

# Navigating Supply Chain Disruption

NPA Annual Conference  
August 30<sup>th</sup>

Matt Gilliland



**Nebraska Public Power District**

*Always there when you need us*

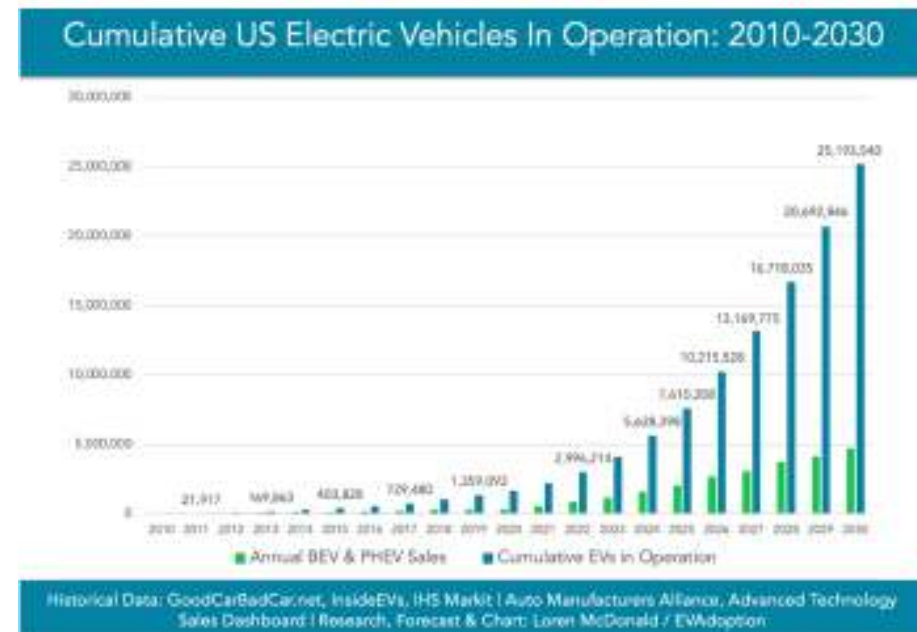
# Outline

- Disruption's Contributing Causes
- Challenges and Conditions
- Mitigation
- Questions



# Contributing Causes

- Initial:
  - Pandemic
    - Global shutdowns related to protective measures
    - The "Great Resignation"
    - Lack of supplier diversity especially for raw materials
  - Regulations
    - Transportation and shipping
- Recent:
  - Ukraine War
  - Transportation transformation
  - Rapid growth



# Material Delivery Challenges

Material	Pre-pandemic Delivery Timelines	Current Delivery Timelines
Wire Cable	4-10 weeks	40-50 weeks
Transformers	10-40 weeks	2 – 3 years
Filters	0 – 2 weeks	10 - 12 weeks
Valves	4 - 6 weeks	40 – 65 weeks
Line Hardware	0 – 2 weeks	4 - 10 weeks
Conveyers and Components	4 - 6 weeks	40 – 65 weeks
Underground Conduit	4 – 10 weeks	40 – 50 weeks

# Material Delivery Challenges

Category	Primary Manufacturers	Raw Material	Raw Material Lead Time Risk	MIg LT (Jan 2023)	Manufacturer Lead Time	Manufacturer Lead Time Risk	WESCO Global Risk	Risk Mitigation Plan
Cable, Accessories & Rubber Goods	3M, ABB, Eaton Power, Hubbell Power, Richard Manuf. TE Connectivity	Aluminum Copper Resins	● ● ●	4 - 6 weeks	16-20 weeks	●	●	WESCO - Increasing inventory levels on key items Suppliers - Monitoring supply chain daily and increasing inventories Increasing use of Air Freight to get around shipping delays
Cordell	Alfred Tate, Akare, Corflex, Corlon, Heritage, JM Eagle, Madison Electric Products, Rama, Queen City Products	Resins	●	2 - 4 weeks	12-14 weeks	●	●	WESCO - Secured consistent capacity Supplier - Vetting of secondary suppliers Focusing on production schedule optimization to manage backlog
Connectors	ABB, AFL, AlumaForm, Hubbell Power, Maclean Power, Seacor, TE Connectivity, Trans Pattern, Utilise	Aluminum Copper Hot Rolled Steel	● ● ●	2 - 4 weeks	12-14 weeks	●	●	WESCO - Increasing inventory levels on key items Supplier - Vetting of secondary suppliers Focusing on recruiting and retention of employees, increasing wages adding flexible work schedules, signing bonuses, etc. Increasing Finished goods inventory
Enclosures	Hubbell Lemor, Nordic Fiberglass, Advanced Pedestal, Oldcastle	Systems Resins polycarbonates	● ● ●	6 - 8 weeks	20-25 Weeks	●	●	WESCO - <b>Placing forward POs for key production space working with mills to increase production efficiencies</b> Supplier - <b>Adding capacity at key factories</b> <b>Looking at all raw material sources</b>
Fiberglass Dossains	AlumaForm, Geotek/Pajl, Hubbell Power, Maclean Power, Shakerstone	Resins Epoxy Steel/Hardware	● ● ●	4 - 6 weeks	10-15+ weeks	●	●	WESCO - Placing additional POs to secure production space Supplier - Trying to hire more employees, add shifts Working to secure materials on contracts and commitments <b>Agencies for commitment suppliers reduce time &amp; freight costs</b>
Fusing	Eaton Power, G&W Electric, Hubbell Power, Intel Beams, SSC Electric	Copper Resins	● ●	2 - 4 weeks	16-20 weeks	●	●	WESCO - Buying additional inventory where possible Suppliers - Monitoring supply chain daily and increasing inventories
Insulators	Hitachi ABB, Hubbell Power, K-Core, Lapp, Maclean Power, MOE Locks, Sndover, Sevis	Resins Rubber Metal fittings	● ● ●	2 - 6 weeks	16-18+ weeks some line Post at 26+ weeks	●	●	WESCO - Placing forward POs to secure production space / increasing w/ suppliers - multi-sourcing specific products Supplier - Vetting secondary suppliers Trying to hire more employees, more shifts Scheduling manufacturing coordination activities
Potline Hardware	ABB, AFL, AlumaForm, Hubbell Power, Hughes Bros, Kottick, Maclean Power, nVent, RUP, Seacor, Stacor, TE Connectivity, Trans Pattern, Utilise, Victory Belt	Aluminum Copper Hot rolled Steel Stainless Steel Disc	● ● ● ● ●	2 - 4 weeks	12-14 weeks	●	●	WESCO - Buying additional inventory, increasing their stock levels Supplier - Pulling more supply from non-China locations due to shipping delays Added period to focus on shipping and transportation bottlenecks improving manufacturing capabilities
Protective Equipment	ABB, AlumaForm, Eaton Power, GE, Hitachi ABB, Hubbell Power, Maclean Power	Hot Rolled Steel Resins Rubber Disc	● ● ● ●	4 - 6 weeks	12-18 weeks	●	●	WESCO - Sourcing additional capacity at current and alternative suppliers Forward buying inventory Supplier - Continue working with long standing, strategic supplier relations Securing contracts on future raw material commitments
Transformers	Eaton Power, ERNCO, GE Protec, Hitachi ABB, Howard, IPI, WEG	Copper Core Steel Hot Rolled Steel Oil	● ● ● ●	10 - 18 weeks	200+ weeks	●	●	WESCO - Sourcing additional capacity at current and alternative suppliers Forecast planning to make efficient use of stock manufacturing process Supplier - Working with WESCO to increase non-ferrous iron Trying to hire more employees
Wire & Cable	Alex Wire, CME Wire, Hendrix, Lake Cable, Nehring, Neasco, Okostin, Priority Wire, Prysmian, Service Wire, Southwire	Aluminum Copper Base Steel	● ● ● ●	6-10 weeks	25 - 42 weeks	●	●	WESCO - Working with suppliers to increase added manufacturing space Looking at new suppliers, domestic & over seas Forecast planning with suppliers to help production Moving facilities (ex- migrating) to WESCO to reduce L/T Supplier - Starting production to higher usage items, adding shifts

Wesco International

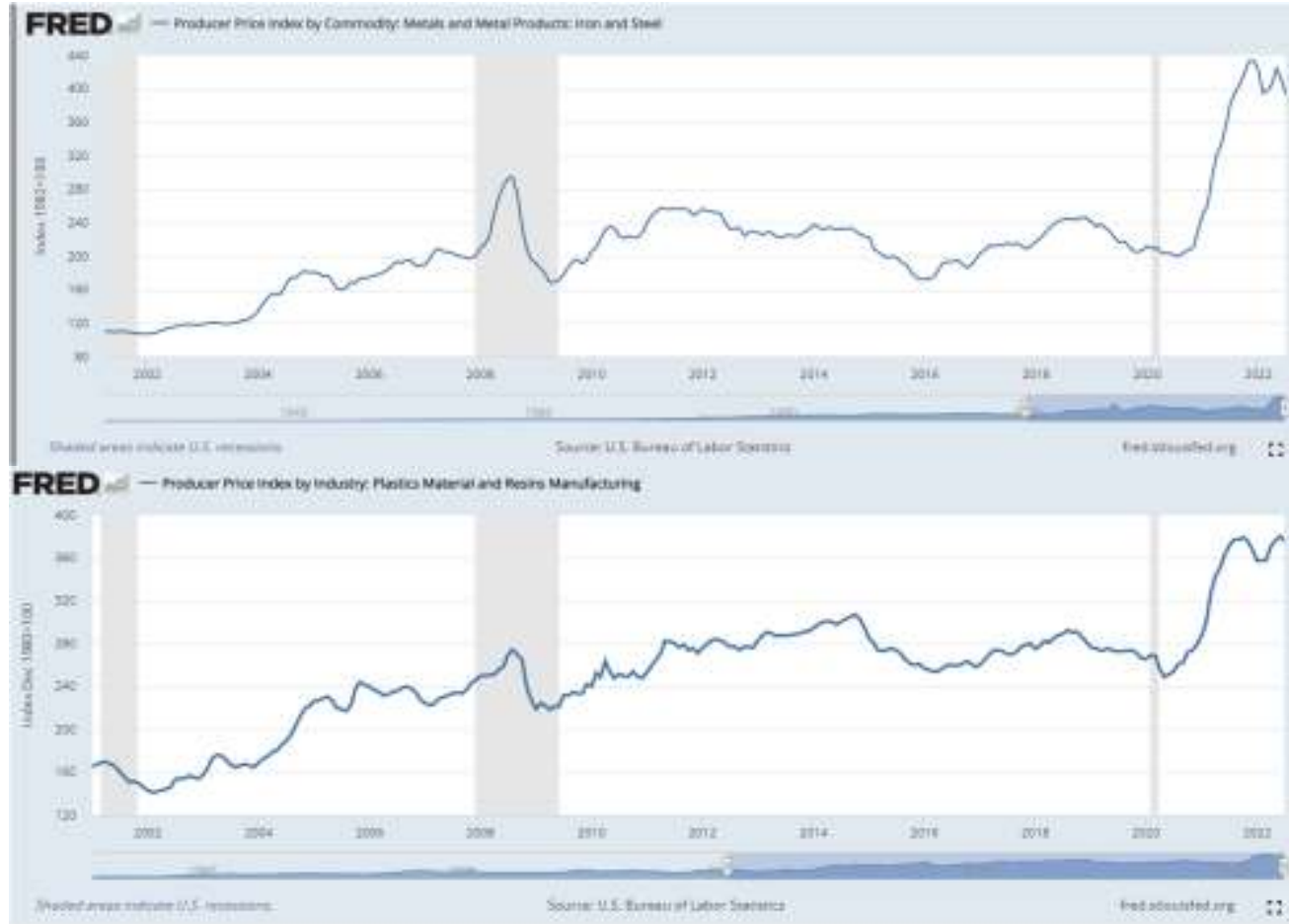


# Cost Challenges

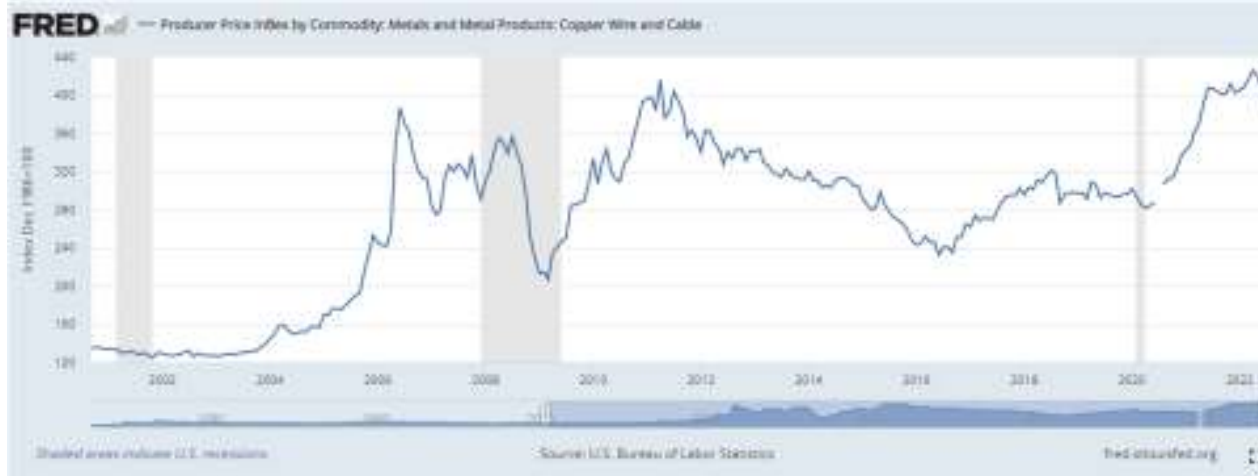
Material	Year over Year Increase	Increase since Feb 2020
Wire Cable	44%	82%
Transformers	125%	132%
Filters	30%	30%
Valves	17%	19%
Chemicals	32%	48%
Transportation Fuel	59%	62%
Line Hardware	44%	64%
Conveyers and Components	58%	65%
Underground Conduit	27%	43%



# Inflationary Conditions



# Inflationary Conditions





# Team & Charter Established October 2021

- Mission Statement:
  - Strategically and actively mitigate supply chain disruption to assure energy generation and delivery
- Deliverables:
  - Strategic methods and actions that identify and mitigate delays and scarcity will be established and utilized
  - Supply chain conditions will be managed to support NPPD as required to meet near-term business needs
  - Inventory level increases will be tracked and reported

# Mitigation Activities

- Forward planning and customer communication
- Analytics and supplier communication
  - purchase order/work management /inventory status reports
  - communication governance
- Purchasing/securing inventory and production "slots"
- Shipping logistics analysis – e.g., "when to insource"
- APPA "Equipment Request" Tool and similar sharing resources
  - Utility Service Alliance
  - Paragon
  - Rapid
  - Peaks



# Mitigation Activities

- Engagement with ESCC, APPA, NAFA, and others
  - APPA supply chain summit May 5<sup>th</sup> and 6<sup>th</sup>
  - APPA/ESCC supply chain tiger team update August 29<sup>th</sup>
  - UMUFC/NAFA collaboration October 17<sup>th</sup>
- Transportation fuel and fleet business continuity activities
- Federal and State action;
  - November 29<sup>th</sup> DOE Request for Information
  - June 6<sup>th</sup> Executive Order
  - July 22<sup>nd</sup> S.4626
- Public Power Partner Summit August 5th



# Power Partner Summit

**Objective:** Bring public power together to pursue solutions to supply chain disruption.

**Participants:**

Auburn BPW	Burt	Butler	Cedar-Knox	Cornhusker
Cuming	Dawson	Elkhorn River	Howard Greeley	KBR
Loup	Niobrara Valley	NPPD	NEG&T	Polk
City of Seward	Southern	Southwest	South Central	Wahoo



# Power Partner Learnings

- Initial Consensus Observations:
  - 75% of the utilities in attendance were willing
    - to provide contact information for their inventory management team
    - explore inventory transparency
    - consider joining together, as one public power, to create efficiencies in buying critical items
  - Pad and pole mount transformers were ranked the most critical challenge, followed by conductor, hardware, and poles.
  - Critical suppliers were ranked as Border States, Wesco, and Dutton-Lainson



# Summit Results

- Created and posted purchasing/material/inventory contact list
- Developed Workstreams
  - Inventory Transparency/Sharing
  - Standardization
    - Engineering
    - Materials
  - Manufacturer/Distributor and Public Power
  - Collaboration
    - Quoting
    - Purchasing
- Affirmed workstream volunteers
  - Auburn Board of Public Works, KBR, Cedar-Knox, Elkhorn River, Polk, Cornhusker, Southwest, Niobrara Valley, Butler and Howard Greeley.



# Summit Next Steps

- Near term; Launched August 29<sup>th</sup>
  - Cumming County and NPPD leading Inventory transparency/sharing workstream
  - Dawson Public Power District coordinating the engineering and material Standardization workstream
  - NPPD developing Manufacture/Distributor/Public Power virtual learning sessions
- Potential future actions
  - Collaboration
    - Quoting
    - Purchasing
  - **NPA Invitation**



# Questions?

Stay connected with us.



**Nebraska Public Power District**  
*Always there when you need us*