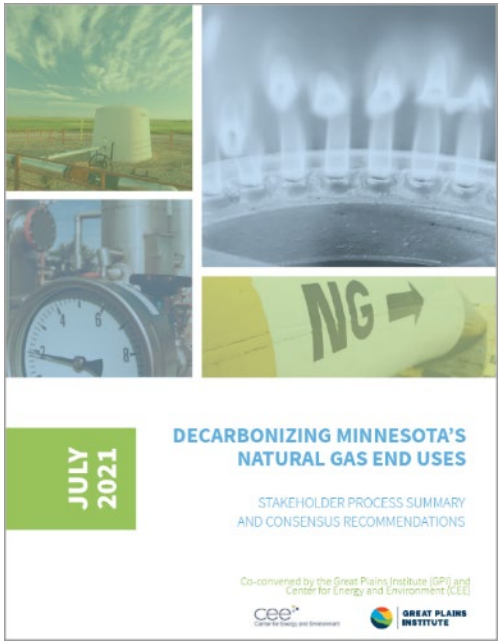
Natural Gas Innovation Act & CenterPoint Energy's First Innovation Plan

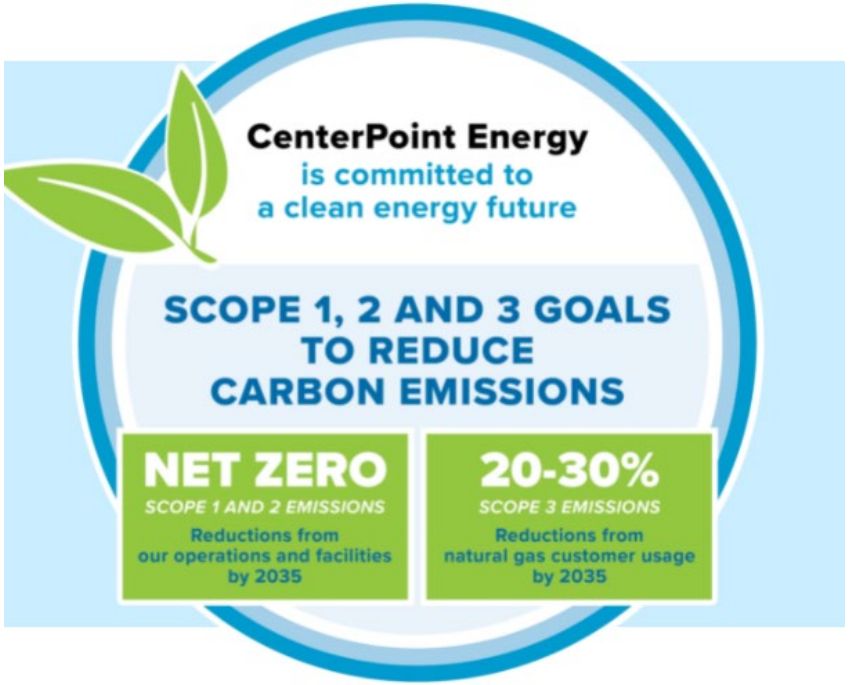
Emma Ingebretsen, Sr. Project Manager

This presentation is being provided for informational purposes only and does not purport to be comprehensive. Neither CenterPoint Energy, Inc., together with its subsidiaries and affiliates (the “Company”), nor its employees or representatives, make any representation or warranty (express or implied) relating to this information. By reviewing this presentation, you agree that the Company will not have any liability related to this information or any omissions or misstatements contained herein. You are encouraged to perform your own independent evaluation and analysis.

Focus on Carbon Emissions Reductions

Section 216H.02, subdivision 1: "It is the goal of the state to reduce statewide greenhouse gas emissions **across all sectors producing those emissions** to a level at least 15 percent below 2005 levels by 2015, to a level at least 30 percent below 2005 levels by 2025, and to a level at least 80 percent below 2005 levels by 2050…





Natural Gas Innovation Act

- Proposed by CenterPoint Energy
- Passed in June 2021 with bipartisan support
- Applies to investor-owned natural gas utilities in MN
- Establishes regulatory framework for deploying renewable energy resources and innovative technologies

NGIA Basics

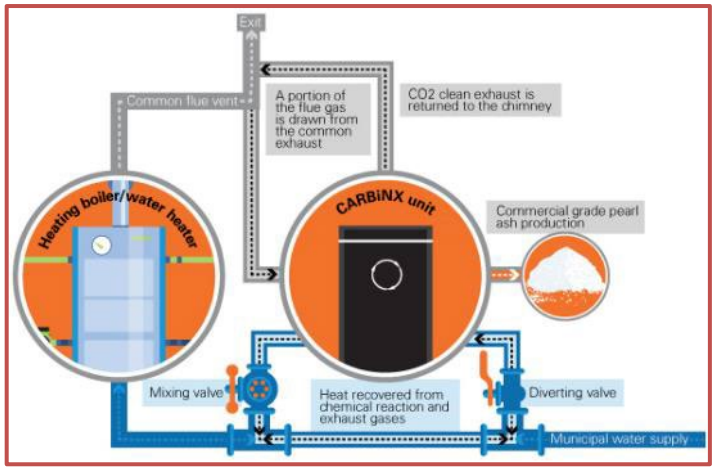
Under NGIA, gas utilities may file "**Innovation Plans**" for approval by PUC and, if approved, recover associated costs determined reasonable and prudent

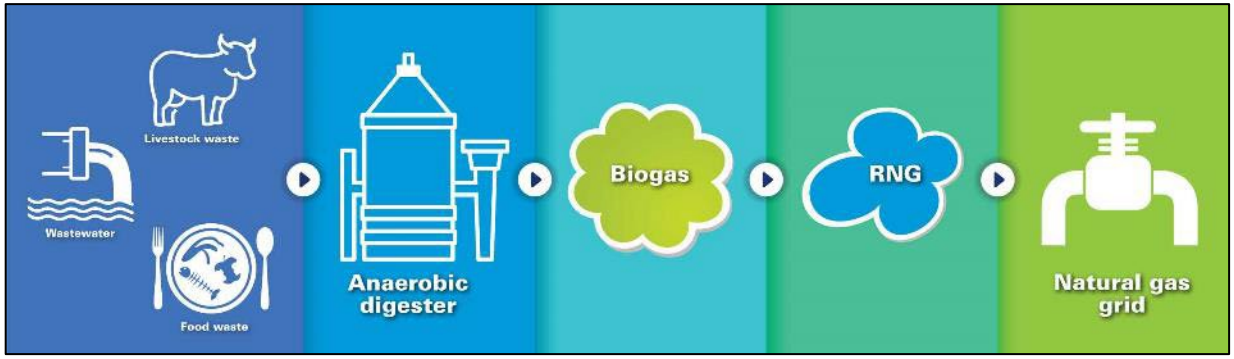
- **Innovation Plan**
  - a set of "**pilot projects**" that directly deploy and/or encourage the deployment of "**innovative resources**"
- **Pilot Projects**
  - can include a wide range of activities, including specific project development, programs and services offered to CenterPoint Energy customers, and research & development efforts

NGIA Basics

Innovative Resources

- "Gaseous Fuels"
  - Renewable natural gas/Biogas
  - Power-to-hydrogen (Green Hydrogen)
  - Power-to-ammonia (Green Ammonia)
- Other decarbonization strategies
  - Energy efficiency (emerging/innovative, beyond CIP)
  - Carbon capture
  - District Energy
  - Strategic electrification



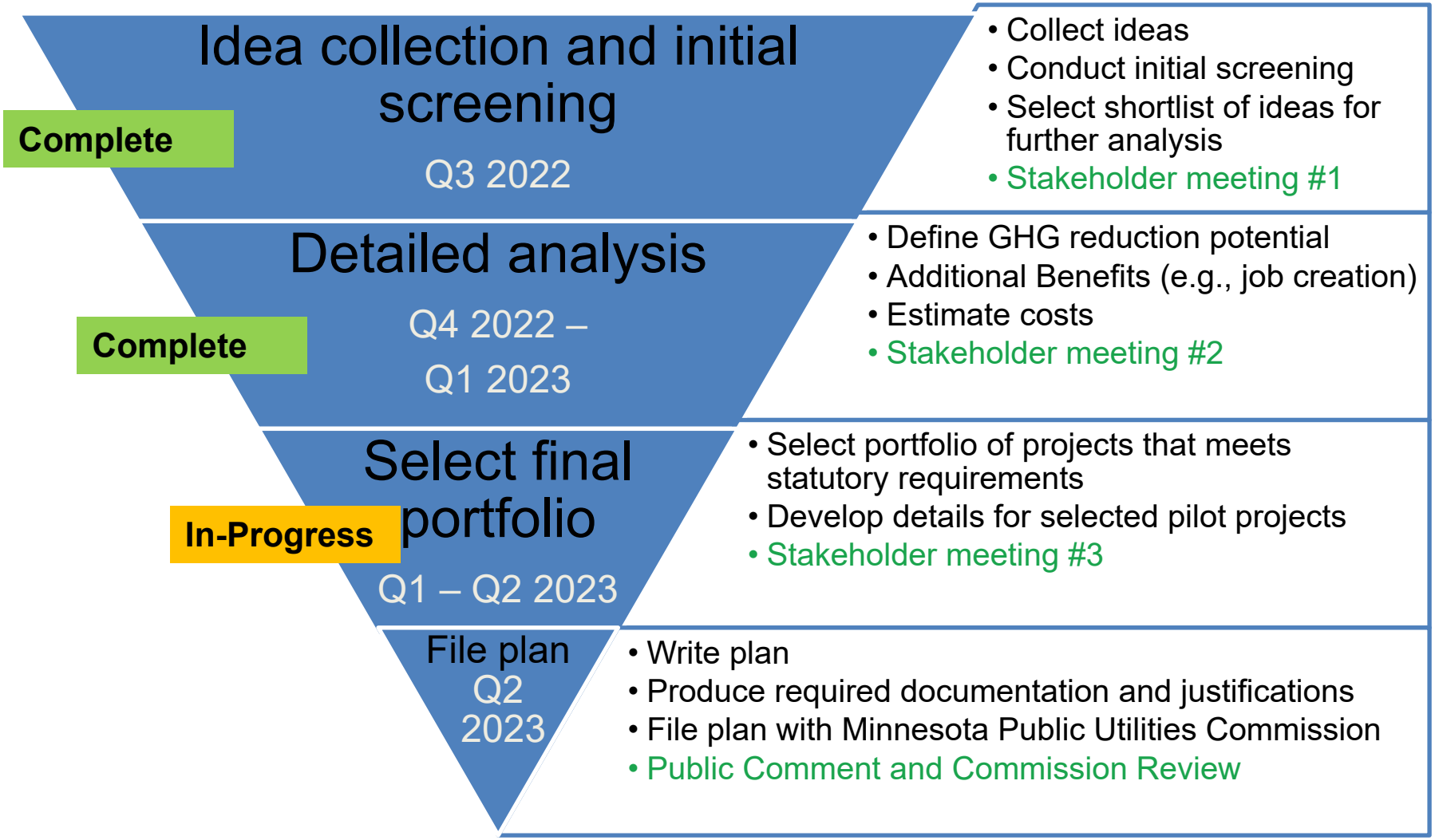


Cost-Benefit Analysis Framework

- Broad view of costs and benefits
  - Environmental co-benefits
  - Economic development
  - Innovation and scalability

	Pilot 1	Pilot 2	Pilot 3
Perspectives			
NGIA Utility Perspective			
NGIA Participants Perspective (including specific impacts on low- and moderate-income participants)			
NGIA Nonparticipating Customers Perspective (including specific impacts on low- and moderate-income customers)			
Effects on Other Energy Systems and Energy Security			
Environment			
GHG Emissions			
Other Pollution (including any environmental justice costs or benefits)			
Waste reduction and reuse (including reduction of water use)			
Policy (e.g., natural gas throughput, renewable energy goals)			
Socioeconomic			
Net Job Creation			
Economic Development			
Public Co-Benefits			
Market Development			
Innovation			
Direct Innovation Support			
Resource Scalability and Role in a Decarbonized System			

Innovation Plan Development Process



Special Items for First Plan

- All utilities: 50% or more of costs must be for RNG, hydrogen, ammonia, and/or biogas

- CenterPoint Energy Only
  - Small/medium sized business GHG audit program
  - Large industrial program for hard-to-electrify facilities
  - Residential electric air source heat pump and deep energy retrofit program (with gas backup)
  - District energy pilot

Approach to Portfolio Development

Aim for a 'balanced portfolio', covering different innovative resource types while meeting all statutory requirements and balancing competing priorities within the NGIA cost-benefit framework

- Include a variety of pilots to maximize innovation and learning
- Prioritize funding for some of the more innovative options that could help CNP evolve its business to support customers in reducing emissions; aim to help the utility gain experience in these areas through this portfolio
- Factor low-cost options with innovation to create a balanced portfolio
- Generally chose larger sizes for pilots that are commercialized technologies, seem highly scalable and have high potential for long-term emission reductions – networked geothermal, commercial hybrid heating, residential deep energy retrofits

Summary of Pilots Selected for Draft CenterPoint Innovation Plan Portfolio

Primary Innovation Category	#	Pilot	Pilot Size Selected for Portfolio[1]	Description of this Size of Pilot
Renewable Natural Gas (RNG)	1	RNG Proposal – Anaerobic Digestion of Organic Materials	B	10-year contract to purchase 41,440 Dth / year
	2	RNG Proposal – Anaerobic Digestion of East Metro Food Waste	B	10-year contract to purchase 152,613 Dth / year
	3	RNG Archetype – WRRF	B	10-year contract to purchase 50,000 Dth / year[2]
	4	RNG Archetype – Dairy Manure	A	10-year contract to purchase 10,000 Dth / year[2]
	5	RNG Archetype – Food Waste	B	10-year contract to purchase 220,000 Dth / year[2]
	6	RNG Archetype – Landfill Gas	A	10-year contract to purchase 100,500 Dth / year[2]
Power-to-Hydrogen	7	Green Hydrogen Blending into Natural Gas Distribution System	B	1 MW electrolyzer + 1 MW solar PV
	8	Green Hydrogen Archetype – Industrial or Large Commercial Facility Electrolyzer	A	One facility installing 5 MW electrolyzer
Carbon Capture	9	Industrial Methane and Refrigerant Leak Reduction Program	A	50 facilities participate in leak surveys and repairs
	10	Urban Tree Carbon Offset Program	A	4,500 carbon credits purchased
	11	Archetype Carbon Capture Project for Industrial or Large Commercial Facility	A	One facility installing carbon capture system
	13	Carbon Capture Rebates for Commercial Buildings	A	325 CarbinX systems installed
District Energy	14	New Networked Geothermal Systems	C	1000-ton capacity system installed
	15	Decarbonizing Existing District Energy Systems	B	2 existing district energy sites supported
	16	New District Energy System	B	2 new district energy sites supported
Strategic Electrification	17	Industrial Electrification Incentive Program	A	Industrial heat pumps piloted at 3 facilities
	18	Commercial Hybrid Heating	B	135 facilities install hybrid gas-electric rooftop units
	19	Residential Deep Energy Retrofit + Electric ASHP Pilot (with Gas Backup)	B	238 buildings (SFH + Multi-family) participate across 3 phases
Energy Efficiency	20	Small/Medium Business GHG Audit	A	992 GHG audits, with 3% implementing measures from NGIA
	21	Residential Gas Heat Pump	A	6 homes install gas heat pumps
	22	Gas Heat Pump for Commercial Buildings	A	3 buildings install gas heat pumps
	24	Solar Thermal Heating for C&I	None	N/A
	25	Industrial and Large Commercial GHG Audit	A	50 GHG audits, 5 projects implemented with NGIA incentive

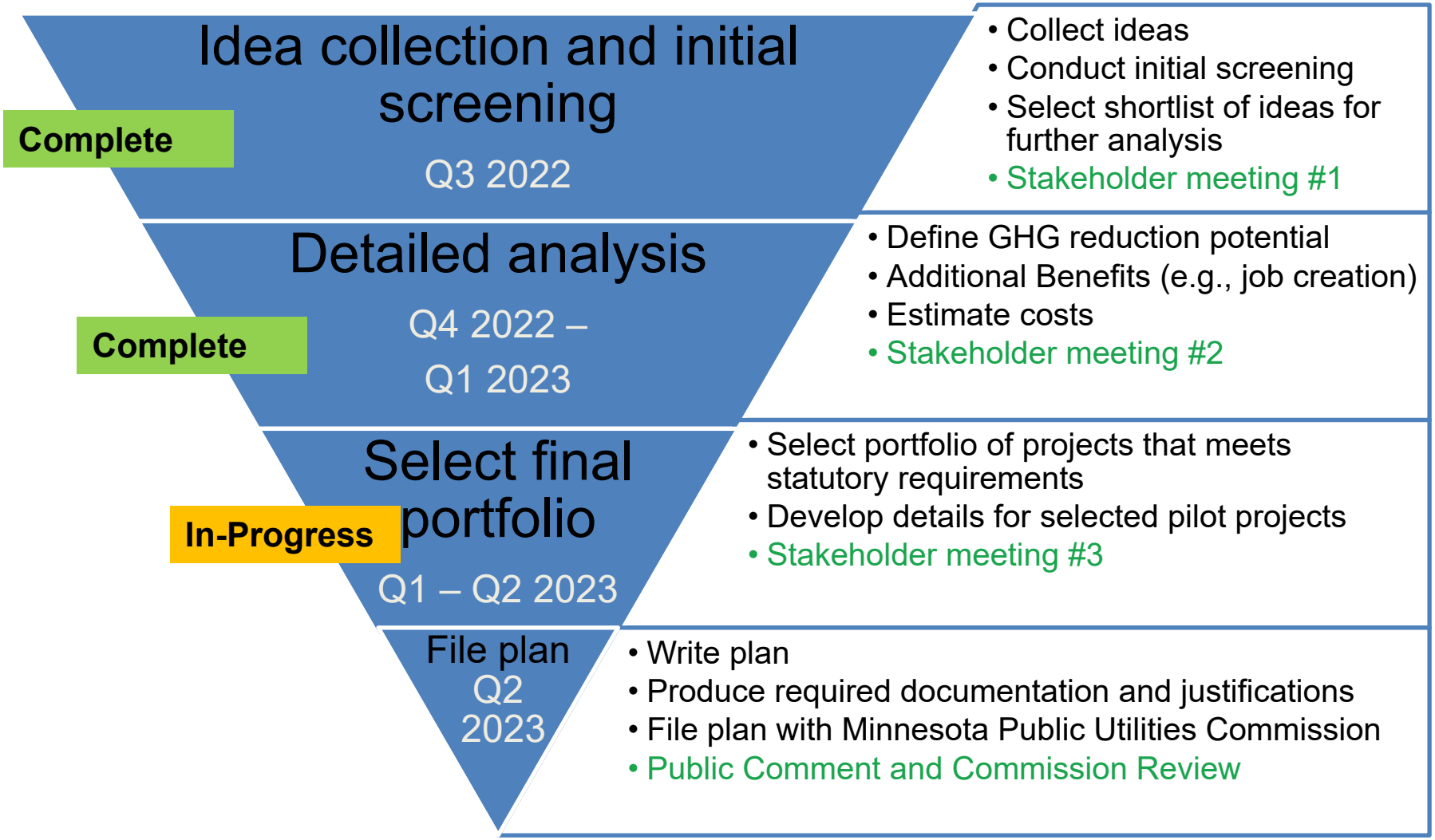
[1] Note that size A is smallest option included for each pilot, size C is the largest.

[2] These values included in current portfolio for budgeting purposes, however CNP intends to hold an RFP process and the final mix of RNG sources could vary significantly from these volumes (based on the responses to that RFP).

R&D Projects Selected for Initial Filing

#	R&D Project	Description
A	CenterPoint Minnesota Net Zero Study	A study to help CenterPoint understand different pathways the Company could take for its gas utility business in Minnesota to reach net zero emissions by 2050.
B	Weatherization Blitzes	The “Neighborhood weatherization blitzes” proposes to test intensive, novel and community-based marketing and outreach approach to increase the participation in CenterPoint Energy's existing CIP weatherization offerings.
C	High Performance Building Envelope Initiative – Commercial New Construction	This proposal outlines a multi-faceted strategy to address these barriers and start the process of creating a more focused and streamlined approach to high performance building envelope design and integration into new commercial construction in Minnesota.
D	Assessing next-generation micro-Carbon Capture for Commercial Buildings	This project will demonstrate installation of CarbinX 4.0 with existing gas-fired space or water heating equipment and document its installed performance, carbon capture effectiveness, energy savings, economics, and best practices for installation, operation, and maintenance.
E	Green Ammonia - Novel Technology	The green ammonia technology – termed MAPS (Micro Ammonia Production System) is the development of a micro, modular ammonia making reactor, which would replace the Haber Bosch process.
F	Utilization of Green Ammonia for Thermal Energy Applications	This research project will investigate turbulent burners for ammonia combustion blended with reactive fuels like hydrogen, syngas from biomass gasification, and natural gas to produce a set of operating ranges and burner concepts that can be applied to industrial burners used in grain drying for agriculture applications and in boilers for district heating.
G	RNG Potential Study	This project will investigate the potential for development of an RNG production facility in three strategic areas of CenterPoint Energy’s distribution system.

Innovation Plan Development Process



Thank you!

Emma Ingebretsen, Sr. Project Manager

emma.ingebretsen@centerpointenergy.com

More information: CenterPointEnergy.com/NGIA