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## Supply Chain Constraints: Impacts and Strategies

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# Discussion Agenda

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# Introduction



RELIABLE • AFFORDABLE • SUSTAINABLE



- Orlando Utilities Commission – Orlando, Florida
  - OUC The Reliable One is the second largest municipal utility in Florida created in 1923
  - Providing utility services - electric, water, chilled water, lighting, back-up generation, electric vehicle charging and solar solutions to more than 400,000 metered accounts in Orlando, St. Cloud and unincorporated parts of Orange and Osceola Counties
  - OUC also has a generation portfolio, which includes 2 wholly owned and operated units with a total capacity of 810 MW. In addition, OUC has jointly owned and operated units with the combined capacity of 809 MW along with jointly owned and non-OUC operated and various power purchase agreements.

# Early Pandemic/Pandemic OUC Operations

# Early Pandemic/Pandemic Operations

- Beginning signs of supply chain issues with transformers
  - In early 2021 OUC materials started experiencing increased demand for transformers mainly in the St. Cloud service area
  - OUC, through our Alliance agreement with our supplier and manufacturer had allocated monthly slots of 85 1Phase pad-mounts with a guaranteed delivery of 12-16 weeks
  - Beginning in March 2021 we were exceeding our slots by 66 to as many as 212 transformers per month for 3 consecutive months
  - Around the August-September time frame our monthly manufacturing slots on 1Phase transformers was reduced from 85 to 50 with a lead-time of 20-22 weeks
  - Materials Demand communicated with the Electric Distribution group to confirm if the demand was real



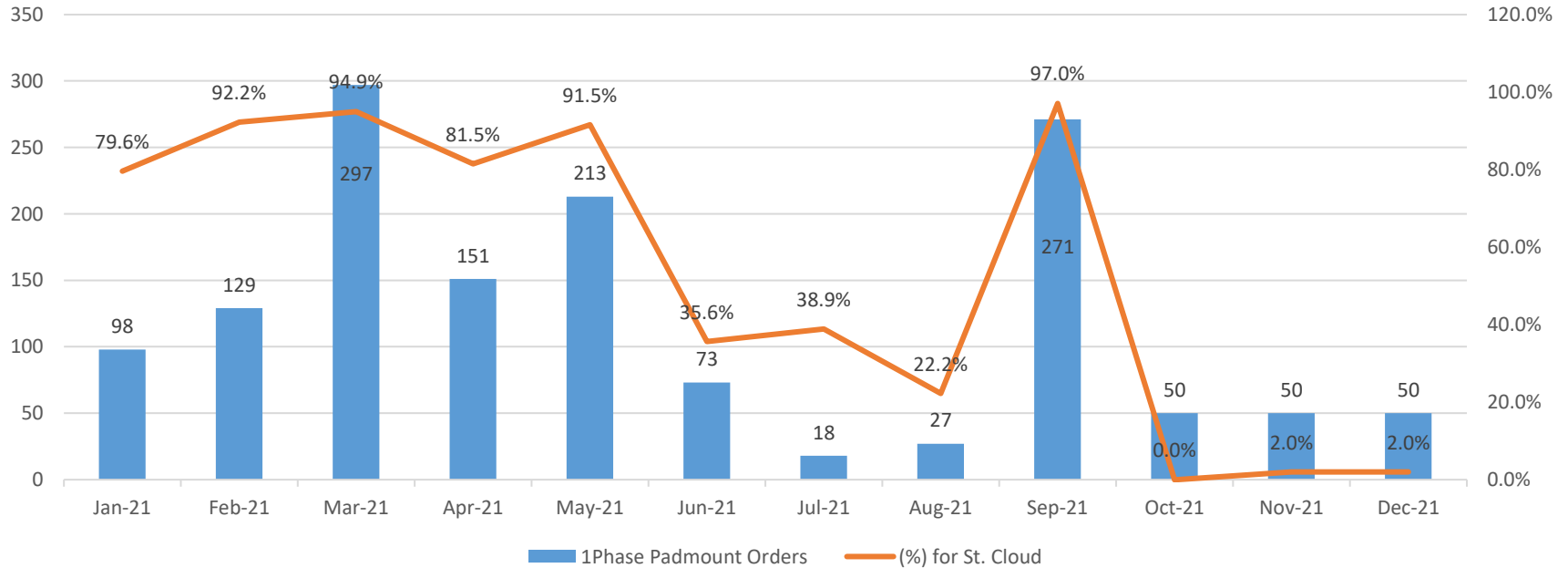
# Operations continued

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- The Alliance supplier reached out to OUC to determine how real/critical was the demand as well
- Senior leadership engagement
  - Senior leadership was actively involved in the discussions around the increased demand
  - OUC senior leadership also met with the leadership of the manufacturer facilitated by our supplier to discuss the challenges being presented
- September 2021 executed a significant transformer order
  - With the thought of staving off potential shortages in St. Cloud leadership subsequently decided, after reviewing the intel from our Alliance supplier, to approve a large forward buy of 1,000 transformers from an alternative supplier

# St. Cloud Impact on Monthly Demand

### Monthly 1Phase Transformer Demand





# Supply Chain Disruptions & Causes

# Supply Chain Disruption & Causes

Utilities have a strong track record when it comes to recovery preparations for weather events and natural disasters. However, the health crisis cause by COVID-19 created some unique challenges foreign to the industry such as wide spread quarantines, workforce and supply chain disruptions that further complicated traditional contingency plans.

- **Raw Material Shortages** – Low inventories have caused cascading issues with material production
- **Backlog of Orders** – Suppliers have reported that it is the sheer amount of demand for materials compounded by shortages in skilled labor
- **Transportation** – Fuel prices and the reported news that more than 80,000 drivers have left the industry since the beginning of the pandemic
- **Economy** – Inflation is impacting pricing, even on some orders that have been delayed

# Primary Materials Impacted

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- Transformers and switchgear
  - The lead-time for single phase pad-mounts outside our allotted slots have been pushed out to 160 weeks and switchgear to 24 weeks.
- Wire and cable
  - Primary cable (EPR) lead-time increased by 186% and our 600V secondary cable lead-time has increased by 150% with the price increasing 6%
- Water meter, meter boxes and lids
  - The lead-times have increased to 168 days and experiencing manufacturing delays
- Chemicals
  - At the height of the pandemic OUC experienced shortages of oxygen used in our water plants to ozonate the water for disinfection and removal of hydrogen sulfide

# OUC Challenges

- Forecasting demand more accurately
  - How do we forecast what the utility doesn't know? Example: with the standard lead-times for transformers increasing to just over 3-years it is virtually impossible to predict what will be needed for future projects
- Continued production delays on the bulk transformer order placed to mitigated the shortages in St. Cloud
- Replenishing and maintaining needed levels of storm stock
- Effectively managing inventory, supplier relationships & business needs
- Managing changing lead-times and price increases
  - Difficulty with price change requests and lead-times being push out on orders already placed and acknowledged by the supplier



# Material Lead-times and Pricing

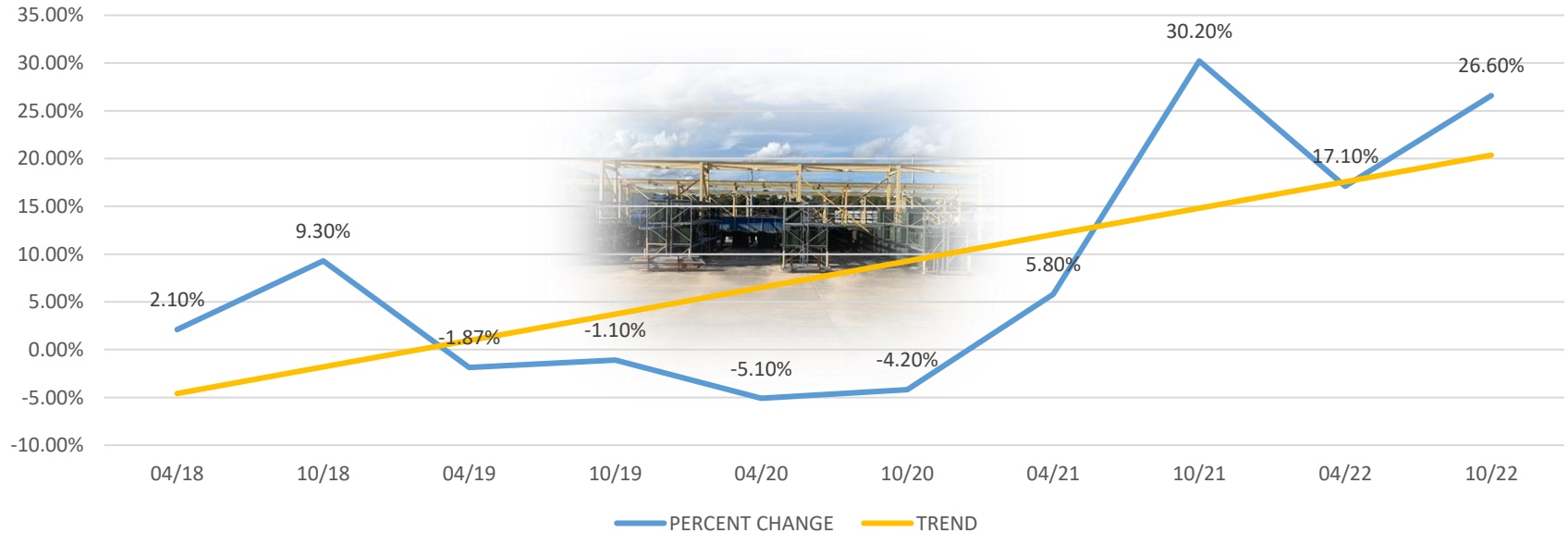


# Material Lead – time and Pricing Impacts

Material type	Price Increase (%)	FY21 Spend	FY22 Estimated Spend	Estimated Impact (1YR) Increase/(Decrease)	Standard Lead-Time
Pad-mount Switchgear	16%	\$742,287.05	\$861,052.98	\$118,765.93	24-38 weeks
Pole-mount Transformers	60%	\$802,860.23	\$1,284,576.37	\$481,716.14	40 weeks
Pad-mount Transformers 1P Pad-mount Transformers 3P	74%	\$6,217,538.14	\$10,818,516.36	\$4,600,978.22	160 weeks 70 weeks
Wood Poles	23%	\$161,275.89	\$198,369.34	\$37,093.45	4 weeks
Concrete Poles	30%	\$334,105.00	\$434,336.50	\$100,231.50	8 weeks
Bulk Chemicals (Hydrated Lime)	10%	\$36,491.03	\$40,140.13	\$3,649.10	4 weeks
Bulk Chemicals (Sulfuric Acid)	114%	\$283,984.71	\$607,727.28	\$323,742.57	1 week
Water Materials	23%	\$2,778,976.73	\$3,418,141.38	\$639,164.65	20 weeks
Water Meters	11%	\$271,014.65	\$300,826.26	\$29,811.61	19 weeks days
Primary Cable EPR	Base Price for wire and cable has not increased only metal market price has.				51 weeks
600 Volt Secondary Cable Stranded + Solid Conductor Primary Cable XLP	6%	\$1,811,454.68	\$1,920,141.96	\$108,687.28	15-46 weeks 76 weeks 30 weeks
Rex Electric Meters Alpha Electric Meters	15%	N/A	N/A	N/A	52 weeks 32 weeks

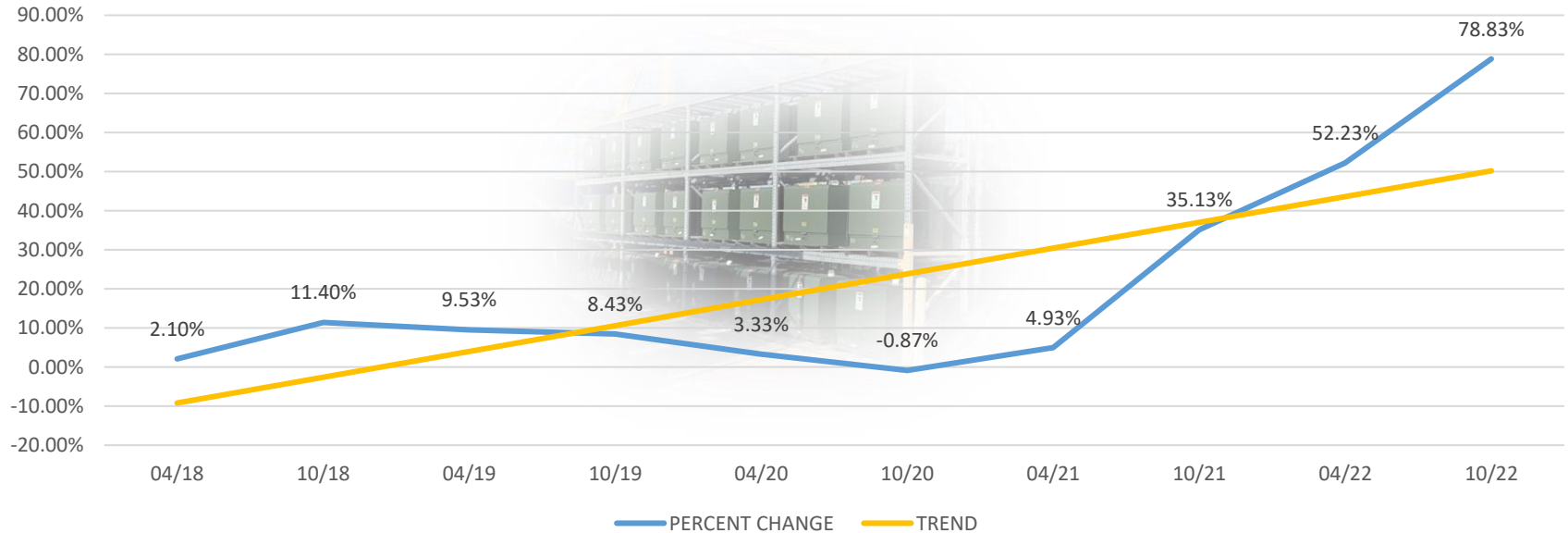
# Transformer Price Changes

### Padmount Transformer 4 Year Bi-Annual Price Trend



# Transformer Price Impacts

### Padmount Transformer 4 Year Cumulative Price Trend



# Supply Chain Opportunities

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- The way things have been done before and business as usual is no longer an option
  - There is increasing pressure on the utility, supplier and manufacturer to transform
  - Evaluate and review the planning of capital projects as well as regular scheduled maintenance
- Explore ways to improve supply chain resilience, as we seek to increase stocking levels of critical material items and appropriate avenues to diversify suppliers as well as materials
- Communicating with strategic supply chain stakeholders on volume for the next quarter when available
  - Includes: materials, utility planning, suppliers, manufacturers and finally the customer

# Mitigation Strategies and Potential Solutions

# Mitigation Strategies and Potential Solutions

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- Strategic partnerships with our suppliers and manufacturers
  - Monthly scheduled meetings with operations, the supplier and manufacturer to discuss orders and any delays
  - Collaborated with our Supplier to hold material at their location based on annual monthly usage, while project orders are being direct shipped from the manufacturer
- Educating and notifying developers and builders within our service area
  - A letter was drafted with assistance of OUC marketing and communications updating customers about delays and adjusting materials allocated for specific phased projects
- Focus efforts on planning and prioritizing jobs/projects
  - Collaborating with Electric and Water to anticipate potential needs in advance for upcoming jobs
  - A Transformer order and delivery report was created to assist in the planning process



# Transformer Order and Delivery Report

TRANSFORMER INVENTORY ROLLOVER REPORT (WO STATUS 50 - 60 READY TO WORK) AS OF 10/12/2022																	
Transformer (50KVA) 026-01405 (ORL 12KV)	Time Line (Data as of date below estimated)																
	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24
Total On Hand	104	55	55	55	55	60	60	87	87	102	102	102	102	102	102	102	102
Supplier 1	0	0	0	0	5	0	27	0	15	0	0	0	0	0	0	0	0
Total Commits by Start Date	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Remaining	55	55	55	55	60	60	87	87	102	102	102	102	102	102	102	102	102
Transformer (25KVA) 026-51402 (STC 25KV)	Time Line (Data as of date below estimated)																
	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24
Total On Hand	39	-41	-67	-67	-67	-67	-67	-67	-67	-67	-67	-67	-67	15	15	15	15
Supplier 1	0	0	0	0	0	0	0	0	0	0	0	0	82	0	0	0	0
Supplier 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Supplier 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total On Order	0	0	0	0	0	0	0	0	0	0	0	0	82	0	0	0	0
Total Commits by Start Date	80	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Remaining	-41	-67	-67	-67	-67	-67	-67	-67	-67	-67	-67	-67	15	15	15	15	15
Transformer (50KVA) 026-51405 (STC 25KV)	Time Line (Data as of date below estimated)																
	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24
Total On Hand	72	-102	-155	-65	-36	-36	3	26	26	26	26	26	26	26	165	165	165
Supplier 1	0	0	90	29	0	39	23	0	0	0	0	0	0	139	0	0	0
Supplier 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Supplier 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Supplier 4	0	24	0	0	24	0	24	0	24	0	24	0	24	0	24	0	0
Total On Order	0	24	90	29	24	39	47	0	24	0	24	0	24	139	24	0	0
Total Commits by Start Date	174	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Remaining	-102	-155	-65	-36	-36	3	26	26	26	26	26	26	26	165	165	165	165

# Strategies and Solutions continued

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- Sending pricing signals
  - Currently exploring the implementation of surcharge/impact fees on transformer sets
- Leveraging existing contracts
  - Considering the option of repairing unfit transformers and switchgear, which is a service available within our current transformer recycling contract
- Pursuing sourcing strategies with alternative suppliers
  - This is challenging as many distributors/supplier buy from the same manufacturers or the alternative manufacturer isn't taking any orders
- Maintaining needed stocking levels for storm materials
  - Typically storm stock is released and the end of Hurricane season, but stocking levels were maintained following a mild 2021 storm season through the present.

# Utility Supply Chain Market Intelligence

- Evolving Supply Chain Landscape
  - Macro Environment, Supplier Challenges, Industry Issues
- Commodity and Labor Impacts
  - Metal: Steel, Copper and Aluminum
    - Driving factors: China lockdowns, Electric Vehicle Demand, Supply & Demand
  - Labor force participation
- Market Conditions
  - Lead times not reliable, Backlogs being repriced, Suppliers moving to allocations and many suppliers not taking on new customers

# Questions/Discussions