



**INDUSTRY UPDATE**

# Energy and Water Quarterly Insights

August 2019

*This quarterly update is prepared by the Knowledge Exchange Division and covers the energy and water markets served by CoBank.*

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**Key Points:**

- Reports of discord between generation and transmission (G&T) cooperatives and their electric distribution cooperative members have increased as market power trends, technological advances, and consumer demands shake up the power industry.
- As cities and counties seek out greener power at lower cost, some are allowing for community choice aggregators (CCAs) to be created and procure power on their behalf as an alternative to traditional utility models.
- Regional water system integrations are gaining momentum as systems tackle a variety of challenges including severe weather, water quality degradation, lack of water infrastructure investment, increased regulation, and shifting populations.

## **What's Behind the Discord Between Some G&Ts and Their Members?**

*Prepared by J.T. Parker and Wyatt Devore, Power, Energy & Utilities Division*

Over the past several years, reports of discord between generation and transmission cooperatives (G&T) and electric distribution cooperatives members have increased. The industry has seen complete Wholesale Power Contract (WPC) buyouts, requests for buyout quotes, litigation over buyouts, altered membership classes, changing WPC provisions, attempted board upheavals, and other developments. However, it is important to keep in mind that these situations represent the minority of such relationships. This topic is complex and sensitive, and each case is unique. Regardless, the factors behind the discord – market power trends, technological advances, consumer demands, and others – are likely to continually impact the industry into the foreseeable future.

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### ***Emergence of Alternative Power Suppliers***

Alternative power suppliers have started to emerge as a result of recent changes in the energy market landscape. Low natural gas prices and renewable energy penetration are causing some G&T members to look outside of their current WPC. Alternative power suppliers can capitalize on current market prices and offer fixed shorter term power contracts at attractive prices. In some cases, the alternative power suppliers will even finance the WPC buyout fee and amortize it through energy rates.

One alternative power supplier, Guzman Energy, made headlines in 2016 for its role in the exit of Kit Carson Electric Cooperative (KCEC) from Tri-State Generation and Transmission Association, Inc. (Guzman is a regional full-service wholesale power provider focused on the bilateral markets of the western United States.) KCEC entered into a 10-year agreement with Guzman to purchase power at fixed rates including the buyout fee, which was amortized over the first six years of the contract. Guzman is actively marketing to other cooperatives, municipalities, and other power suppliers in the region. Notably, the universe of alternative power suppliers is relatively limited at this point.

### ***Conditions that Could Lead to Discord***

Certain conditions can make G&Ts and their members more susceptible to discord. These can include:

- **High member rates relative to regional peers.** Combined with frequent rate increases, higher rates could be a primary reason that members look for cheaper power supply options in the market. Small alternative power suppliers have the ability to enter into agreements that utilize lower priced market energy and provide solutions that can be tailored to each individual client.
- **Inflexibility of a G&T.** Inflexibility can be a symptom of leadership that is unwilling to adapt, stagnant or negative load growth, excess power supply, and legacy investments.
- **A large and diverse member base.** Discord can result as members become unaligned due to differing priorities, load profiles, and varying geography. In certain regions of the country, availability of a strong renewable resource locally can lead to requests for WPC amendments, such as carve-outs.
- **The Board makeup, local politics, cultural shifts, and other factors.**

### ***Credit Risk Perspective***

From a creditworthiness standpoint, there are several key aspects to consider when there is discord:

- Could a departure of one member lead to a movement amongst the remaining members (i.e. contagion risk)?
- Is a departure structured in such a way that the cost burden isn't shifted to the remaining members?
- Do the time, effort, and other resources spent managing the discord prevent the G&T management from executing on other strategic initiatives?

All of these questions play a role in assessing the risk profile and consequently have the potential of impacting credit agency ratings and in turn, the historically strong capital markets access.

### **CoBank Perspective**

Wholesale power and transmission is one of many services that a G&T offers, which can also include economic development, engineering, forecasting, billing, training, human resources, communications, marketing, and a host of other services. The energy industry remains a scalable business that leads to potential efficiencies and benefits for the members. Further, we acknowledge the value in long-term stability offered by a WPC. As Rappahannock Electric Cooperative (a distribution cooperative in Virginia) recently put it, “a snapshot of the market compared to a long-term contract is not an apples-to-apples comparison; it’s like saying the interest rate of a variable-rate mortgage is lower than the rate of a fixed mortgage – it might be true today, but are you willing to take that risk over the 30-year term of the mortgage?”

Ultimately, achieving alignment in the board room and amongst the members is paramount to being able to fully capture the value of the cooperative model. As the industry continues to evolve at a rapid pace, strategic direction and the conversations held amongst G&T managers, member managers, and directors today will shape the future direction of the cooperative industry. ■

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### **Sources:**

Rappahannock Electric Cooperative | <https://www.myrec.coop>  
S&P | <https://www.spglobal.com>  
Guzman Energy | <https://www.guzmanenergy.com>

## Community Choice Aggregation Emerges as Alternative Utility Model

Prepared by Nigel Pretty, Project Finance Division

As U.S. power markets evolve to accommodate a changing generation blend, community choice aggregators (CCAs) have emerged as vehicles for procuring power on behalf of cities and counties. A growing number of states are evaluating legislation that would authorize the creation of CCAs as an alternative to the traditional utility model (*Exhibit 1*). Proponents claim that CCAs reduce the cost of power to end-use customers while also increasing the “green” content of the power supplied. However, the model remains relatively novel, and participants and investors alike may be subject to a new set of risks as the model evolves.

### What are CCAs?

Generally speaking, CCAs are legal entities – formed by one or more counties, cities, or towns – that exist for the purpose of purchasing power on behalf of residents, businesses, and municipal facilities within a local or sub-regional area.

The primary difference in the CCA model compared to the conventional utility model is the transfer of the procurement function from the incumbent utility to the newly-formed CCA (*Exhibit 2*), which (in theory) may be better equipped to serve the specific interests of its local customers at potentially lower costs.

Once established, the CCA is responsible for procuring power for participating end users in its service region, and may also engage in the development/ownership of local generation to augment its contracted supply. The CCAs are typically self-regulated with respect to price setting, though like utilities, they are subject to Renewable Portfolio Standards (RPS) and may be responsible for ensuring resource adequacy.

Under the CCA model, the incumbent utility continues to own, operate, manage, and repair the existing transmission and distribution infrastructure. The utility also remains responsible for the metering, servicing, and billing of end-use customers.

### EXHIBIT 1: State Legislation Status

#### Authorized in 8 States:

- California
- Illinois
- Massachusetts
- New Jersey
- New York
- Ohio
- Rhode Island
- Virginia

#### Legislation Introduced:

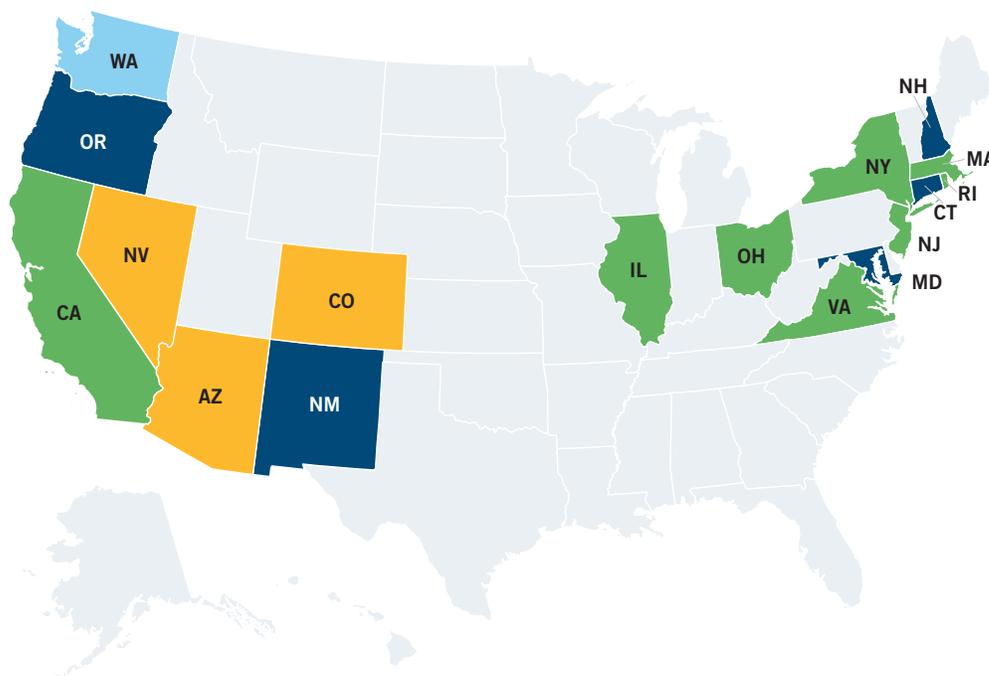
- Connecticut
- Maryland
- New Hampshire
- New Mexico
- Oregon

#### Watch List/Potential:

- Arizona
- Colorado
- Nevada

#### Inquiries Received:

- Washington



Source: LEAN Energy



From the customer’s perspective, all remains the same as electricity continues to be delivered through existing distribution networks with billing/servicing provided via the utility’s existing billing structure.

**Formation and Implementation**

After a state passes legislation enabling CCAs to form, each city or county in the state can form its own CCA as a local ordinance. Local government agencies may set up a new CCA on a standalone basis, or they may choose to join an existing CCA. CCAs are typically formed within the existing service territory of an incumbent investor-owned utility (IOU) or other utility.

Once the ordinance is passed, an agency must be formed to create and manage the CCA. Many CCAs involving multiple cities have chosen to set up a joint powers authority. As a legally separate public agency, it can sue, be sued, hire staff, obtain financing, assume debt, and manage or lease property.

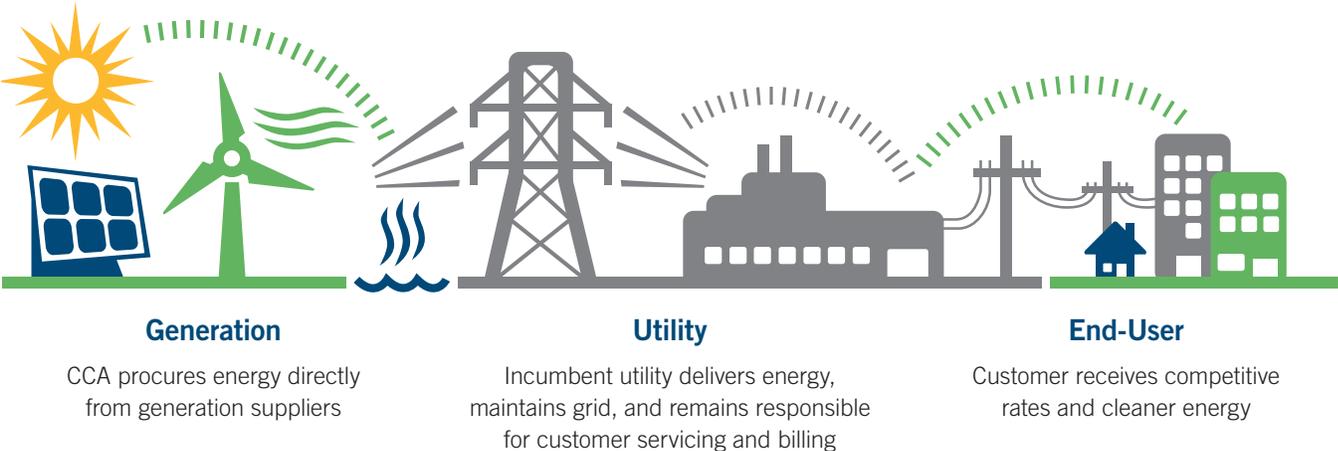
Energy aggregation can be done on an “opt-in” or “opt-out” basis (depending on statute). The most common and successful programs are “opt-out”, which effectively eliminates the high customer acquisition cost that the CCA would otherwise confront

Typically, a newly-formed CCA will give customers within its territory the immediate option to opt out of the CCA, with the customer then reverting to the incumbent utility. Customers may also opt-out of the CCA at any time on an ongoing basis, though this may be subject to a notice period and/or penalty fee.

**Generation Blend**

Like utilities and other load-serving entities, CCAs determine the mix of resources used to supply electricity to their customers. In many, customers are allowed to choose between various options based on renewable content (e.g. 50% renewable, 100% renewable, etc.), subject to additional surcharge.

**EXHIBIT 2: CCA Model**



Source: LEAN Energy

All CCAs are required to comply with state-level RPS requirements. In some cases, participants may elect to purchase renewable power at targets above these standards, i.e., “Voluntary Green Power” (*Exhibit 3*).

The expansion of CCAs could affect grid-wide electricity portfolios if CCAs exhibit extreme preferences for specific resources, such as renewable energy or low-cost natural gas. By contrast, some CCA electricity portfolios may not vary substantively from the portfolios of other load-serving entities.

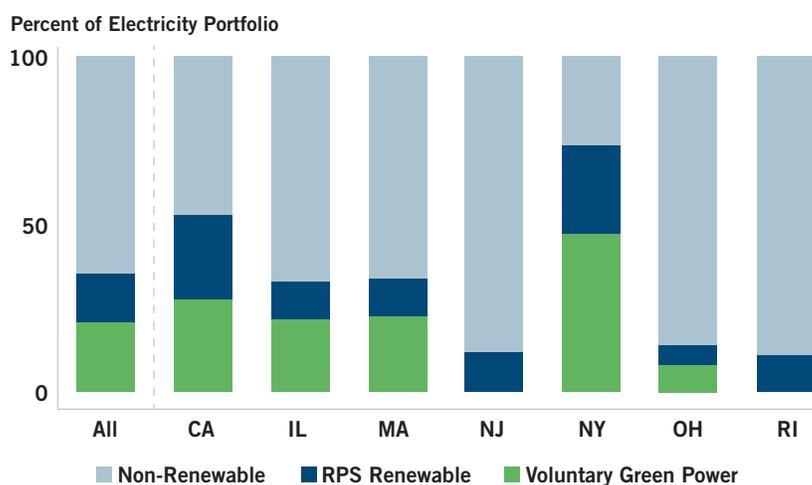
### Current Status and Growth

NREL estimates that in 2017, approximately 750 CCAs procured 42 million MWh of electricity on behalf of 5 million customers. These figures equate to about 5% of retail sales and 12% of retail customers. (*Exhibit 4*).

At the national level, approximately 4% of U.S. retail electricity customers were served by a CCA in 2017, though CCA sales only represent about 1% of all retail electricity sales.

CCAs have achieved the greatest market penetration in Illinois, followed closely by Massachusetts and California. New York is also poised to become a major CCA market, with at least 50 communities in New York State having passed local laws to form CCAs.

### EXHIBIT 3: CCA Generation Blend by State



Source: National Renewable Energy Lab (NREL)

### EXHIBIT 4: 2017 CCA Implementation

| State         | Number of CCAs | Sales (Million MWh/yr) | Number of Customers ('000s) | Percent of Total State Sales | Percent of Total State Customers |
|---------------|----------------|------------------------|-----------------------------|------------------------------|----------------------------------|
| California    | 9              | 11.8                   | 1,239.0                     | 5.0%                         | 8.0%                             |
| Illinois      | 490            | 16.2                   | 1,960.0                     | 11.0%                        | 34.0%                            |
| Massachusetts | 110            | 5.1                    | 870.0                       | 10.0%                        | 27.0%                            |
| New Jersey    | 15             | 1.7                    | 210.0                       | 2.0%                         | 5.0%                             |
| New York      | 1              | 0.7                    | 93.0                        | 0.4%                         | 1.0%                             |
| Ohio          | 120            | 6.6                    | 660.0                       | 4.0%                         | 12.0%                            |
| Rhode Island  | 1              | 0.2                    | 2.0                         | 3.0%                         | 0.4%                             |
| <b>Total</b>  | <b>746</b>     | <b>42.3</b>            | <b>5,430.0</b>              | <b>5.0%</b>                  | <b>12.0%</b>                     |

Source: National Renewable Energy Laboratory (NREL) 2019.



### **Relationship with IOUs**

One significant, unresolved question involves the long-term relationship between CCAs and existing utilities, such as investor owned utilities (IOUs). CCAs are able to procure power at lower rates than IOUs as they are more nimble and not subject to the same long-term requirements that have impacted IOUs procurement strategies. While IOUs in states with stringent RPS requirements were forced to meet procurement targets by signing long-term power purchase agreements (PPAs) that are now substantially out-of-market, CCAs have the flexibility to source PPAs at the lowest possible cost in the current market.

To resolve this issue, customers in territories served by CCAs may be required to pay exit fees to the incumbent utilities to compensate them for ongoing legacy costs such as power plants and PPAs that are no longer required. Negotiation of these exit fees has been a matter of significant disagreement between IOUs and CCAs and will remain a critical consideration going forward. For CCAs to be viable in the long-term, these exit fees will need to remain lower than the cost savings associated with switching to CCAs.

### **CoBank Outlook**

While public policy and regulatory support for CCAs continues to build momentum, CCAs remain an uncertain proposition from a credit and debt financing perspective. Two CCAs (Marin Clean Energy and Peninsula Clean Energy) have now achieved investment grade ratings (Baa2) from Moody's, marking a significant milestone in establishing the creditworthiness of CCA.

Still, significant questions remain regarding the long-term viability of CCAs. In Illinois, for example, CCAs (known as Municipal Electricity Aggregators, or MCEs) experienced a surge in popularity during 2009-2013, with over 720 individual MCEs providing electricity to customers in the service territories of the major Illinois IOUs (ComEd and Ameren Illinois) as of early 2014, including over 2 million customers in Chicago. However, the cost-competitiveness of these MEAs was soon eroded, and within two years many of these MEAs had been suspended, with customers returning to their utilities. While most of these customers would be indifferent to the change (i.e. the MEA had served its purpose in the short term), such a shift would be a serious concern from a banking perspective, and would also limit the ability of the MEAs on a long-term basis.

Key items that will likely require clarity from expected regulatory action include:

- Reporting and financial health requirements
- Establishment of service territories
- Length of contracts
- Customer retention / barriers to exit
- Exit fees and pass-through of IOU legacy costs
- Governance requirements

Given the scale of CCAs in the region and the history of renewable policy implementation, we expect California to be the leader in addressing these challenges. However, progress may be gradual given the volume of issues that need to be resolved. CoBank will continue to monitor and evaluate the situation. ■

## Regionalization as a Solution to Water Industry Challenges

Prepared by Jonathan Mann, Water Infrastructure Division

Regional integration among small water systems, known as “regionalization,” is a topic of increasing popularity and debate within the industry. While the idea of neighboring water systems collaborating and even merging may not seem controversial, issues of control, politics, and equity have prevented wide-scale regionalization. Whereas micro- and macro-economic forces generally limit and reduce the number of market participants over time, there remain over 52,000 water suppliers in the United States.

### Challenges Facing the Industry

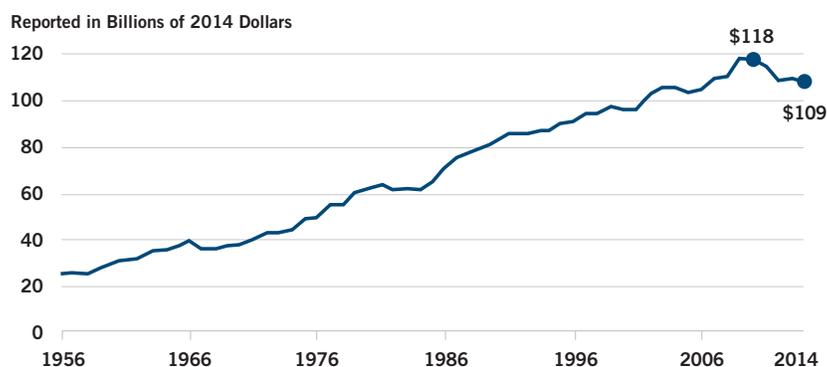
Several important challenges have led to greater consideration of water services regionalization.

**Weather.** Significant weather events and changing weather patterns have increased variability of water supply. Coastal hurricanes and increased snowpack (which can cause flooding) as well as sustained periods of dry weather (which can cause droughts) can disrupt the provision of adequate and safe water and wastewater services.

**Failure to Plan.** These issues can have a negative impact on water rates if operators do not plan and react properly. While these environmental forces are nothing new, water systems have faced a higher frequency of these events in recent years, and they are having a longer-lasting impact.

**Degradation of Water Quality.** Approximately 44% of stream miles and 64% of lakes in this country are not clean enough for swimming or for the consumption of fish residing therein. Even with water treatment performed by the local utility, 19.5 million Americans become ill annually through biological contaminants

### EXHIBIT 5: Government Water Spending



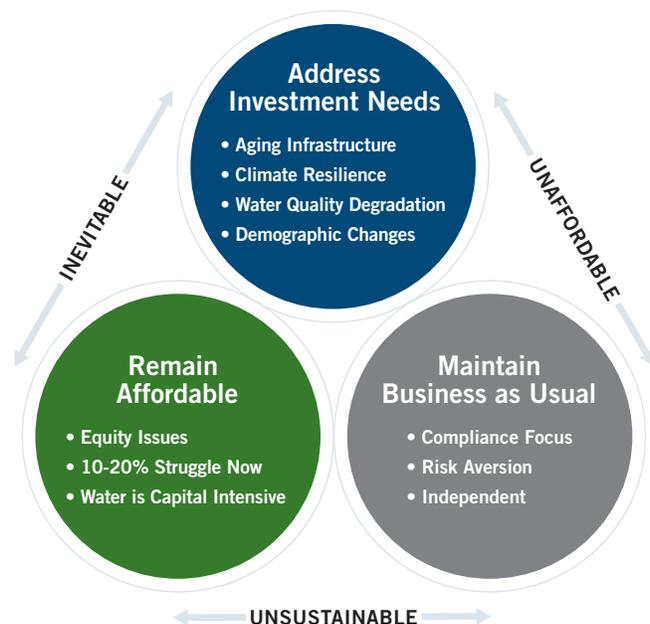
Source: 2018 Aspen-Nicholas Water Forum Report

found in drinking water (caused either by improper treatment or through the distribution of that water through the system and users' infrastructure).

**Inadequate Investment in Water Infrastructure.** While grant funding and low-interest-rate loans are available through federal and state programs (in addition to traditional banks), this type of spending has decelerated over time, despite the aging of infrastructure (*Exhibit 5*). This trend has led to an estimated \$1.27 trillion of water infrastructure improvements needed over the next 25 years, which represents more than double the current spending level, according to the 2018 Aspen-Nicholas Water Forum Report.

**Increased Regulation.** The issue of inadequate capital investment is exacerbated by increased regulation of the industry. Whereas financial incentives used to be more prevalent, increased regulation is having the opposite effect on financial performance of rural water systems. Although regulators typically allow generous grace periods for compliance, the associated costs are often greater than can be supported by historical water rates.

## EXHIBIT 6: Factors Influencing Water Management



Source: 2018 Aspen-Nicholas Water Forum Report

**Shifting Populations.** The trend of Americans moving away from rural areas towards suburban and urban areas also puts a strain on operators. For those water systems in areas experiencing increasing populations, their challenges are to secure adequate water supply for the new customers and expand infrastructure to reach those customers. For those water systems in areas experiencing decreasing populations, the challenges are to monetize oversized plant infrastructure while managing rising fixed costs per customer and a declining revenue base.

Three primary factors are influencing water management approaches (*Exhibit 6*). The typical rural water system is most concerned with maintaining affordability and “business-as-usual”, which appeases the customer-base in the short-term, but creates a growing need for capital investments in the long-term.

### *Regionalization as the Solution*

Potential solutions to industry problems include advancements in technology, inter-sectoral collaboration, regulation, and institutional change (e.g., regionalization). Examples of technological breakthroughs include water systems using high-resolution sensor networks, and (eventually) using artificial intelligence to optimize operations. Inter-sectoral collaboration refers to partnering with constituents outside of the industry to help solve problems. An example of this would be farmers and land-owners taking measures to have less impact on water resources, which in turn, would decrease spending by water systems on the treatment of water prior to distribution. As it relates to regulation, federal, state, and local governments have the power and authority to become part of the solution to these problems as much as they have caused and contributed to them.

Historically, regionalization has been isolated for a few reasons. Likely the most significant barrier to regionalization has been the up-front costs. Compared to other utility resources, water is heavy and, therefore, more costly to transport. This factor, coupled with consumer sensitivity to rate increases, often make consolidation an unpopular proposition among stakeholders. Water system managers are likely to be more successful in raising rates every few years for inflationary adjustments and small maintenance projects than for a larger project that may not present immediate benefits. Another barrier to regionalization has been the organizational structure of water systems, which are often owned and operated by municipalities, which cannot easily merge with one another.

Proponents of regionalization argue that the challenges facing the industry are universal, yet the decisions, practices and policies being used to combat them are made at the local level. This results in a patchwork of solutions that are often mismatched to the problems,

**EXHIBIT 7: Forms of Regionalization**

| Informal Cooperation   | Service Contracts   | Institutional Changes  | Formal Consolidation  |
|--|---|--|---|
| Cooperate with others, but without any contractual obligations   | Contracts between two entities but no transfer of control   | Create a new institution facilitating collaboration while individual entities keep independence  | Consolidation of physical assets into an existing or newly created entity   |
| <b>Increasing Transfer of Responsibility</b>   |   |  |   |
| <b>Examples:</b> <ul style="list-style-type: none"> <li>• Share equipment</li> <li>• Share bulk supply purchases</li> <li>• Mutual aid arrangements</li> </ul> | <b>Examples:</b> <ul style="list-style-type: none"> <li>• Share operations and maintenance</li> <li>• Share engineers</li> <li>• Purchase water via interconnections</li> </ul> | <b>Examples:</b> <ul style="list-style-type: none"> <li>• Co-management</li> <li>• Shared allocation of source water</li> <li>• Combine staff resources</li> </ul> | <b>Examples:</b> <ul style="list-style-type: none"> <li>• Physical connection</li> <li>• Private or public acquisition</li> </ul> |

Source: 2018 Aspen-Nicholas Water Forum Report

rather than a larger and comprehensive strategy that is realistic and effective in addressing the issues. Additionally, proponents believe that this type of collaboration can create synergies, and benefits to the parties involved that could not otherwise be gained.

Regionalization can come in several different forms (*Exhibit 7*). Informal cooperation and service contracts are common throughout the country and have been created organically over time, whereas institutional changes and formal consolidation have been less frequent, since they are more costly, require greater relinquishment of control, and impose more risk to operators and customers.

Regionalization's primary financial benefits are economies of scale, lower cost of and increased access to capital, and revenue stability. Economies of scale include lower costs per individual customer, which in turn lead to lower water rates. Specific expense savings could include staffing, maintenance and repairs, and regulatory compliance, all of which are critical for water systems. The more customers who are served, the greater and more diversified the system's revenue base will be. As it relates to capital, a larger and more stable water system would be more attractive to traditional lenders, and would command a larger debt load at more favorable terms (although it may simultaneously qualify for less government subsidies based on its size).

Secondary financial benefits to be gained through regionalization include economic development and improved planning and risk management functions. A deficient water system that cannot accommodate growth, let alone meet the needs of existing customers, can directly deter migration of businesses and population into an area. This is one reason why local and state governments have been willing to provide subsidies to water systems in the past; return on investment of these subsidies can be substantial if it results in attracting new businesses to the community, which add to the tax base. As it relates to planning and risk mitigation, a larger water system can employ better talent to not only improve and streamline operations, but also to better plan for the future, something that many rural water operators are not trained and equipped to do today.

Other financial and non-financial factors should be evaluated when water systems are considering regionalization. Up-front costs are important, and can be a significant barrier to regionalization. These costs include engineering and environmental reports, feasibility studies, and legal expenses on a pre-construction basis. Also included are the costs to interconnect systems, which is critical in order for the operator to gain control of its entire system and streamline operations. Water systems with widely varying financial conditions are less likely to consider regionalization, despite the long-term

benefits that they might enjoy together in the long-term. Similarly, the benefits afforded to each of the participating systems may not be equal (or perceived to be equal). These issues can be overcome for the greater good of the region as a whole, but the often short-term views of elected leaders can be in direct conflict with this goal. Finally, a potential incentive for regionalization in some cases may be increased influence among the regulator, which may also provide meaningful long-term impact.

### **Summary**

Regionalization beyond informal cooperation and service agreements for non-core operations is not widespread, however, today's challenges within the industry may cause water operators to reconsider and determine whether the proper incentives are in place to take action. We view the net impact of potential increases in regionalization to be credit positive, based on the

economies of scale generally seen among acquisitions and mergers of like systems. Many of the challenges faced by small rural water systems can be solved by regionalization if the political will is there and constituents can take a long-term view of their operations and communities. ■

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### **Sources:**

“Reaching Watershed Scale Through Cooperation And Integration: A Report from the 2018 Aspen-Nicholas Water Forum.” Duke University Nicholas Institute for Environmental Policy Solutions/The Aspen Institute Energy Environmental Program. 2018.

“Strengthening Utilities Through Consolidation: The Financial Impact.” U.S. Water Alliance/UNC School of Government Environmental Finance Center. 2019.

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