

NORTH AMERICAN UTILITIES: STILL A SMART BET FOR THE NEW GRID

NEW OLIVER WYMAN ANALYSIS FINDS A SOLID FOUNDATION FOR EARNINGS GROWTH EVEN WITH COMING CHANGES



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The warnings of competitive threats to the US utility industry have sounded as the new smart electric network begins to evolve and develop and new distributed solar and wind generation finds traction in the market.

The threats are real, but a new analysis from Oliver Wyman suggests that utilities have a solid foundation to participate, grow, and deliver strong investor returns in the North American market.

Many recent analyses focus on the bleak outlook and dire consequences that the competitive dynamics of the new smart electric grid will have on utilities, especially electric utilities. Our new analysis evaluates and focuses on the strong foundation that utilities have, especially with future rate base and earnings growth, to be successful in the energy market. During the next 15 years, Oliver Wyman expects utility earnings will grow 3% to 4% annually, with upside if utilities change smartly in the face of the new competition. The smart grid can enable utilities to thrive, not wither.

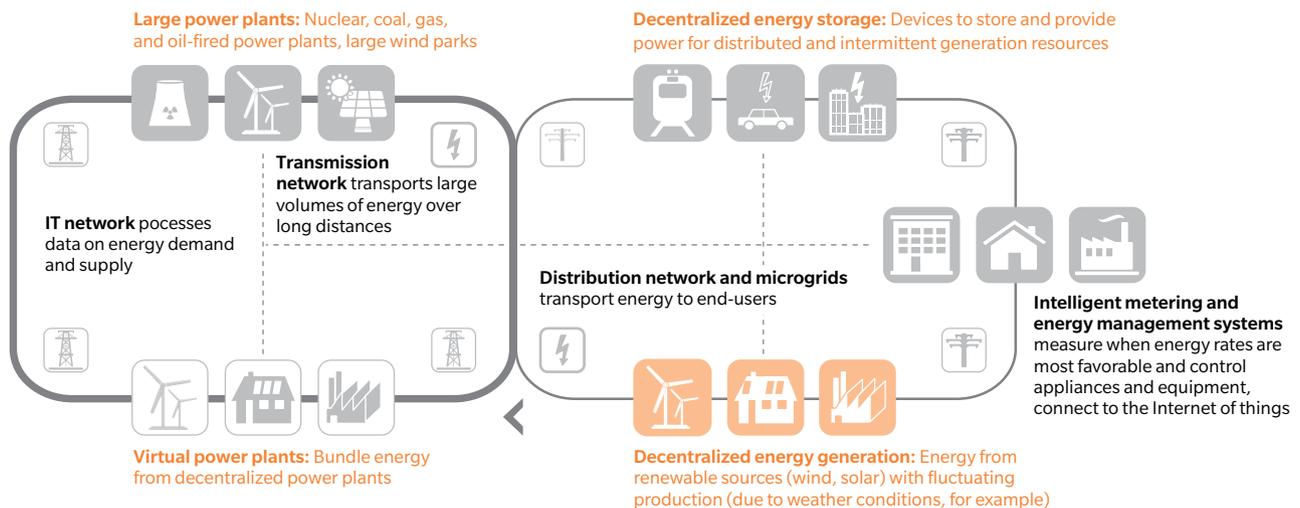
Change in the utility business is inevitable, and key customer segments will demand greater control and choice over their energy decisions. Customer demand and technological innovation will create sizable profit pools and invite new entrants and stronger competition.

However, the North American utility model works well for most customers, regulators, and investors. To continue their strong performance, utilities will need to alter their business models. In the future, utilities can lead and achieve stellar financial results. As long as they meet changing customer needs while helping shape regulations, there is good reason to believe that utilities can prosper while capitalizing on opportunities.

1. THE NETWORK: THE NORTH AMERICAN SMART GRID OPENS OPPORTUNITIES FOR MANY

Oliver Wyman believes that the traditional centralized grid will remain relevant, but decentralized energy resources, as their economics improve, will be the new building blocks in the industry. With the new grid, consumers will have more control and more choices. Consumers can monitor, analyze, and adjust usage based on the information at hand. They will be able to choose a range of distributed generation resources – and not just solar – thanks to innovative energy storage technologies. The old grid and centralized resources will still be around, but new technologies will proliferate (Exhibit 1).

Exhibit 1: Electric network of the future



Source: Oliver Wyman analysis

2. ENERGY CUSTOMERS: WHAT CHANGES DO THEY REALLY WANT?

Customers, not ratepayers, rule markets, even in the utility business. Clearly, some customer segments in North America will demand greater control and choice over their energy decisions. Today, there is a lot of rhetoric about the power of the new grid, usually from energy market entrants who want to encourage purchasing or financing to build their businesses. In North America, one has to be careful to not over-hype the new grid, at least in the short term.

Consumer marketers targeting North America have long considered utilities – electricity, natural gas, and water – to represent low involvement categories of consumer spending. Simply put, consumers want these basic services always there when they need them at a reasonable price. Most consumers spend little time fretting over their utility. There are much more important things to spend their time and effort on, like housing, vacations, cars, mobile phones, clothing, and other higher involvement categories of consumer spending. Energy's place in the pecking order dampens demand for change and innovation.

Additionally, utility costs represent a tiny percentage of a consumer's income. In 2013, consumer spending for electricity, natural gas, and other fuels represented only about 3% of a consumer's before-tax income

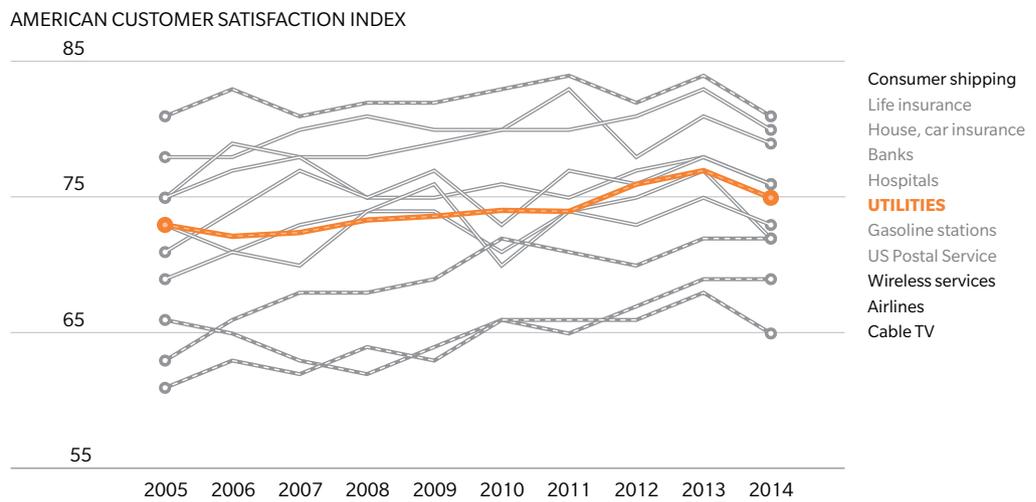
There may be a sizable segment of the North American consumer market that will become highly engaged in energy decisions – at minimum 10%, perhaps 25%, or maybe more. However, the overall tone of segmentation studies is that most North American consumers expect cost savings in order to change their behavior. Particularly noteworthy: There is small interest in changing energy behavior in a big way for environmental reasons. In a nutshell, many consumers say, *"If I can achieve savings with no hassles, by all means sign me up! Show me the money, but do not put me through hoops or expose me to risks I do not understand to cut my bill."*

So how about future cost savings in energy spending? According to Oliver Wyman's work with the World Energy Council for its World Energy Trilemma report, the US continues to be the top-ranked country in "energy equity" since the rankings began in 2010. Utility-related services in the US are cheap and accessible to the entire population compared to the rest of the world. In a low involvement category, cheap and accessible is not a significant call to action for most consumers.

How about the future? At least for the near term, North America has bountiful supplies of energy, especially driven by the shale gas revolution. Real electricity prices to residential consumers should rise minimally, maybe less than 0.5% per year over the next 15 years. Furthermore, North Americans have a range of energy-efficiency programs already in place or planned over the next few years. Total residential energy use most likely will remain flat and may even drop. Therefore, the overall energy bill, which is what consumers are really concerned about, should not change much, especially relative to other categories of spending. The energy bill may actually fall when considering real income growth. Again, a flat bill suggests there may be limited opportunities for cost savings, dampening consumer interest in change.

Past utility customer satisfaction ratings echo the overall place of utilities in the North American consumer marketplace. According to the American Customer Satisfaction Index (Exhibit 2), utilities have ranked right in the middle of the pack across service categories in the US over the last decade. Residential consumers find utility service generally acceptable compared to other services. Note the ranges of performance, both good and bad, across higher involvement categories – package shipping (FedEx, UPS) representing the good, and airlines and cable TV representing the bad. In addition, consumer satisfaction with wireless services has increased significantly over the period due to heightened consumer interest and the growth of smart phones. A warning to utilities as innovation and the grid develop? Yes, you better believe it, but perhaps at a lower decibel than higher involvement categories.

Exhibit 2: US customer satisfaction with services



3. THE NEWCOMERS: MULTIPLE BREEDS OF COMPETITORS EMERGE BUT WILL THEIR BUSINESS MODELS WORK?

There is no doubt that the new grid will unleash a wave of innovation and entrants into the market for utility services. North America already has a plethora of new publicly traded companies in residential solar, distributed generation, battery storage, energy services of various shapes, natural gas vehicles, and wind, bio, ocean, and other fuel sources. Workers in offices and labs from Massachusetts to Texas to the Silicon Valley work tirelessly to prep the next wave of energy IPOs. Do they represent competitors for utilities? Absolutely. However, the competitive threat from these entrants is difficult to ascertain. According to Value Line, the more than 30 new entrants it covers that have a focus on North America collectively generated about \$20 BN in sales in both 2013 and 2014. However, these entrants were generally unprofitable. The median after-tax income margin for these companies was -1.3% in 2013, which worsened to -5.5% in 2014. Half had negative cash flow. Do not even ask about return on equity or capital employed. Looking ahead, analysts expect 60%

to remain unprofitable over the coming years. In contrast, in 2014, the average after-tax operating margin of a utility was 7.5%, the average return on equity was 8.1%, and each and every utility was profitable. Utility operating activities provided over \$88 BN of cash that was used to pay more than \$21 BN in dividends to investors.

Many of the entrants have not figured out a business model that works. They are still formulating their target customers, developing their product and service offers, understanding how to become profitable and sustain performance, and building their operating models. It is difficult to envision many of these companies offering continued cost savings to consumers. Burning through cash is plainly not sustainable. Of course, many will not succeed and just fade away or be gobbled up by others.

Excluded from the above analysis are those relatively new publicly traded energy companies that develop large-scale wind and solar projects and sell the capacity and output to utilities under profitable long-term contracts. In general, investors view these companies positively because of their steady long-term cash flows and the creditworthiness of the counterparties (e.g. the utility). The current utility model works very well for this type of entrant.

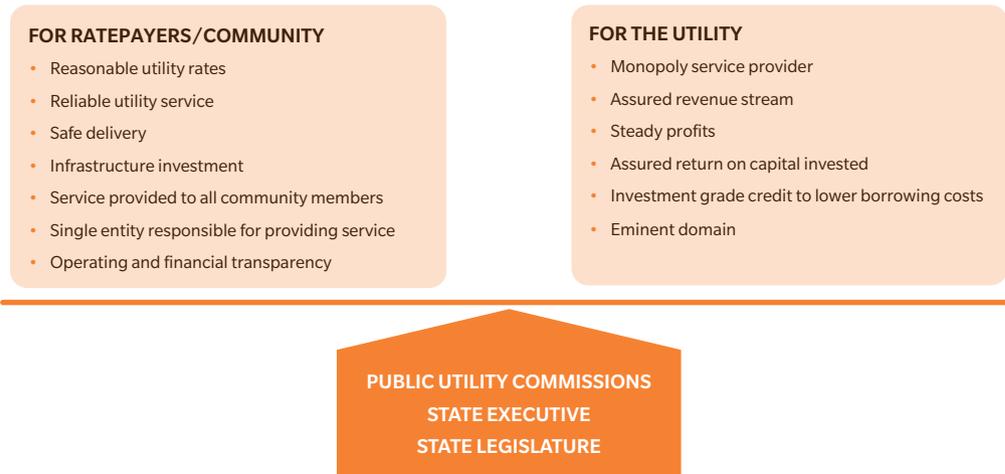
Of course, an 800-pound gorilla could emerge from the pack. The favorite is not clear and may not be clear until much later, say 2040 or beyond. Google's acquisition of Nest in 2013 certainly created a stir in the energy industry. However, Google's acquisition and positioning may be more about developing the connected home and the larger Internet of things rather than the energy market. There is no doubt that Google represents a strong future competitor. In announcing the Nest deal, Google highlighted the shared values of the two companies with "both of us [believing] that technology should be doing the hard work so that people can get on with their lives and do great things." If Google or another company should figure it out on energy, this is an ominous competitive threat even for utilities in a low involvement sector where most customers are already getting on with their lives. Replacement of utilities by a Google is a scary long-term value proposition.

4. THE MOST IMPORTANT STAKEHOLDER: REGULATORS AND REGULATIONS WILL OF COURSE ADJUST BUT THE UTILITY FRAMEWORK ENDURES

Changing customer demands? New entrants and competitors? This much is certain: The states – governors, legislatures, and especially the state public utility commissions – and the federal government will step in.

While we see regulatory change as inevitable, we doubt there will be fundamental change in the utility operating model. The regulatory compact (see Exhibit 3) will continue. In return for monopoly franchise rights and cost recovery, the utility's obligation to serve and its obligation to the community will continue. The utility model will still be front and center in providing safe, reliable, and reasonably priced service to customers.

Exhibit 3: The US utility regulatory compact



Will regulatory change occur? Absolutely. How might these changes evolve? Current regulatory proceedings provide some hints that utilities will still play crucial roles.

- New York’s Reforming the Energy Vision proceeding clearly outlines the utility’s role as the distribution provider but limits utility ownership in distributed energy resources markets. However, the door is open even in a challenging regulatory state such as New York for large utility investment in the grid, utility use of data and information to improve service, and even third-party utility ownership of utility-scale renewables.
- Massachusetts’ grid modernization plans suggest continued utility involvement in reducing outages, optimizing peak demand, integrating distributed resources, and improving workforce and asset management.
- California’s grid modernization proceedings place the utility at the forefront in developing and implementing distribution resource plans.

Different states have different views of the utility of the future, depending upon the state or region-specific generation and policy mix. Consequently, there is no standard operating model across the US, leaving the states to experiment with various frameworks (see Exhibit 4).

US utility commissions are increasingly grappling with cross-subsidization as they take up proposed changes to rate design. Although specifics of rate design plans vary from state to state, the proposals all attempt to make monthly utility bills less sensitive to volumetric changes.

But PUCs and state governments clearly recognize that the US utility model delivers world-class service.

Equity and bond investors are happy with this business model, too. Steady, stable financial returns lead to robust debt coverage ratios and superior bond ratings. Stable, growing profits lead to safe and consistently rising dividends. Is there huge upside? Probably not. But many private investors and infrastructure funds would gladly add a utility to their investment

portfolios if they could buy one. Billionaire investor Warren Buffet likes utilities a lot. Demand outstrips supply. The high multiples that utilities are paying to acquire other utilities suggest that they, too, know a good thing when they see it.

Rating agencies and stock analysts know the deal that is the regulatory compact. Stable and sufficient cash flow is king and that's the typical utility business model.

- **From Moody's:** "Our stable outlook for the US regulated utility industry is based on our expectation that regulatory support will continue to help utilities recover costs and maintain stable cash flow, even with competition from distributed generation or energy-efficiency efforts that keep overall demand growth low."
- **From S&P:** "Our fundamental view of the sector is a stable one, supported by the essential nature of the services provided, making the companies somewhat insensitive to economic fluctuations; the rate-regulated nature of the business, which lends a measure of stability and predictability to cash flow generation; and the generally supportive posture of regulators toward cost recovery of incremental investments facilitated by the ongoing low power prices."
- **From Warren Buffet:** "Our utility subsidiary is one of our 'Powerhouse Five' [of major lines of business. ... [A] key characteristic is [its] huge investment in very long-lived, regulated assets. ... Factors ensure the [utility's] ability to service its debt under all circumstances ... [and] recession-resistant earnings, which results from these companies exclusively offering an essential service. ... Our confidence is justified ... by the knowledge that society will forever need massive investments in ... energy. It is in the self-interest of governments to treat capital providers in a manner that will ensure the continued flow of funds to essential projects. It is meanwhile in our self-interest to conduct our operations in a way that earns the approval of our regulators and the people they represent."

Exhibit 4: Shaping the future utility operating model

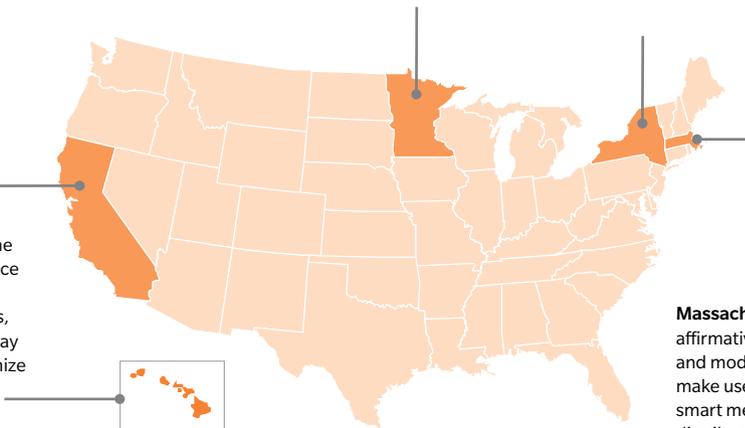
SELECTED EXAMPLES OF REGULATORY PERSPECTIVES

California has aggressive carbon reductions targets and renewable distributed generation will play a key role. California is working on methods to incorporate distributed energy into system planning and is pursuing tariffs that favor consumer generators

Minnesota is creating a value-of-solar tariff to replace traditional net metering at retail rates. Furthermore, Minnesota's e21 initiative (a public-private working group) is proposing performance-based rates for utilities

New York's Reform the Energy Vision program relies on utilities to create a distribution system platform for the integration of distributed energy. Utilities would retain their role in maintaining the distribution platform and ensuring reliability. Some safeguards would ensure fair market access

Hawaii wants to capture the benefits of solar PV to reduce high generation costs. Energy storage, microgrids, and virtual power plants may provide solutions to maximize the value of solar, handle overfeed situations, and reduce costs



Massachusetts requires utilities to take affirmative action to install advanced metering and modernize the electric grid. Utilities should make use of distributed energy resources, smart metering, and time-of-use rates in distribution planning

- But of course there are elements of risk. **From Barclay's:** "Valuations suggest credit investors are depending on the 'regulatory compact' (whereby the monopoly utility agrees to invest in assets to service customers in return for prices that are set to allow them a reasonable return) to give sufficient protection from industry changes. While the regulator/utility construct has usually resulted in low-risk returns to credit in the past, technological change creates precisely the environment where slower-moving incumbents and their regulators can fall behind the curve, risking credit volatility, or disrupt the regulatory compact, possibly leading to unexpected losses for bondholders."

Are there future risks to the utility business model? Of course. But overall, the utility business is a good business.

5. THE GROWTH CHALLENGE: THE NEXT 15 YEARS

What do all the opportunities, threats, and changes mean, especially for North American utilities? Oliver Wyman's new analysis and forecast for utility earnings growth suggests utilities have a strong foundation for success over the next 15 years: long-term earnings for utilities should grow at least 3% per year. This represents a solid starting point for competing in the world of the new grid.

Our new analysis and forecast are built on our worldwide work for and support of the World Energy Council and our consulting work in the North American markets.

A number of factors shape our forecast for utility earnings.

- **Electric distribution:** continuing significant and increasing investment in electric distribution to replace aging infrastructure, to build the network of the future, and to accommodate distributed resources.
- **Electric transmission:** tapering but steady investment in new transmission as the near-term build-out is completed and more distributed resources hit the market.
- **Generation:** continuing utility investment in a portfolio of generation resources (in states where utilities can invest in generation), offset with a significant increase of predominantly non-utility investment in distributed resources.

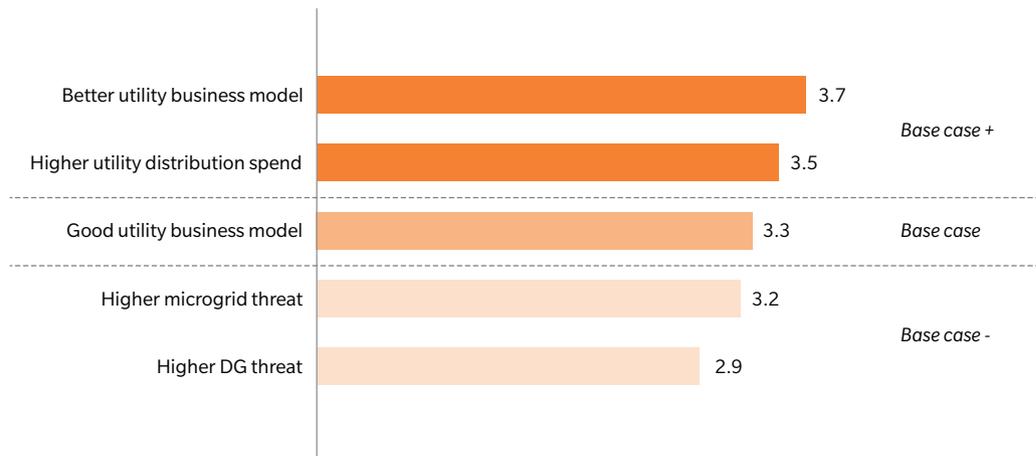
As the US Environmental Protection Agency works to decarbonize the energy sector, the Clean Power Plan presents a huge growth opportunity for many utilities. Hundreds of gigawatts of new natural gas and renewable generation along with new transmission will be needed to comply with the regulations.

- **Gas transmission and distribution:** for the utilities that also have gas business, a doubling of spending for gas distribution and transmission to enable ample and price-competitive gas to reach end-users, including power generators.

What does it all mean for utility earnings? Well, it is not all that bad. **Oliver Wyman's most likely market scenario suggests that utility earnings will grow on average about 3.3% annually during the next 15 years.** That's not bad a starting point at all – not superb but not a death spiral either.

Exhibit 5: New Oliver Wyman forecast: US utility earnings growth

2014–2030
PERCENT PER YEAR



Sure, there is downside, but the customer, regulatory, and competitive factors tend to mitigate any chance of free fall.

- **More distributed resources:** A higher penetration of non-utility resources negatively impacts utility profitably. A tripling of the penetration over our base case assumptions lowers earnings growth to under 3% per year.
- **More non-utility microgrids:** A small but significant increase in non-utility investment through microgrids has less of a negative impact. Our forecast suggests that higher non-utility distribution investment, predominantly in microgrids, will slow utility earnings growth marginally, by only 0.1% annually to 3.2%.

It is hard to get excited about 3% per year earnings growth – yes, a secure and growing dividend helps. And certainly Oliver Wyman’s analysis suggests that earnings growth will be less than the 4% to 6% range that many utilities have touted and delivered during the recent period of exemplary utility stock performance.

So where does a utility CEO look for higher earnings growth?

Many believe that our aging utility infrastructure needs even more investment to continue the high levels of service that we enjoy. Investing an additional 20% in electrical distribution will drive the growth rate to 3.5%. Want more? Shaping the regulatory environment to allow the utilities to participate and invest in the majority of distributed resources, either as part of rate base or as non-regulated activities, might add 10 or 20 basis points, to top out at 3.7% annually.

Utilities will continue to be a solid business, but not the growth engine that they have been recently. Is Oliver Wyman being boring in its estimates? We do not think so: Our belief is that this forecast represents the new reality for utilities. Where is the catastrophic death spiral? We do not believe there will be one. The cry for change is too weak and the fundamental utility business model is too strong in North America.

Our bottom line: We would still hold.

6. ON THE PATH TO HIGHER UTILITY EXECUTIVE COMPENSATION: EXPECTATIONS FOR THE UTILITY OF THE FUTURE

So what is a utility leadership team to do? Certainly there will be challenges: changing customer expectations, the threat of new entrants, the need to shape and set the regulatory agenda – the list goes on and on. The biggest challenge? It is meeting Wall Street's expectations of continued 4% to 6% annual earnings growth.

There is a solid list of levers for utility leaders to think about pulling now and hard:

- **Undertake solid strategic and business planning now:** Undoubtedly, the energy business holds great unknowns, uncertainties, and risks. Despite its detractors, utilities can pave the way for success with strategic planning. Good planning examines opportunities, business design, and profit models focusing on the new grid, distributed resources, microgrids, energy storage, and other initiatives. Good planning can still result in bad outcomes. Therefore, a clear focus and commitment from strategic planning to implementation and communication is more likely to increase earnings.
- **Become customer-centric:** Our research suggests that utilities that deliver exemplary customer service earn 50 to 100 basis points more than those that are less customer-focused. Happy customers lead to more responsive, flexible regulators, which lead to greater opportunities to achieve higher earnings. Yes, focusing on the customer works even in the utility industry! Let's be honest: Customer experience data suggest that utilities are average at best. The world is changing: We are transitioning from an institutional era to a more human era. It is the end of putting the company first, speaking from a script and talking at customers. Customers want to buy from companies that show empathy, have conversations with them, and engage them at eye level. And consumers want these behaviors even from their utility. Consumers will be even more open to leaving the utility if new entrants get with the program first (hello distributed resources).
- **Use natural gas expansion as a customer-centric lever:** The US will be awash in natural gas for a good while. Many utilities also have a natural gas distribution business. What better time to make it unbelievably easy for utility customers to convert or expand their use of natural gas? Low oil prices and more modest conversion demand provide a great time to get the basics right. This will set the stage for utilities to act when oil prices inevitably rise again. Utilities need to build relationships with the community in target areas, hone their segmentation skills, develop their marketing and communication capabilities, get the proper regulatory rules in place, and align their operations for swift response to customers. If customers call to convert, utilities need to deliver new gas service, following the model of Amazon and other leading retailers.

- **Position for increased electric T&D investment:** Core future earnings may be lower than what Wall Street demands. The infrastructure is more than aging. Utilities must set the customer and regulatory stage to accelerate investment in the future. It is crucial that they act now to ensure a customer price path through operational and capital efficiency that will support more investment later.
- **Take the regulatory initiative – position to dominate, not just stay in the game:** Utilities have delivered big time to their customers and regulators. They need to tell their story! Regale the listener with facts about how great utility service is and how low utility bills really are. Continue to position the utility as the linchpin of the future. Be a leader with the state executive branch, the legislature, and big-city mayors. Position the utility to sit at the head of the table, not just to have a seat.
- **Develop a fresh approach to non-regulated activities and business models:** The last round of energy retail and wholesale deregulation went down in flames, capped off with the Enron fiasco. Utility after utility went back to basics, focused on regulated operations. The trend is continuing (see PPL, Duke, NiSource, etc.). If non-regulated earnings growth is needed, do not repeat the mistakes of the mid-1990s to early 2000s. Think differently and smartly. It is hard to compete with new entrants that do not make any money. Obtain enabling regulation. No copycats allowed: avoid embracing non-regulated initiatives if you do not have a snowball's chance to execute them effectively and profitably.
- **Focus on cost management to better earn allowed returns:** Look within first. The average utility does not earn its allowed return on equity. In 2014, the average return on equity was 8.1%. To earn their allowed returns, utilities need to reduce non-fuel operating and maintenance expenses about 10% annually. In general, most utilities could stand to improve their management performance. A 10% expense reduction is difficult to achieve and sustain but certainly would go a long way to improve future earnings. For many utilities, trying to hold expenses flat represents a good first step. The future business environment may require more.
- **Reconsider M&A, especially small acquisitions:** Future utility earnings (~3% +/- per year) may be lower than recent performance and less than future market expectations. Slow underlying demand growth plus lower-than-expected earnings strongly suggest further industry consolidation. We still have a lot of utilities in the US. Management teams will need to double down on acquisitions to fuel growth. Sure, go after the big ones if you can make the management, social issues and regulatory barriers work. But do not forget smaller acquisitions: There are more than 200 small utilities with \$30 BN of rate base and \$1.3 BN of annual earnings. Small may be beautiful, too!

Based on our experience, Oliver Wyman believes that utilities are a smart bet for the new grid. Our new analysis suggests that utilities will have a strong earnings platform, especially for the near term. Though it will be challenging, pulling the right management levers smartly should lead to outstanding financial performance. However, there may be real customer, competitive, or technological game changers out there that we – along with others – are clueless about now. We don't know the next Apple or Google or even Uber that will hit and stick in the energy business. Good utility management provides the best chance to change and succeed.

ABOUT OLIVER WYMAN

Oliver Wyman is a global leader in management consulting that combines deep industry knowledge with specialised expertise in strategy, operations, risk management, and organisation transformation.

Oliver Wyman's energy practice helps companies address strategic and operational challenges through proven, results-oriented approaches across all sectors of the market. The practice bases its on deep industry expertise across the energy sector, informed by decades of work with industry leaders. The energy team has worked with leading international and domestic oil and gas companies operating in the Americas, Europe, Asia, Africa, and the Middle East.

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