



CHAMPAIGN-URBANA MASS TRANSIT DISTRICT BOARD OF TRUSTEES

SPECIAL MEETING

Wednesday, February 9, 2022 – 3:00 p.m.

1101 East University Avenue, Urbana
Main Conference Room

Board of Trustees:

Dick Barnes

Margaret Chaplan – Vice-Chair

Tomas Delgado

Bradley Diel – Chair

Phil Fiscella

Bruce Hannon

Alan Nudo

Advisory Board:

Lowa Mwilambwe/Marty Paulins

Briana Barr

- | | <u>Pages</u> |
|--|--------------|
| 1. Call to Order | |
| 2. Roll Call | |
| 3. Approval of Agenda | |
| 4. Audience Participation | |
| 5. Action Item | |
| A. Solar Array Expansion Change Order | 1-11 |
| 6. Next Meeting | |
| A. Regular Board of Trustees Meeting
February 23, 2022 – 3:00 p.m. at Illinois Terminal | |
| 7. Adjournment | |

Champaign-Urbana Mass Transit District strives to provide an environment welcoming to all persons regardless of disability, race, gender, or religion. Please call Beth Brunk at 217-384-8188 to request special accommodations at least 2 business days in advance.



To: Board of Trustees
 From: Jane Sullivan, External Affairs Director
 Date: February 9, 2022
 Subject: Approval of Solar Array Expansion Change Order

A. Introduction: The District received state grant funding to build a solar array on land leased from the Urbana & Champaign Sanitary District (UCSD) to power MTD’s hydrogen production station.

B. Recommended Action: Approval of the change order to the contract with Lyons Electric Company in the amount of \$282,500 for the solar-to-hydrogen connection.

C. Previous Action:

- On April 27, 2021, the Board of Trustees approved the contract with Lyons Electric Company for the Solar Array Expansion Project.
- On October 28, 2020, the Board of Trustees approved the Right-of-Way agreement with the City of Urbana to run conduit along Hickory Street from UCSD property south to University Ave.
- On October 28, 2020, the Board of Trustees approved the Intergovernmental Agreement with the Urbana & Champaign Sanitary District for the solar project land lease.
- On April 29, 2020, the Board of Trustees passed Resolution 2020-1 authorizing the filing of state grant applications, including an application for funding for the solar array project.
- On January 29, 2020, the Board of Trustees approved the contract with Dewberry for Part A of the Solar Array Expansion Design & Engineering project and on April 29, 2020, the approved Part B of the contract with Dewberry.

D. Summary: MTD is expected to be the first transit agency in the nation with a hydrogen fleet fueled entirely from our own renewable source. This is made possible by connecting the solar array to the hydrogen station. The work to make this connection was intended to be added to the hydrogen station contractor’s, Trillium, work. However, as Trillium’s contract was underway, we were uncertain of the timing of the solar array construction due to the state grant funding. Therefore, the solar-to-hydrogen connection was added to the solar contractor’s, Lyons Electric Company, work. Supply shortages and coordination between projects have extended the timeline on this change. We have two options to add the solar-to-hydrogen connection, shown below.

	Amount	Estimated Completion
Option 1	\$171,650	December 2022
Option 2	\$282,500	April 2022

Option 1 delays the solar array start-up to December 2022. The estimated solar production loss of Option 1 is 2,062,500 kilowatt hours. This equates to \$114,410, the supply cost of purchasing this electricity from Ameren. When this is factored in, Option 2 is \$3,560 less than Option 1.

	CO Amount	Additional Electricity Cost	Total Cost
Option 1	\$171,650	\$114,410	\$286,060
Option 2	\$282,500		\$282,500
		Difference	\$3,560

Option 1	Option 2
<ul style="list-style-type: none"> • Switch located in hydrogen plant • Less labor and less additional equipment • Warranty extensions required 	<ul style="list-style-type: none"> • Switch located on new pad outside of hydrogen plant • New sectionizing cabinet between utility pole and hydrogen plant • Additional site work required • No remobilization or warranty extension

E. Background: The District is leasing about 8 acres of UCSD land and rooftop across the street from MTD’s facilities in Urbana. Energy from the solar array will be used to produce hydrogen to fuel zero-emission fuel cell buses. The District was awarded \$4,547,500 in state grant funding in December 2020 through the Rebuild Illinois program to complete the solar array expansion project.

F. Alternatives – advantages/disadvantages

- Without a solar-to-hydrogen connection, the District would not be directly using renewable energy to produce hydrogen for the zero emission buses.
- Option 1 delays start-up of the solar array to December 2022, losing out on solar energy production in the most productive months of the year.

G. Budget & Staffing Impacts: This change order will be funded with local funds.



Lyons & Pinner Electric Companies
 650 E. Elm Avenue
 LaGrange, IL 60525

Change Request Proposal

Project: (name and address)	21027 / MTD Solar Array Exp Ph 1 1101 E. UNIVERSITY AVE. URBANA, IL 61802	Change request number:	CO-004
		Description:	Hydrogen Plant Tie-In - Option #1 (44 Week Lead Time)
Customer:	CHAMPAIGN-URBANA MTD		

Notice to Proceed

Submitted date:
 Received date:
 Rough order of magnitude: 0.00

Status: Proposed
 Origination date: 01/20/22

Quotation

Submitted date: 01/20/22
 Due date:
 Submitted amount: 171,650.00
 Requested days delay: 0

Notes

Clarifications:

Total Estimated Duration 44 Weeks
 Per the Hydrogen Plant drawings provided, we are under the impression that there is enough conduit, space and power within the existing switch to provide the 120V circuit needed for the new switch heater.
NOTE: If sourcing another pathway for the 120V circuit ends up being necessary, the monetary consequences would be established in the form of an adder.

UL Listing = Maintained
 Estimated number of Ameren Shutdowns: 1
 Estimated number of Days Hydrogen Plant to be shut down: 3 Days
 Note: Ameren Shutdown fee's by other
 Completion of Initial Scope : First week of April 2022 (Pending Transformer Delivery)

Proposal for Option #1 is contingent upon the following considerations:

- Original Retention to be adjusted down to \$150,000.00 and paid upon Final Completion.
- All other retention to be paid by Completion of Initial Scope - (First week of April)
- Any and all warranty coverage is contingent upon implementation of an Operation & Maintenance Plan.
- Once O&M has been established, approximate Warranty timelines would transpire per the following dates:

SunPower - Solar Panels

~Current Coverage = 25 Year Manufacturer Warranty / Starts 6 months after delivery to site.
 ~Approx. Start Date = 6/5/2022
 ~Approx. End Date = 5/30/2047
 ~Option to Extend Warranty = **NOT AVAILABLE** (Per Manufacturer)

----- **10 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION** -----

SMA - Inverters

~Current Coverage = 5 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 3/6/2022
 ~Approx. End Date = 6/2/2027
 ~Option to Extend Warranty = 5 Year Extension Available (Per Manufacturer) / \$16,794.00
 ~If Extended, End Date = 6/1/2032

SolarEdge - Inverters

~Current Coverage = 12 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 3/6/2022
 ~Approx. End Date = 3/3/2034
 ~Option to Extend Warranty = 8 Year Extension Available (Per Manufacturer) / \$8,335.00
 ~If Extended, End Date = 3/3/2042

SolarEdge - Optimizers

~Current Coverage = 25 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 3/6/2022
 ~Approx. End Date = 2/28/2047
 ~Option to Extend Warranty = **NOT AVAILABLE** (Per Manufacturer)

----- **25 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION** -----



Lyons & Pinner Electric Companies
 650 E. Elm Avenue
 LaGrange, IL 60525

Change Request Proposal

Project: 21027 / MTD Solar Array Exp Ph 1
 (name and address) 1101 E. UNIVERSITY AVE.
 URBANA, IL 61802

Change request number: CO-004
 Description: Hydrogen Plant Tie-In - Option #1 (44 Week Lead Time)

Customer: CHAMPAIGN-URBANA MTD

Advanced Racking - Roof Racking

~Current Coverage = 20 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 12/31/2021
 ~Approx. End Date = 12/26/2041
 ~Option to Extend Warranty = **NOT AVAILABLE** (Per Manufacturer)

----- 20 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION -----

DCE Solar - Ground Racking

~Current Coverage = 20 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 12/31/2021
 ~Approx. End Date = 12/26/2041
 ~Option to Extend Warranty = **NOT AVAILABLE** (Per Manufacturer)

----- 5 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION -----

Solar Bos - 1500VDC Disconnect

~Current Coverage = 5 Year Manufacturer Warranty / Starts on date of delivery to site.
 ~Approx. Start Date = 10/1/2021
 ~Approx. End Date = 9/30/2026
 ~Option to Extend Warranty = **NOT AVAILABLE** (Per Manufacturer)

----- 2 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION -----

SMA - Energy Data Manager

~Current Coverage = 2 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 4/2/2022
 ~Approx. End Date = 4/1/2024
 ~Option to Extend Warranty = **NOT AVAILABLE** (Per Manufacturer)

SolarEdge - Energy Data Manager

~Current Coverage = 5 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 4/2/2022
 ~Approx. End Date = 4/1/2027
 ~Option to Extend Warranty = **NOT AVAILABLE** (Per Manufacturer)

- Under the current circumstances, certain warranty requirements range outside of the actual coverage available.
 Therefore, final warranty parameters will likely differ from what is currently specified and would require a mutual agreement between Lyons Electric and MTD.

Estimated Production Loss During Option 1 Timeline:

- Ground Array = 1,525,166 KWhrs
- Roof Array = 537, KWhrs
- At an estimated \$0.06 per KWhr, the total production loss would project to equal \$123,750.00

Revenue Detail

Billing Item	Description	Revenue
CO-004	HYDROGEN PLANT - OPTION #1	171,650.00
Total Revenue For CR CO-004		171,650.00

Approvals

Customer: CHAMPAIGN-URBANA MTD
 Authorized Representative: _____
 By: _____
 Date: _____

Contractor: Lyons Electric Company, Inc.
 By: _____
 Date: _____



LYONS & PINNER ELECTRIC COMPANIES

650 East Elm Avenue, LaGrange, Illinois 60525
 Phone: (708) 588-6800 Fax: (708) 588-6805

To: **Jane Sullivan**
 Champaign-Urbana Mass Transit District (MTD)
 1101 E. University Ave.
 Urbana, IL 61802

Date: 1/26/22

From: **Walter Munoz**
 Lyons & Pinner Electric Companies
 650 E. Elm Avenue
 LaGrange, IL 60525

Job: CO-004 – Hydrogen Plant Tie-In Option #1 (Revised)

PROPOSAL

Lyons Electric is pleased to submit the following proposal for your consideration:

No.	Unit Price Description	Unit of Measure	Qty Bid	Total
1	Engineering/Design of Additional Work	LS	1	\$ 10,449.15
2	PALS	LS	1	\$ 77,689.21
	<i>Provide/Install (1) Square D HVL/cc MV Switch Addition (35-40 Week Lead Time)</i>			
	<i>Provide/Install (3) Square D Current Limiting 15.5kV 125E Fuses</i>			
	<i>Bring 120V circuit from Existing Switch to New PV Switch for space heater within cabinet.</i>			
	<i>Provide (2) Spare Sets of Square D Current Limiting 15.5kV 125E Fuses</i>			
	<i>Provide/Install (1) Ameren approved PT cabinet on side of Solar MDP</i>			
	<i>Provide/Install strut "H-Structure" on Solar MDP concrete pad next to Solar MDP</i>			
	<i>Install Ameren provided Elite Meter enclosure</i>			
	<i>Provide/Install (1) 2" rigid conduit from PT Cabinet to Ameren Elite Meter</i>			
	<i>Provide/Install (3) PTs 288:120 ratio (Must be Ameren approved before ordering)</i>			
	<i>Provide/Install (3) CTs 2500:5 ratio (Must be Ameren approved before ordering)</i>			
	<i>Provide (1) Electrician on site for Ameren to wire Elite Meter</i>			
3	Per Diem for Hardt/Lyons Employees	LS	1	\$ 4,119.50
4	Extension of Site Services/Rentals	Month	8	\$ 8,433.68
5	Remobilization Time to Go Back to Site	LS	1	\$ 28,382.08
6	Coordination with Ameren	LS	1	\$ 9,277.36
7	Manufacturer Warranty Extensions	LS	1	\$ 25,129.00
			Subtotal	\$ 163,479.98
			Profit (5%)	\$ 8,174.00
			TOTAL	\$ 171,650.00

Exclusions and clarifications as per Change Request Proposal attached.

Thank you for the opportunity to bid this work.

Sincerely,

X

Walter Munoz
Assistant Project Manager

X

Jane Sullivan
Champaign-Urbana Mass Transit District (MTD)



Lyons & Pinner Electric Companies
 650 E. Elm Avenue
 LaGrange, IL 60525

Change Request Proposal

Project: 21027 / MTD Solar Array Exp Ph 1
 (name and address) 1101 E. UNIVERSITY AVE.
 URBANA, IL 61802

Change request number: CO-004
 Description: Hydrogen Plant Tie-In - Option #2 (13 Week Lead Time)

Customer: CHAMPAIGN-URBANA MTD

Notice to Proceed

Submitted date:
 Received date:
 Rough order of magnitude: 0.00

Status: Proposed
 Origination date: 01/31/22

Quotation

Submitted date: 01/31/22
 Due date:
 Submitted amount: 282,500.00
 Requested days delay: 0

Notes

Clarifications:

Total Estimated Duration 10 Week Material Lead Time + 3-4 Week Install (Projected Completion week of April 18th 2022)
 Per the Hydrogen Plant drawings provided, we are under the impression that there is enough conduit, space and power within the existing switch to provide the 120V circuit needed for the new switch heater.

NOTE: If sourcing another pathway for the 120V circuit ends up being necessary, the monetary consequences would be established in the form of an adder.

UL Listing = Maintained
 Estimated number of Ameren Shutdowns: 2
 Estimated number of Days Hydrogen Plant to be shut down: **4-6 Days**
 Note: Ameren Shutdown fees and ALL Ameren fees to be paid by others.
 Projected Completion of Scope : Week of April 18th 2022 (Pending Official Material Deliveries)

Proposal for Option #2 is contingent upon the following considerations:

- Approval of Option #2 proposal before Friday - 2/11/22.
- Sectionalizing Cabinet currently IN STOCK with (1) supplier.
 * **Supplier cannot guarantee unit will remain in stock.**
 * **If Cabinet in question is sold prior to change order approval, lead time will likely spike back to 30 weeks, pricing would change and retention modifications would need to be revisited.**
- We are NOT responsible for any engineering fees or additional permit fees.
- Proposal assumes new scope will be covered under current electrical permit.
- Approval of Option 2 to eliminate the need for any warranty extensions.
- Any and all warranty coverage is contingent upon implementation of an Operation & Maintenance Plan.
- Once O&M has been established, approximate Warranty timelines would transpire per the following dates:

SunPower - Solar Panels

~Current Coverage = 25 Year Manufacturer Warranty / Starts 6 months after delivery to site.
 ~Approx. Start Date = 6/5/2022
 ~Approx. End Date = 5/30/2047

----- 10 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION -----

SMA - Inverters

~Current Coverage = 5 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 3/6/2022
 ~Approx. End Date = 6/2/2027

SolarEdge - Inverters

~Current Coverage = 12 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 3/6/2022
 ~Approx. End Date = 3/3/2034

SolarEdge - Optimizers

~Current Coverage = 25 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 3/6/2022
 ~Approx. End Date = 2/28/2047

----- 25 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION -----



Lyons & Pinner Electric Companies
 650 E. Elm Avenue
 LaGrange, IL 60525

Change Request Proposal

Project: 21027 / MTD Solar Array Exp Ph 1
 (name and address) 1101 E. UNIVERSITY AVE.
 URBANA, IL 61802

Change request number: CO-005
 Description: Hydrogen Plant Tie-In - Option #2 (13 Week Lead Time)

Customer: CHAMPAIGN-URBANA MTD

Advanced Racking - Roof Racking

~Current Coverage = 20 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 12/31/2021
 ~Approx. End Date = 12/26/2041

----- 20 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION -----

DCE Solar - Ground Racking

~Current Coverage = 20 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 12/31/2021
 ~Approx. End Date = 12/26/2041

----- 5 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION -----

Solar Bos - 1500VDC Disconnect

~Current Coverage = 5 Year Manufacturer Warranty / Starts on date of delivery to site.
 ~Approx. Start Date = 10/1/2021
 ~Approx. End Date = 9/30/2026

----- 2 YEARS SPECIFIED POST SUBSTANTIAL COMPLETION -----

SMA - Energy Data Manager

~Current Coverage = 2 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 4/2/2022
 ~Approx. End Date = 4/1/2024

SolarEdge - Energy Data Manager

~Current Coverage = 5 Year Manufacturer Warranty / Starts 3 months after delivery to site.
 ~Approx. Start Date = 4/2/2022
 ~Approx. End Date = 4/1/2027

Revenue Detail

Billing Item	Description	Revenue
CO-005	HYFROGEN PLANT - OPTION #2	282,500.00
Total Revenue For CR CO-005		282,500.00

Approvals

Customer: CHAMPAIGN-URBANA MTD
 Authorized Representative: _____

Contractor: Lyons Electric Company, Inc.
 By: _____

By: _____

By: _____

Date: _____

Date: _____



LYONS & PINNER ELECTRIC COMPANIES

650 East Elm Avenue, LaGrange, Illinois 60525

Phone: (708) 588-6800 Fax: (708) 588-6805

To: **Jane Sullivan**
Champaign-Urbana Mass Transit District (MTD)
1101 E. University Ave.
Urbana, IL 61802

Date: 1/31/22

From: **Walter Munoz**
Lyons & Pinner Electric Companies
650 E. Elm Avenue
LaGrange, IL 60525

Job: CO-004 – Hydrogen Plant Tie-In Option #2 (Valid until Friday - 2/11/22)

PROPOSAL

Lyons Electric is pleased to submit the following proposal for your consideration:

No.	Unit Price Description	Unit of Measure	Qty Bid	Total
1	Coordination and Commissioning of Hydrogen Plant Tie-In	LS	1	\$ 21,429.36
2	PALS	LS	1	\$ 232,639.00
	Provide/Install (1) Square D HVL MV Switch with Custom NEMA-3R Enclosure			
	Provide/Install (3) Current Limiting 15.5kV 125E Fuses (Plus 3 Spares)			
	Provide/Install concrete pad for Square D HVL MV Switch South of Ameren Pole (concrete pad to have rebar and frost footings)			
	Provide/Install (1) 15kV Sectionalizing Cabinet South of Ameren Pole (next to MV Switch pad)			
	Locate and dig up (3) existing spare conduits from Hydrogen Plant			
	Re-route (3) existing 4" conduits to new Square D HVL MV Switch			
	Remove existing 15kV #1/0 Feeders from Ameren pole to existing 15kV Hydrogen Plant Switch			
	Re-route existing 4" primary conduit from Ameren pole to sectionalizing cabinet			
	Re-route existing 4" primary conduit from existing Hydrogen Plant 15kV switch to sectionalizing cabinet			
	Provide/Install new #1/0 MV wire from Ameren pole to sectionalizing cabinet			
	Provide/Install new #1/0 MV wire from Sectionalizing Cabinet to Hydrogen Plant 15kV Switch			
	Provide/Install Medium Voltage Stress Cones for 15kV switch terminations			
	Provide/Install Medium Voltage Dead Break Elbows for Sectionalizing Cabinet terminations			
	Re-route existing (2) 4" conduits from Hydrogen Plant 15kV switch (for solar array) to new Square D 15kV switch			
	Install Quazite Box and turn up (2) spare conduits from 15kV Hydrogen Plant Switch for future use			
	Re-route (1) of the 4" spare conduits from the Hydrogen Plant 15kV switch to new Solar 15kV switch for 120V power from Hydrogen Plant for Switch Heater			
	Provide/Install (1) 120V circuit from Hydrogen Plant to new Solar 15kV switch for heater circuit			
	Provide/Install (3) #1/0 MV cables from Sectionalizing Cabinet to new Solar 15kV switch			
	Provide temporary safety fence around underground construction at Hydrogen Plant			
	Provide/Install (1) Ameren approved PT cabinet on side of Solar MDP			
	Provide/Install strut "H-Structure" on Solar MDP concrete pad next to Solar MDP			
	Install Ameren provided Elite Meter Enclosure			
	Provide/Install (1) 2" rigid conduit from PT Cabinet to Ameren Elite Meter			
	Provide/Install (3) PT's 288:120 ratio (Must be Ameren approved before ordering)			
	Provide/Install (3) CT's 2500:5 ratio (Must be Ameren approved before ordering)			
	Provide (1) Electrician on site for Ameren to wire Elite Meter			
	Includes Mobilization/Wage Difference For Testing/Installing Inverters Due to Delay			
	ANY and ALL Ameren Fees are NOT INCLUDED in this quote			
	Megger of all MV wiring - No VLF or Hi-Pot testing of MV cables included in quote			
	Sectionalizing Cabinet currently in stock with (1) supplier - cannot guarantee will remain in stock - typical lead time is 28-30 weeks			
3	Per Diem for Hardt/Lyons Employees	LS	1	\$ 3,020.00
4	Extension of Site Services/Rentals	Month	8	\$ 1,511.00
5	Engineering & Design Work for Hydrogen Plant Tie-In	LS	1	\$ 10,449.15
6	Manufacturer Warranty Extensions	LS	1	
		Subtotal		\$ 269,048.51
		Profit (5%)		\$ 13,452.43
		TOTAL		\$ 282,500.94

Exclusions and clarifications as per Change Request Proposal attached.

Thank you for the opportunity to bid this work.

Sincerely,

X

Walter Munoz
Assistant Project Manager

X

Jane Sullivan
Champaign-Urbana Mass Transit District (MTD)