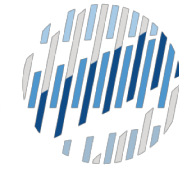


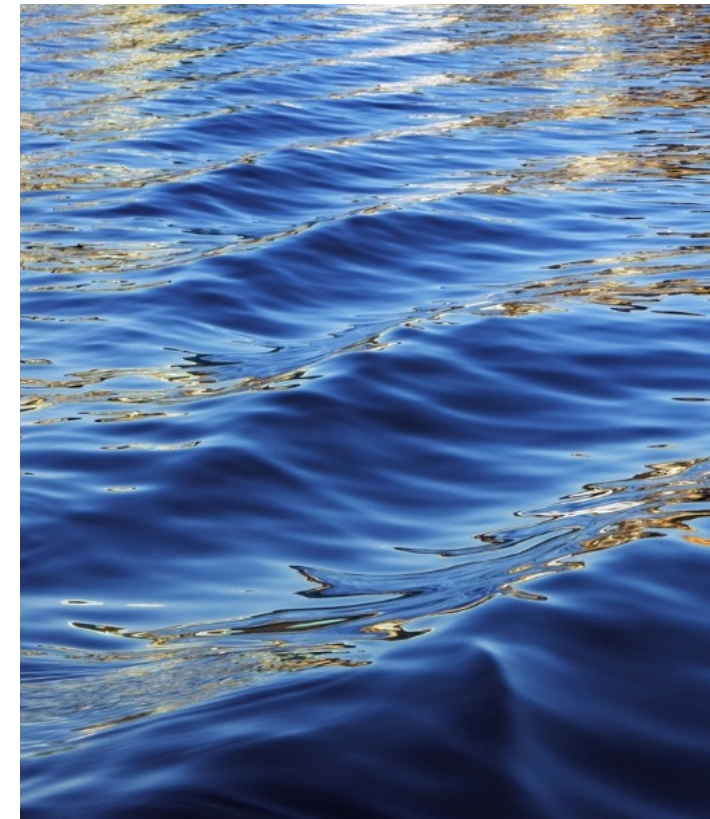


Where are the best opportunities in industrial reuse?

March 13, 2019



bluefield
RESEARCH

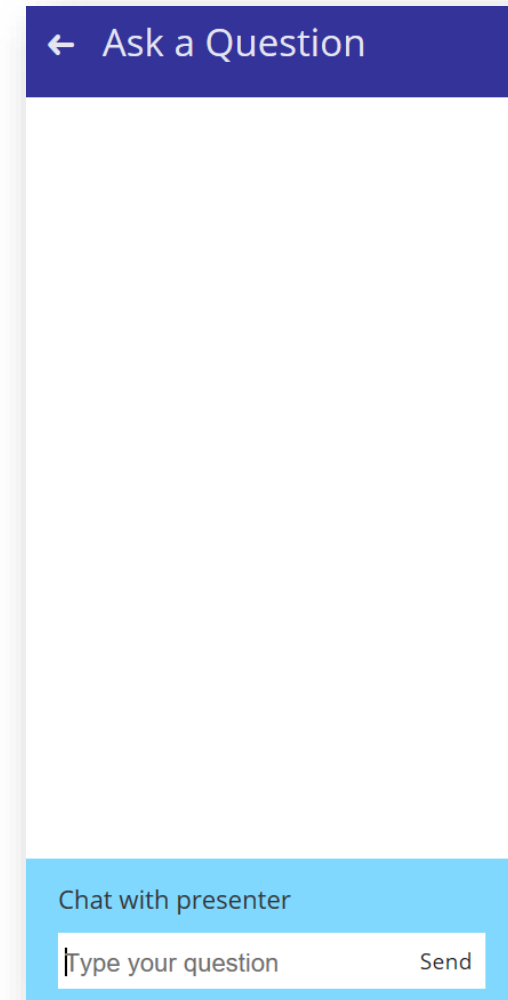


WaterReuse Webcast Series

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A Few Notes Before We Start...

- Today's webcast will be 60 minutes.
- There is one (1) Professional Development Hour (PDH) available for this webcast.
- A PDF of today's presentation can be downloaded when you complete the survey at the conclusion of this webcast.
- If you have questions for the presenters please send a message by typing it into the chat box located on the panel on the left side of your screen.



← Ask a Question

Chat with presenter

Type your question Send

Today's Presenters



ERIN BONNEY CASEY
Research Director



MIKE KOZAR
Senior Analyst



WES MCDANIEL
Sales Manager, North America



bluefield VALUE

Water Experts



A team of business-focused analysts **exclusively focused on water** markets and trends full time.

Data-Driven Analysis



Proprietary data enabling independent, bottom-up and actionable intelligence backed by a transparent methodology.

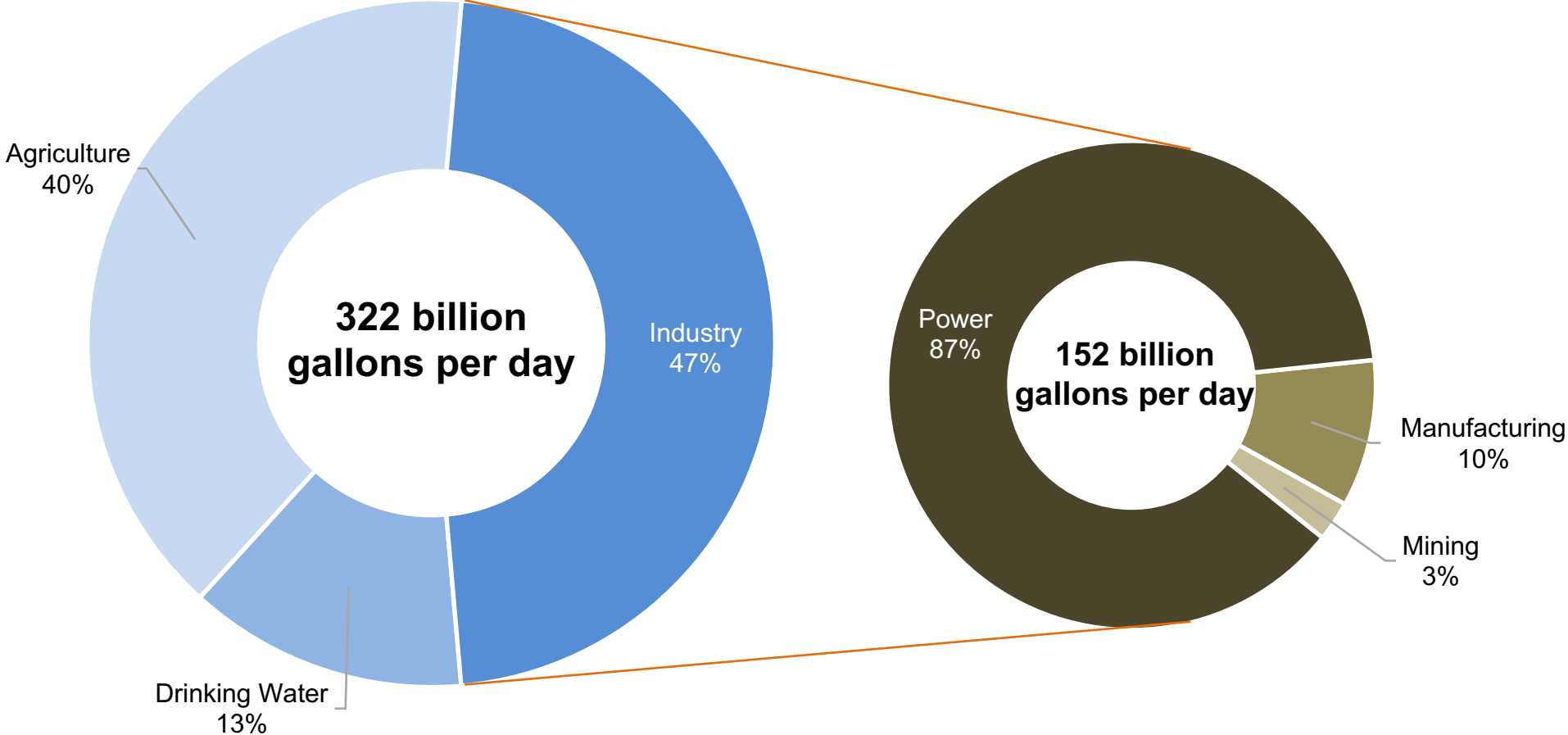
Demonstrated Model



Validated by **leading companies across the value chain** addressing water as a business.

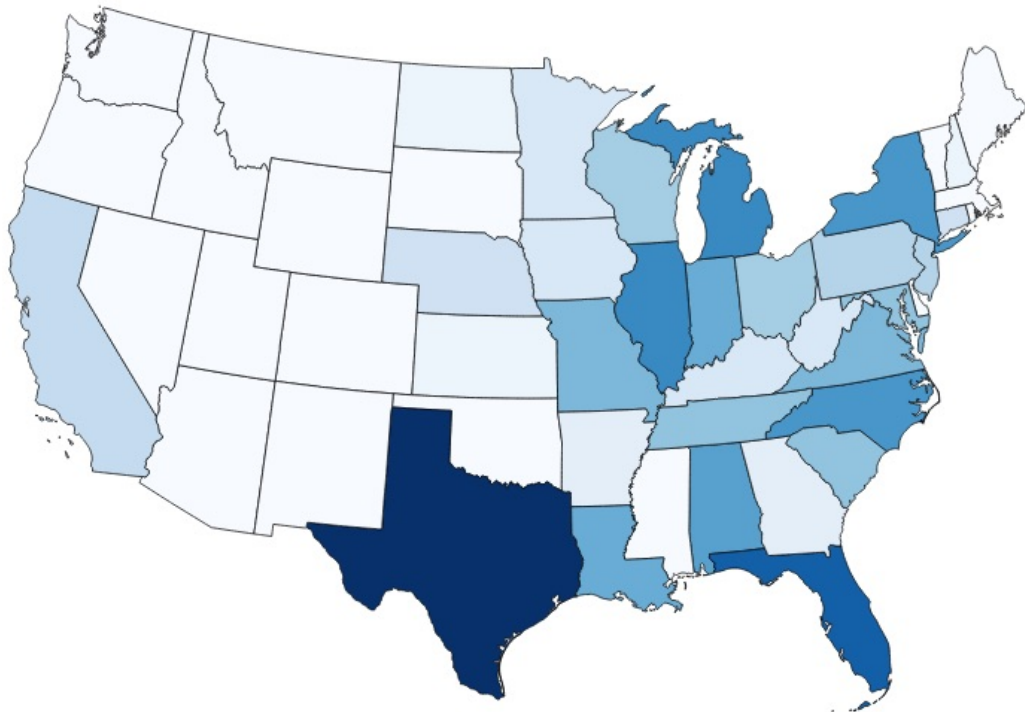
U.S. Industrial Water Footprint

U.S. Industrial Self-Supply Withdrawals (2015)

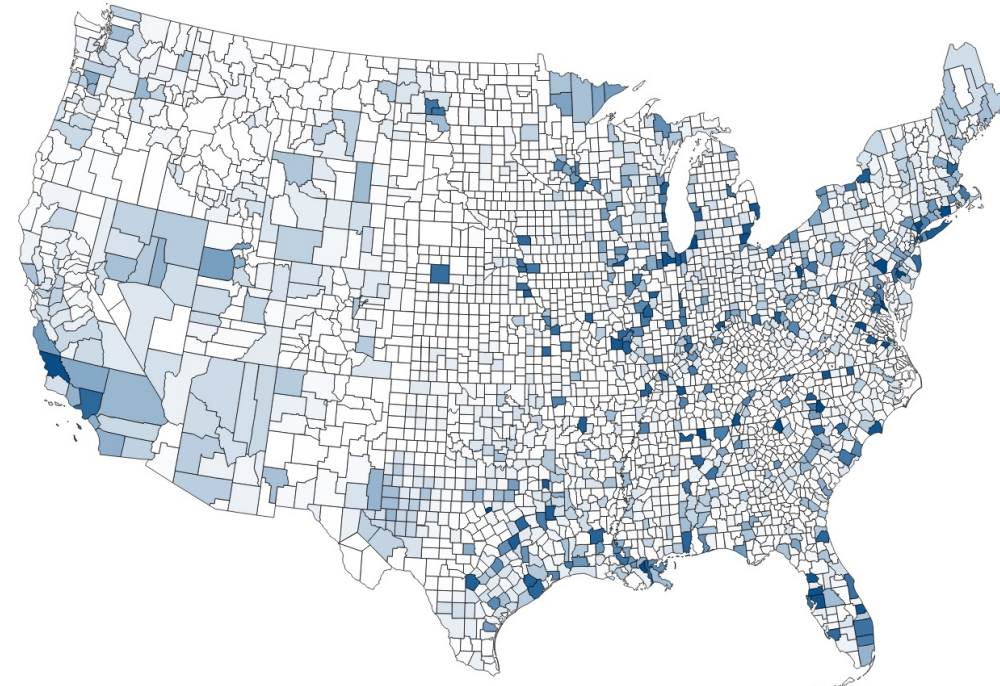


Mapping U.S. Industrial Water

Industrial Self Supply by State (2015)

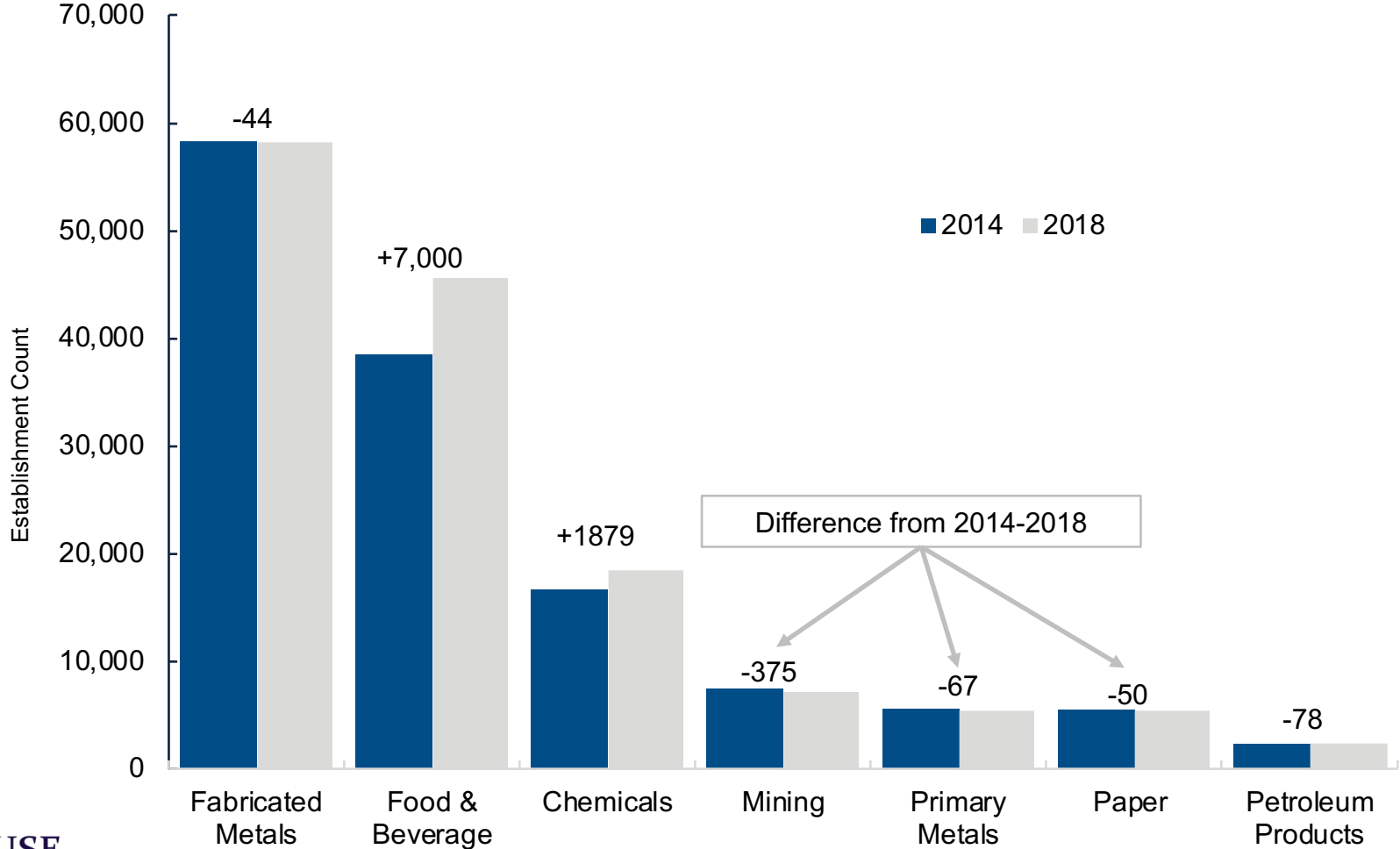


Industrial Self Supply by County (2015)



Key Industrial Indicator 1

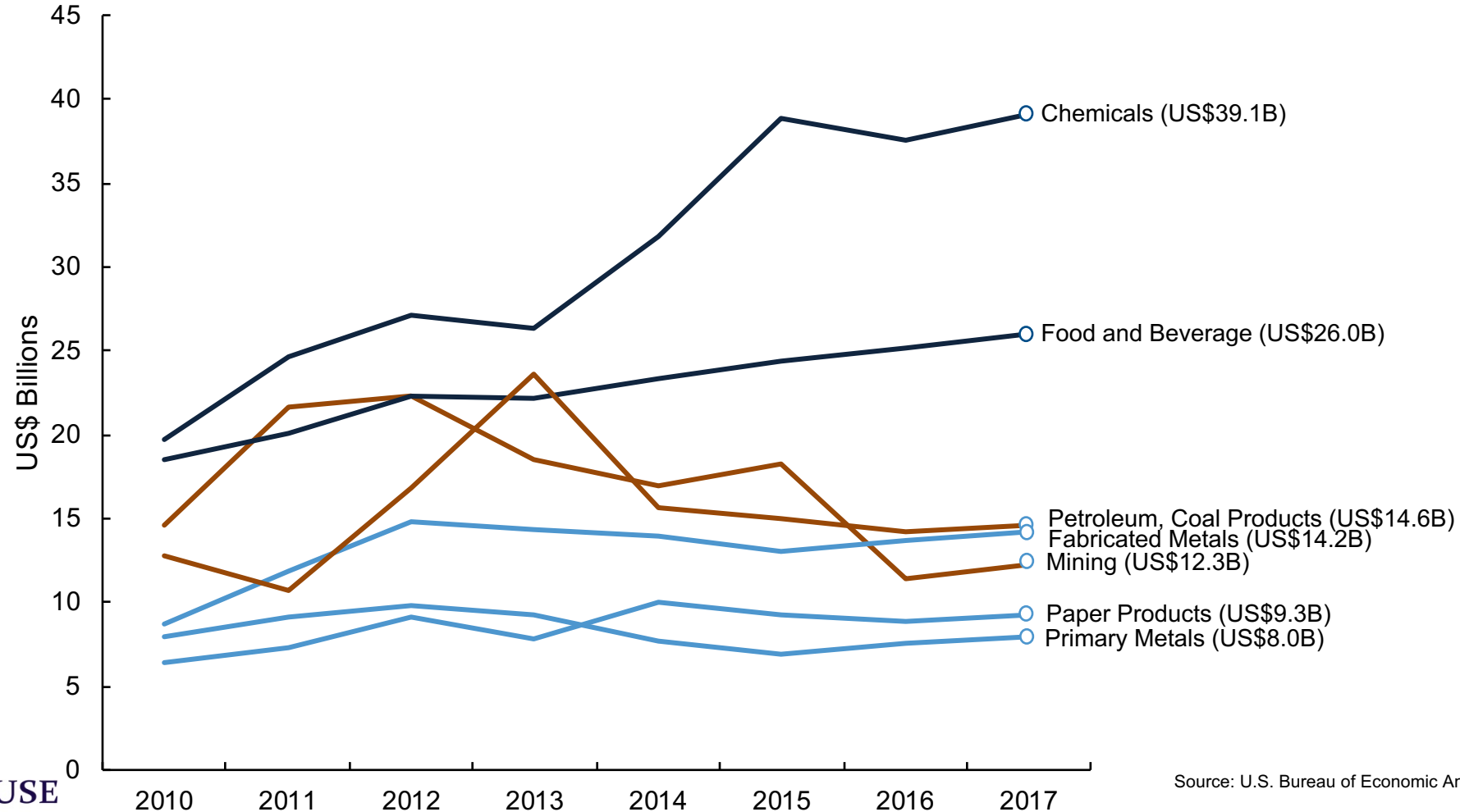
Growth in Establishments (2014-2018)



Source: US Bureau of Labor Statistics

Key Industrial Indicator 2

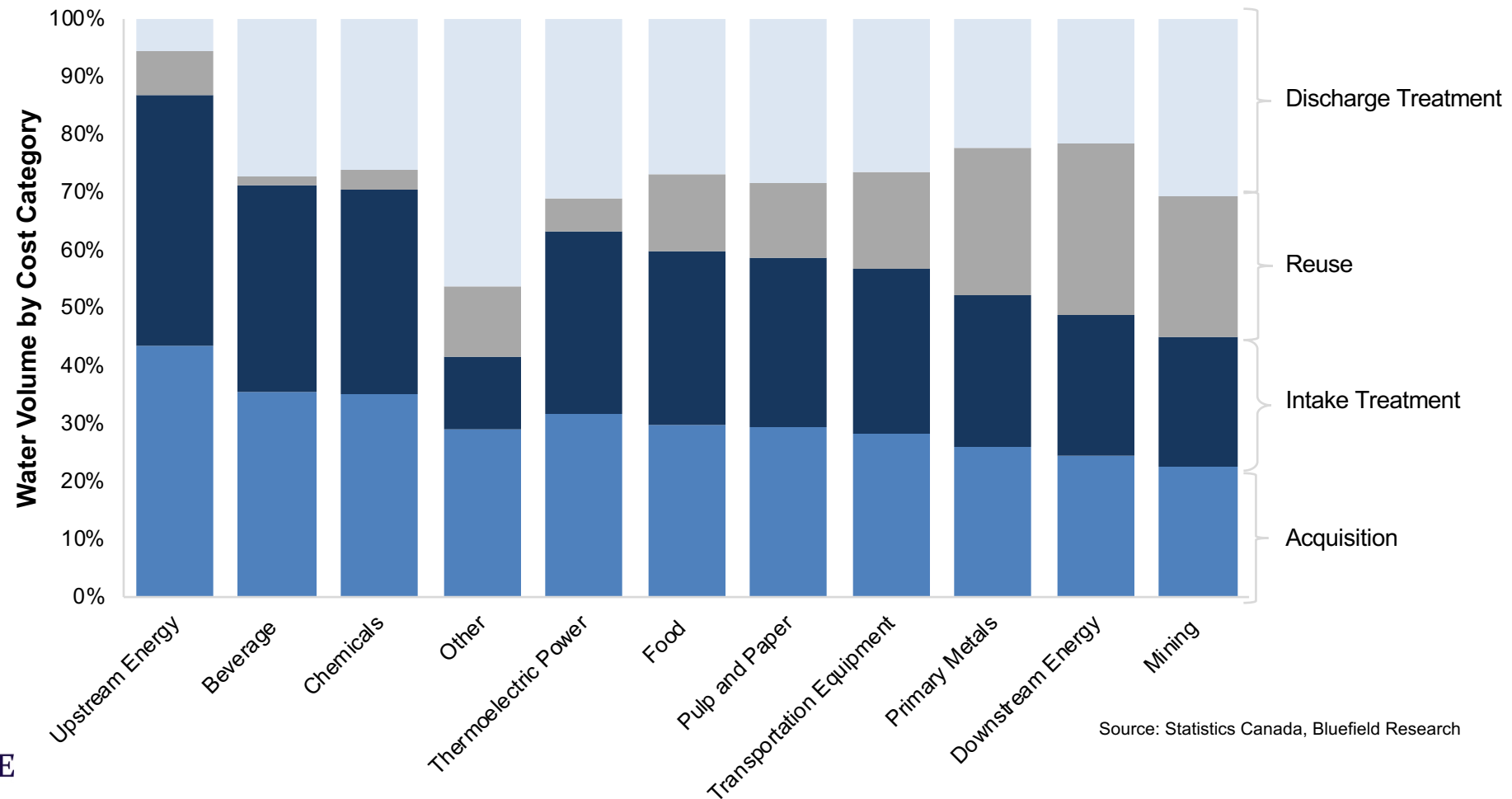
Private Investment in Structures and Equipment (2010-2017)



Source: U.S. Bureau of Economic Analysis

Water Volume: Sector Demand & Flows

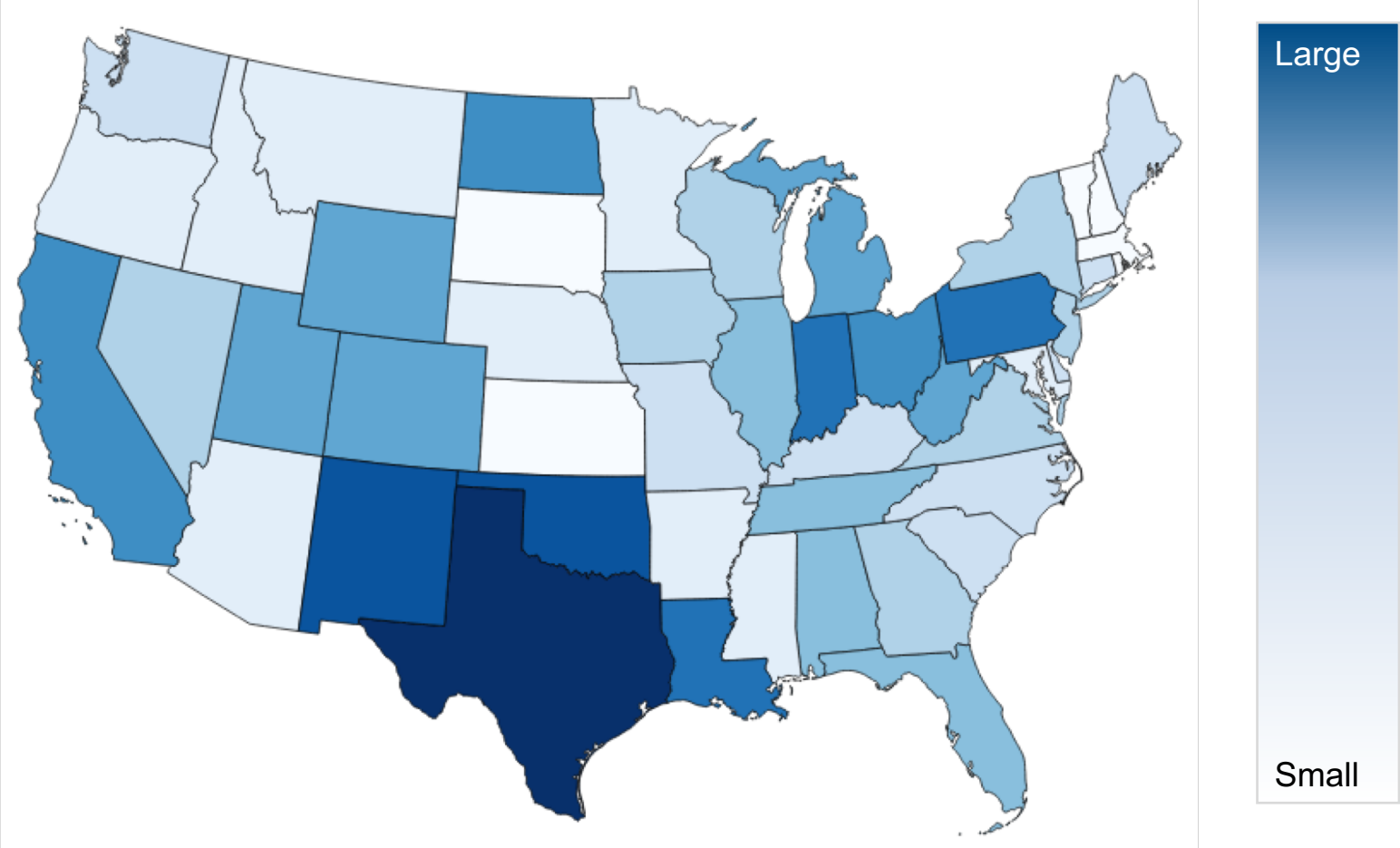
Water Volume by Cost Category (%) Across Industry Verticals



Source: Statistics Canada, Bluefield Research

U.S. Industrial Reuse Market

Industrial reuse market by state (2017)



U.S. Industrial Reuse Market

DRIVERS

Cost Reduction

Water scarcity

CSR

INHIBITORS

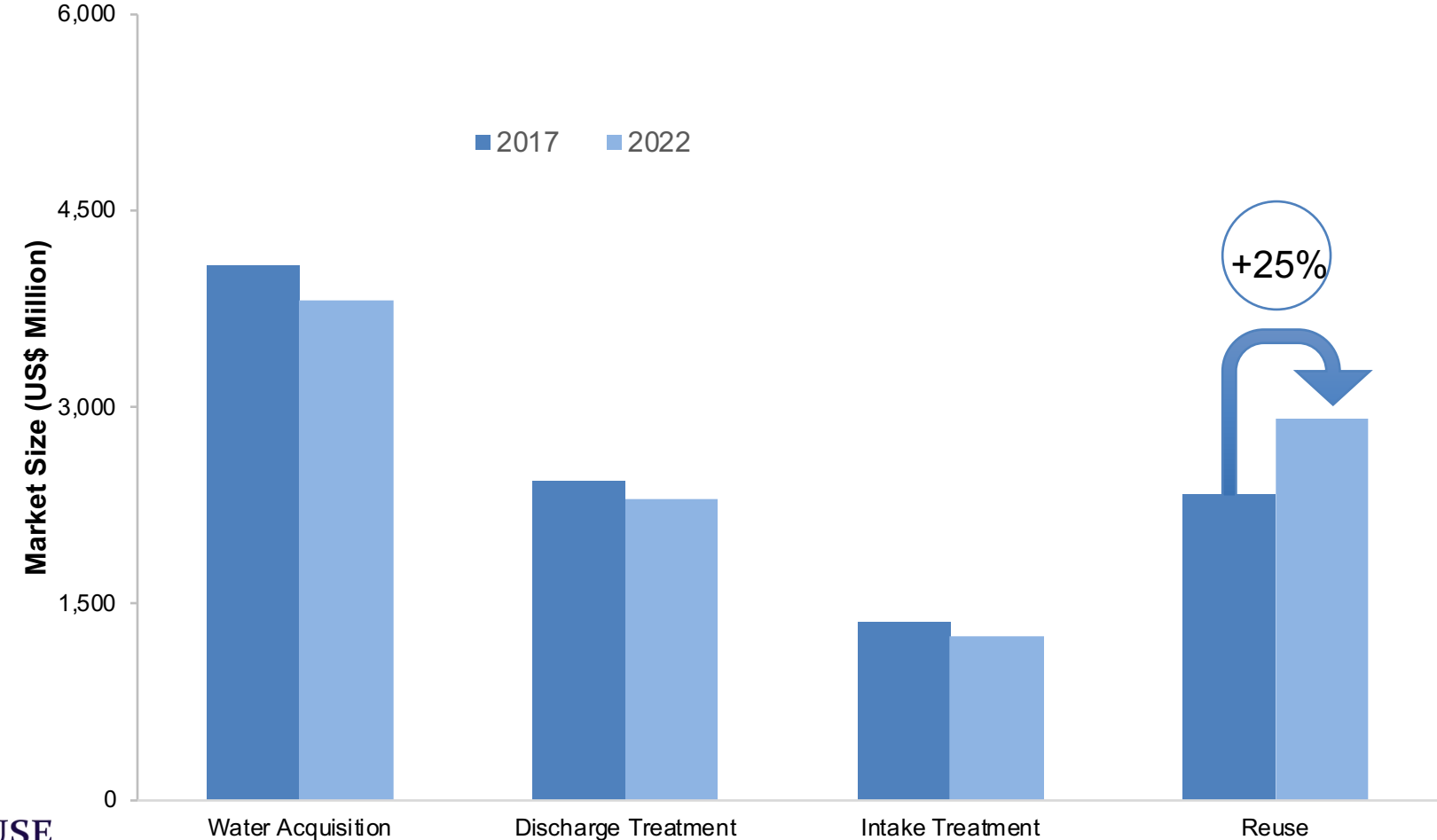
ROI Timeframe

Lack of Market Insights

Industry Specialization

U.S. Industrial Reuse Market

Market Size by Industrial Vertical (2017-22)



In order to adopt reuse, industries need to understand that water quality is not binary and instead transition to a “fit for purpose” mindset.



Industrial Reuse Strategies

Industrial users typically think of water management issues at their facility from two perspective: securing water supplies for operations and complying with quality standards for wastewater discharge.

Reuse solutions:

Supply Side

- Reduce acquisition and intake treatment costs
- Reduce Supply Risk
- Social Responsibility

Discharge Side

- Reduce discharge treatment and solid/liquid waste disposal costs
- Relieve regulatory pressure
- Social Responsibility

Municipal Offtake - Refineries

Currently four refineries in the US, all in California, use 18.1 MGD of reclaimed municipal wastewater for operations.

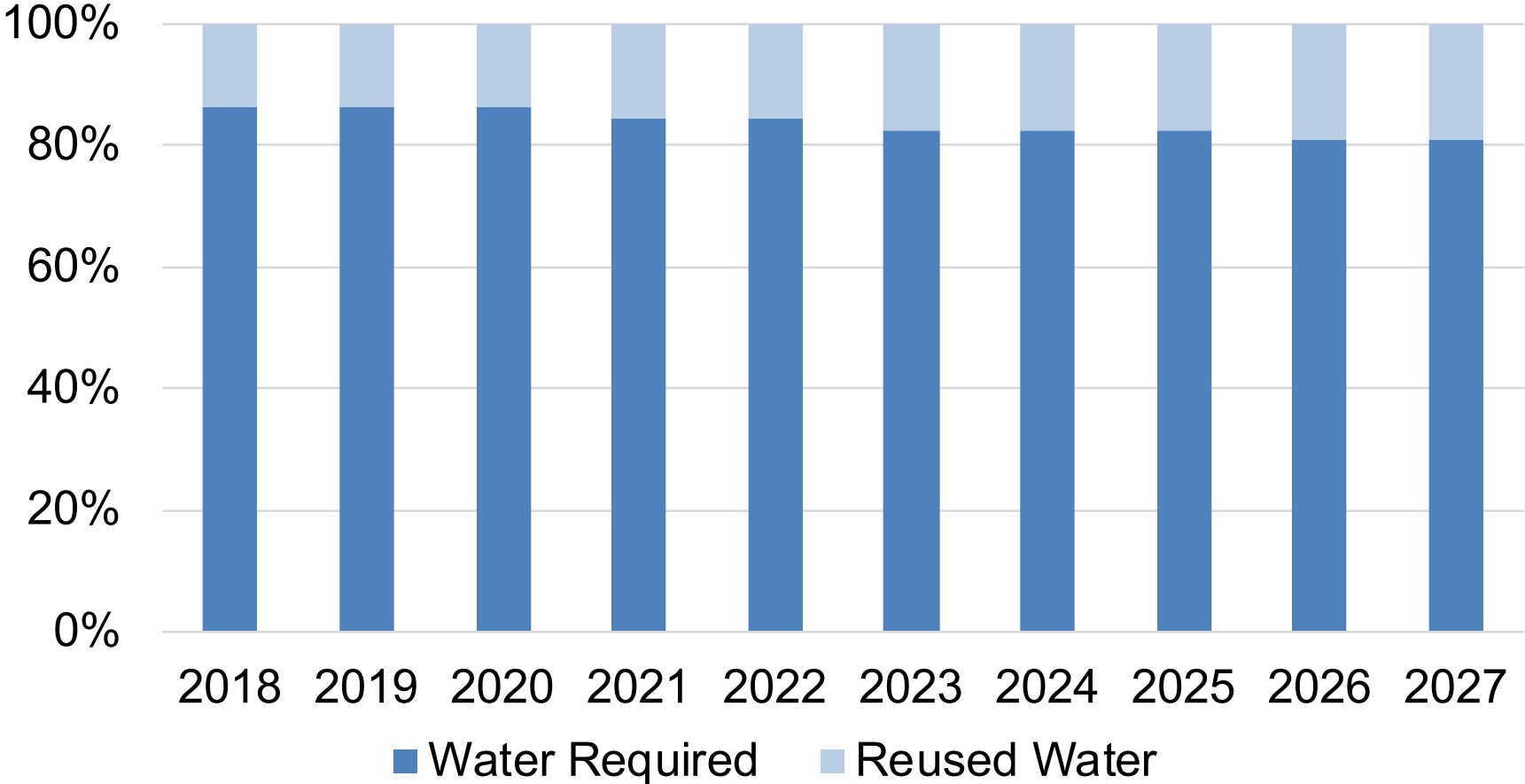


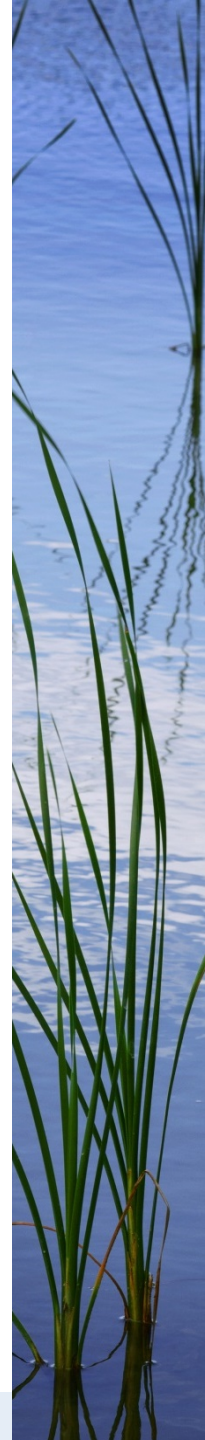
Refinery	Owner	Reclaimed Water Source	Water Demand
Torrance Refinery	ExxonMobil	West Basin MWD	6 MGD
El Segundo Refinery	Chevron	West Basin MWD	5 MGD
Carson Refinery	Tesoro	West Basin MWD	3.5 MGD
Richmond Refinery	Chevron	East Bay MUD	3.6 MGD



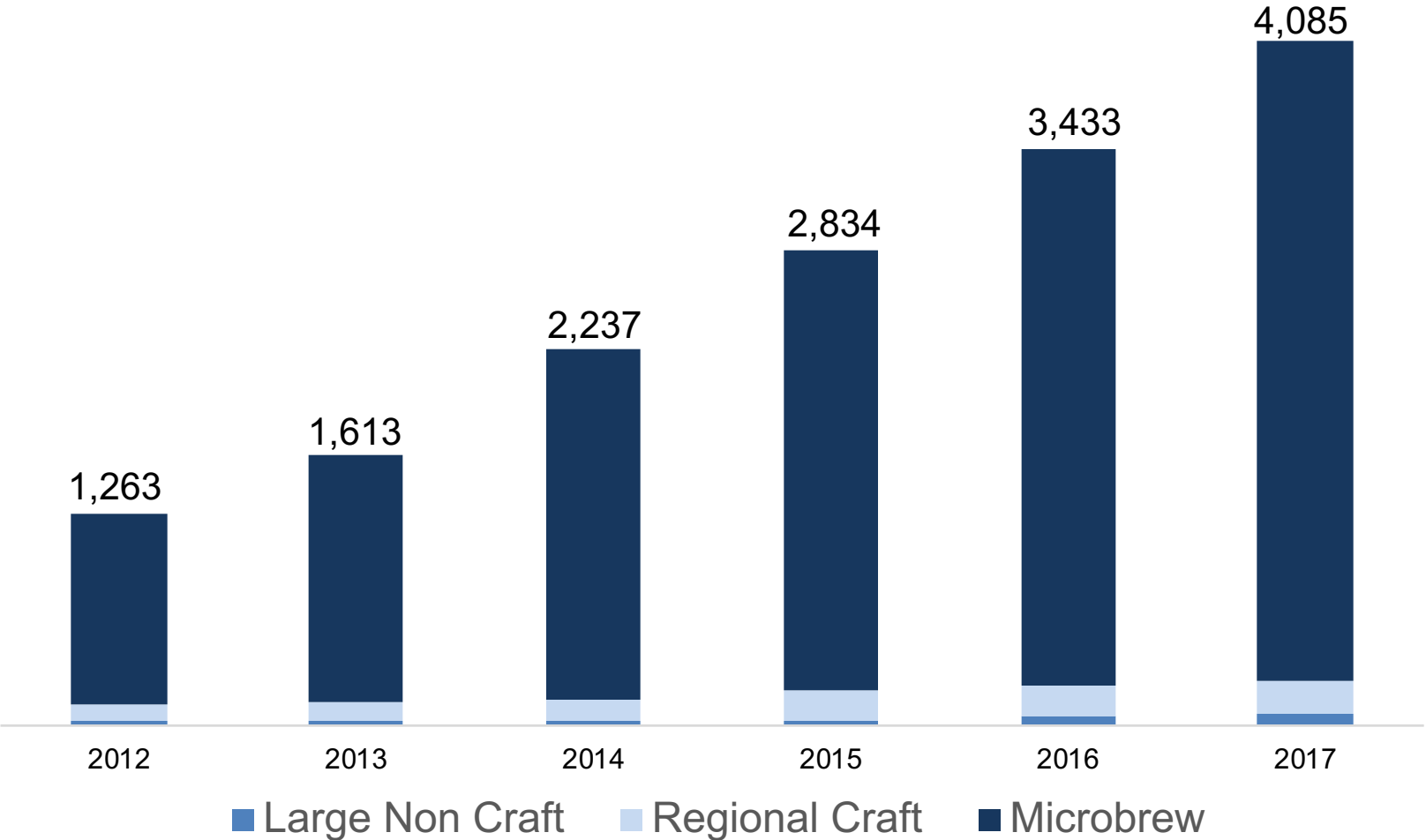
Reclaiming Flowback and Produced Water in Hydraulic Fracturing

Reclaimed Water for Reuse, 2018-2027





Growth of Breweries in the U.S.



Bluefield Takeaways

- 1) Industrial water is fragmented, and concentrated**
- 2) The South and Midwest are key regions for industrial reuse opportunities**
- 3) Economics drives reuse**
- 4) Food & Beverage, Chemical Manufacturing, Fracking are key verticals**



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.

Contact Bluefield Research

NORTH AMERICA

192 South Street // Suite 550
Boston, MA 02111
T +1 617 910 2540

EUROPE

Carrer de Sant Joan de la Salle 42
Edifici Technova, 2.12
08022 Barcelona, Spain
T +34 673 408 963

waterexperts@bluefieldresearch.com
www.bluefieldresearch.com

