



Freezing your Bottom Line: Mitigating Weather Impacts to the Supply Chain

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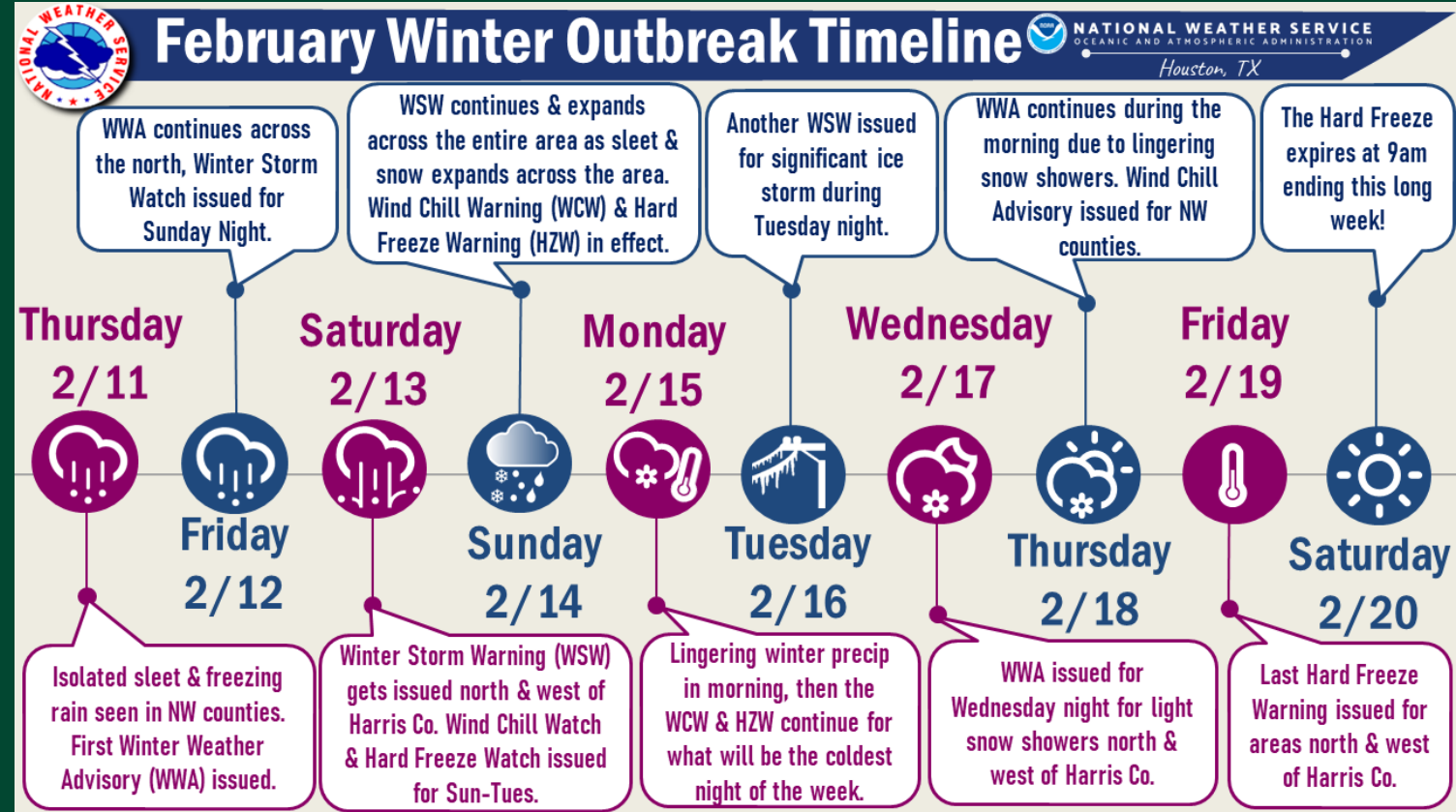
Weather Event

Historic Winter Storm in Texas

Weather Warnings

February 11-20, 2021

Multiple warnings and advisories moved across Texas during “Valentine’s Week” as an arctic cold front crossed the US. The storm was historic for its intensity, duration, and reach.



Historic Effects

Extraordinary Circumstances

Record Low Temperatures

How Does The Cold Over The Last Days Rank Historically?

A look at the average temperature from February 11th - 17th

	City of Houston	Houston Hobby	College Station	City of Galveston
1	29.7° 1895	34.3° 2021	24.6° 1899	31.3° 1895
2	30.1° 1899	41.6° 1958	25.9° 2021	37.6° 1899
3	32.5° 2021	43.7° 1963	29.1° 1895	39.7° 2021
4	38.6° 1905	44.5° 2010	39.4° 1958	40.1° 1905
5	41.6° 1958	45.6° 1981	41.9° 2010	43.3° 1958

Widespread Impacts

Entire State of Texas in a Winter Storm Warning on Sunday, February 14th 2021



Immediate Impact

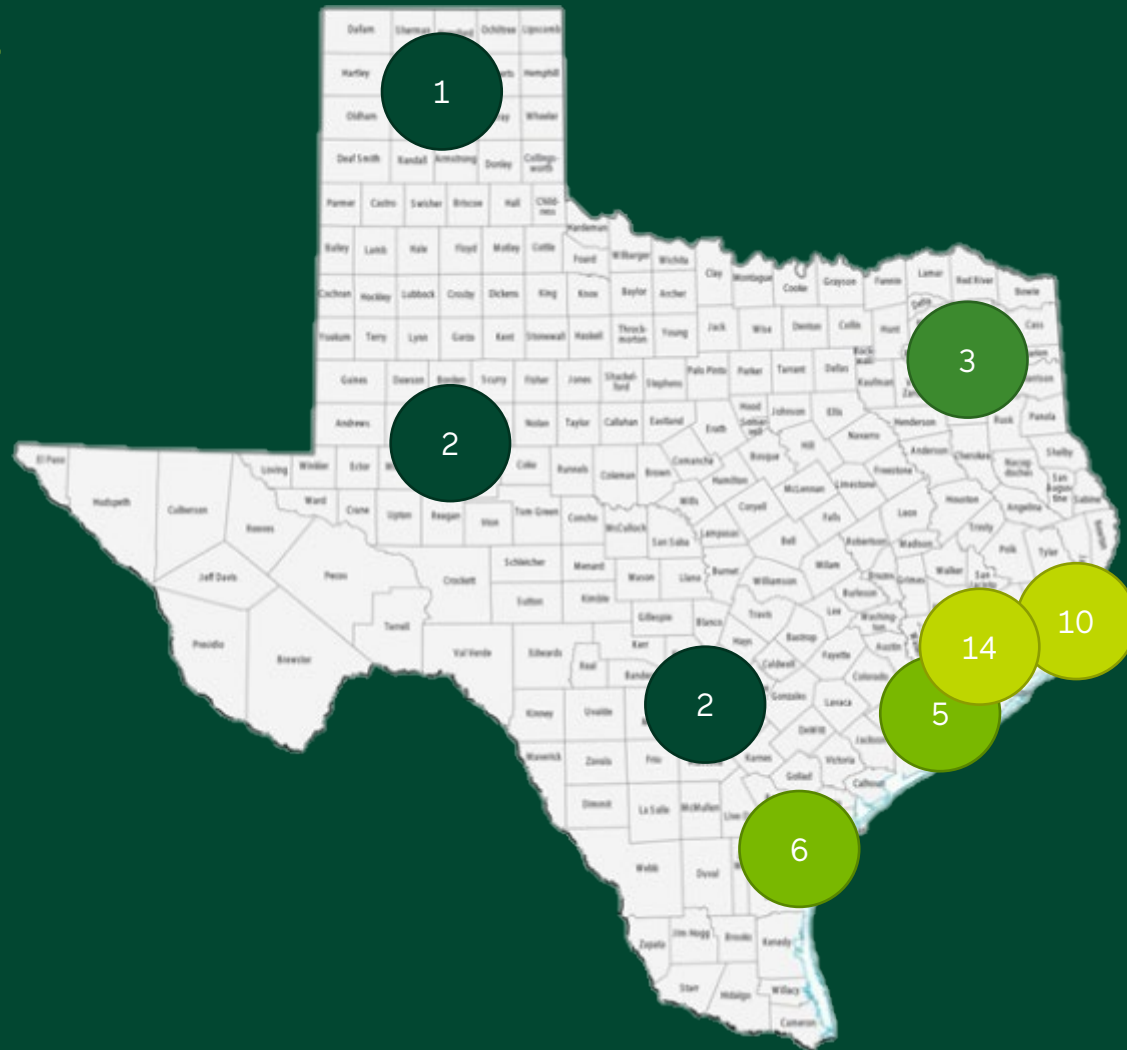
Disruptions in the Chemical Industry



Processing Facility Closures

Wide-spread production shut-downs resulted in limited raw material availability.

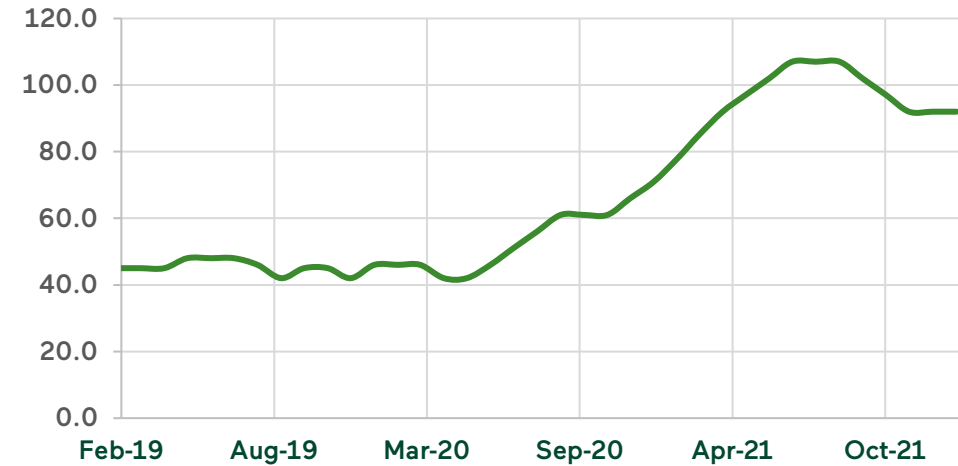
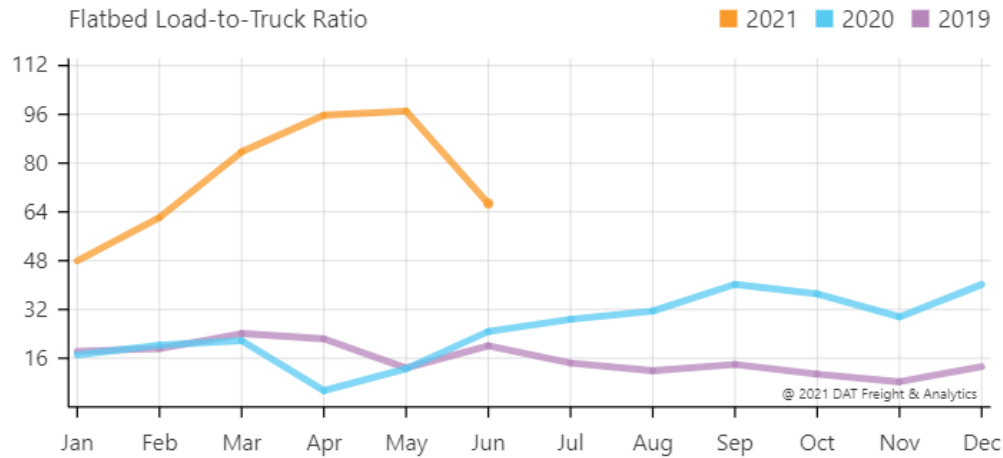
Closures were measured in weeks and months rather than days.



Case Study

How a Texas Storm Impacted a CCR Project
in North Carolina

Synthetic Closure Turf Industry



Raw Material Shortage

- Historically Stable Availability
- Dramatic Disruption
- Slow Recovery

Raw Material Pricing

- Historically Stable Pricing
- Sudden Increases in Raw Material Indexes
- No Short-Term Recovery Expected

Force Majeure Inundation



Dear Valued Customer

Reference: Solmax Resin

Solmax Kingstree the lamination of the geocomposite time period. Yi geocomposite at

Resin allocation on the resin supply

- Raw Materials
- Petrochemical inventory
- Solmax of hurricane
- Resin supply July 1st, prices volatile
- Freight therefore freight adjustments
- All products manufactured required 3rd party conform

This correspondence is intended to can take the appropriate action to CX or Sales Representative.

Solmax appreciates your patience during these unprecedented



June 15, 2021

RE: Implement Increase for

Dear Polyethylene

The Dow Chemical US\$0.07/lb for polyethylene

In addition, TDCC effective July

Your local TDCC movements.

We appreciate

and return to anticipated

We apologize



February 18,

Re: Polyethylene

Dear Valued Customer

Please be assured and return to anticipated

We apologize

Performance by design. Caring by choice.



To whom it may concern

March 5th 2021

Dear Valued Customer

The extreme weather

We apologize

We will however be able to maintain a certain level of them and go through these difficult times. We will adjust to pricing structure.



May 17, 2021

RE: Implementation Increase for June

Dear Polyethylene

The Dow Chemical US\$0.05/lb for all polyethylene resins

In addition, TDCC effective June 1, 2021

Your local TDCC movements.

We appreciate you



March 19- 2021

Dear Valued Customer

The unprecedented conditions for supply

This situation has caused distortion in are trying to solve

As the last reports

Under these circumstances you that Atarfil must

We are focused on

We are available contacting you regarding

We value the trust you place in us and we apologize for the inconvenience this may cause you.



February 15, 2021

Re: Notice of Force Majeure

Dear Valued Customer:

Recent winter storm conditions resulting governmental mandate INEOS Olefins & Polymers USA notice of a Force Majeure even

Your INEOS Olefins & Polymers USA Account Manager will be contacting you this event may have on future supply availability.



February

To Our Valued Customer

As many of our supply issues This is an

What is happening here were affected limit the price year. Poly used and used to our Raincover Nonwove

Recently the plant shut drastically raw materials global shipping

The Plant declared unforeseen

What is the both Raw validity price create significant declared queue, are

Nearly all outstanding quotes for this All of this is unprecedented and has



February 24, 2021

To Our Valued Customer

As we have previously and fiber situation The recent severe made the situation either been common conditions.

As a result, severe anticipate that the conditions, we expect availabilities will continue to diligently good as the supply

We will continue have the maximum you as we monitor the products you

Thank you for your



March 1:

Dear Valued Customer

As we have for SKAF production spunbond basic fee Gulf Coast compound

As we have to continue situation material : LyondellB their inactivated According We regret we see n

At this time the raw n begins to you supply provide y possible. you as w continued

January 20, 2021

Re: Excuse of Perf Polyethylene

Dear Valued Customer

This correspondence regarding the unplanned Formosa Plastics C

- Operational issues leading to our and the plant was circulating pump s Current timeline to as detailed inspection

- Polyethylene products except but important to note that you on the details o

We value you as a operational difficulties

February 18, 2021



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Equistar Chemicals, LP LyondellBasell Tower, Suite 300



Equistar Chemicals, LP LyondellBasell Tower, Suite 300 1221 McKinney Street



335 Athena Dr. Athens, GA 30601 Tel 706 354 3700 Fax 706 354 3737 E-mail - info@agru.com

AGRU America, Inc. 500 Garrison Road Georgetown, SC 29400 Phone: (803) 545-0400 www.agruamerica.com

Formosa Plastics Corporation, U.S.A. 9 Peach Tree Hill Road Livingston, NJ 07039 Telephone: (973)-992-2090

March 16, 2021

Polyethylene Price Increase: April 1, 2021

Dear Valued Customer:

Chevron Phillips Chemical ("Chevron Phillips") will increase the price for all polyethylene products by nine cents per pound (\$0.09/lb) effective April 1, 2021.

This price increase effective April 1, 2021 is in addition to the previously announced \$0.07 per pound increase for all polyethylene products implemented on March 1, 2021.

Please contact your Chevron Phillips Marlex® polyethylene sales representative with any questions you may have regarding polyethylene pricing and current industry conditions.



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Involved Parties

Ripple effects were felt across the entire supply chain



Project Timeline: Key Dates



Original project bid

September 2019



Historic winter storm

February 2021



Refinery shutdowns/force majeure

March - July 2021



Closure turf rebid

October 2021



Contract award

December 2021



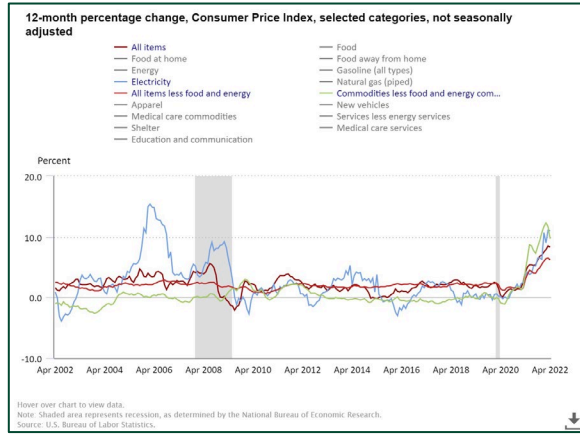
Delivery and installation

June 2022

Mitigation & Recovery

Minimizing Cost and Time Impacts

How Can You Prepare for the Unexpected?



- Gain a deep understanding of what you are buying
- Indexed price protections
 - With suppliers
 - With customers

- Continual client communications
- Project status transparency
- Connecting subcontractors and suppliers with clients

- Proactive supply chain management
- Established network of subcontractors and suppliers

- Strong project management and project controls
- Established strategies with identified substitutes and alternatives

Questions?

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Thank you.

Please visit us at exhibit booth #3

