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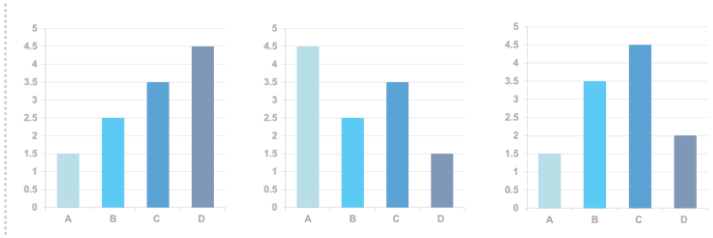
INSIGHT REPORT

U.S. & Canada Digital Water Market Outlook

Key Drivers, Competitive Shifts, and Forecasts, 2024–2033

August 2024



U.S. & Canada Digital Water Forecast Research Methodology

RESEARCH SCOPE AND METHODOLOGY

- Forecast of utility spending on digital water across 36 technology segments to determine the size and growth outlook of the U.S. and Canadian digital water market from 2024 to 2033.
- Product pricing and adoption rates per utility tier were estimated based on publicly available resources including financial filings, utility bid documents and contracts, and interviews with industry professionals.

RESEARCH OUTPUT

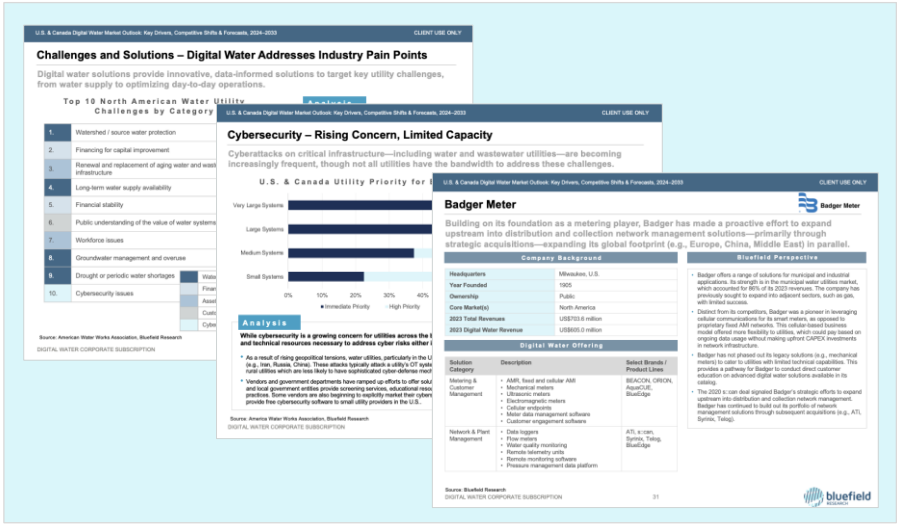
- Analysis of key drivers and inhibitors to digital water technology adoption in the U.S. and Canada.
- Forecast of the digital water market from 2024 to 2033 by geography (country, state, and province), technology segment, product type, water type, utility size, spend type, and software type.
- Competitive analysis of companies in the digital water value chain.
- Profiles of 15 key digital water companies primarily active in the U.S. and Canada, including:
  - Company Details – Headquarters, Year Founded, Ownership, Core Markets, 2023 Total Revenue, 2023 Digital Water Revenue
  - Bluefield Perspective

KEY SOURCES

- Government reports on utility counts and asset bases.
- Publicly available utility budget and procurement documents (e.g., capital improvement plans, bid documents, contracts).
- Interviews with industry professionals.
- Bluefield's Data Navigator (e.g., utility asset data, federal funding, company revenues, digital water M&A and VC deals, digital water vendor landscape)

SELECT COMPANIES MENTIONED

CORE & MAIN, DRAGOS, FERGUSON WATERWORKS, BainCapital PRIVATE EQUITY, xpv, xylem, sciens WATER, Rockwell Automation, Veralto, BLACK & VEATCH, NEPTUNE TECHNOLOGY GROUP, Bentley, CARLYLE, 120Water™, MUELLER, Badger Meter, AUTODESK, TETRA TECH, carollo, Halma, suez, Itron, IDEX, Trimble, esri, kamstrup, PureTerra Ventures, BlueConduit, Bell, ARCADIS, CLAROTY, ORACLE, AECOM



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Defining the Market – What is Digital Water?

Bluefield takes a broad view of the digital water market, covering the full ecosystem of technologies and services used by water, wastewater, and stormwater utilities to collect, transmit, manage, analyze, and use data.

Digital Water Forecast Scope

Included in Forecast

36 common digital water product segments, including:

- Established / mature water management technologies (e.g., SCADA, GIS, meters)
- New applications of cutting-edge technology to the water market (e.g., AI, IoT, cloud computing)

Four product types:

- Hardware (meters, sensors, telemetry devices)
- Software (on-premise and cloud platforms)
- Services (installation / implementation services for digital water hardware and software)
- Connectivity (telecommunication / data transmission services for connected hardware)

Two types of expenditure:

- CAPEX (upfront capital investments in hardware, perpetual software licenses, installation services)
- OPEX (recurring annual operating expenses for software support, SaaS licenses, connectivity)

Not Included in Forecast

Digital technology expenditure by third-party industry consultants for services provided to utilities:

- Water infrastructure design and engineering software purchased by engineering firms
- CCTV inspection equipment purchased by third-party CCTV service providers

Spend on digital technologies for water, wastewater, and stormwater management outside the utility sector:

- Domestic / “smart home” technology
- Commercial / “smart building” technology
- Agricultural / “smart irrigation” technology

Investment in digital solutions at industrial treatment facilities (e.g., food & beverage plants, data centers):

- SCADA systems
- Water and wastewater flow / quality monitoring equipment
- Plant optimization platforms

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Source: Bluefield Research

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Challenges and Solutions – Digital Water Addresses Industry Pain Points

Digital water solutions provide innovative, data-informed solutions to target key utility challenges, from water supply to optimizing day-to-day operations.

Top 10 North American Water Utility Challenges by Category

1.	Watershed / source water protection
2.	Financing for capital improvement
3.	Renewal and replacement of aging water and wastewater infrastructure
4.	Long-term water supply availability
5.	Financial stability
6.	Public understanding of the value of water systems and services
7.	Workforce issues
8.	Groundwater management and overuse
9.	Drought or periodic water shortages
10.	Cybersecurity issues

Water Supply Management
Finance
Asset and Workforce Resilience
Customer Relations
Cybersecurity

Analysis

Digital water solutions support utility decision-making by tapping into an abundance of data.

- Network monitoring solutions provide insight into pollution events and groundwater withdrawals. This coupled with optimization solutions, allows utilities to make informed decisions to best mitigate their environmental impacts.
- Smart metering solutions support revenue recovery through accurate consumption data to improve billing accuracy. At the same time leak detection solutions reduce nonrevenue water losses to utilities.
- Artificial intelligence and machine learning startups have found a growing niche in the strategic asset management space, leveraging data analytics to identify high-risk network assets and optimize utility investments.
- Utilities are turning to alternative water sources to meet customer demand. In drought-prone regions, many have turned to direct potable reuse from residential and industrial wastewater. Network monitors and sensors provide real-time insights into key metrics such as flow and quality which allow utilities to protect the advanced purification process.
- Customer portals allow utilities to communicate directly with the public providing accurate water consumption data and sharing other educational resources. Some utilities have also begun experimenting with online chatbots to answer basic customer inquiries, reducing wait times, and improving quality of service overall.

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Source: American Water Works Association, Bluefield Research

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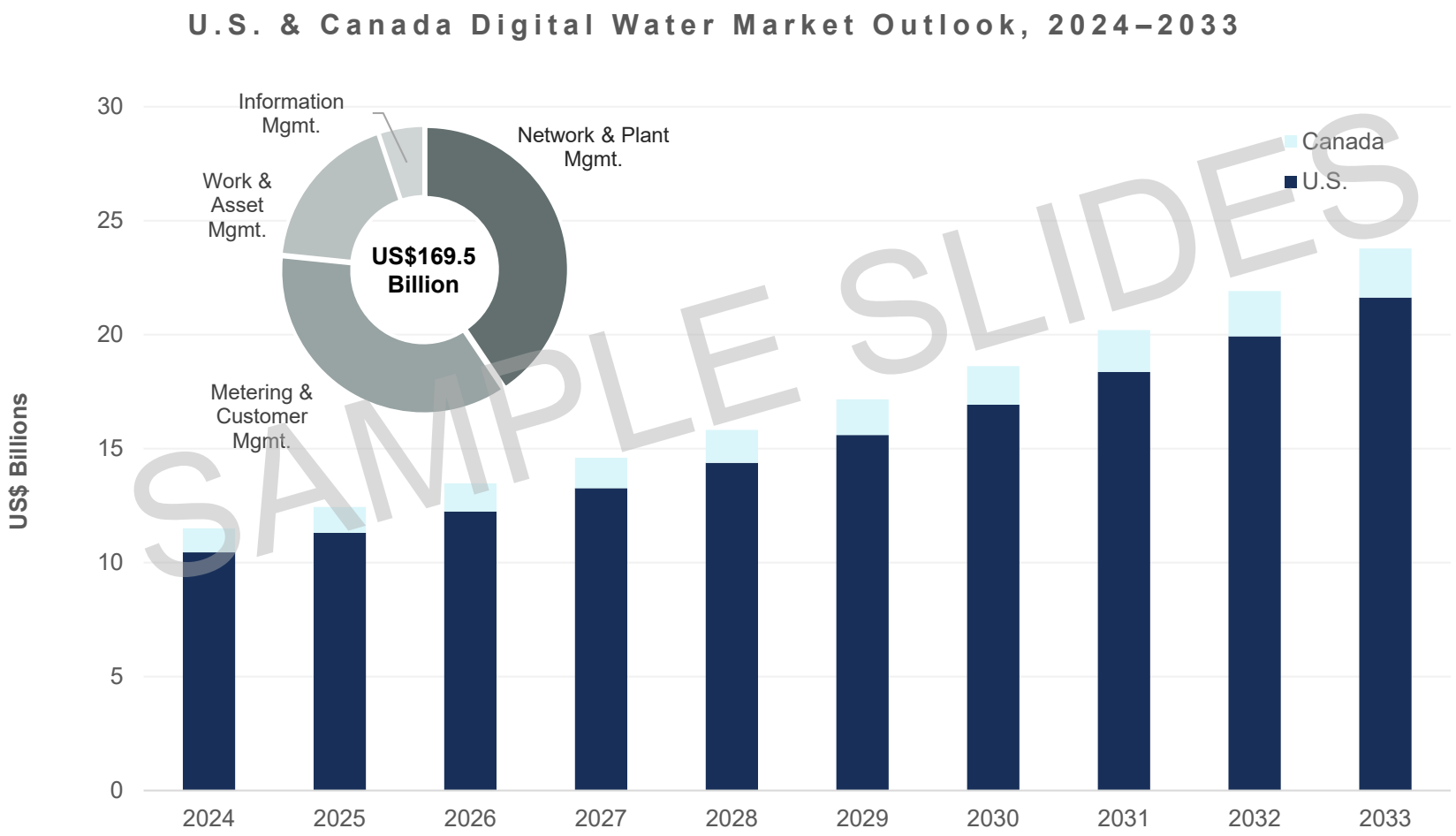
The Big Picture – U.S. & Canada Digital Water Market Opportunity

Demand for digital water solutions remains robust in the U.S. and Canada, with the market absorbing significant post-COVID price increases in the past two to three years.



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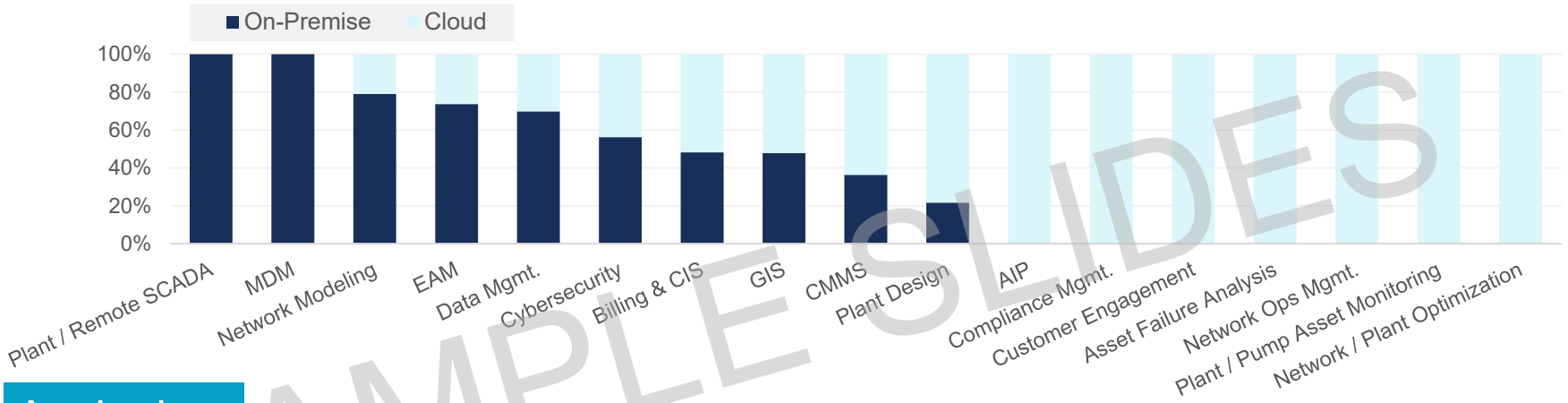
Note: Values expressed in 2024 US$
Source: Bluefield Research

Push To The Cloud – Digital Water Software Adoption Trends

While on-premise software is preferred for legacy digital water solutions, vendors are increasingly offering advanced analytics solutions on cloud-only platforms.

Cloud vs. On-Premise Software Spend for Select Digital Water Segments, 2024



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Analysis

From 2024 to 2033, Bluefield estimates spending on cloud-based software will scale at a 12.5% CAGR, outpacing the 5.5% CAGR projected for on-premise software spend.

- Bluefield estimates that by 2028, spending on cloud-based solutions in the U.S. and Canada will overtake that of on-premise software (US$X billion and US$X billion, respectively). Some legacy software solutions (e.g., GIS, CMMS, Billing & CIS) are already seeing cloud adoption overtake that of on-prem.
- Cloud-based solutions allow vendors to offer sophisticated analytics features such as leveraging AI for predictive analytics and other data processing functions to inform utility decision-making.
- Utilities prefer to stick to the status quo of on-premise software for established digital water solutions (e.g., SCADA, MDM, network modeling). However, vendors are increasingly pushing software solutions into the cloud, emphasizing benefits for cybersecurity, scalability, and affordability for utility clients. This also opens opportunities for big tech players (e.g., AWS, Microsoft, Google) to provide cloud platforms for vendors to build their solutions on.
- The rise of the as-a-Service business model (e.g., SaaS, DaaS, NaaS) is driving cloud adoption which particularly benefits smaller utilities due to its relatively low-cost nature. Vendors are responsible for the day-to-day operations and maintenance of cloud-based software systems, which benefits utilities with limited in-house technical capabilities.

Source: Bluefield Research

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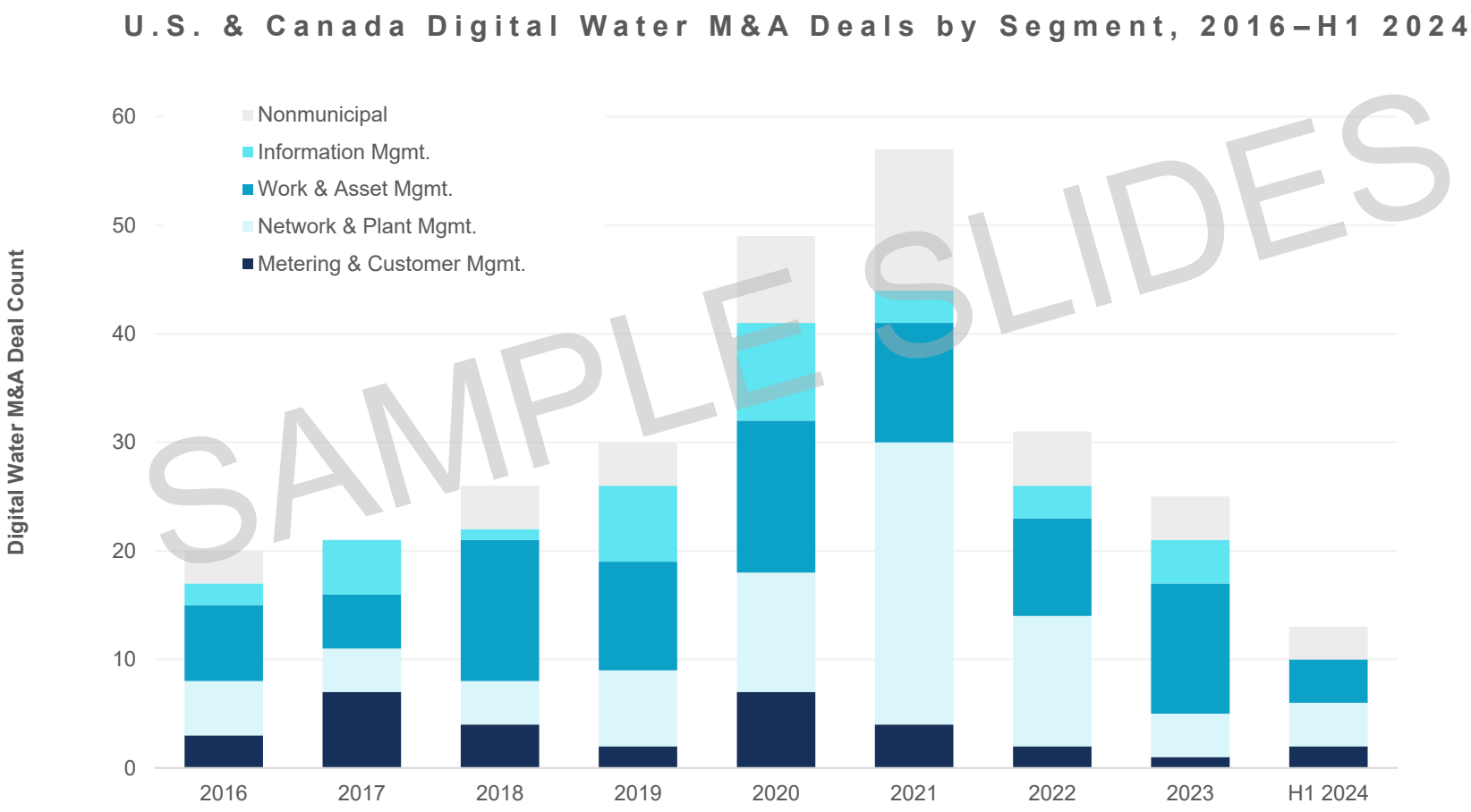
Acquisition Hot Spots – Digital Water M&A Trends in the U.S. & Canada

Digital water M&A in North America has largely followed broader global trends, peaking in 2021 at 57 deals followed by a steady decline through H1 2024.



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Source: Bluefield Research

Autodesk

Autodesk has developed a digital twin offering for water utilities by leveraging its foundation in building information modeling (BIM) solutions, along with Innovyze's hydraulic modeling and asset and operations management technologies.

Company Background

Headquarters	San Francisco, U.S.
Year Founded	1982
Ownership	Public
Core Market(s)	North America, Europe
2023 Total Revenues	US$5.5 billion
2023 Digital Water Revenue	US$X million

Digital Water Offering

Solution Category	Description	Select Brands / Product Lines
Work & Asset Management	• Asset condition and performance monitoring • Asset management • Digital twin • Building information management (BIM) • Digital project delivery • Hydraulic modeling • Network and plant design • Stormwater modeling	Info360, AutoCAD, Revit, Innovyze
Network & Plant Management	• Network operations management • Flood management • Plant operations analytics	InfoWorks, InfoWater, Innovyze

Bluefield Perspective

- The Innovyze acquisition vaulted Autodesk into a leading position as a software provider for water utilities and engineering consultancies. Building off Autodesk's existing expertise in engineering design and BIM, combined with Innovyze, it has built a digital twin solution for the water industry.
- Autodesk has aggressively shifted to a subscription-based model, with 93% of 2022 revenues coming from subscriptions—a 107% increase since 2013. Following the Innovyze acquisition, Autodesk has sought to align Innovyze's perpetual license model with its subscription-based model. This move has potentially alienated some Innovyze customers, leading them to switch to competitors, including emerging startups.
- Autodesk has integrated the technologies from companies in which it has made early-stage investments (i.e., Transcend, VAPAR) into its cloud-based software platform. The company is leveraging these partnerships to incentivize customers to move to the cloud.

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Source: Bluefield Research

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Global companies across the value chain are developing strategies to capitalize on greenfield opportunities in water − new build, new business models, and private investment. Bluefield Research supports a growing roster of companies across key technology segments and industry verticals addressing risks and opportunities in the new water landscape.

Companies are turning to Bluefield for in-depth, actionable intelligence into the water sector and the sector's impacts on key industries. The insights draw on primary research from the water, energy, power, mining, agriculture, financial sectors and their respective supply chains.

Bluefield works with key decision makers at utilities, project development companies, independent water and power providers, EPC companies, technology suppliers, manufacturers, and investment firms, giving them tools to define and execute strategies.

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