

**SUBMISSION COVER SHEET**

**IMPORTANT:** Check box if Confidential Treatment is requested

Registered Entity Identifier Code (optional): 23-259 (10 of 18)

Organization: Chicago Mercantile Exchange Inc. ("CME")

Filing as a:  DCM  SEF  DCO  SDR

Please note - only ONE choice allowed.

Filing Date (mm/dd/yy): 07/27/23 Filing Description: Initial Listing of Eighteen (18) Options on Heating Degree Day (HDD) Index Futures and Seasonal Strip HDD Index Futures Contracts

**SPECIFY FILING TYPE**

Please note only ONE choice allowed per Submission.

**Organization Rules and Rule Amendments**

- Certification § 40.6(a)
- Approval § 40.5(a)
- Notification § 40.6(d)
- Advance Notice of SIDCO Rule Change § 40.10(a)
- SIDCO Emergency Rule Change § 40.10(h)

**Rule Numbers:**

**New Product**

Please note only ONE product per Submission.

- Certification § 40.2(a)
- Certification Security Futures § 41.23(a)
- Certification Swap Class § 40.2(d)
- Approval § 40.3(a)
- Approval Security Futures § 41.23(b)
- Novel Derivative Product Notification § 40.12(a)
- Swap Submission § 39.5

Official Product Name: See filing.

**Product Terms and Conditions (product related Rules and Rule Amendments)**

- Certification § 40.6(a)
- Certification Made Available to Trade Determination § 40.6(a)
- Certification Security Futures § 41.24(a)
- Delisting (No Open Interest) § 40.6(a)
- Approval § 40.5(a)
- Approval Made Available to Trade Determination § 40.5(a)
- Approval Security Futures § 41.24(c)
- Approval Amendments to enumerated agricultural products § 40.4(a), § 40.5(a)
- "Non-Material Agricultural Rule Change" § 40.4(b)(5)
- Notification § 40.6(d)

Official Name(s) of Product(s) Affected:

Rule Numbers:

July 27, 2023

**VIA ELECTRONIC PORTAL**

Mr. Christopher J. Kirkpatrick  
Office of the Secretariat  
Commodity Futures Trading Commission  
Three Lafayette Centre  
1155 21st Street, N.W.  
Washington, D.C. 20581

**Re: CFTC Regulation 40.2(a) Certification. Initial Listing of Eighteen (18) Options on Heating Degree Day (HDD) Index Futures and Seasonal Strip HDD Index Futures Contracts.  
CME Submission No. 23-259 (10 of 18)**

Dear Mr. Kirkpatrick:

Chicago Mercantile Exchange Inc. (“CME” or “Exchange”) certifies to the Commodity Futures Trading Commission (“CFTC” or “Commission”) the initial listing of Options on Heating Degree Day (HDD) Index Futures and Seasonal Strip HDD Index Futures contracts for Boston, Burbank, Houston, Philadelphia, Essen, and Paris (collectively, the “Contracts”) for trading on the CME Globex electronic platform (“CME Globex”) and for submission for clearing via CME ClearPort as more specifically described below effective on Sunday, August 13, 2023 for trade date Monday, August 14, 2023.

| <i>Contract Title/Commodity Code/Rulebook Chapter</i>                                 | <i>Commodity Code</i> | <i>CME Rulebook Chapter</i> |
|---|-----------------------|-----------------------------|
| <b>Options on CME Degree Days Index Futures – BOSTON HDD</b>                          | 403A                  | HW                          |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - BOSTON HDD NOV</b>       | 405A                  | HWX                         |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - BOSTON HDD DEC</b>       | 405A                  | HWZ                         |
| <b>Options on CME Degree Days Index Futures – BURBANK HDD</b>                         | 403A                  | LP                          |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - BURBANK HDD NOV</b>      | 405A                  | LPX                         |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - BURBANK HDD DEC</b>      | 405A                  | LPZ                         |
| <b>Options on CME Degree Days Index Futures – HOUSTON HDD</b>                         | 403A                  | HR                          |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - HOUSTON HDD NOV</b>      | 405A                  | HRX                         |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - HOUSTON HDD DEC</b>      | 405A                  | HRZ                         |
| <b>Options on CME Degree Days Index Futures – PHILADELPHIA HDD</b>                    | 403A                  | H6                          |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - PHILADELPHIA HDD NOV</b> | 405A                  | H6X                         |

|   |      |     |
|---|------|-----|
| <b>Options on CME Seasonal Strip Degree Days Index Futures - PHILADELPHIA HDD DEC</b> | 405A | H6Z |
| <b>Options on CME European HDD Index Futures ESSEN</b>                                | 406A | D4  |
| <b>Options on CME European Seasonal Strip HDD Index Futures ESSEN NOV</b>             | 407A | D4X |
| <b>Options on CME European Seasonal Strip HDD Index Futures ESSEN DEC</b>             | 407A | D4Z |
| <b>Options on CME European HDD Index Futures PARIS</b>                                | 406A | D1  |
| <b>Options on CME European Seasonal Strip HDD Index Futures PARIS NOV</b>             | 407A | D1X |
| <b>Options on CME European Seasonal Strip HDD Index Futures PARIS DEC</b>             | 407A | D1Z |

Exhibits A, B, C, and D provide amendments to the relevant rulebook chapters to include the Contracts. Exhibit E addresses the Exchange fees. Exhibit F addresses the applicable position limits and reportable position levels pursuant to Chapter 5 of the CME Rulebook. Exhibit G sets forth the applicable CME Globex non-reviewable trading ranges as prescribed in CME Rule 588.H. Exhibit H provides the market overview and analysis of deliverable supply in support of the related position limits.

## Section 1: Contract Terms and Conditions

### Contract Specifications

| <i>Contract Title/Rulebook Chapter/Commodity Code</i>                                 | <i>Rulebook Chapter</i> | <i>Commodity Code</i> |
|---|-------------------------|-----------------------|
| <b>Options on CME Degree Days Index Futures - BOSTON HDD</b>                          | 403A                    | HW                    |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - BOSTON HDD NOV</b>       | 405A                    | HWX                   |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - BOSTON HDD DEC</b>       | 405A                    | HWZ                   |
| <b>Options on CME Degree Days Index Futures - BURBANK HDD</b>                         | 403A                    | LP                    |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - BURBANK HDD NOV</b>      | 405A                    | LPX                   |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - BURBANK HDD DEC</b>      | 405A                    | LPZ                   |
| <b>Options on CME Degree Days Index Futures - HOUSTON HDD</b>                         | 403A                    | HR                    |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - HOUSTON HDD NOV</b>      | 405A                    | HRX                   |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - HOUSTON HDD DEC</b>      | 405A                    | HRZ                   |
| <b>Options on CME Degree Days Index Futures - PHILADELPHIA HDD</b>                    | 403A                    | H6                    |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - PHILADELPHIA HDD NOV</b> | 405A                    | H6X                   |
| <b>Options on CME Seasonal Strip Degree Days Index Futures - PHILADELPHIA HDD DEC</b> | 405A                    | H6Z                   |

|   |  |   |                          |
|---|--|---|--------------------------|
|   | <b>Options on CME European HDD Index Futures ESSEN</b>   | 406A  | D4                       |
|   | <b>Options on CME European Seasonal Strip HDD Index Futures ESSEN NOV</b>  | 407A  | D4X                      |
|   | <b>Options on CME European Seasonal Strip HDD Index Futures ESSEN DEC</b>  | 407A  | D4Z                      |
|   | <b>Options on CME European HDD Index Futures PARIS</b>   | 406A  | D1                       |
|   | <b>Options on CME European Seasonal Strip HDD Index Futures PARIS NOV</b>  | 407A  | D1X                      |
|   | <b>Options on CME European Seasonal Strip HDD Index Futures PARIS DEC</b>  | 407A  | D1Z                      |
| <i>Trading Unit</i>                                       | <b>US Cities:</b>  | \$20 (US Dollars) times the respective CME Degree Day Index   |                          |
|   | <b>European Cities:</b>  | €20 (Euros) times the respective CME European HDD/CAT Index   |                          |
| <i>Listing Schedule (U.S. Cities and European Cities)</i> | <b>Options on CDD Index Futures</b>  | 21 monthly contracts of Apr, May, Jun, Jul, Aug, Sep, Oct   |                          |
|   | <b>Options on CDD May Seasonal Strip Futures</b>   | 1 monthly contract of Sep   |                          |
|   | <b>Options on CDD Jul Seasonal Strip Futures</b>   | 1 monthly contract of Aug   |                          |
|   | <b>Options on HDD Index Futures</b>  | 21 monthly contracts of Oct, Nov, Dec, Jan, Feb, Mar, Apr   |                          |
|   | <b>Options on HDD Nov Seasonal Strip Futures</b>   | 1 monthly contract of Mar   |                          |
|   | <b>Options on HDD Dec Seasonal Strip Futures</b>   | 1 monthly contract of Feb   |                          |
|   | <b>Options on CAT Index Futures</b>  | 21 monthly contracts of Apr, May, Jun, Jul, Aug, Sep, Oct   |                          |
|   | <b>Options on CAT May Seasonal Strip Futures</b>   | 1 monthly contract Sep  |                          |
|   | <b>Options on CAT Jul Seasonal Strip Futures</b>   | 1 monthly contract of Aug   |                          |
| <i>Initial Listing</i>                                    |  | Oct 2023 – Sep 2024   |                          |
| <i>Trading and Clearing Hours</i>                         | CME Globex Pre-Open  | Sunday – 4:00 p.m. – 5:00 p.m. Central Time/CT<br>Monday – Thursday 4:45 p.m. – 5:00 p.m. CT                |                          |
|   | CME Globex   | Sunday - Friday 5:00 p.m. - 3:15 p.m. CT with daily trading halts 3:15 p.m. - 5:00 p.m.                     |                          |
|   | CME ClearPort  | Sunday 5:00 p.m. - Friday 5:45 p.m. CT with no reporting<br>Monday - Thursday from 5:45 p.m. – 6:00 p.m. CT |                          |
| <i>Minimum Price Increments</i>                           | <b>US Cities:</b>  | 1 index point (= \$20 per contract)   |                          |
|   | <b>European Cities:</b>  | 1 index point (= €20 per contract)  |                          |
| <i>Termination of Trading</i>                             | Trading shall terminate for U.S. cities at 9:00 a.m. CT on the second Exchange Business Day after the futures contract month. Trading shall terminate for European cities at 9:00 a.m. CT on the fifth Exchange Business Day after the futures contract month. |   |                          |
| <i>Settlement Type</i>                                    | Physically Settled - Exercise into Futures   |   |                          |
| <i>CME Globex Matching Algorithm</i>                      | F-FIFO (First-In, First Out)   |   |                          |
| <i>Exercise Style</i>                                     | European   |   |                          |
| <i>Strike Price Listing</i>                               | Dynamically listed at intervals of 1 index point   |   |                          |
| <i>Position Limits and Reportable Levels</i>              |  | <b>Single Month Accountability Level</b>  | <b>Reportable Levels</b> |
|   | <b>Boston CDD/HDD Options</b>  | 10,000  | 25                       |
|   | <b>Burbank CDD/HDD Options</b>   | 10,000  | 25                       |

|                                     |        |    |
|-------------------------------------|--------|----|
| <b>Houston CDD/HDD Options</b>      | 10,000 | 25 |
| <b>Philadelphia CDD/HDD Options</b> | 10,000 | 25 |
| <b>Essen HDD/CAT Options</b>        | 10,000 | 25 |
| <b>Paris HDD/CAT Options</b>        | 10,000 | 25 |

*Block Trade Minimum  
Threshold and  
Reporting Window*

20 contracts subject to a 15-minute reporting window

## Section 2: Price Reporting Agency

The official weather data that is used to settle our contracts is published by government weather agencies and then supplied to us from Speedwell Settlement Services Ltd. (SSS). In the case of the United States, the National Weather Service (NWS), Federal Aviation Administration (FAA), the Department of Defense (DoD), and the National Oceanic and Atmospheric Administration (NOAA) are responsible for the measurement, recording and issuance of the data. Weather stations used for CME weather contracts are located at major airports or government owned properties having 24 hour/365 day security measures in place to insure the accuracy of the data being reported. Similar to the US, European and Asian governments have implemented similar systems and collect the data in the same way, with the same authority and oversight.

These weather stations serve a vital function to air traffic safety around the world. Data readings from these stations are used to determine such things as flying and de-icing conditions. Therefore, the accuracy and security of these instruments are a high priority for these government agencies. Instrument placement is usually out on the property in remote secure locations, so as not to be affected by jet engine or tarmac heat radiation and most importantly human tampering.

### Settlement Data

Raw Data Weather Elements that have been processed to produce Certified Data, and when needed, Calculated Data.

### Data Certification

Data Certification involves the process of detecting data problems (Gross Errors and Missing Data) and then correcting those problems by removing and replacing problem values with Estimated Values.

As weather data is being released, a number of weather data suppliers are monitoring the data for any unusual readings. If a reading were to be an outlier or missing it would be reported to the issuing agency to verify for accuracy and/or correction. Weather data suppliers, such as Speedwell, not only monitor the specific CME weather locations, but also surrounding weather stations. They use surrounding weather stations as one means to verify for the accuracy of data being issued by the reporting agency. Speedwell is an industry leader in weather-related data to the futures and OTC markets.

## Section 3: Compliance with Core Principles

The Exchange reviewed the designated contract market core principles (“Core Principles”) as set forth in the Commodity Exchange Act (“CEA” or “Act”) and identified that the following Core Principles may be impacted by this initiative as follows:

- **Compliance with Rules:** Trading in the Contracts will be subject to all CME Rules, including prohibitions against fraudulent, noncompetitive, unfair and abusive practices as outlined in CME Rule Chapter 4, the Exchange’s trade practice rules, the majority of which are contained in Chapter 5 and Chapter 8 of the CME Rulebook, and the dispute resolution and arbitration procedures of CME Rule Chapter 6. As with all products listed for trading on one of CME Group’s designated

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contract markets, trading activity in the Contract will be subject to monitoring and surveillance by CME Group's Market Regulation Department. The Market Regulation Department has the authority to exercise its investigatory and enforcement power where potential rule violations are identified.

- **Contracts not Readily Subject to Manipulation:** The Contracts are not readily subject to manipulation because of their structural attributes and reliance on government supplied data. Final settlements are based on official weather data that is published by government weather agencies and supplied to the Exchange by a single PRA, Speedwell Settlement Services Ltd. In the case of the United States, the National Weather Service (NWS), Federal Aviation Administration (FAA), the Department of Defense (DoD), and the National Oceanic and Atmospheric Administration (NOAA) are responsible for the measurement, recording and issuance of the data. Weather stations used for CME weather contracts are located at major airports or government owned properties having 24 hour/365 day security measures in place to insure the accuracy of the data being reported. Similar to the U.S., European and Asian governments have implemented similar systems and collect the data in the same way, with the same authority and oversight.
- **Prevention of Market Disruption:** Trading in the Contracts will be subject to the rules of the Exchange, which include prohibitions on manipulation, price distortion, and disruption to the cash settlement process. As with any new product listed for trading on a CME Group designated contract market, trading activity in the option contract proposed herein will be subject to monitoring and surveillance by CME Group's Market Regulation Department.
- **Position Limitations or Accountability:** The speculative position limits for the Contracts as demonstrated in this submission are consistent with the Commission's guidance.
- **Emergency Authority:** As with all CME Group futures and options product, the Exchange shall have full authority to act appropriately and as necessary in emergency situations.
- **Availability of General Information:** The Exchange will publish on its website information in regard to contract specifications, terms, and conditions, as well as daily trading volume, open interest, and price information for the Contracts. The Exchange will issue a Special Executive Report ("SER") regarding the launch of the Contracts. The SER will also be posted on the CME Group website.
- **Daily Publication of Trading Information:** The Exchange will publish contract trading volumes, open interest levels, and price information daily on its website and through quote vendors for the Contracts.
- **Execution of Transactions:** The Contracts will be listed for trading on the CME Globex and for submission of clearing through the CME ClearPort platform. The CME Globex trading venue provides for competitive and open execution of transactions and affords the benefits of reliability and global connectivity.
- **Trade Information:** All requisite trade information for the Contracts will be included in the audit trail and is sufficient for the Market Regulation Department to monitor for market abuse.
- **Financial Integrity of Contracts:** The Contracts will be cleared by the CME Clearing, a derivatives clearing organization registered with the CFTC and subject to all CFTC Regulations related thereto.
- **Protection of Market Participants:** CME Rulebook Chapters 4 and 5 set forth multiple prohibitions that preclude intermediaries from disadvantaging their customers. These rules apply to trading in all of the Exchange's competitive trading venues.
- **Disciplinary Procedures:** Chapter 4 of the Rulebook contains provisions that allow the Exchange to discipline, suspend or expel members or market participants that violate the Rulebook. Trading

in the Contracts will be subject to Chapter 4, and the Market Regulation Department has the authority to exercise its enforcement power in the event rule violations in these products are identified.

- **Dispute Resolution:** Disputes with respect to trading in the Contract will be subject to the arbitration provisions set forth in Chapter 6 of the Rulebook. Chapter 6 allows all non-members to submit a claim for financial losses resulting from transactions on the Exchange to arbitration. A member named as a respondent in a claim submitted by a non-member is required to participate in the arbitration pursuant to Chapter 6. Additionally, the Exchange requires that members resolve all disputes concerning transactions on the Exchange via arbitration.

Pursuant to Section 5c(c) of the Act and CFTC Regulation 40.6(a), the Exchange hereby certifies that the listing of the Contracts complies with the Act, including regulations under the Act. There were no substantive opposing views to this proposal.

The Exchange certifies that this submission has been concurrently posted on the Exchange's website at <http://www.cmegroup.com/market-regulation/rule-filings.html>.

Should you have any questions concerning the above, please contact the undersigned at 212-299-2200 or via e-mail at [CMEGSubmissionInquiry@cmegroup.com](mailto:CMEGSubmissionInquiry@cmegroup.com).

Sincerely,

/s/ Christopher Bowen  
Managing Director and Chief Regulatory Counsel

Attachments: Exhibit A – CME Rulebook Chapter 403A  
Exhibit B – CME Rulebook Chapter 405A  
Exhibit C – CME Rulebook Chapter 406A  
Exhibit D – CME Rulebook Chapter 407A  
Exhibit E – Exchange Fees  
Exhibit F – Position Limit, Position Accountability, and Reportable Level Table in  
Chapter 5 of the CME Rulebook (attached under separate cover)  
Exhibit G – CME Rule 588.H. – (“Globex Non-Reviewable Trading Ranges”) Table  
Exhibit H – Cash Market Overview and Deliverable Supply Analysis

## **Exhibit A**

### **CME Rulebook**

(additions underscored)

#### **Chapter 403A Options on CME Degree Days Index Futures**

##### **403A00. SCOPE OF CHAPTER**

This chapter is limited in application to options on CME Degree Days Index futures. In addition to this chapter, options on CME Degree Days Index futures shall be subject to the general rules and regulations of the Exchange insofar as applicable.

For purposes of this chapter, unless otherwise specified, times referred herein shall refer to and indicate Chicago time.

##### **403A01. OPTIONS CHARACTERISTICS**

###### **403A01.A. Contract Months and Trading Hours**

Options contracts shall be listed for such contract months and scheduled for trading during such hours as may be determined by the Exchange.

###### **403A01.B. Trading Unit**

The trading unit shall be an option to buy, in the case of the call, or to sell, in the case of the put, one CME Degree Days Index futures contract as specified in Chapter 403. The table below lists the cities and their corresponding weather stations for which options on CME Degree Days Index Futures are available:

Listing Cities and Corresponding Automated Weather Stations

Atlanta Hartsfield International Airport (WBAN 13874)

**Boston-Logan International Airport (WBAN 14739)**

**Burbank-Glendale-Pasadena Airport (WBAN 23152)**

Chicago O'Hare International Airport (WBAN 94846)

Cincinnati Northern Kentucky (Covington) Airport (WBAN 93814)

Dallas-Fort Worth International Airport (WBAN 03927)

**Houston-George Bush Intercontinental Airport (WBAN 12960)**

Las Vegas McCarran International Airport (WBAN 23169)

Minneapolis-St. Paul International Airport (WBAN 14922)

New York La Guardia Airport (WBAN 14732)

**Philadelphia International Airport (WBAN 13739)**

Portland International Airport (WBAN 24229)

Sacramento Executive Airport (WBAN 23232)

###### **403A01.C. Minimum Fluctuations**

The price of an option shall be quoted in terms of the respective CME Degree Days Index. Each index point represents \$20. For example, a quote of 2 index points represents \$40. The minimum fluctuation shall be 1.0 HDD or 1.0 CDD (also known as one tick), equal to \$20.

###### **403A01.D. [Reserved]**

###### **403A01.E. Exercise Prices**

Exercise prices shall be stated in terms of the respective CME Degree Days Index futures contract. Eligible exercise prices shall also be at intervals of 1 index point (e.g., 710, 711, 712, etc.). At the commencement of option trading in a contract month, the eligible put and call options are dynamically listed at intervals of 1 index point in a range of 0 to 1500 index points for CDD months and a range of 0 to 3200 index points for HDD months. New options may be listed for trading up to and including the



termination of trading. The Exchange may modify the provisions governing the establishment of exercise prices as it deems appropriate.

**403A01.F. Position Limits, Exemptions, Position Accountability and Reportable Levels**

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

**403A01.G. [Reserved]**

**403A01.H. [Reserved]**

**403A01.I. Termination of Trading**

Options trading shall terminate on the same date and time as the underlying futures contract.

**403A01.J. [Reserved]**

**403A02. EXERCISE AND ASSIGNMENT**

In addition to the applicable procedures and requirements of Chapter 7, the following shall apply to the exercise of the CME Degree Days options.

**403A02.A. Exercise of Option by Buyer**

An option may be exercised by the buyer only on the termination of Trading Day. To exercise an option the clearing member representing the buyer shall present an exercise notice to the Clearing House by 5:30 p.m. on the day of exercise.

An option that is in the money and has not been liquidated prior to the termination of trading shall, in the absence of contrary instructions delivered to the Clearing House by 5:30 p.m. on the day of expiration by the clearing member representing the option buyer, be exercised automatically.

**403A02.B. Assignment**

Exercise notices accepted by the Clearing House shall be assigned through a process of random selection to clearing members with open short positions in the same series. A clearing member to which an exercise notice is assigned shall be notified thereof as soon as practicable after such notice is assigned by the Clearing House, but not later than 45 minutes before the opening of Regular Trading Hours in the underlying futures contract on the following Business Day.

The clearing member assigned an exercise notice shall be assigned a short position in the underlying futures contract if a call is exercised or a long position if a put is exercised. The clearing member representing the option buyer shall be assigned a long position in the underlying futures contract if a call is exercised and a short position if a put is exercised.

All such futures positions shall be assigned at a price equal to the exercise price of the option and shall be marked to market in accordance with Rule 814 on the Trading Day of acceptance by the Clearing House of the exercise notice.

**403A03. [RESERVED]**

(End Chapter 403A)

**INTERPRETATIONS AND SPECIAL NOTICES  
RELATING TO CHAPTER 403A**

**LIMITATION OF LIABILITY AND DISCLAIMER**

Speedwell Settlement Services Ltd. ("SSS") grants the Exchange the rights to use various data ("Data") in connection with the trading of futures contracts and options on futures contracts based upon such Data. SSS makes no warranty, express or implied, as to the results to be obtained by any person or any entity from the use of the Data in connection with the trading of futures contracts, options on futures contracts or any other use. SSS makes no express or implied warranties, and expressly disclaims all warranties of merchantability or fitness for a particular purpose or use with

respect to the Data. Without limiting any of the foregoing, in no event shall SSS have any liability for any special, punitive, indirect, or consequential damages (including lost profits), even if notified of the possibility of such damages.

## **Exhibit B**

### **CME Rulebook**

(additions underscored)

#### **Chapter 405A**

#### **Options on CME Seasonal Strip Degree Days Index Futures**

##### **405A00. SCOPE OF CHAPTER**

This chapter is limited in application to options on CME Seasonal Strip Degree Days Index futures. In addition to this chapter, options on CME Seasonal Strip Degree Days Index futures shall be subject to the general rules and regulations of the Exchange insofar as applicable.

For purposes of this chapter, unless otherwise specified, times referred herein shall refer to and indicate Chicago time.

##### **405A01. OPTIONS CHARACTERISTICS**

###### **405A01.A. Contract Months and Trading Hours**

Options contracts shall be listed for such contract months and scheduled for trading during such hours as may be determined by the Exchange.

###### **405A01.B. Trading Unit**

The trading unit shall be an option to buy, in the case of the call, or to sell, in the case of the put, one respective CME Seasonal Strip Degree Days Index futures contract as specified in Chapter 405. The table below lists the cities and their corresponding weather stations for which options on CME Seasonal Strip Degree Days Index Futures are available:

###### Listing Cities and Corresponding Automated Weather Stations

Atlanta Hartsfield International Airport (WBAN 13874)

**Boston-Logan International Airport (WBAN 14739)**

**Burbank-Glendale-Pasadena Airport (WBAN 23152)**

Chicago O'Hare International Airport (WBAN 94846)

Cincinnati Northern Kentucky (Covington) Airport (WBAN 93814)

Dallas-Fort Worth International Airport (WBAN 03927)

**Houston-George Bush Intercontinental Airport (WBAN 12960)**

Las Vegas McCarran International Airport (WBAN 23169)

Minneapolis-St. Paul International Airport (WBAN 14922)

New York La Guardia Airport (WBAN 14732)

**Philadelphia International Airport (WBAN 13739)**

Portland International Airport (WBAN 24229)

Sacramento Executive Airport (WBAN 23232)

###### **405A01.C. Minimum Fluctuations**

The price of an option shall be quoted in terms of the respective CME Seasonal Strip Degree Days Index. Each index point represents \$20. For example, a quote of 2 index points represents \$40. The minimum fluctuation shall be 1.0 HDD or 1.0 CDD (also known as one tick), equal to \$20.

###### **405A01.D. [Reserved]**

###### **405A01.E. Exercise Prices**

Exercise prices shall be stated in terms of the respective CME Seasonal Strip Degree Days Index futures

contract. Eligible exercise prices shall be at intervals of 1 CME Seasonal Strip Degree Days Index point (e.g., 4510, 4511, 4512, etc.).

At the commencement of options trading in a contract month, the eligible put and call options are dynamically listed at intervals of 1 index point in a range of 0 to 7500 index points for the CDD season and a range of 0 to 16,000 index points for the HDD season. New options may be listed for trading up to and including the termination of trading.

The Exchange may modify the provisions governing the establishment of exercise prices as it deems appropriate.

**405A01.F. Position Limits, Exemptions, Position Accountability and Reportable Levels**

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

**405A01.G. [Reserved]**

**405A01.H. [Reserved]**

**405A01.I. Termination of Trading**

Options trading shall terminate on the same date and time as the underlying futures contract.

**405A01.J. [Reserved]**

**405A02. EXERCISE AND ASSIGNMENT**

In addition to the applicable procedures and requirements of Chapter 7, the following shall apply to the exercise of the CME Seasonal Degree Days options.

**405A02.A. Exercise of Option by Buyer**

An option may be exercised by the buyer only on the termination of Trading Day. To exercise an option the clearing member representing the buyer shall present an exercise notice to the Clearing House by 5:30 p.m. on the day of exercise.

An option that is in the money and has not been liquidated prior to the termination of trading shall, in the absence of contrary instructions delivered to the Clearing House by 5:30 p.m. on the day of expiration by the clearing member representing the option buyer, be exercised automatically.

**405A02.B. Assignment**

Exercise notices accepted by the Clearing House shall be assigned through a process of random selection to clearing members with open short positions in the same series. A clearing member to which an exercise notice is assigned shall be notified thereof as soon as practicable after such notice is assigned by the Clearing House, but not later than 45 minutes before the opening of Regular Trading Hours in the underlying futures contract on the following Business Day.

The clearing member assigned an exercise notice shall be assigned a short position in the underlying futures contract if a call is exercised or a long position if a put is exercised. The clearing member representing the option buyer shall be assigned a long position in the underlying futures contract if a call is exercised and a short position if a put is exercised.

All such futures positions shall be assigned at a price equal to the exercise price of the option and shall be marked to market in accordance with Rule 814 on the Trading Day of acceptance by the Clearing House of the exercise notice.

**405A03. [RESERVED]**

(End Chapter 405A)

**INTERPRETATIONS & SPECIAL NOTICES  
RELATING TO CHAPTER 405A**

**LIMITATION OF LIABILITY AND DISCLAIMER**

Speedwell Settlement Services Ltd. (“SSS”) grants the Exchange the rights to use various data (“Data”) in connection with the trading of futures contracts and options on futures contracts based upon such Data. SSS makes no warranty, express or implied, as to the results to be obtained by any person or any entity from the use of the Data in connection with the trading of futures contracts, options on futures contracts or any other use. SSS makes no express or implied warranties, and expressly disclaims all warranties of merchantability or fitness for a particular purpose or use with respect to the Data. Without limiting any of the foregoing, in no event shall SSS have any liability for any special, punitive, indirect, or consequential damages (including lost profits), even if notified of the possibility of such damages.

## **Exhibit C**

### **CME Rulebook**

(additions underscored)

#### **Chapter 406A Options on CME European HDD Index Futures**

##### **406A00. SCOPE OF CHAPTER**

This chapter is limited in application to options on CME European HDD Index futures. In addition to this chapter, options on CME European HDD Index futures shall be subject to the general rules and regulations of the Exchange insofar as applicable.

For purposes of this chapter, unless otherwise specified, times referred herein shall refer to and indicate Chicago time.

##### **406A01. OPTIONS CHARACTERISTICS**

###### **406A01. A. Contract Months and Trading Hours**

Options contracts shall be listed for such contract months and scheduled for trading during such hours as may be determined by the Exchange.

###### **406A01. B. Trading Unit**

The trading unit shall be an option to buy, in the case of the call, or to sell, in the case of the put, one respective CME European HDD Index futures contract as specified in Chapter 406. The table below lists the cities and their corresponding weather stations for which options on CME European HDD Index Futures are available:

###### Listing Cities and Corresponding Automated Weather Stations

Amsterdam-Schiphol, Netherlands (WMO 06240)

London-Heathrow, United Kingdom (WMO 03772)

**ESSEN, Germany (WMO 10410)**

**PARIS ORLY, France (WMO 07149)**

###### **406A01.C. Minimum Fluctuations**

The price of an option shall be quoted in terms of the respective CME European HDD Index. Each index point represents 20 British pounds (pounds sterling) for London-Heathrow, or 20 Euros (€) for all other locations. For example, a quote of 2 index points represents 40 British pounds (pounds sterling) for London-Heathrow, or 40 Euros (€) for all other locations. The minimum fluctuation shall be 1.0 index point (also known as one tick), equal to 20 British pounds (pounds sterling) for London-Heathrow, or 20 Euros (€) for all other locations.

###### **406A01.D. [Reserved]**

###### **406A01.E. Exercise Prices**

Exercise prices shall be stated in terms of the respective CME European HDD Index futures contract. Eligible exercise prices shall also be at intervals of 1 index point (e.g., 710, 711, 712, etc.). At the commencement of option trading in a contract month, the eligible put and call options are dynamically listed at intervals of 1 index point in a range of 0 to 1700 index points for HDD months. New options may be listed for trading up to and including the termination of trading. The Exchange may modify the provisions governing the establishment of exercise prices as it deems appropriate.

###### **406A01.F. Position Limits, Exemptions, Position Accountability and Reportable Levels**

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

**406A01.G. [Reserved]**

**406A01.H. [Reserved]**

**406A01.I. Termination of Trading**

Options trading shall terminate on the same date and time as the underlying futures contract.

**406A01.J. [Reserved]**

## **406A02. EXERCISE AND ASSIGNMENT**

In addition to the applicable procedures and requirements of Chapter 7, the following shall apply to the exercise of the CME European HDD options.

**406A02.A. Exercise of Option by Buyer**

An option may be exercised by the buyer only on the termination of Trading Day. To exercise an option the clearing member representing the buyer shall present an exercise notice to the Clearing House by 5:30 p.m. on the day of exercise.

An option that is in the money and has not been liquidated prior to the termination of trading shall, in the absence of contrary instructions delivered to the Clearing House by 5:30 p.m. on the day of expiration by the clearing member representing the option buyer, be exercised automatically.

**406A02.B. Assignment**

Exercise notices accepted by the Clearing House shall be assigned through a process of random selection to clearing members with open short positions in the same series. A clearing member to which an exercise notice is assigned shall be notified thereof as soon as practicable after such notice is assigned by the Clearing House, but not later than 45 minutes before the opening of Regular Trading Hours in the underlying futures contract on the following Business Day.

The clearing member assigned an exercise notice shall be assigned a short position in the underlying futures contract if a call is exercised or a long position if a put is exercised. The clearing member representing the option buyer shall be assigned a long position in the underlying futures contract if a call is exercised and a short position if a put is exercised.

All such futures positions shall be assigned at a price equal to the exercise price of the option and shall be marked to market in accordance with Rule 814 on the Trading Day of acceptance by the Clearing House of the exercise notice.

## **406A03. [RESERVED]**

(End Chapter 406A)

## **INTERPRETATIONS & SPECIAL NOTICES RELATING TO CHAPTER 406A**

### **LIMITATION OF LIABILITY AND DISCLAIMER**

Speedwell Settlement Services Ltd. ("SSS") grants the Exchange the rights to use various data ("Data") in connection with the trading of futures contracts and options on futures contracts based upon such Data. SSS makes no warranty, express or implied, as to the results to be obtained by any person or any entity from the use of the Data in connection with the trading of futures contracts, options on futures contracts or any other use. SSS makes no express or implied warranties, and expressly disclaims all warranties of merchantability or fitness for a particular purpose or use with respect to the Data. Without limiting any of the foregoing, in no event shall SSS have any liability for any special, punitive, indirect, or consequential damages (including lost profits), even if notified of the possibility of such damages.

## **Exhibit D**

### **CME Rulebook**

(additions underscored)

#### **Chapter 407A**

#### **Options on CME European Seasonal Strip HDD Index Futures**

##### **407A00. SCOPE OF CHAPTER**

This chapter is limited in application to options on CME European Seasonal Strip HDD Index futures. In addition to this chapter, options on CME European Seasonal Strip HDD Index futures shall be subject to the general rules and regulations of the Exchange insofar as applicable.

For purposes of this chapter, unless otherwise specified, times referred herein shall refer to and indicate Chicago time.

##### **407A01. OPTIONS CHARACTERISTICS**

###### **407A01. A. Contract Months and Trading Hours**

Options contracts shall be listed for such contract months and scheduled for trading during such hours as may be determined by the Exchange.

###### **407A01. B. Trading Unit**

The trading unit shall be an option to buy, in the case of the call, or to sell, in the case of the put, one respective CME European Seasonal Strip HDD Index futures contract as specified in Chapter 407. The table below lists the cities and their corresponding weather stations for which options on CME European Seasonal Strip HDD Index Futures are available:

###### Listing Cities and Corresponding Automated Weather Stations

Amsterdam-Schiphol, Netherlands (WMO 06240)

London-Heathrow, United Kingdom (WMO 03772)

**ESSEN, Germany (WMO 10410)**

**PARIS ORLY, France (WMO 07149)**

###### **407A01.C. Minimum Fluctuations**

The price of an option shall be quoted in terms of the respective CME European Seasonal Strip HDD Index. Each index point represents 20 British pounds (pounds sterling) for London-Heathrow, or 20 Euros (€) for all other locations. For example, a quote of 2 index points represents 40 British pounds (pounds sterling) for London-Heathrow, or 40 Euros (€) for all other locations. The minimum fluctuation shall be 1.0 index point (also known as one tick), equal to 20 British pounds (pounds sterling) for London-Heathrow, or 20 Euros (€) for all other locations.

###### **407A01.D. [Reserved]**

###### **407A01.E. Exercise Prices**

Exercise prices shall be stated in terms of the respective CME European Seasonal Strip HDD Index futures contract. Eligible exercise prices shall be at intervals of 1 CME Seasonal Degree Days Index point (e.g., 4510, 4511, 4512, etc.). At the commencement of options trading in a contract month, the eligible put and call options are dynamically listed at intervals of 1 index point in a range of 0 to 8500 index points for a seasonal Strip HDD. New options may be listed for trading up to and including the termination of trading. The Exchange may modify the provisions governing the establishment of exercise prices as it deems appropriate.

###### **407A01.F. Position Limits, Exemptions, Position Accountability and Reportable Levels**

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

**407A01.G. [Reserved]**

**407A01.H. [Reserved]**

**407A01.I. Termination of Trading**

Options trading shall terminate on the same date and time as the underlying futures contract.

**407A01.J. [Reserved]**

## **407A02. EXERCISE AND ASSIGNMENT**

In addition to the applicable procedures and requirements of Chapter 7, the following shall apply to the exercise of the CME European Seasonal Strip HDD options.

**407A02.A. Exercise of Option by Buyer**

An option may be exercised by the buyer only on the termination of Trading Day. To exercise an option the clearing member representing the buyer shall present an exercise notice to the Clearing House by 5:30 p.m. on the day of exercise.

An option that is in the money and has not been liquidated prior to the termination of trading shall, in the absence of contrary instructions delivered to the Clearing House by 5:30 p.m. on the day of expiration by the clearing member representing the option buyer, be exercised automatically.

**407A02.B. Assignment**

Exercise notices accepted by the Clearing House shall be assigned through a process of random selection to clearing members with open short positions in the same series. A clearing member to which an exercise notice is assigned shall be notified thereof as soon as practicable after such notice is assigned by the Clearing House, but not later than 45 minutes before the opening of Regular Trading Hours in the underlying futures contract on the following Business Day.

The clearing member assigned an exercise notice shall be assigned a short position in the underlying futures contract if a call is exercised or a long position if a put is exercised. The clearing member representing the option buyer shall be assigned a long position in the underlying futures contract if a call is exercised and a short position if a put is exercised.

All such futures positions shall be assigned at a price equal to the exercise price of the option and shall be marked to market in accordance with Rule 814 on the Trading Day of acceptance by the Clearing House of the exercise notice.

## **407A03. [RESERVED]**

(End Chapter 407A)

## **INTERPRETATIONS & SPECIAL NOTICES RELATING TO CHAPTER 407A**

### **LIMITATION OF LIABILITY AND DISCLAIMER**

Speedwell Settlement Services Ltd. ("SSS") grants the Exchange the rights to use various data ("Data") in connection with the trading of futures contracts and options on futures contracts based upon such Data. SSS makes no warranty, express or implied, as to the results to be obtained by any person or any entity from the use of the Data in connection with the trading of futures contracts, options on futures contracts or any other use. SSS makes no express or implied warranties, and expressly disclaims all warranties of merchantability or fitness for a particular purpose or use with respect to the Data. Without limiting any of the foregoing, in no event shall SSS have any liability for any special, punitive, indirect, or consequential damages (including lost profits), even if notified of the possibility of such damages.



**Exhibit E**  
**Exchange Fees**

| Membership Type  | Venue/Transaction Type        | Fee    |
|--|-------------------------------|--------|
| Individual Members<br>Clearing Members<br>Rule 106.J Equity Member Firms & Rule 106.J Qualified Subsidiaries<br>Rule 106.I Members & Rule 106.I Qualified Affiliates<br>Rule 106.S Member Approved Funds | CME Globex                    | \$0.15 |
|  | EFP                           | \$0.46 |
|  | EFR                           | \$0.46 |
|  | Block                         | \$0.46 |
|  | Delivery                      | \$0.02 |
|  | Exe Asn Future From           | \$0.07 |
| Rule 106.D Lessees<br>Rule 106.F Employees   | CME Globex                    | \$0.20 |
|  | EFP                           | \$0.51 |
|  | EFR                           | \$0.51 |
|  | Block                         | \$0.51 |
|  | Delivery                      | \$0.07 |
|  | Exe Asn Future From           | \$0.12 |
| Rule 106.R Electronic Corporate Members<br>(For other than CME Globex - Non-Member rates apply)  | CME Globex                    | \$0.44 |
| Rule 106.H and 106.N Firms   | CME Globex                    | \$0.25 |
|  | EFP                           | \$0.56 |
|  | EFR                           | \$0.56 |
|  | Block                         | \$0.56 |
|  | Delivery                      | \$0.12 |
|  | Exe Asn Future From           | \$0.17 |
| International Incentive Program (IIP) Participants<br>International Volume Incentive Program (IVIP) Participants<br>(For other than CME Globex - Non-Member rates apply)                                 | CME Globex                    | \$0.26 |
| Members Trading Outside of Division<br>(For other than CME Globex During ETH - Non-Member rates apply)   | CME Globex<br>During ETH Only | \$0.29 |
| Non-Members  | CME Globex                    | \$0.54 |
|  | EFP                           | \$0.60 |
|  | EFR                           | \$0.60 |
|  | Block                         | \$0.60 |
|  | Delivery                      | \$0.16 |
|  | Exe Asn Future From           | \$0.21 |

| Processing Fees                       | Fee    |
|---------------------------------------|--------|
| Position Adjustment/Position Transfer | \$0.10 |
| Give-Up Surcharge                     | \$0.05 |
| Facilitation Fee                      | \$0.40 |



**Exhibit F**

**CME Rulebook  
Chapter 5  
("Trading Qualifications and Practices")**

**Position Limits, Position Accountability and Reportable Level Table**

(attached under separate cover)

## Exhibit G

### CME Rulebook Chapter 5 ("Trading Qualifications and Practices")

#### Rule 588.H. – ("Globex Non-Reviewable Trading Ranges") Table

| Instrument  | Globex Symbol       | Globex Non-Reviewable Ranges (NRR)   |
|---|---------------------|--|
| <a href="#">Boston HDD Options</a>                      | <a href="#">HW</a>  | <p>The greater of the following:</p> <ul style="list-style-type: none"> <li>• <a href="#">Delta multiplied by the underlying futures non-reviewable range</a></li> <li>• <a href="#">20% of premium up to 1/4 of the underlying futures non-reviewable range</a></li> <li>• <a href="#">5 ticks</a></li> </ul> |
| <a href="#">Boston HDD Seasonal Strip Options</a>       | <a href="#">HWX</a> |  |
| <a href="#">Boston HDD Seasonal Strip Options</a>       | <a href="#">HWZ</a> |  |
| <a href="#">Burbank HDD Options</a>                     | <a href="#">LP</a>  |  |
| <a href="#">Burbank HDD Seasonal Strip Options</a>      | <a href="#">LPX</a> |  |
| <a href="#">Burbank HDD Seasonal Strip Options</a>      | <a href="#">LPZ</a> |  |
| <a href="#">Houston HDD Options</a>                     | <a href="#">HR</a>  |  |
| <a href="#">Houston HDD Seasonal Strip Options</a>      | <a href="#">HRX</a> |  |
| <a href="#">Houston HDD Seasonal Strip Options</a>      | <a href="#">HRZ</a> |  |
| <a href="#">Philadelphia HDD Options</a>                | <a href="#">H6</a>  |  |
| <a href="#">Philadelphia HDD Seasonal Strip Options</a> | <a href="#">H6X</a> |  |
| <a href="#">Philadelphia HDD Seasonal Strip Options</a> | <a href="#">H6Z</a> |  |
| <a href="#">Paris HDD Options</a>                       | <a href="#">D1</a>  |  |
| <a href="#">Paris HDD Seasonal Strip Options</a>        | <a href="#">D1X</a> |  |
| <a href="#">Paris HDD Seasonal Strip Options</a>        | <a href="#">D1Z</a> |  |
| <a href="#">Essen HDD Options</a>                       | <a href="#">D4</a>  |  |
| <a href="#">Essen HDD Seasonal Strip Options</a>        | <a href="#">D4X</a> |  |
| <a href="#">Essen HDD Seasonal Strip Options</a>        | <a href="#">D4Z</a> |  |
| <a href="#">Boston CDD Options</a>                      | <a href="#">KW</a>  |  |
| <a href="#">Boston CDD Seasonal Strip Options</a>       | <a href="#">KWK</a> |  |
| <a href="#">Boston CDD Seasonal Strip Options</a>       | <a href="#">KWN</a> |  |
| <a href="#">Burbank CDD Options</a>                     | <a href="#">KP</a>  |  |
| <a href="#">Burbank CDD Seasonal Strip Options</a>      | <a href="#">KPK</a> |  |
| <a href="#">Burbank CDD Seasonal Strip Options</a>      | <a href="#">KPN</a> |  |
| <a href="#">Houston CDD Options</a>                     | <a href="#">KR</a>  |  |
| <a href="#">Houston CDD Seasonal Strip Options</a>      | <a href="#">KRK</a> |  |
| <a href="#">Houston CDD Seasonal Strip Options</a>      | <a href="#">KRN</a> |  |
| <a href="#">Philadelphia CDD Options</a>                | <a href="#">K6</a>  |  |
| <a href="#">Philadelphia CDD Seasonal Strip Options</a> | <a href="#">K6K</a> |  |

|   |                     |  |
|---|---------------------|--|
| <a href="#">Philadelphia CDD Seasonal Strip Options</a> | <a href="#">K6N</a> |  |
| <a href="#">Paris CAT Options</a>                       | <a href="#">G1</a>  |  |
| <a href="#">Paris CAT Seasonal Strip Options</a>        | <a href="#">G1K</a> |  |
| <a href="#">Paris CAT Seasonal Strip Options</a>        | <a href="#">G1N</a> |  |
| <a href="#">Essen CAT Options</a>                       | <a href="#">G4</a>  |  |
| <a href="#">Essen CAT Seasonal Strip Options</a>        | <a href="#">G4K</a> |  |
| <a href="#">Essen CAT Seasonal Strip Options</a>        | <a href="#">G4N</a> |  |

## **Exhibit H**

### **Cash Market Overview and Deliverable Supply Analysis**

#### **Position Limit/Accountability Levels**

The Contracts will mirror the currently listed weather futures and options contracts with single month accountability levels of 10,000 contracts. These changes will be reflected in the position accountability table in Chapter 5.

The 10,000 per month contract accountability level for similar weather products has been previously vetted with the CFTC. Note that Section 151 of the Act was vacated and reverted back to Section 150, which does not have an interpretation for position accountability for Alternative products. The CFTC previously acknowledged that weather is unique and that it is an excluded commodity and has no deliverable supply. At that time, CME noted the following: 1) due to the secured locations of the recording instruments, major airports, the index is not easily susceptible to manipulation and 2) a number of weather data suppliers are monitoring the data being released by these governmental agencies and any errors would most likely be reported and corrected promptly by the reporting agencies.

#### **Cash Market Overview**

Heating Degree Days (HDD)/Cooling Degree Days (CDD) and Cumulative Average Temperature (CAT) contracts are employed by a wide variety of enterprises, largely operating in the context of the energy industry, to manage their temperature related risks.

Energy companies, for example, have been known to sell HDD or CDD contracts to manage the risk of diminished revenues under mild weather conditions, noting that the quantity of energy sold is heavily contingent upon consumer demand driven by temperatures. Large scale energy consumers including automobile manufacturers and large residential building operators may buy HDD or CDD contracts to hedge against the risk of rising utility costs under extreme weather conditions.

Retailers whose sales are sensitive to weather conditions might control inventory costs more effectively through the use of HDD or CDD contracts. Beer consumption reaches a seasonal peak in the summer and cool weather can put a dent in beer sales. “the 2000 Preliminary Report for SABMiller, “History shows that on a summer day with the temperature over 25 degrees Celsius, sales can be more than 50% greater than on a day where the temperature is under 20 degrees...”

Utility companies may utilize HDD or CDD contracts to guard against “volumetric risks.” These volumetric risks are based upon the quantity of energy that might be expected to be marketed throughout the course of a heating or cooling season. These transactions rely upon the intuitive and well-documented relationship between power consumption and temperature extremes.

Thus, if the daily average temperatures during the course of a winter season were abnormally high, utility firms might face depressed demand for heating. Utilities have traditionally increased consumer prices to offset lower retail consumption volume. However, intensifying competition caused by ongoing deregulation has made it increasingly difficult for utilities to raise prices arbitrarily. Therefore, it becomes necessary for utility firms to address volumetric risks using other means such as HDD or CDD contracts.

Proper use of temperature related contracts not only enables utility firms to stabilize revenue streams but may also be used to provide at least a partial hedge to the cost side of the equation. Note that most utility firms operate under inherent capacity limitations. Electricity represents a non-storable commodity. If temperature suddenly rises or declines dramatically, utility firms may need to deploy less efficient generators to meet the sudden jump in demand or may be compelled to purchase electricity from the power grid in the face of soaring demands and rising prices. This implies that energy prices may increase, and

transmission costs may grow simultaneously. In this case, utility firms may find both weather derivatives and energy contracts useful to stabilize their economic outcomes, i.e., to hedge both volumetric and cost-based risks.

### **Weather Market Overview**

It has been estimated that over 2/3 of the global economy is impacted either directly or indirectly by weather conditions. The impact that weather has on businesses such as energy and agriculture is particularly acute. However, not only energy and agriculture observe the weather conditions. The lists of other economic sectors that are affected by the weather include construction and transportation sectors that have to contend with delays and budget overruns. The retail and entertainment sectors face similar challenges when weather turns unfavorable. A retailer may have stocked up on winter clothing only to have the season be unseasonably warm, causing markdowns at the end of the season to move merchandise, and incurring a loss. Entertainment such as concerts, municipal parades, ski resorts, amusement parks etc. can be impacted by rain, cold and heat translating into lost revenue.

In addition to the commercial market participants like utility companies, some of the most active participants in the existing weather markets are insurance and reinsurance companies. Reinsurance companies, for example, offer clients a path to transfer their weather-related risk, and are then able to lay off a portion of that risk by participating in our weather futures and options markets. Hedge funds, pension funds, and asset managers that are looking for assets that are uncorrelated to their current portfolio holdings are also active participants in weather futures and options markets.