0                | 0.00%   | -                            | 0                            | 0.0%    | -                  | 0                     | 0.0%     |
| E-MINI EURO FX         | 0                          | 0                          | 0.0%    | 102,290          | 106,509          | -3.96%  | 0                            | 0                            | 0.0%    | 1,223,766          | 1,140,403             | 7.3%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                       | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG   | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG    | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG   | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|-----------------------|----------------------------|----------------------------|---------|------------------|------------------|----------|------------------------------|------------------------------|---------|--------------------|-----------------------|----------|
| <b>FX Futures</b>     |                            |                            |         |                  |                  |          |                              |                              |         |                    |                       |          |
| E-MINI JAPANESE YEN   | 0                          | 0                          | 0.0%    | 21,982           | 8,563            | 156.71%  | 0                            | 0                            | 0.0%    | 162,963            | 316,956               | -48.6%   |
| EURO FX               | 0                          | 88                         | -100.0% | 5,183,197        | 5,370,411        | -3.49%   | 544                          | 2,913                        | -81.3%  | 68,087,111         | 55,977,807            | 21.6%    |
| HUNGARIAN FORINT (EC) | 0                          | -                          | -       | 0                | -                |          | 0                            | -                            | -       | 0                  | -                     | -        |
| HUNGARIAN FORINT (US) | 0                          | -                          | -       | 0                | -                |          | 0                            | -                            | -       | 0                  | -                     | -        |
| INDIAN RUPEE          | 0                          | 0                          | 0.0%    | 78,320           | 44,530           | 75.88%   | 0                            | 0                            | 0.0%    | 1,089,106          | 472,306               | 130.6%   |
| JAPANESE YEN          | 2                          | 49                         | -95.9%  | 3,287,163        | 3,128,652        | 5.07%    | 113                          | 9,030                        | -98.7%  | 36,729,517         | 41,449,197            | -11.4%   |
| KOREAN WON            | 0                          | 0                          | 0.0%    | 373              | 323              | 15.48%   | 0                            | 0                            | 0.0%    | 3,164              | 673                   | 370.1%   |
| MEXICAN PESO          | 0                          | 0                          | 0.0%    | 1,377,612        | 1,363,597        | 1.03%    | 0                            | 5                            | -100.0% | 16,819,045         | 12,869,533            | 30.7%    |
| NEW ZEALND DOLLAR     | 0                          | 0                          | 0.0%    | 592,062          | 548,070          | 8.03%    | 0                            | 0                            | 0.0%    | 7,488,787          | 6,231,072             | 20.2%    |
| NKR/USD CROSS RATE    | 0                          | 0                          | 0.0%    | 5,384            | 2,808            | 91.74%   | 0                            | 0                            | 0.0%    | 58,013             | 22,380                | 159.2%   |
| POLISH ZLOTY (EC)     | 0                          | 0                          | 0.0%    | 24               | 9                | 166.67%  | 0                            | 0                            | 0.0%    | 232                | 416                   | -44.2%   |
| POLISH ZLOTY (US)     | 0                          | 0                          | 0.0%    | 88               | 325              | -72.92%  | 0                            | 0                            | 0.0%    | 1,022              | 1,618                 | -36.8%   |
| RMB USD               | 0                          | 0                          | 0.0%    | 0                | 24               | -100.00% | 0                            | 0                            | 0.0%    | 25                 | 305                   | -91.8%   |
| RUSSIAN RUBLE         | 0                          | 0                          | 0.0%    | 88,721           | 52,518           | 68.93%   | 0                            | 0                            | 0.0%    | 657,473            | 449,172               | 46.4%    |
| S.AFRICAN RAND        | 0                          | 0                          | 0.0%    | 51,619           | 64,722           | -20.25%  | 0                            | 0                            | 0.0%    | 548,677            | 555,018               | -1.1%    |
| SF/JY CROSS RATES     | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%    | 7                  | 0                     | 0.0%     |
| SHEKEL                | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%    | 0                  | 0                     | 0.0%     |
| SKR/USD CROSS RATES   | 0                          | 0                          | 0.0%    | 5,753            | 4,939            | 16.48%   | 0                            | 0                            | 0.0%    | 54,006             | 26,738                | 102.0%   |
| SWISS FRANC           | 0                          | 0                          | 0.0%    | 645,963          | 697,135          | -7.34%   | 0                            | 0                            | 0.0%    | 7,122,193          | 6,904,907             | 3.1%     |
| TURKISH LIRA          | 0                          | 0                          | 0.0%    | 0                | 2                | -100.00% | 0                            | 0                            | 0.0%    | 10                 | 20                    | -50.0%   |
| USDZAR                | 0                          | 0                          | 0.0%    | 0                | 1                | -100.00% | 0                            | 0                            | 0.0%    | 15                 | 1                     | 1,400.0% |

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## CME Group Exchange Volume Comparison Report - Monthly

|                      | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG  | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG    | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG   | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|----------------------|----------------------------|----------------------------|--------|------------------|------------------|----------|------------------------------|------------------------------|---------|--------------------|-----------------------|----------|
| <b>FX Options</b>    |                            |                            |        |                  |                  |          |                              |                              |         |                    |                       |          |
| AUD/USD PQO 2pm Fix  | 0                          | 0                          | 0.0%   | 104,813          | 74,203           | 41.25%   | 600                          | 5,746                        | -89.6%  | 1,510,062          | 1,257,212             | 20.1%    |
| AUSTRALIAN DLR (EU)  | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%    | 0                  | 2                     | -100.0%  |
| AUSTRALIAN DOLLAR    | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 2,674                        | -100.0% | 0                  | 200,250               | -100.0%  |
| BRITISH POUND        | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 693                          | -100.0% | 0                  | 462,114               | -100.0%  |
| BRITISH POUND (EU)   | 0                          | 0                          | 0.0%   | 1                | 180              | -99.44%  | 0                            | 0                            | 0.0%    | 280                | 4,609                 | -93.9%   |
| CAD/USD PQO 2pm Fix  | 40                         | 501                        | -92.0% | 107,864          | 169,089          | -36.21%  | 3,080                        | 6,646                        | -53.7%  | 1,840,370          | 1,693,702             | 8.7%     |
| CANADIAN DOLLAR      | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 4,597                        | -100.0% | 0                  | 183,080               | -100.0%  |
| CANADIAN DOLLAR (EU) | 0                          | 0                          | 0.0%   | 0                | 10               | -100.00% | 0                            | 0                            | 0.0%    | 63                 | 146                   | -56.8%   |
| CHF/USD PQO 2pm Fix  | 0                          | 0                          | 0.0%   | 800              | 1,550            | -48.39%  | 0                            | 0                            | 0.0%    | 30,519             | 38,525                | -20.8%   |
| EFX/JY CROSS RATES   | 0                          | -                          | -      | 0                | -                |          | 0                            | -                            | -       | 0                  | -                     | -        |
| EURO FX              | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 8,535                        | -100.0% | 0                  | 1,287,538             | -100.0%  |
| EURO FX (EU)         | 0                          | 0                          | 0.0%   | 0                | 4                | -100.00% | 0                            | 0                            | 0.0%    | 59                 | 509                   | -88.4%   |
| EUR/USD PQO 2pm Fix  | 990                        | 1,764                      | -43.9% | 539,463          | 605,620          | -10.92%  | 16,844                       | 31,710                       | -46.9%  | 8,605,822          | 7,698,222             | 11.8%    |
| GBP/USD PQO 2pm Fix  | 75                         | 467                        | -83.9% | 190,501          | 218,144          | -12.67%  | 987                          | 5,469                        | -82.0%  | 3,123,991          | 2,644,755             | 18.1%    |
| JAPANESE YEN         | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 8,468                        | -100.0% | 0                  | 544,469               | -100.0%  |
| JAPANESE YEN (EU)    | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%    | 0                  | 182                   | -100.0%  |
| JPY/USD PQO 2pm Fix  | 38                         | 520                        | -92.7% | 240,671          | 175,468          | 37.16%   | 4,523                        | 35,123                       | -87.1%  | 3,061,724          | 2,996,133             | 2.2%     |
| MEXICAN PESO         | 300                        | 0                          | 0.0%   | 1,217            | 820              | 48.41%   | 6,418                        | 1,770                        | 262.6%  | 17,793             | 26,166                | -32.0%   |
| NEW ZEALND DOLLAR    | 0                          | -                          | -      | 17               | -                |          | 0                            | -                            | -       | 1,050              | -                     | -        |
| RUSSIAN RUBLE        | -                          | 0                          | 0.0%   | -                | 0                | 0.00%    | -                            | 0                            | 0.0%    | -                  | 0                     | 0.0%     |
| SWISS FRANC          | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%    | 0                  | 5,710                 | -100.0%  |
| SWISS FRANC (EU)     | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%    | 0                            | 0                            | 0.0%    | 0                  | 15                    | -100.0%  |

|                    |   |   |      |   |   |       |   |   |      |   |   |      |
|--------------------|---|---|------|---|---|-------|---|---|------|---|---|------|
| <b>Ags Futures</b> |   |   |      |   |   |       |   |   |      |   |   |      |
| FERTILIZER PRODUCS | 0 | 0 | 0.0% | 0 | 0 | 0.00% | 0 | 0 | 0.0% | 0 | 0 | 0.0% |

|                                 |   |   |      |   |       |          |   |   |      |        |        |        |
|---------------------------------|---|---|------|---|-------|----------|---|---|------|--------|--------|--------|
| <b>Foreign Exchange Futures</b> |   |   |      |   |       |          |   |   |      |        |        |        |
| CHILEAN PESO                    | 0 | 0 | 0.0% | 0 | 3,887 | -100.00% | 0 | 0 | 0.0% | 12,942 | 21,480 | -39.7% |

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## CME Group Exchange Volume Comparison Report - Monthly

|                                 | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG  | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG     | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG  | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|---------------------------------|----------------------------|----------------------------|--------|------------------|------------------|-----------|------------------------------|------------------------------|--------|--------------------|-----------------------|----------|
| <b>Foreign Exchange Options</b> |                            |                            |        |                  |                  |           |                              |                              |        |                    |                       |          |
| AUD/USD PQO 2pm Fix             | 0                          | 0                          | 0.0%   | 2,615            | 138              | 1,794.93% | 0                            | 0                            | 0.0%   | 12,296             | 772                   | 1,492.7% |
| <b>Ag Products Futures</b>      |                            |                            |        |                  |                  |           |                              |                              |        |                    |                       |          |
| BUTTER CS                       | 0                          | 0                          | 0.0%   | 4,423            | 3,672            | 20.45%    | 0                            | 0                            | 0.0%   | 51,424             | 39,041                | 31.7%    |
| CASH-SETTLED CHEESE             | 0                          | 0                          | 0.0%   | 14,481           | 12,865           | 12.56%    | 0                            | 0                            | 0.0%   | 134,740            | 126,301               | 6.7%     |
| CAT EURO SEASONAL STRIP         | -                          | 0                          | 0.0%   | -                | 0                | 0.00%     | -                            | 0                            | 0.0%   | -                  | 0                     | 0.0%     |
| CATTLE                          | 848                        | 441                        | 92.3%  | 1,119,135        | 989,457          | 13.11%    | 13,819                       | 38,318                       | -63.9% | 16,413,365         | 16,087,063            | 2.0%     |
| CDD SEASONAL STRIP              | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 0                     | 0.0%     |
| CDD WEATHER                     | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 25                    | -100.0%  |
| CHI WHEAT                       | 3,998                      | 4,981                      | -19.7% | 1,467,122        | 1,596,229        | -8.09%    | 151,610                      | 159,318                      | -4.8%  | 36,365,895         | 33,330,843            | 9.1%     |
| CLASS IV MILK                   | 21                         | 0                          | 0.0%   | 2,354            | 323              | 628.79%   | 24                           | 79                           | -69.6% | 10,772             | 10,336                | 4.2%     |
| COCOA TAS                       | 0                          | 0                          | 0.0%   | 0                | 5                | -100.00%  | 0                            | 0                            | 0.0%   | 5                  | 92                    | -94.6%   |
| COFFEE                          | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 41                    | -100.0%  |
| CORN                            | 11,957                     | 12,805                     | -6.6%  | 4,129,113        | 3,711,972        | 11.24%    | 369,624                      | 381,635                      | -3.1%  | 93,693,645         | 86,665,154            | 8.1%     |
| COTTON                          | 0                          | 0                          | 0.0%   | 1                | 1                | 0.00%     | 0                            | 0                            | 0.0%   | 22                 | 20                    | 10.0%    |
| DJ_UBS ROLL SELECT INDEX        | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 0                     | 0.0%     |
| DOW-UBS COMMOD INDEX            | 0                          | 0                          | 0.0%   | 101,482          | 163,209          | -37.82%   | 0                            | 0                            | 0.0%   | 940,252            | 1,032,734             | -9.0%    |
| DRY WHEY                        | 0                          | 0                          | 0.0%   | 1,230            | 1,628            | -24.45%   | 0                            | 0                            | 0.0%   | 16,589             | 20,707                | -19.9%   |
| FEEDER CATTLE                   | 0                          | 0                          | 0.0%   | 231,572          | 274,899          | -15.76%   | 38                           | 538                          | -92.9% | 3,528,525          | 3,539,370             | -0.3%    |
| FERTILIZER PRODUCTS             | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 0                     | 0.0%     |
| GOLDMAN SACHS                   | 0                          | 0                          | 0.0%   | 31,926           | 28,228           | 13.10%    | 0                            | 0                            | 0.0%   | 375,177            | 402,183               | -6.7%    |
| GSCI EXCESS RETURN FUT          | 0                          | 0                          | 0.0%   | 74               | 320              | -76.88%   | 0                            | 0                            | 0.0%   | 892                | 1,385                 | -35.6%   |
| HDD EURO SEASONAL STRIP         | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 0                     | 0.0%     |
| HDD SEASONAL STRIP              | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 0                     | 0.0%     |
| HDD WEATHER                     | 0                          | 0                          | 0.0%   | 0                | 39               | -100.00%  | 0                            | 0                            | 0.0%   | 55                 | 89                    | -38.2%   |
| HDD WEATHER EUROPEAN            | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 50                    | -100.0%  |
| HOGS                            | 1,006                      | 710                        | 41.7%  | 752,089          | 729,540          | 3.09%     | 18,217                       | 34,887                       | -47.8% | 13,512,546         | 11,158,074            | 21.1%    |
| HOUSING INDEX                   | 0                          | 0                          | 0.0%   | 13               | 3                | 333.33%   | 0                            | 0                            | 0.0%   | 113                | 136                   | -16.9%   |
| Intercommodity Spread           | 0                          | 0                          | 0.0%   | 0                | 0                | 0.00%     | 0                            | 0                            | 0.0%   | 0                  | 0                     | 0.0%     |
| KC WHEAT                        | 108                        | 103                        | 4.9%   | 600,064          | 645,249          | -7.00%    | 12,543                       | 10,323                       | 21.5%  | 14,923,368         | 12,234,918            | 22.0%    |
| LUMBER                          | 0                          | 0                          | 0.0%   | 11,518           | 18,305           | -37.08%   | 0                            | 0                            | 0.0%   | 214,072            | 203,573               | 5.2%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                            | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG    | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG   | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG   | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|----------------------------|----------------------------|----------------------------|----------|------------------|------------------|---------|------------------------------|------------------------------|---------|--------------------|-----------------------|----------|
| <b>Ag Products Futures</b> |                            |                            |          |                  |                  |         |                              |                              |         |                    |                       |          |
| MALAYSIAN PALM SWAP        | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 0                  | 0                     | 0.0%     |
| MILK                       | 96                         | 80                         | 20.0%    | 28,521           | 24,944           | 14.34%  | 1,335                        | 2,994                        | -55.4%  | 300,265            | 315,653               | -4.9%    |
| MINI CORN                  | 0                          | 0                          | 0.0%     | 6,163            | 5,517            | 11.71%  | 0                            | 0                            | 0.0%    | 118,868            | 115,624               | 2.8%     |
| MINI SOYBEAN               | 0                          | 0                          | 0.0%     | 20,681           | 18,547           | 11.51%  | 0                            | 0                            | 0.0%    | 273,551            | 204,770               | 33.6%    |
| MINI WHEAT                 | 0                          | 0                          | 0.0%     | 3,052            | 2,759            | 10.62%  | 0                            | 0                            | 0.0%    | 88,004             | 67,702                | 30.0%    |
| MLK MID OPTIONS            | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 0                  | 0                     | 0.0%     |
| NFD MILK                   | 0                          | 70                         | -100.0%  | 3,615            | 4,621            | -21.77% | 43                           | 99                           | -56.6%  | 59,297             | 59,579                | -0.5%    |
| OATS                       | 0                          | 0                          | 0.0%     | 6,388            | 9,334            | -31.56% | 43                           | 80                           | -46.3%  | 163,568            | 154,537               | 5.8%     |
| PALM OIL                   | -                          | 0                          | 0.0%     | -                | 0                | 0.00%   | -                            | 0                            | 0.0%    | -                  | 0                     | 0.0%     |
| ROUGH RICE                 | 0                          | 0                          | 0.0%     | 21,703           | 23,390           | -7.21%  | 58                           | 0                            | 0.0%    | 219,048            | 257,636               | -15.0%   |
| SOYBEAN                    | 8,620                      | 11,256                     | -23.4%   | 4,072,116        | 4,971,433        | -18.09% | 180,444                      | 169,418                      | 6.5%    | 55,851,404         | 51,831,507            | 7.8%     |
| SOYBEAN MEAL               | 1,684                      | 5,474                      | -69.2%   | 2,038,645        | 2,427,741        | -16.03% | 38,308                       | 28,568                       | 34.1%   | 30,741,113         | 25,050,339            | 22.7%    |
| SOYBEAN OIL                | 823                        | 1,541                      | -46.6%   | 2,416,072        | 2,652,818        | -8.92%  | 16,677                       | 45,170                       | -63.1%  | 30,559,779         | 29,503,228            | 3.6%     |
| S&P GSCI ENHANCED ER SWA   | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 0                  | 0                     | 0.0%     |
| SUGAR 11                   | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 58                 | 42                    | 38.1%    |
| USD CRUDE PALM OIL         | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 0                  | 0                     | 0.0%     |
| WHEAT                      | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 22                 | 119,222               | -100.0%  |
| <b>Ag Products Options</b> |                            |                            |          |                  |                  |         |                              |                              |         |                    |                       |          |
| AUG-DEC SOYBEAN MEAL CS    | -                          | 0                          | 0.0%     | -                | 0                | 0.00%   | -                            | 0                            | 0.0%    | -                  | 0                     | 0.0%     |
| AUG-NOV SOYBEAN CAL SPR    | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 103                          | -100.0% | 0                  | 0                     | 0.0%     |
| BUTTER CS                  | 257                        | 305                        | -15.7%   | 4,623            | 1,968            | 134.91% | 10,969                       | 11,871                       | -7.6%   | 37,895             | 11,006                | 244.3%   |
| CASH-SETTLED CHEESE        | 5,842                      | 6,365                      | -8.2%    | 9,714            | 9,781            | -0.69%  | 36,904                       | 56,796                       | -35.0%  | 88,082             | 62,510                | 40.9%    |
| CATTLE                     | 17,374                     | 19,818                     | -12.3%   | 128,378          | 171,381          | -25.09% | 294,978                      | 558,398                      | -47.2%  | 2,345,635          | 2,342,992             | 0.1%     |
| CDD SEASONAL STRIP         | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 0                  | 0                     | 0.0%     |
| CDD WEATHER                | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%    | 0                  | 0                     | 0.0%     |
| CHI WHEAT                  | 74,314                     | 102,568                    | -27.5%   | 440,114          | 325,578          | 35.18%  | 1,982,158                    | 1,704,411                    | 16.3%   | 7,379,340          | 5,806,017             | 27.1%    |
| CLASS IV MILK              | 186                        | 30                         | 520.0%   | 2,701            | 955              | 182.83% | 1,274                        | 3,321                        | -61.6%  | 14,227             | 17,000                | -16.3%   |
| CORN                       | 241,335                    | 158,163                    | 52.6%    | 863,587          | 749,098          | 15.28%  | 6,208,360                    | 6,581,689                    | -5.7%   | 19,036,658         | 17,301,755            | 10.0%    |
| CORN NEARBY+2 CAL SPRD     | 9,885                      | 100                        | 9,785.0% | 0                | 0                | 0.00%   | 40,603                       | 15,838                       | 156.4%  | 150                | 102                   | 47.1%    |
| DEC-DEC CORN CAL SPRD      | 0                          | 76                         | -100.0%  | 0                | 0                | 0.00%   | 18,242                       | 11,862                       | 53.8%   | 33                 | 274                   | -88.0%   |
| DEC-JULY CORN CAL SPRD     | 0                          | 0                          | 0.0%     | 0                | 0                | 0.00%   | 18,499                       | 39,888                       | -53.6%  | 0                  | 0                     | 0.0%     |

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## CME Group Exchange Volume Comparison Report - Monthly

|                            | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG   | ELEC<br>DEC 2018 | ELEC<br>DEC 2017 | % CHG   | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG    | ELEC<br>Y.T.D 2018 | ELEC<br>Y.T.D<br>2017 | %<br>CHG |
|----------------------------|----------------------------|----------------------------|---------|------------------|------------------|---------|------------------------------|------------------------------|----------|--------------------|-----------------------|----------|
| <b>Ag Products Options</b> |                            |                            |         |                  |                  |         |                              |                              |          |                    |                       |          |
| DEC-JULY WHEAT CAL SPRD    | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 1,744                        | 1,923                        | -9.3%    | 0                  | 210                   | -100.0%  |
| DRY WHEY                   | 24                         | 478                        | -95.0%  | 395              | 369              | 7.05%   | 1,379                        | 4,288                        | -67.8%   | 5,611              | 3,193                 | 75.7%    |
| FEEDER CATTLE              | 1,957                      | 3,684                      | -46.9%  | 18,371           | 30,758           | -40.27% | 22,116                       | 52,018                       | -57.5%   | 316,625            | 360,535               | -12.2%   |
| HDD EURO SEASONAL STRIP    | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%     | 0                  | 0                     | 0.0%     |
| HDD SEASONAL STRIP         | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%     | 0                  | 0                     | 0.0%     |
| HDD WEATHER                | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%     | 0                  | 0                     | 0.0%     |
| HDD WEATHER EUROPEAN       | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%     | 0                  | 0                     | 0.0%     |
| HOGS                       | 22,424                     | 11,686                     | 91.9%   | 135,516          | 127,275          | 6.47%   | 326,708                      | 354,162                      | -7.8%    | 2,439,384          | 2,177,565             | 12.0%    |
| HOUSING INDEX              | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 0                            | 0.0%     | 0                  | 46                    | -100.0%  |
| Intercommodity Spread      | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 10,713                       | 701                          | 1,428.2% | 0                  | 0                     | 0.0%     |
| JAN-MAY SOYBEAN CAL SPRD   | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 36                           | -100.0%  | 0                  | 0                     | 0.0%     |
| JULY-DEC CORN CAL SPRD     | 500                        | 400                        | 25.0%   | 20               | 0                | 0.00%   | 11,076                       | 17,802                       | -37.8%   | 120                | 0                     | 0.0%     |
| JULY-DEC SOYMEAL CAL SPR   | 0                          | -                          | -       | 0                | -                | -       | 1,200                        | -                            | -        | 0                  | -                     | -        |
| JULY-DEC SOY OIL CAL SPRD  | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 630                          | -100.0%  | 0                  | 10                    | -100.0%  |
| JULY-DEC WHEAT CAL SPRD    | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 2,165                        | 1,414                        | 53.1%    | 455                | 200                   | 127.5%   |
| JULY-JULY WHEAT CAL SPRD   | -                          | 0                          | 0.0%    | -                | 0                | 0.00%   | -                            | 0                            | 0.0%     | -                  | 0                     | 0.0%     |
| JULY-NOV SOYBEAN CAL SPR   | 324                        | 345                        | -6.1%   | 150              | 200              | -25.00% | 56,707                       | 69,695                       | -18.6%   | 2,765              | 1,517                 | 82.3%    |
| KC WHEAT                   | 20,627                     | 6,209                      | 232.2%  | 49,360           | 26,696           | 84.90%  | 364,722                      | 160,218                      | 127.6%   | 639,628            | 368,666               | 73.5%    |
| LUMBER                     | 0                          | 0                          | 0.0%    | 2,070            | 1,609            | 28.65%  | 223                          | 44                           | 406.8%   | 21,334             | 16,175                | 31.9%    |
| LV CATL CSO                | 25                         | 0                          | 0.0%    | 0                | 0                | 0.00%   | 341                          | 1,972                        | -82.7%   | 0                  | 0                     | 0.0%     |
| MAR-JULY CORN CAL SPRD     | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 0                            | 70                           | -100.0%  | 0                  | 0                     | 0.0%     |
| MAR-JULY WHEAT CAL SPRD    | 1,690                      | 600                        | 181.7%  | 60               | 45               | 33.33%  | 1,890                        | 2,093                        | -9.7%    | 60                 | 121                   | -50.4%   |
| MILK                       | 7,850                      | 6,319                      | 24.2%   | 32,764           | 22,158           | 47.87%  | 68,857                       | 139,463                      | -50.6%   | 359,179            | 281,662               | 27.5%    |
| MLK MID OPTIONS            | 12                         | 78                         | -84.6%  | 13               | 0                | 0.00%   | 443                          | 834                          | -46.9%   | 41                 | 0                     | 0.0%     |
| NFD MILK                   | 289                        | 1,176                      | -75.4%  | 2,935            | 3,696            | -20.59% | 9,405                        | 17,085                       | -45.0%   | 48,963             | 35,804                | 36.8%    |
| NOV-JULY SOYBEAN CAL SPR   | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 1                            | 1,696                        | -99.9%   | 0                  | 0                     | 0.0%     |
| NOV-MAR SOYBEAN CSO        | 0                          | -                          | -       | 0                | -                | -       | 130                          | -                            | -        | 0                  | -                     | -        |
| NOV-NOV SOYBEAN CAL SPR    | 0                          | 0                          | 0.0%    | 0                | 0                | 0.00%   | 118                          | 164                          | -28.0%   | 0                  | 0                     | 0.0%     |
| OATS                       | 320                        | 381                        | -16.0%  | 72               | 237              | -69.62% | 2,413                        | 6,497                        | -62.9%   | 4,388              | 7,565                 | -42.0%   |
| ROUGH RICE                 | 480                        | 397                        | 20.9%   | 468              | 527              | -11.20% | 8,891                        | 12,112                       | -26.6%   | 9,388              | 12,629                | -25.7%   |
| SEP-DEC SOYBEAN MEAL CSC   | 0                          | -                          | -       | 0                | -                | -       | 1,170                        | -                            | -        | 0                  | -                     | -        |
| SOYBEAN                    | 144,831                    | 190,296                    | -23.9%  | 916,321          | 969,678          | -5.50%  | 3,326,672                    | 3,420,941                    | -2.8%    | 15,576,261         | 13,559,475            | 14.9%    |
| SOYBEAN CRUSH              | 0                          | 25                         | -100.0% | 0                | 0                | 0.00%   | 185                          | 741                          | -75.0%   | 0                  | 0                     | 0.0%     |
| SOYBEAN MEAL               | 25,096                     | 90,231                     | -72.2%  | 73,457           | 162,999          | -54.93% | 1,069,341                    | 681,006                      | 57.0%    | 2,106,023          | 1,478,839             | 42.4%    |

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## CME Group Exchange Volume Comparison Report - Monthly

|                            | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG        | ELEC<br>DEC 2018   | ELEC<br>DEC 2017   | % CHG        | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG        | ELEC<br>Y.T.D 2018   | ELEC<br>Y.T.D<br>2017 | %<br>CHG     |
|----------------------------|----------------------------|----------------------------|--------------|--------------------|--------------------|--------------|------------------------------|------------------------------|--------------|----------------------|-----------------------|--------------|
| <b>Ag Products Options</b> |                            |                            |              |                    |                    |              |                              |                              |              |                      |                       |              |
| SOYBEAN OIL                | 15,253                     | 40,200                     | -62.1%       | 80,016             | 77,031             | 3.88%        | 418,250                      | 926,190                      | -54.8%       | 985,328              | 1,124,038             | -12.3%       |
| SOYBN NEARBY+2 CAL SPRD    | 0                          | 0                          | 0.0%         | 0                  | 0                  | 0.00%        | 10                           | 460                          | -97.8%       | 0                    | 600                   | -100.0%      |
| SOYMEAL NEARBY+2 CAL SPR   | 0                          | 0                          | 0.0%         | 0                  | 0                  | 0.00%        | 8,415                        | 0                            | 0.0%         | 0                    | 0                     | 0.0%         |
| WHEAT                      | 100                        | 325                        | -69.2%       | 0                  | 25                 | -100.00%     | 3,087                        | 1,372                        | 125.0%       | 335                  | 528                   | -36.6%       |
| WHEAT-CORN ICSD            | 0                          | 2,290                      | -100.0%      | 0                  | 0                  | 0.00%        | 5,780                        | 8,840                        | -34.6%       | 0                    | 6                     | -100.0%      |
| WHEAT NEARBY+2 CAL SPRD    | 160                        | 425                        | -62.4%       | 0                  | 185                | -100.00%     | 9,647                        | 13,351                       | -27.7%       | 4,531                | 4,552                 | -0.5%        |
| <b>TOTAL FUTURES GROUP</b> |                            |                            |              |                    |                    |              |                              |                              |              |                      |                       |              |
| Interest Rate Futures      | 751,041                    | 756,512                    | -0.7%        | 150,114,597        | 99,714,799         | 50.5%        | 11,592,521                   | 9,596,451                    | 20.8%        | 1,831,780,214        | 1,471,510,583         | 24.5%        |
| Equity Index Futures       | 62,484                     | 118,124                    | -47.1%       | 81,846,055         | 44,571,138         | 83.6%        | 488,281                      | 816,606                      | -40.2%       | 686,082,521          | 496,175,965           | 38.3%        |
| Metals Futures             | 0                          | 0                          | 0.0%         | 7,318,359          | 9,304,489          | -21.3%       | 0                            | 0                            | 0.0%         | 141,929,049          | 126,875,306           | 11.9%        |
| Energy Futures             | 0                          | 0                          | 0.0%         | 38,865,980         | 38,120,091         | 2.0%         | 0                            | 0                            | 0.0%         | 532,885,720          | 522,747,364           | 1.9%         |
| FX Futures                 | 6                          | 183                        | -96.7%       | 18,948,588         | 18,925,404         | 0.1%         | 716                          | 16,464                       | -95.7%       | 231,772,808          | 208,903,502           | 10.9%        |
| Ags Futures                | 0                          | 0                          | 0.0%         | 0                  | 0                  | 0.0%         | 0                            | 0                            | 0.0%         | 0                    | 0                     | 0.0%         |
| Foreign Exchange Futures   | 0                          | 0                          | 0.0%         | 0                  | 3,887              | -100.0%      | 0                            | 0                            | 0.0%         | 12,942               | 21,480                | -39.7%       |
| Ag Products Futures        | 29,161                     | 37,461                     | -22.2%       | 17,083,553         | 18,317,048         | -6.7%        | 802,783                      | 871,427                      | -7.9%        | 298,556,434          | 272,531,974           | 9.5%         |
| <b>TOTAL FUTURES</b>       | <b>842,692</b>             | <b>912,280</b>             | <b>-7.6%</b> | <b>314,177,132</b> | <b>228,956,856</b> | <b>37.2%</b> | <b>12,884,301</b>            | <b>11,300,948</b>            | <b>14.0%</b> | <b>3,723,019,688</b> | <b>3,098,766,174</b>  | <b>20.1%</b> |
| <b>TOTAL OPTIONS GROUP</b> |                            |                            |              |                    |                    |              |                              |                              |              |                      |                       |              |
| Equity Index Options       | 1,220,553                  | 1,165,547                  | 4.7%         | 18,259,089         | 11,965,293         | 52.6%        | 12,238,676                   | 13,736,446                   | -10.9%       | 195,265,435          | 155,035,810           | 25.9%        |
| Interest Rate Options      | 20,384,077                 | 16,335,927                 | 24.8%        | 25,818,344         | 16,985,067         | 52.0%        | 254,907,567                  | 237,790,158                  | 7.2%         | 322,798,618          | 262,775,751           | 22.8%        |
| Metals Options             | 0                          | 0                          | 0.0%         | 1,008,439          | 787,345            | 28.1%        | 0                            | 0                            | 0.0%         | 11,733,699           | 9,288,862             | 26.3%        |
| Energy Options             | 0                          | 0                          | 0.0%         | 4,027,322          | 4,624,603          | -12.9%       | 0                            | 0                            | 0.0%         | 55,008,744           | 52,597,547            | 4.6%         |
| FX Options                 | 1,443                      | 3,252                      | -55.6%       | 1,185,347          | 1,245,088          | -4.8%        | 32,452                       | 111,431                      | -70.9%       | 18,191,733           | 19,043,339            | -4.5%        |
| Ag Products Options        | 591,155                    | 642,970                    | -8.1%        | 2,761,105          | 2,682,249          | 2.9%         | 14,345,786                   | 14,881,995                   | -3.6%        | 51,422,439           | 44,975,592            | 14.3%        |
| Foreign Exchange Options   | 0                          | 0                          | 0.0%         | 2,615              | 138                | 1,794.9%     | 0                            | 0                            | 0.0%         | 12,296               | 772                   | 1,492.7%     |
| <b>TOTAL OPTIONS</b>       | <b>22,197,228</b>          | <b>18,147,696</b>          | <b>22.3%</b> | <b>53,062,261</b>  | <b>38,289,783</b>  | <b>38.6%</b> | <b>281,524,481</b>           | <b>266,520,030</b>           | <b>5.6%</b>  | <b>654,432,964</b>   | <b>543,717,673</b>    | <b>20.4%</b> |

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## CME Group Exchange Volume Comparison Report - Monthly

|                       | Open<br>Outcry<br>DEC 2018 | Open<br>Outcry<br>DEC 2017 | % CHG        | ELEC<br>DEC 2018   | ELEC<br>DEC 2017   | % CHG        | Open<br>Outcry<br>Y.T.D 2018 | Open<br>Outcry<br>Y.T.D 2017 | % CHG       | ELEC<br>Y.T.D 2018   | ELEC<br>Y.T.D<br>2017 | %<br>CHG     |
|-----------------------|----------------------------|----------------------------|--------------|--------------------|--------------------|--------------|------------------------------|------------------------------|-------------|----------------------|-----------------------|--------------|
| <b>TOTAL COMBINED</b> |                            |                            |              |                    |                    |              |                              |                              |             |                      |                       |              |
| Interest Rate         | 21,135,118                 | 17,092,439                 | 23.7%        | 175,932,941        | 116,699,866        | 50.8%        | 266,500,088                  | 247,386,609                  | 7.7%        | 2,154,578,832        | 1,734,286,334         | 24.2%        |
| Equity Index          | 1,283,037                  | 1,283,671                  | 0.0%         | 100,105,144        | 56,536,431         | 77.1%        | 12,726,957                   | 14,553,052                   | -12.5%      | 881,347,956          | 651,211,775           | 35.3%        |
| Metals                | 0                          | 0                          | 0.0%         | 8,326,798          | 10,091,834         | -17.5%       | 0                            | 0                            | 0.0%        | 153,662,748          | 136,164,168           | 12.9%        |
| Energy                | 0                          | 0                          | 0.0%         | 42,893,302         | 42,744,694         | 0.3%         | 0                            | 0                            | 0.0%        | 587,894,464          | 575,344,911           | 2.2%         |
| FX                    | 1,449                      | 3,435                      | -57.8%       | 20,133,935         | 20,170,492         | -0.2%        | 33,168                       | 127,895                      | -74.1%      | 249,964,541          | 227,946,841           | 9.7%         |
| Ags                   | 0                          | 0                          | 0.0%         | 0                  | 0                  | 0.0%         | 0                            | 0                            | 0.0%        | 0                    | 0                     | 0.0%         |
| Foreign Exchange      | 0                          | 0                          | 0.0%         | 2,615              | 4,025              | -35.0%       | 0                            | 0                            | 0.0%        | 25,238               | 22,252                | 13.4%        |
| Ag Products           | 620,316                    | 680,431                    | -8.8%        | 19,844,658         | 20,999,297         | -5.5%        | 15,148,569                   | 15,753,422                   | -3.8%       | 349,978,873          | 317,507,566           | 10.2%        |
| <b>GRAND TOTAL</b>    | <b>23,039,920</b>          | <b>19,059,976</b>          | <b>20.9%</b> | <b>367,239,393</b> | <b>267,246,639</b> | <b>37.4%</b> | <b>294,408,782</b>           | <b>277,820,978</b>           | <b>6.0%</b> | <b>4,377,452,652</b> | <b>3,642,483,847</b>  | <b>20.2%</b> |

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