

Green Ammonia Summit 2024

Agenda and Speakers



Agenda

Monday, Dec. 9

The summit started with an opening dinner with guest speakers former U.S. Senator Heidi Heitkamp and Minnesota House Rep. Paul Anderson (12A) at the Prime Steakhouse. Sponsored by MN Corn Growers Association and West Central Initiative

Tuesday, Dec. 10

8:00 am Networking Breakfast

Attendees joined Summit Stakeholders for a light breakfast, coffee, and tea for a chance to connect in Oyate Hall at the University of Minnesota Morris. Sponsored by M-RETS.

9:00 am Welcome and Opening Remarks

9:20 am Green Ammonia as a Strategy for Rural Development and Decarbonization

Pete Wyckoff, Deputy Commissioner, Minnesota Department of Commerce

9:40 am Minnesota State Policy Panel

The panel looked at different ways Minnesota supports green ammonia production, and how policy leaders are thinking about the way green ammonia fits into the larger state strategy for climate and rural livelihoods.

Moderator: Stu Lourey, Government Relations Director, Minnesota Farmers Union
Rep. Paul Anderson, District 12A, Co-Chair Agriculture Finance and Policy
Thom Petersen, Commissioner, Minnesota Department of Agriculture
Pete Wyckoff, Deputy Commissioner, Minnesota Department of Commerce

10:30 am Lightning Talks

Why Minnesota? Why now? Attendees heard from leading experts about the decarbonization and rural vitality opportunities of green ammonia. These talks also explored the science behind green ammonia, policy landscape, utilities and scaling technology.

Mike Reese, Green Ammonia Research Lead & Director of Operations, West Central Research and Outreach Center
Erin Heitkamp, VP of Supply Chain Development, Gevo
Jen King, Research Engineer, National Renewable Energy Laboratory
Sheran Munasinghe, Senior Associate of Climate-Aligned Industries, Rocky Mountain Institute

12:00 pm Lunch and Farmer Fireside Chat

Attendees heard from farmer leaders on the importance of locally produced, cooperatively owned farm inputs.

Moderator: Ariel Kagan, Director of Climate and Working Lands, Minnesota Farmers Union

Doug Albin, Farmer and Council Member, Minnesota Corn Growers Association
Harmon Wilts, President of H & G Farms LLC, Swift County

In the afternoon, the summit dove deeper into the real-world implications of green ammonia through insights from policymakers, farmers, cooperatives, and private sector companies. There was also panel discussions to address key topics such as building new markets and finance and ownership structures.

1:15 pm Private Sector Perspectives

The focus of this panel was on the demand for low carbon feedstocks and climate-smart ingredients.

Moderator: Patrick Molloy, Principal of Climate-Aligned Industries, Rocky Mountain Institute
Courtney Hall, Director, International Business Development, Crop Nutrients Product Line, CHS
Tom Rabaey, Senior R&D Manager, General Mills
Brian Werner, Executive Director, Minnesota Bio-Fuels Association

2:00 pm Rural Development and the Cooperative Model

This panel discussed the greater impacts of green energy transition for rural communities and the value of building these new green technologies out through the cooperative model.

Moderator: Katie Marty, Cooperative Director & Consultant, Collectivity
Al Hamen, CEO, Runestone Electric Association
Sen. Aric Putnam, District 14, Chair of the Agriculture, Broadband, and Rural Development Committee
Ben Schrier, Mayor of Fergus Falls and Director of Civic Partnerships, West Central Initiative

3:00 pm The Bottom Line: Making Green Ammonia Projects Happen

This panel explored the critical role of financing and project development play in advancing new low-carbon energy production.

Moderator: Pete Wyckoff, Deputy Commissioner, Minnesota Dept. Of Commerce
Warrenn Anderson, Attorney, Fluegel, Anderson, McKlaughlin & Brutlag
Elizabeth Burns- Thompson, VP of External Affairs, Landus Ag Cooperative
Tom Traen, former General Manager of Glacial Ridge Cooperative

4:00 pm Closing Session

4:00 pm Closing Reception Happy Hour

The Summit closed with a toast to the possibilities and learning generated during the Summit. Sponsored by Fresh Energy and MN Bio-Fuels Association.

5:30 pm Adjourn

Speakers

Rep. Paul Anderson

District 12A

Paul Anderson represents Morris and the rest of Stevens County along with portions of Big stone, Pope, swift, and Stearns. He was first elected to the legislature in 2008 and has been a leader of agriculture and rural development. Most recently, he was named co-Chair of the House Agriculture and Finance Policy Committee. Paul has served as a Pope County commissioner, a member of the Starbuck school board and as a Pope County Township officer. A fourth-generation farmer, he also has worked in both electronic and print media. He and his wife, Faith live on a farm near Starbuck. They have three children.

Doug Albin

Farmer Council Member, Minnesota Corn Growers Association

Doug Albin is from Clarkfield, MN. He and his wife Lois have been farming together for 45 years. They raise corn and soybeans on 1100 acres. Their son and daughter are both married and together have 6 children total. Doug serves on the Minnesota Corn Research and Promotion Council to help direct research for new uses for corn and new opportunities for Minnesota farmers. He is a graduate of the University of Minnesota, Crookston.

Warrenn Anderson

Attorney, Fluegel, Anderson, McKlaughlin & Brutlag

Warrenn Anderson is the Chairperson for Denco II ethanol plant and One Earth Renewables LLC/OER, a green fertilizer startup coordinating with numerous area co-ops and a major utility company thru the Heartland H2 Hub. He also represents producers for 2,000+ MW of wind and solar.

Elizabeth Burns-Thompson

Vice President, External Affairs, Landus Cooperative

Elizabeth has a multi-faceted skillset and extensive agriculture policy and political experience across the Midwest. Throughout her professional career she has specialized in helping farmers and rural agricultural businesses sustain their voice in the political process. Her roots run deep in agriculture, having grown up on a family farm in eastern Iowa, she's held roles with a variety of ag associations, as well as industry leading biofuel manufacturers and innovative carbon management technologies. Elizabeth holds a Juris Doctorate from Drake Law School with a specialization in agricultural law and policy, and a Bachelor of Science in Agricultural Business and International Agriculture from Iowa State University. She now lives in eastern Nebraska, focusing on rural policy on behalf of Landus Cooperative.

Dr. Jordan Cofer

Vice Chancellor of Academic Affairs and Dean of Faculty, University of Minnesota Morris

Dr. Jordan Cofer is the Vice Chancellor of Academic Affairs and Dean of Faculty at the University of Minnesota Morris. He is a professor of English, and the author of *The Gospel According to Flannery O'Connor*, co-author of *Reconsidering Flannery O'Connor* and *Writing the Nation: A Concise Introduction to American Literature 1865 to Present*. Cofer recently joined UMN Morris from Georgia College, where he served as the Associate Provost and Director of the Flannery O'Connor Institute for the Humanities. He also serves as an instructor in the AAC&U High Impact Practices Institute.

Courtney Hall

Director, International Business Development, Crop Nutrients Product Line, CHS

Courtney Hall is the Director, International Business Development, Crop Nutrients Product Line at CHS. Prior to this, Hall was the Senior Director of Sustainability at CHS. As a strategic and technical thinker, she's spent her 16-year career focused on making sustainability actionable in agriculture and developing solutions that make sense for business and the environment. At CHS, Hall and her team work across the enterprise to identify strategic opportunities to reduce carbon emissions and drive value.

Hall has held multiple roles in sustainability and spent the majority of her career at Cargill. She has collaborated with customers, NGOs, universities, farmers, ranchers, and government agencies. Most notably, Hall built, launched and led one of Cargill's largest and most ambitious programs on sustainability, called BeefUp Sustainability.

Hall holds a bachelor's degree from the University of Wisconsin Eau Claire and a master's degree from University of Denver. She lives in Golden Valley, Minn. with her husband and son.

Al Hamen

CEO, Runestone Electric Association

Al Hamen is the CEO of Runestone Electric Association based in Alexandria, MN. REA is an electric distribution cooperative serving 15,000 accounts in the rural areas of Douglas, Pope, and Grant counties in West Central MN.

Prior to joining REA, Al was CEO at STAR Energy Services in Alexandria from 1999 through 2020 and was employed by Otter Tail Power in Fergus Falls from 1991 to 1999 as an electrical engineer.

He is a North Dakota State University graduate and a registered professional engineer in MN.

Erin Heitkamp

VP of Supply Chain Development, Gevo

Erin Heitkamp serves as VP of Supply Chain Development for Gevo. She has over two decades of experience in the overlapping spaces of sustainability, policy, strategy, supply chain, and business development across the aviation, fuel, food, and agriculture sectors.

Heidi Heitkamp

Former U.S. Senator of North Dakota

U.S. Senator Heidi Heitkamp served as the first female senator elected from North Dakota from 2013 – 2019.

During her six years in the U.S. Senate, Heitkamp quickly became a proven negotiator who worked across the aisle to fight for rural America. She personally showed that if senators work together, it can lead to real solutions. Throughout her time in the Senate, Heidi prioritized improving the lives of Indigenous peoples and working families, stopping human trafficking; guaranteeing affordable health care; addressing childhood trauma; eliminating unnecessary regulation; and securing an energy policy that keeps costs low but achieves climate goals. Providing equal economic opportunity to Rural America continues to be her lifelong pursuit.

Heitkamp previously served as North Dakota's Attorney General, and elected state Tax Commissioner. She serves on numerous boards including The McCain Institute, The Howard Buffett Foundation and The German Marshall Fund. She is the founder and Chair of the One Country Project, an organization focused on addressing the needs and concerns of rural America. Heidi currently serves as Director of the Institute of Politics at the University of Chicago where she works with bright young students and encourages them to seek opportunities in public service to our country.

Heidi also serves as a contributor to both *CNBC* and *ABC News*.

Ariel Kagan

Director of Climate and Working Lands, Minnesota Farmers Union

Ariel Kagan joined the MFU team as the Climate and Working Lands Program Director in February 2023. Her background is in agricultural economics and policy and she has worked across sectors to support farmers, climate resilience, and policy development.

At Farmers Union, she works on topics related to climate-smart agriculture, renewable energy, market development, and environmental policy. She holds an undergraduate degree in economics from Mount Holyoke College and a graduate degree in agricultural economics from the University of British Columbia.

Jen King

Research Engineer, National Renewable Energy Laboratory

Jennifer King is a group manager at the National Renewable Energy Laboratory working at the National Wind Technology Center, primarily focused on systems engineering and controls for industrial decarbonization applications such as ammonia, steel, fuels, etc. She is passionate about finding new ways to better integrate and operate renewable energy into the energy system of the future. She obtained her Ph.D. in aerospace engineering and mechanics from the University of Minnesota, where she developed her passion for renewable energy and controls, where her primary focus was on reduced-order modeling and control of wind farms. Her current research focus areas are in modeling and distributed control/optimization of large-scale hybrid systems.

Stu Lourey

Government Relations Director, Minnesota Farmers Union

Stu Lourey's primary responsibility is making sure that MFU members are well-represented at the state Capitol and other places where people are making policy decisions that affect family farmers and rural communities. Stu joined the team in March of 2019.

Prior to MFU, he worked for Minnesota Senators Tina Smith and Al Franken, where part of his focus was making healthcare more affordable and tackling the price of prescription drugs. He graduated from Carleton College in Northfield, Minn., and his roots remain in northern Pine County where his family raises beef cattle.

Katie Marty

Cooperative Director & Consultant, Collectivity

Katie joined Collectivity in 2023 as their Cooperative Director and Senior Consultant to direct cooperative initiatives. She is passionate about the positive economic impact of cooperatives and the big impact they offer for transforming extractive business practices. Her introduction to co-ops was in supporting an agriculture co-op which formed to equitably share resources and decision-making power. Seeing the potential of the cooperative model in action, Katie founded Aynah, a nonprofit introducing young people to cooperatives through experiential learning. Katie's recent work has included building a stronger cross-sector cooperative ecosystem in Minnesota through the relaunch of CoMinnesota.

Katie holds degrees in business and Spanish, certificates in cooperative development and abolitionist training, in addition to serving on the Ralph K. Morris Foundation board. She lives in Vadnais Heights, MN with her husband, two young children, and beloved dog Nina. Katie is also passionate about minimizing waste, hiking (ideally daily), and eating good bread.

Patrick Molloy**Principal, Rocky Mountain Institute**

Patrick is a principal with RMI's Climate-Aligned Industries Program, where he leads workstreams focused on ammonia and fertilizers, hydrogen infrastructure, and hydrogen system innovation. He focuses on deployment potential, system design, market evolution, and potential for disruption in next-generation traded markets. Patrick has been widely cited on next-generation technology emergence with particular focus on hydrogen applications in the industrial space. Previously, he worked with RMI's Business Renewables Center, focusing on tax equity structures and PPA deal structures. Additionally, as part of RMI's mining team, he led work on mine site remediation of on-site renewable resource development.

Sheran Munasinghe**Senior Associate of Climate-Aligned Industries, Rocky Mountain Institute**

Sheran is a senior associate in RMI's Climate-Aligned Industries Program, where he works on accelerating green hydrogen deployment. In his role, Sheran informs and guides market actors on cost-effective opportunities in the hydrogen space, with a particular focus on ammonia and fertilizers. Most recently, Sheran was selected as an "Emerging Leader" by GreenBiz for their annual GreenFin Conference.

Sheran holds an MA in International Economics and Energy, Resources and Environment from Johns Hopkins University and a BA in International Affairs from John Cabot University. He is based in Washington, DC.

Thom Petersen**Commissioner, MN Department of Agriculture**

Thom Petersen was appointed Commissioner of the Minnesota Department of Agriculture by Governor Tim Walz in 2019 and reappointed in 2023.

Commissioner Petersen is a long-time resident of Royalton Township near Pine City where he lives on a horse farm. Before being appointed Commissioner, Petersen served as the Director of Government Relations for Minnesota Farmers Union (MFU) since 2002, working on behalf of MFU's farmer-members in both Washington, D.C., and St. Paul.

Prior to his work at the Minnesota Farmers Union, Commissioner Petersen spent most of his life working for his family and his own horse and farm business. He has a wide range of experience in state and federal farm policy, and travels to almost every county in Minnesota each year to fully understand how these policies affect farmers' daily lives. He has served on many boards and committees, including the University of Minnesota Extension Citizens Advisory Committee, Farmers Legal Action Group, Minnesota Ag in the Classroom, Minnesota State Organic Task Force, and the Minnesota Rural Broadband Coalition.

Commissioner Petersen received his associate degree from Normandale Community College and studied at both the University of Minnesota and University of Georgia. The Commissioner and his wife, Alana, live in Pine City with their two sons. The Petersen's show horses around the state and have competed at the Minnesota State Fair for over 25 years.

Senator Aric Putnam**District 14**

Sen. Putnam is chair of the Agriculture, Broadband, and Rural Development Committee, and serves on the Higher Education Committee, Jobs and Economic Development Committee, and Taxes Committee. He was first elected to the Minnesota Senate in 2021. He represents the communities of St. Cloud, Waite Park, St. Augusta, Haven, and

Minden Townships. Aric graduated from San Francisco State University, finished his Master's in Maine, and then came to Minnesota, where his Mom is from, for his Ph.D. at the University of Minnesota. He was then hired as a professor of communication at Saint John's University and the College of St. Benedict, where he has taught and researched for the last 17 years.

He currently lives in Saint Cloud, MN with his wife, Laurie (Superintendent for District 742), and two children. One of his favorite parts of being the Ag. committee chair has been the opportunity to go on over 90 farm visits over the past two years where he has been able to meet farmers in their homes to learn what they have to teach.

Tom Rabaey

Senior R&D Manager, General Mills

Tom Rabaey is a Sr. R & D Manager leading the Agronomy Sciences group at General Mills in Minneapolis, MN. The Agronomy Sciences team is focused on research and enabling the adoption of regenerative agriculture, supply chain resilience and GHG reduction for the ingredients we source, in addition the team leads oat breeding & genetics, variety development and agronomy support for other key ingredient crops.

Tom Rabaey holds a B.S in Agronomy Sciences from South Dakota State University and M.S and PhD in Agronomy Sciences and Entomology from the University of Wisconsin – Madison.

In 1995 Tom began work for General Mills, Inc. and has worked in many agriculture supply chains that provide the ingredients for several of the brands in the company including Green Giant, Big G Cereals, Cheerios, Pillsbury, Nature Valley, and organic brands such as Cascadian Farm, Muir Glen, and Annie's.

Tom Rabaey grew up on a diversified family farm near Minnesota, MN where he still has an active role in the management of the operation.

Mike Reese

Green Ammonia Research Lead & Director of Operations, West Central Research and Outreach Center

Mike Reese is the Green Ammonia Research Lead and WCROC Director of Operations. He has been the Renewable Energy Director at the University of Minnesota West Central Research and Outreach Center, Morris since 2001. He has overseen the development of the renewable-energy program at Morris and has participated as Principal Investigator or Project Manager on more than \$18 million of research and demonstration projects including wind energy, biomass gasification, renewable hydrogen and ammonia, and solar-energy systems. Reese is leading the renewable-energy program's new strategy to reduce fossil-energy consumption in agricultural production systems through incorporating renewable and efficient energy technologies. He has addressed numerous national and regional conferences on the topic of renewable energy. Reese assumed the role as Director of Operations August 2022.

Ben Schierer

Mayor of Fergus Falls and Director of Civic Partnerships at West Central Initiative

Ben Schierer is the Director of Civic Partnerships at West Central Initiative. Ben brings a wealth of experience in government and civic engagement, with 16 years as an elected official. He is the Mayor of Fergus Falls, a 2020-2021 Bush Fellow, and a 2023 Presidential Leadership Scholar. Prior to becoming mayor, Schierer served on the Fergus Falls City Council for two terms. Schierer joined West Central Initiative as a consultant for its Rural Democracy program in 2023 and now will expand his work to create a positive civic culture in rural Minnesota.

Anne Schwagerl**Vice President, Minnesota Farmers Union**

Anne Schwagerl was elected as the MFU State Vice President in 2021, after serving as the MFU State Secretary for five years. She and her husband, Peter, own and operate a diversified grain and livestock operation near Browns Valley in Big Stone County. Anne serves on the board of governors of Farmers Union Industries.

Along with her work for MFU, Anne has worked with fellow Kernza® growers to develop the Perennial Promise Growers Cooperative and served as the secretary of that organization until 2023. Previously, Anne completed the WFO-GYMNASIUM Young Farmer Leader Training and was the Next Generation Representative on the National Farmers Union Board of Directors from 2019-22. Anne is a graduate of Gustavus Adolphus College in St. Peter, MN.

Dan Skogen (Summit Moderator)**Former Member of the Minnesota State Senate**

Dan Skogen spent 34 years in radio broadcasting, working in Thief River Falls and Wadena Minnesota. He spent 4 years in the Minnesota Senate serving Ottertail, Wadena and Becker Counties, and 10 years as the Director of Government and Industry Relations for the Agricultural Utilization Research Institute (AURI) before retiring in 2022.

Peter Tester**Deputy Commissioner, Minnesota Pollution Control Agency**

Peter Tester joined the agency as deputy commissioner in 2019. He previously spent years focused on addressing environmental issues in Minnesota, first at the Minnesota Attorney General's Office, then as a partner at the law firm Lindquist and Vennum. Most recently, he served as senior corporate counsel for Ecolab. Peter also served as temporary MPCA commissioner from June to November 2021.

Peter has a Bachelor of Arts in history from Boston College, a Master of Arts in government and foreign affairs from the University of Virginia, and he completed his law degree at Boston College Law School. He is an avid canoer, hiker, skater, hunter, and skier. Tester has also developed a passion for mountaineering, climbing Mt. Rainier (2014), Mt. Baker (2017), and Denali, the highest peak in North America (2018). Tester lives with his wife Maya and has two grown daughters.

Tom Traen**Former General Manager of Glacial Ridge Cooperative**

Tom Traen, raised on a farm in SW Minnesota, graduated from the University of Minnesota with a degree in Ag Business Administration. He worked for CHS for twenty years in various merchandising and management positions. Tom then went on to manage Glacial Plains Cooperative, Murdock, MN for another twenty years. He retired in July of 2019. Tom is currently working on a green fertilizer project for One Earth Renewables/Denco II. Tom lives in Benson, MN, is married to Vicky, they have 5 children and 9 grandchildren.

Harmon Wilts**president of H & G Farms LLC, Swift County**

Harmon Wilts is the President of H & G Farms LLC.

Brian Werner**Executive Director, Minnesota Bio-Fuels Association**

Brian Werner was appointed Executive Director of MN Bio-Fuels on Sept 26, 2022. A native of Marshall, MN, Brian's prior experience includes working for Sen. Amy Klobuchar as Deputy Legislative Director/Senior Legislative Assistant for renewable energy and agriculture. Throughout that time, he supported the Senator's work to protect mandatory funding for Farm Bill energy title programs, maintain stability in the implementation of the Renewable Fuel Standard, provide economic relief for biofuel producers negatively affected by the coronavirus pandemic, and secure federal investment in biofuel infrastructure.

Brian also spent time on Capitol Hill in the offices of former Congressman Collin Peterson and former U.S. Senator, Tim Johnson, of South Dakota. He received his BA from Augustana University in Sioux Falls, South Dakota, and a master's degree in public policy and public administration from American University in Washington, D.C.

In his spare time Brian enjoys golfing, watching Twins baseball and Gopher football, hiking and traveling with his wife Lori, and explaining the difference between field corn and sweet corn to his non-Midwestern friends.

Pete Wyckoff

Deputy Commissioner, MN Dept. Of Commerce

Pete Wyckoff, PhD was appointed Deputy Commissioner of Energy Resources in September 2024. He joined Commerce in March 2023 as Assistant Commissioner of Federal and State Initiatives for the Energy Resources Division. During that time, he has worked closely with the Governor's Office and Legislature to coordinate efforts to bring millions in federal clean energy funds to Minnesota. He oversaw the Commerce Offices of Energy Affordability and Energy Development during a time of rapid expansion, as Commerce has worked to stand up many new programs funded by recent federal and state legislation. Prior to joining Commerce, Wyckoff served as Senior Policy Advisor for Energy for U.S. Senator Tina Smith. He also worked for former U.S. Senator Al Franken and at the U.S. Department of Energy during his time in Washington, DC. Wyckoff is an environmental scientist by training and an emeritus professor of the University of Minnesota Morris. Wyckoff received his bachelor's degree in biology and political science from Drew University in New Jersey and a PhD in Ecology from Duke University in North Carolina.