

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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UNION ELECTRIC COMPANY  
Petitioner

v.

BIRCHTECH CORP.  
(f/k/a MIDWEST ENERGY EMISSIONS CORP.)  
Patent Owner

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Case IPR2025-01118  
Patent 10,343,114

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**PATENT OWNER'S SUR-REPLY TO PETITIONER'S REPLY TO  
PATENT OWNER'S PRELIMINARY RESPONSE**

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<b>Exhibit List</b>	
<b>Exhibit</b>	<b>Description</b>
<b>2003</b>	Original Complaint for Patent Infringement, <i>Midwest Energy Emissions Corp., et al. v. Vistra Energy Corp., et al.</i> , C.A. 1:19-cv-01334, ECF No. 1 (D. Del. July 17, 2019)
<b>2004</b>	Transcript of Jury Trial, <i>Midwest Energy Emissions Corp., et al. v. Arthur J. Gallagher &amp; Co., et al.</i> , C.A. 1:19-cv-01334 (D. Del.) (Feb. 26, 2024–March 1, 2024)
<b>2005</b>	Non-Final Judgment Following Jury Verdict, <i>Midwest Energy Emissions Corp., et al. v. Arthur J. Gallagher &amp; Co., et al.</i> , C.A. 1:19-cv-01334, ECF No. 697 (D. Del. March 8, 2024)
<b>2006</b>	Case Management Order, <i>In re: Midwest Energy Emissions Corp. Pat. Litig.</i> , No. 4:24-md-03132-SHL-WPK, ECF No. 60 (S.D. Iowa March 7, 2025)
<b>2007</b>	Complaint for Patent Infringement, <i>Midwest Energy Emissions Corp. v. Ameren Corp., et al.</i> , 4:24-cv-00980, ECF No. 1 (E.D. Mo. July 17, 2024)
<b>2008</b>	Plaintiff ME2C’s Brief in Support of Its Motion for Preliminary Injunction, <i>Midwest Energy Emissions Corp. v. Berkshire Hathaway Energy Company, et al.</i> , 4:24-cv-00243-SHL-WPK, ECF No. 58-1 (S.D. Iowa Oct. 11, 2024)
<b>2009</b>	Defendants’ Brief in Support of Their Resistance to Plaintiff’s Motion for Preliminary Injunction, <i>Midwest Energy Emissions Corp. v. Berkshire Hathaway Energy Company, et al.</i> , 4:24-cv-00243-SHL-WPK, ECF No. 125 (S.D. Iowa Dec. 16, 2024) (Redacted)
<b>2010</b>	Plaintiff ME2C’s Reply Brief in Support of Its Motion for Preliminary Injunction, <i>Midwest Energy Emissions Corp. v. Berkshire Hathaway Energy Company, et al.</i> , 4:24-cv-00243-SHL-WPK, ECF No. 139 (S.D. Iowa Dec. 23, 2024) (Redacted)
<b>2011</b>	First Amended Complaint for Patent Infringement, <i>Midwest Energy Emissions Corp., et al. v. Vistra Energy Corp., et al.</i> , C.A. 1:19-cv-01334, ECF No. 130 (D. Del. July 15, 2020)
<b>2012</b>	Third Amended Complaint for Patent Infringement, <i>Midwest Energy Emissions Corp., et al. v. Arthur J. Gallagher &amp; Co., et al.</i> , C.A.

	1:19-cv-01334, ECF No. 326 (D. Del. Oct. 7, 2021)
<b>2013</b>	Order Denying Motions to Stay and Motion to Compel, <i>In re: Midwest Energy Emissions Corp. Pat. Litig.</i> , No. 4:24-md-03132-SHL-WPK, ECF No. 131 (S.D. Iowa May 22, 2025)
<b>2014</b>	Amended and Restated Refined Coal Sales Agreement (Labadie Energy Center) between Larkwood Energy, LLC, and Union Electric Company, d/b/a Ameren Missouri, dated March 11, 2014 (SEALED)
<b>2015</b>	Refined Coal Sales Agreement (Rush Island Project Generation Facility) between Buffington Partners, LLC, and Union Electric Company, d/b/a Ameren Missouri, dated November 4, 2011 (SEALED)
<b>2016</b>	Memorandum Opinion, <i>Midwest Energy Emissions Corp., et al. v. Arthur J. Gallagher &amp; Co., et al.</i> , C.A. 1:19-cv-01334, ECF No. 791 (D. Del. Sept. 25, 2025)
<b>2017</b>	Declaration of Inventor John Pavlish, dated July 27, 2020
<b>2018</b>	EPA Clean Air Act Overview, <a href="https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-iii">https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-iii</a>
<b>2019</b>	EPA, Mercury and Air Toxics Standards, <a href="https://www.epa.gov/mats/cleaner-power-plants">https://www.epa.gov/mats/cleaner-power-plants</a>
<b>2020</b>	EPA, “Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units—Final Report to Congress”
<b>2021</b>	Pilot- and Full-Scale Demonstration of Advanced Mercury Control Technologies for Lignite-Fired Power Plants, Quarterly Report (for the Period October 1, 2003 – December 31, 2003), dated February 2004
<b>2022</b>	Pilot- and Full-Scale Demonstration of Advanced Mercury Control Technologies for Lignite-Fired Power Plants, Final Report, dated February 2005
<b>2023</b>	DOE, Success Story for Sorbent Enhancement Additives
<b>2024</b>	Declaration of Thomas Erickson including PTC logbook entries
<b>2025</b>	Mercury Control Technologies for Electric Utilities Burning Subbituminous Coals, Final Report (For the period January 1, 2004 through June 30, 2005), dated October 2005

<b>2026</b>	Center for Air Toxic Metals (CATM), 2003 Research Ideas, dated August 30, 2002
<b>2027</b>	Document Metadata for Center for Air Toxic Metals (CATM), 2003 Research Ideas
<b>2028</b>	EPA, Mercury Study Report to Congress Vol. I (1997)
<b>2029</b>	EERC internal presentation, “Description of Test Facilities Particulate Test Combustor”
<b>2030</b>	EERC internal presentation, “Mercury Control Technologies for Electric Utilities Burning Lignite Coals, Introduction to Project” (12/4/2001)
<b>2031</b>	EERC internal presentation, “Mercury Control Technologies for Electric Utilities Burning Lignite Coals Project Kickoff Meeting” part 1 (2/28/2002)
<b>2032</b>	EERC internal presentation, “Mercury Control Technologies for Electric Utilities Burning Lignite Coals Project Kickoff Meeting” part 2 (2/28/2002)
<b>2033</b>	EERC internal presentation, “Mercury Control Technologies for Electric Utilities Burning Lignite Coals, Project Review Meeting” (2/25/2003)
<b>2034</b>	“JV TASK 45 – MERCURY CONTROL TECHNOLOGIES FOR ELECTRIC UTILITIES BURNING LIGNITE COAL, PHASE I BENCH- AND PILOT-SCALE TESTING Final Report” (Oct. 2003) (the “Oct. 2003 Report”)
<b>2035</b>	Metadata for Notes on Center for Air Toxic Metals (CATM) 2003 Research Ideas
<b>2036</b>	United States Patent No. 10,343,114
<b>2037</b>	File History, U.S. Patent No. 10,343,114 (U.S. App. No. 15/978,760)
<b>2038</b>	J. D. Kilgroe, C. B. Sedman, R. K. Srivastava, J. V. Ryan, C. W. Lee, S. A. Thorneloe, <i>Control of Mercury Emissions from Coal-Fired Electric Utility Boilers: Interim Report</i> , U.S. Environmental Protection Agency, Office of Research and Development, EPA-600/R-01-109, April 2002.

On October 9, 2025, Petitioner was authorized to file a Reply to Patent Owner's Preliminary Response with a filing date of October 22, 2025, and Patent Owner was authorized to file this Sur-Reply with a filing deadline of November 5, 2025. Ex. 3102. On October 22, Petitioner filed its Authorized Reply. IPR2025-01118, Paper 19 (Oct. 22, 2025). On October 31, 2025, before Patent Owner's Authorized Sur-Reply came due, the Director denied institution in this IPR in a Notice of Decisions on Institution. IPR2025-01118, Paper 20 (Oct. 31, 2025).

Patent Owner disagrees with the arguments made by Petitioner in its Authorized Reply and would request an opportunity to respond to those arguments if the Board believes that is necessary. However, because institution has been denied and this proceeding terminated, Patent Owner understands that no further briefing is required.

Dated: November 5, 2025

Respectfully submitted,

*Birchtech Corp.*

/Hamad M. Hamad/

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**CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6(e)(4)**

It is hereby certified that on this 5th day of November, 2025, a copy of the foregoing document was served via electronic mail, as consented to by Petitioners upon the following counsel of record:

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Date: November 5, 2025

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