

Utilization Technology Development NFP (UTD) is a not-for-profit, utility-directed scientific research organization established in 2004. Utilities participating in UTD serve more than 30 million homes, businesses, and other gas customers in North America.

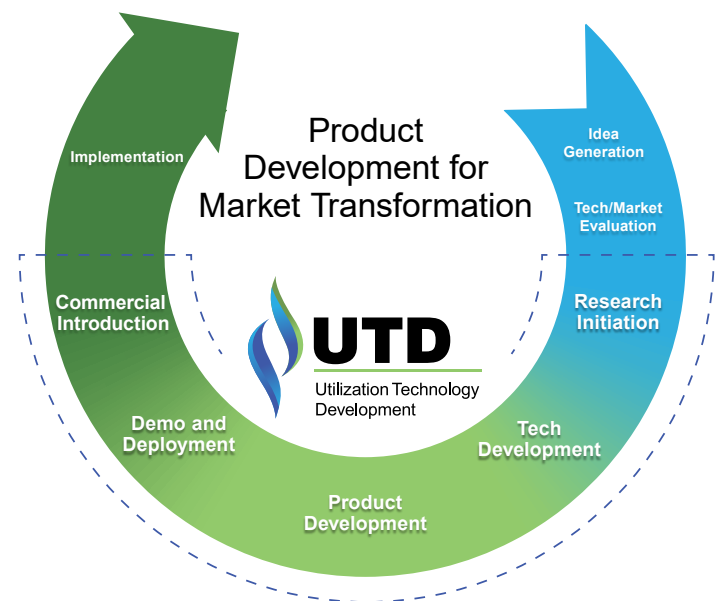


# UTILIZATION TECHNOLOGY DEVELOPMENT

Utilization Technology Development, NFP (UTD) is at the forefront of research, development, and demonstration (RD&D) for energy innovation in homes, businesses and other end uses. As a not-for-profit corporation led by forward-thinking utilities, UTD sponsors a wide-ranging program to enhance the efficiency, safety, reliability, and affordability of gas appliances, equipment and technologies, while integrating renewable energy. UTD end-use RD&D projects focus on taking new technologies from laboratory prototypes through initial field test validation and further optimization, and then to initial commercial uptake.

Utilities participating in UTD combine their interests, expertise, and resources into focused RD&D projects that shape energy systems and contribute to a healthier environment and robust economy. Each utility in UTD actively directs its individual RD&D financial resources while leveraging the resources of other utilities in UTD as well as funding from federal, state and local government sources. Through collaboration, utilities share knowledge and insights to efficiently accelerate new technologies and transform markets.

As energy markets evolve to meet decarbonization goals, utilities and their customers need advanced end-use gas technology innovations to reduce energy intensity and consumption, achieve economic and environmental benefits, leverage more renewable energy, and complement utility programs that aim to accelerate energy efficiency, emerging technologies, and market transformation.



## Our Mission

Identify, select, fund, and oversee research projects resulting in innovative customer solutions which maximize the environmental performance, affordability, efficiency and safety of equipment and processes that use natural gas and renewable energy resources

## Our Goals



Save consumers money



Save energy and reduce GHG emissions



Ensure safe, reliable, and resilient operation of end user's equipment and energy delivery systems



Achieve superior environmental performance



Integrate with renewable energy sources

## Benefits to Utilities and Customers

UTD's benefits to utilities and customers include:

- **Collective knowledge and experience through a platform** that enables utility staff to share insights and contacts, and form relationships that speed the identification and assessment of technology needs, opportunities, and ways to overcome barriers to implement end use innovations
- **Development of more products and technologies for customers, while reducing total product development costs** by enhancing coordinated efforts, consolidating resources for co-funding, and reducing duplicative efforts
- **Expansion of utility Energy Efficiency, Emerging Technology, and Market Transformation programs** and revisions to Technical Reference Manuals through validation of performance, emissions, and operating characteristics for emerging and developed technologies, and gaining earlier insights into upcoming products and technologies
- **Acceleration of a lower-carbon future and integration of more renewable energy with gas** by advancing the use of hybrid fuel-fired and electric-driven equipment, integrated energy systems, renewable natural gas, and the safe use of hydrogen and other alternative gases derived from renewable energy
- **Increased availability of self-powered equipment and on-site power generation** from renewable energy and gas to enhance reliability and resiliency of end users' equipment and energy delivery systems
- **Substantial funding and impact leverage** by collaborating with other utilities and achieving significant co-funding from federal and state governmental agencies, as well as in-kind co-funding from many other partners
- **Reduction of risk for utility RD&D efforts** by providing a diverse end use gas RD&D portfolio, rather than a utility concentrating its RD&D resources into a few select efforts
- **Improved identification and coordination of customers as early-adopter field host sites** to assess and validate new technologies
- **Greater coordination to address other technical barriers to market transformation** by advancing methods of test or rating, and modeling tools, that are necessary for market transformation to adopt new products and technologies

## Project Ideation and Selection

UTD meets in person twice a year and holds periodic virtual meetings throughout the year. Discussions about project proposals and reviews, and technology development needs and issues are organized in four areas of end users:

- Residential and Light Commercial
- Large Commercial and Industrial
- Food Preparation and Service
- Clean Transportation

Ideas for individual research projects are proposed by the utilities that participate in UTD, researchers, and others. Project ideas are then reviewed and prioritized by the utilities that participate in UTD. The project ideas that are of higher interest, along with any specific ideas that a participating utility directs, advance to written proposals for in-depth consideration.

**Each utility controls its own funds and determines how much funding to allocate to proposed projects.**

A project is initiated once it receives adequate funding, and the statement of work, cost and timeline are agreed upon by the utilities funding the work. **All utilities that participate in UTD can access all the results of UTD's efforts, whether they individually funded them or not.**

## Project Scopes and Deliverables

The statement of work for each UTD project contains a scope, schedule, budget, and deliverables. Specific deliverables are unique to each proposal and are finalized through guidance and recommendations of participants, and may include for example:

- Periodic reports and a final report, summarizing for example performance results and technology development status of prototype product or software as well as recommended next technical steps
- Opportunities to evaluate and demonstrate nearly-final functional prototypes, or recently-commercialized products, within a utility's service territory
- Publication of key results in technical papers or presentations
- Commercialization progress or pathway next steps

## Background

UTD was formed based on extensive input from energy utilities and GTI Energy's Public Interest Advisory Committee in the early 2000s. GTI Energy was encouraged to develop a mechanism to leverage interest in end-use RD&D to provide sustained benefits and value to utility customers and the environment.

As focus increases on the effects of how energy is used, alongside ambitious greenhouse gas (GHG) reduction goals, UTD's two decades of projects and achievements demonstrate how participating utilities have made sustained, long-term strides in advancing innovations and solutions that benefit their customers, society, and the environment.

## Corporate Structure and Governance

UTD is incorporated as "Utilization Technology Development, NFP" as a 501(c)(6) not-for-profit corporation in the State of Illinois. UTD is governed by a Board of Directors which is comprised of designees of utilities that meet the minimum funding level. The Board finalizes and approves UTD's bylaws and provides policy and operating guidance for UTD. Project-level decisions are made by the utilities that directly funded that specific project.

## Funding

UTD is funded via utilities by gas consumers on a per-meter basis of US\$0.50 per meter per year (about 4.2 cents per meter per month) with a minimum annual level of US\$100,000 and a maximum annual level obligation of US\$350,000 for an individual member. A portion of these funds support UTD program management and general and administrative activities. A utility's funding commitment is for an initial one-year period, with annual review thereafter. At their discretion, individual utilities can fund and direct additional resources towards specific projects.

Utilities with less than 200,000 meters can pool with other gas utilities to meet the minimum funding level. Interested stakeholders may provide co-funding to specific UTD research projects.

## Partners

To accelerate impacts and leverage resources, UTD partners with many governmental agencies and laboratories, technical organizations, research institutes, universities, manufacturers, entrepreneurs, customers, and others. UTD often co-funds RD&D efforts that are prime-funded by the U.S. Department of Energy, California Energy Commission, or other agencies—often tripling the impact of UTD's total funding.



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