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The New Energy Consumer
Unleashing Business Value in a Digital World

accenture

Contents

Introduction

Energy providers around the globe are operating in a whole new world. Everything and everyone is increasingly connected. Energy consumers are embracing innovative technologies and taking on new roles as both buyers and sellers of energy. At the same time, a host of threats—from traditional competitors as well as new market entrants—are challenging utilities to become more innovative and more agile.

In *The New Energy Consumer: Unleashing Business Value in a Digital World*, Accenture shares the latest results of our multiyear New Energy Consumer research program. Our findings and analysis point to important shifts and highlight growing opportunities for forward-thinking energy providers. Above all, they reinforce the importance of the digitally engaged consumer and the need for energy providers to stake their claims in the digital energy ecosystem.

Forces shaping the energy marketplace

Electric, gas and water utilities are surrounded by change—from rapid advancements and widespread adoption of distributed generation and smart technologies to product innovation, game-changing partnerships and converging markets. At the same time, consumers' values and preferences continue to evolve. In the face of so much change, where will energy providers find new growth? How will they reduce costs? And what new approaches can they adopt to better serve consumers?

While opportunities and challenges vary by region, every provider needs to take deliberate action—embracing a bold vision and reformulating strategies for understanding, reaching and engaging energy consumers. In doing so, it is crucial to keep a keen eye on four key forces shaping energy markets around the world:

- Connected everything
- Personalized energy
- Asymmetric competition
- Shifting regulatory frameworks

Connected everything

From wearable computers to sensors in sports clothing, the physical world is coming online—altering how consumers live and work and driving new opportunities for energy providers.

Everyday objects are being embedded with sensors and combined with intuitive visualization, yielding new insights into consumer habits and behaviors. A growing number of consumers are filling their homes with connected devices and, in some cases, they may not even realize it. Kitchen appliances, thermostats, lights, locks, phones and televisions are becoming smarter and more interconnected. In fact, almost all energy consumers now use some type of connected device in their day-to-day lives. Doing so offers easy access to information, empowering consumers to make faster, better decisions on their own terms. With smart devices, consumers can choose between being highly informed and influential or adopting a simple, effortless set-and-forget mindset.

All the while, the digitization of everything is becoming a reality. The *2015 Accenture Technology Vision* cites organizations' unprecedented leap forward in the journey to becoming digital businesses.[1] Together, such organizations are creating a hyper-connected world—a "We Economy"—in which companies, consumers and everyday objects can digitally interact with each other.

The We Economy offers savvy companies new strategies to compete and win in a digital world. It also offers rich opportunities for businesses to collaborate with other players and consumers to place bets—on new products, services and experiences—that were not possible one or two years ago. Today, the We Economy can shape new markets at scale.

Connected everything has raised the bar, with consumers who now expect choice, control and convenience. Leading energy providers are leveraging digital capabilities to meet those expectations—while strengthening consumer engagement and delivering tailored experiences that ultimately support long-term consumer satisfaction. In the We Economy, winning energy providers will be those that think and act differently. No longer relying on a single idea, technology or organization to achieve success, they will position themselves at the center of the emerging digital energy ecosystem.

Personalized energy

As a broad spectrum of energy products and services becomes interconnected, consumers' awareness and needs are on the rise.

Ease of access and energy self-sufficiency are becoming top of mind for consumers—opening opportunities but also posing threats for energy providers.

Energy is reaching new levels of convenience for consumers and energy is becoming less centralized, with consumers tapping into non-traditional sources of energy. Evidence of personalized energy is everywhere—from the increasing consumer adoption of home generation solutions via solar panels and electric vehicles (EVs) combined with increasing battery storage to the emergence of microgrids. Some refer to this as the "democratization of energy" and anticipate that, in the future, the majority of energy will be generated in the home with only back-up needs and large industrial power being produced centrally.

With personalized, convenient energy top of mind, retailers are getting into the act: IKEA now offers a line of wireless charging furniture that lets consumers charge their smartphone by simply setting it on their desk,[2] while BirkSun has equipped backpacks with a solar panel for charging cell phones.[3] Energy consumers on the move in San Francisco and London have the ability to charge their smartphones wirelessly at their local Starbucks coffee shop.[4] There is also a new technology that can turn any window or sheet of glass into a photovoltaic (PV) solar cell—suggesting a not-too-distant world in which new homes and office buildings, new cars, and even new smartphones and tablets could generate their own energy.[5]

While that world may still be in the future, the current reality includes declining solar technology prices, new leasing and financing models to become power self-sufficient, and growing adoption among consumers. Solar can be found everywhere—across rooftops and awnings, as well as roadways and in EVs. As solar grows in popularity, prosumers (those who not only consume but also generate and sell energy) are gaining critical mass. At the same time, EVs are creating a new breed of prosumers who use energy services in various places and in varying quantities. From an energy provider's viewpoint, EVs represent an opportunity to increase load and revenue generation while extending reach beyond the home.

As digital technologies are increasingly applied to the energy infrastructure and prosumers adopt distributed generation and storage solutions, grid technologies will become increasingly more distributed. Utilities executives are expecting to see greater growth in the development of microgrids in the next five years. In 2014, the number of utilities executives expressing that view nearly doubled to 66 percent from 35 percent in the 2013 survey.[6] However, according to *The New Energy Consumer: Unleashing Business Value in a Digital World*, consumer knowledge of microgrids is low: two-thirds of consumers do not know what a microgrid is. Engaging prosumers to advance their knowledge and understanding of distributed energy resources will become increasingly important as these solutions are proliferating. With companies such as Alevo[7] offering battery back-up systems, Tesla's Powerwall Home Battery with 7kWh or 10kWh of storage, and the 100kWh Powerpack can only serve to accelerate energy storage adoption.[8]

Emerging platforms will likely facilitate direct transactions between energy consumers and distributed energy producers, such as homeowners with solar panels or farmers with wind turbines, who often generate more power than they need.

In much the same way that Airbnb's platform disrupted the hospitality industry by directly connecting hosts and travelers, platforms will enable neighbors to buy and sell power directly from each other. As more energy solutions emerge, consumers may shop around for the best deal on their electricity, especially if local generation offers a more compelling value proposition. Utilities have an opportunity to decide whether to participate and what role they will play in maintaining platforms or otherwise facilitating these local, peer-to-peer transactions.

For energy providers, the prosumer segment is quickly advancing from simply an interesting concept to a multifaceted reality. As more consumers become power generators and the traditional one-way flow of power becomes bi-directional, more complex and interactive relationships with consumers are required.

In short, all consumers have opportunities to play a more dominant, pivotal role in the energy ecosystem. They enjoy growing choice around the source of their electrons—wind, solar or even landfill generation—and, in competitive markets, they can select their energy provider. Personalized energy will continue changing how consumers interact with utilities and, ultimately, how a utility runs its business.

Asymmetric competition

What energy provider would have anticipated competing with Apple or Google for consumer mindshare around home energy management?

For core energy and new products and services, energy providers now face competition from all directions—startup digital retailers, telecom giants and prosumers, as well as incumbent utilities. In some markets, incumbent providers have adopted a strategy to pursue a dual-fuel bundle offering consumers extended products and services. However, with the cost of innovation at an all-time low, new players are entering both regulated and deregulated markets:

- In a bid to capture the behind-the-meter market, a growing list of blue-chip vendors, including Apple, ADT, Google (after it acquired Nest), Samsung, Verizon and Walmart, are partnering with incumbent hardware and software providers to develop home Internet-of-Things ecosystems to usher in a new phase of home energy management solutions.[9]

- A visit to Kickstarter[10] reveals numerous startup companies seeking funding for home entertainment/security systems, smart house keys and a hands-free Voice over IP (VoIP) call recorder—any of which could theoretically be connected to a utility-owned platform to deliver a simpler and better consumer experience.

- Pure digital competitors, such as Bounce Energy[11] in Texas and Powershop[12] in New Zealand, may be unencumbered by legacy investments and regulatory requirements with which traditional utilities must contend. Using a digital

platform, these new companies deliver a modern experience, offering energy packages consumers value—and their significantly above-average customer satisfaction scores validate their innovative approaches.

- Solar solution companies are offering compelling value propositions to consumers that may require energy providers to innovate to deliver renewable products and services in a new way, such as offering community-based solar services. The complexity of helping consumers understand their energy context will be compounded as more consumer-grade storage technologies become available.

- New entrants in some competitive markets are leveraging automated comparison of retail versus wholesale market prices to gain market share through robotic switching and collection switching services.

The playing field for these diverse competitors is far from level, and these differences in capabilities and constraints within the market epitomize asymmetric competition. Although utility incumbents have the edge when it comes to economies of scale and years of experience in refining energy delivery, digital energy startups benefit from agility and risk tolerance and may not have responsibility for energy delivery. They are also well positioned to take advantage of new technologies for a seamless consumer experience across digital channels.

By nature, digital startups benefit from the proverbial clean slate. Able to design internal operations and processes around consumer needs, they can choose where, when and how to automate transactional processes. In addition, as new energy retailers, they avoid many of the overhead costs borne by a traditional utility. This lower cost of entry has made it easier for digital energy retailers to enter the market. In the United Kingdom, for example, the number of retailers has been growing, with some playing the market by buying energy in the spot market and then passing those savings on to consumers. Admittedly, not every utility can be a pure digital retailer, but almost every provider can learn from how these retailers interact with their consumers.

In addition to threats from digital energy retailers, energy providers are now sparring with telecommunications giants, tech innovators and other competitors that would have been unthinkable a decade ago. In the quest for consumers, these new entrants are offering a variety of energy and home management products and services—and leveraging consumer information to provide valuable insights and recommendations. Apple's HomeKit[13] and Google's Nest[14] are currently vying to become the smart thermostat of choice. They are pursuing this market not because controlling a home's temperature is lucrative but because each wants to become the platform on which all of a consumer's in-home interactions occur.

In Europe, Deutsche Telekom is testing its Qivicon product[15]—an open platform intelligent home automation system that can unite products from a number of companies, including electricity suppliers and manufacturers of household appliances and consumer electronics, as well as producers of health-oriented solutions. The Qivicon platform creates a link between the various devices and functions that can then be accessed through an application on a smartphone, tablet or computer.

Asymmetric competition reflects a host of new and, in some cases, unexpected threats. For innovative energy providers, however, it also creates a market for new products and services.

Shifting regulatory frameworks

Around the world, regulatory frameworks are being rewritten to anticipate rapidly changing consumer and industry needs.

Regulatory bodies are facing continued pressure to confirm reliability, security of supply, energy efficiency, affordability and long-term market predictability. Among the key drivers of change: rising energy prices and higher consumer awareness; increased adoption of distributed energy resources and the integration of renewables; growing reliance on demand response; the needs of the modernized grid; and

infrastructure investment recovery. In response, many jurisdictions are driving fundamental change through retail market liberalization, alternative utility revenue models and performance-based remuneration. While each country has distinctive priorities, common challenges and opportunities exist around the implications of the new energy consumer.

In many markets, changing policies around price regulation, affordability and consumer information transparency are driving change. Competitive market structures are continuing to expand globally. The journey to retail competition underway in a number of countries (see Figure 1) is bringing a wave of change for consumers and energy providers alike.

Figure 1. State of global retail competitive electricity markets.

Degree of competition

Low ——————→ High   Moving to competitive market

Source: Accenture analysis.
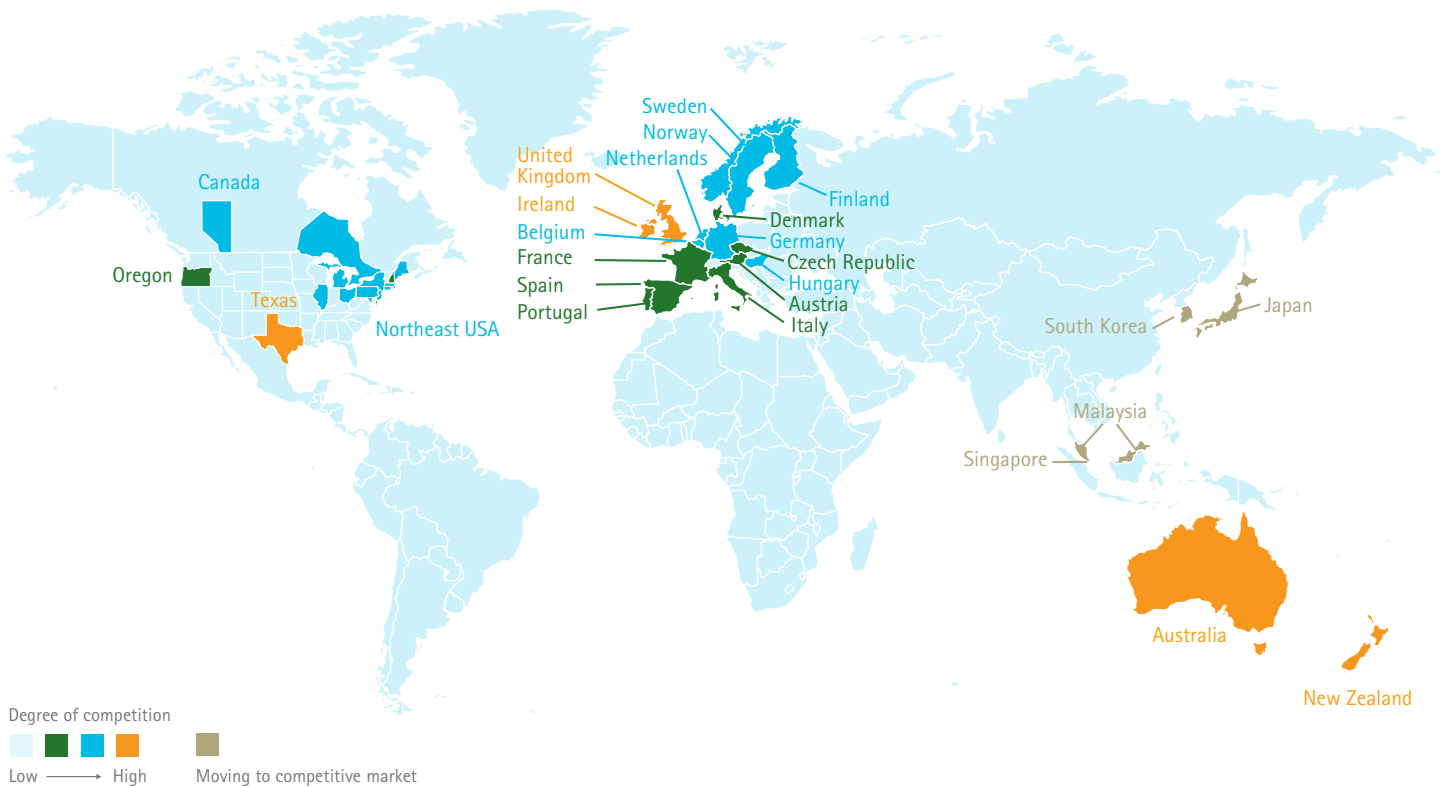
For some, the journey is already underway. For example, Portugal has been implementing its competitive market structure since 1995, and eliminated the regulated tariff to end consumers in 2013. For consumers with contracted power up to 10.35kVA, a transition period is in place through December 31, 2015.[16] Elements of consumer engagement are yet to be determined; for example, how quickly and to what degree prosumers will emerge, and what will drive consumers to implement energy-efficiency initiatives. However, the removal of the regulated tariff is consistent with a well-functioning retail market in which customers can benefit from competition and innovation.

While Japan is also ramping up its open, competitive retail market structure, it is much earlier in its journey. Japan is considering allowing residential and small and medium businesses (SMBs) to choose their gas suppliers by 2017,[17] as well as opening up electricity markets[18] in the hope of encouraging greener energy, reducing costs and preventing future power shortages. Japanese energy consumers have shown interest in finding ways to reduce household energy use, save money on their bills and buy power from 100-percent renewable sources. Deregulation will create opportunities for new providers to help customers meet these goals.

In the United Kingdom, the focus has recently been on long-term consumer value with the introduction of new market rules to simplify the choices offered to consumers and to increase price transparency. The goal is to encourage higher levels of consumer choice. Each of the six large incumbent energy providers may offer no more than four tariffs per fuel type and must inform consumers of the best deal. In addition, consumer churn or switching has increased in 2015 over previous years, with a larger percentage of customers who switched opting for smaller players.[19] This appears to be the result of the changes and the proliferation of comparison sites that are making information consistently more transparent to consumers.

Another interesting development in the United Kingdom is the evolution to principle-based regulation following a similar approach to the financial services industry. The regulator has introduced standards of conduct that require suppliers to treat their customers fairly. Energy providers are accountable for implementing the principle, embedding fair treatment of customers throughout their organizations.[20]

While there are many benefits to a competitive market model for consumers and providers, distributed energy resources and systems are fundamentally reshaping competitive and regulated markets. As technologies advance and their price points become more palatable for consumers, pressure on existing systems is increasing. Deutsche Bank estimates that rooftop solar will reach grid parity in all 50 states in the United States by 2016[21] and, by 2017, grid parity will be realized in 80 percent of global markets.[22] In response to rising consumer adoption, the speed and scale of regulatory change will influence the long-term value available to both customers and energy providers. Multiple markets around the globe are making fundamental regulatory changes, affecting business and recovery models.

In New York, regulators have undertaken the Reforming the Energy Vision (REV) initiative aimed at reorienting the electric industry and the ratemaking paradigm toward a consumer-centered approach that harnesses technology and markets.[23] The vision is to develop a "distributed system platform" to animate a market where distributed energy and traditional energy organizations can compete to promote system-wide efficiency and reliability, regardless of preferred energy source, and increase consumer knowledge of energy management.

Recently, the California Public Utilities Commission (CPUC) revisited the approach to plug-in electric vehicle (PEV) charging infrastructure within its jurisdiction. In December 2014, the CPUC endorsed an expanded role for the incumbent utilities in developing and supporting the PEV charging infrastructure. The intent is to encourage expansion of electric vehicle-related infrastructure and the widespread deployment and use of PEVs.[24] Further, Colorado recently introduced Bill 1250, which prioritizes developing a performance-based regulatory system that will drive innovation and promote economic development in a variety of technologies.[25]

As other jurisdictions grapple with emerging technology, renewable energy or approaches to electrifying rural areas, we continue to see regulatory interventions. For example, as Germany learns from its experiences undergoing an energy transition, it is now looking to reforms to protect consumers and further advance market innovation. Last year, the German government approved a sweeping change to its well-known green energy transformation to reduce subsidies for renewables and stem rising electricity prices. Under the plan, Germany plans to meet 80 percent of its energy needs through renewables, while producers will gradually have to sell their green energy competitively on the market rather than enjoying regulatory protection.[26]

Lastly, in response to the impact of rising retail prices, the advent of distributed energy and growing concerns around consumer protection, Australia has moved to change network pricing rules. The ultimate goal of the reform: network prices that better reflect the costs of providing network services to individual consumers. This move will likely allow consumers to make more informed decisions about how they want to use energy services and the technologies they invest in to help manage their consumption.[27]

Current regulatory activity demonstrates that both the pace of change and the approach will vary by jurisdiction. However, the power of the consumer to influence the energy marketplace is universal. More than ever, market structure developments are having profound implications on the energy provider's ability to maintain and enhance the consumer relationship, as well as the strategies and business models of the future. Leading energy providers are proactively engaging regulators and a host of stakeholders to help shape the energy ecosystem.

Moving forward

The We Economy, greater consumer choice and access, diverse competitive threats and market environments are radically shaping the energy marketplace today.

In architecting a future-forward strategy, every energy provider should consider not only the implications of these macro forces, but also the evolving values and preferences of each new energy consumer.

How can energy providers address changing consumer values and preferences? Unlocking the digital value of the new energy consumer is key. The sections that follow explore the ways in which energy providers can better understand and capture digital value. Opportunities for energy providers to extend the value proposition are also identified, including innovative offerings to engage energy prosumers and the growing potential of platform-based models in the digital energy ecosystem.

Unlocking the digital value of the new energy consumer

Digital is changing the nature of consumer engagement across the customer life cycle. Whether to educate consumers, sell new products, encourage self-service or create value with new services, digital must be considered as part of every initiative.

It is no secret that digital has transformed how consumers behave, learn, research and engage with companies. Digital continues to disrupt customer service delivery, as well as product and service development. Energy consumers are increasingly embracing digital on their own—going digital for customer service and, in competitive markets, for comparing and switching providers.

In some industries, the distinction between a digital consumer and a non-digital consumer no longer exists. Consumers have passed a tipping point of mass adoption of self-serve and digital engagement and yet, in this industry, energy providers may not yet be seeing consumers adopt digital at the same levels. Accenture's latest research shows that only 44 percent of consumers are currently digitally engaged (digitally engaged consumers are those who have interacted through digital channels over the past year). So why should energy providers further invest in capabilities to digitally engage consumers?

Our survey results show that digitally engaged energy consumers can unleash significantly more business value for energy providers than those who do not use digital channels (see Figure 2):
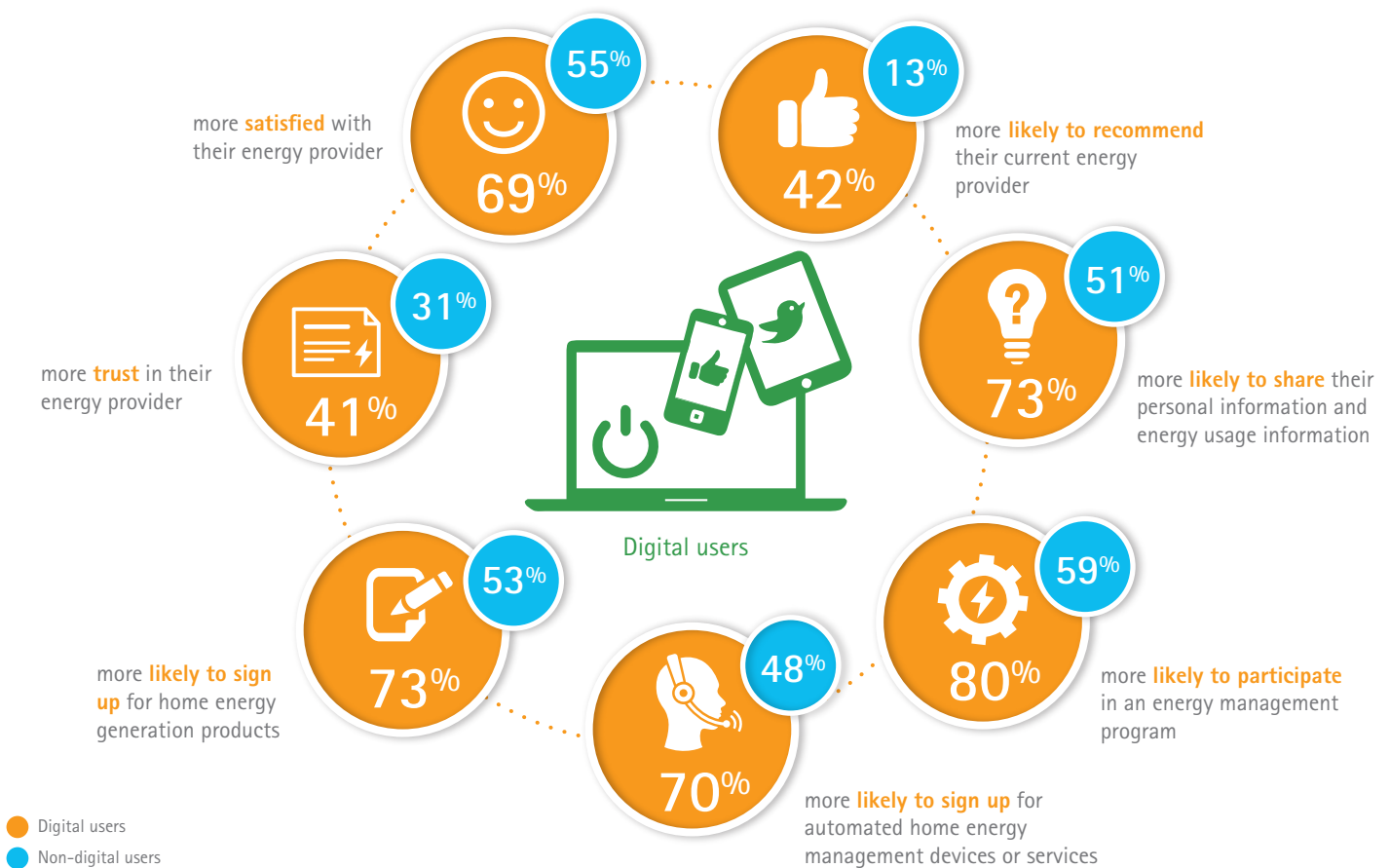
Higher trust. 41 percent of digital consumers state that they trust their energy provider to help them optimize their energy consumption, versus 31 percent of non-digital users.

Higher satisfaction. 69 percent of digital consumers indicate that they are satisfied with their energy provider—14 percentage points higher than those who do not use digital channels.

Higher likelihood to recommend. 42 percent of digital consumers indicate that they would be willing to recommend or promote their energy provider, compared to just 13 percent of non-digital users.

Higher likelihood to share personal information. Digital consumers are about 1.5 times more likely to share their personal or energy usage information than non-digital users.

Figure 2. The digitally engaged energy consumer unleashes more business value for energy providers.

more **satisfied** with their energy provider — 69% / 55%

more **likely to recommend** their current energy provider — 42% / 13%

more **trust** in their energy provider — 41% / 31%

more **likely to share** their personal information and energy usage information — 73% / 51%

more **likely to sign up** for home energy generation products — 73% / 53%

more **likely to sign up** for automated home energy management devices or services — 70% / 48%

more **likely to participate** in an energy management program — 80% / 59%

Digital users

● Digital users
● Non-digital users

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Higher likelihood to participate. 80 percent of digital consumers indicated they would participate in an energy management program, compared to 59 percent of non-digital users.

Higher likelihood to sign up for energy–related products and services. 70 percent of digital consumers indicated they would sign up for automated home energy management devices, compared to just 48 percent of non-digital consumers. Digital consumers are nearly 1.4 times more likely to sign up for home energy generation products compared to non-digital users.

Clearly, energy providers have much to gain from building a stronger digital relationship with consumers. Many providers have invested in improving website designs, developing mobile applications, building social media engagement and strengthening digital marketing capabilities. Yet, digital needs to be the engine of every business.
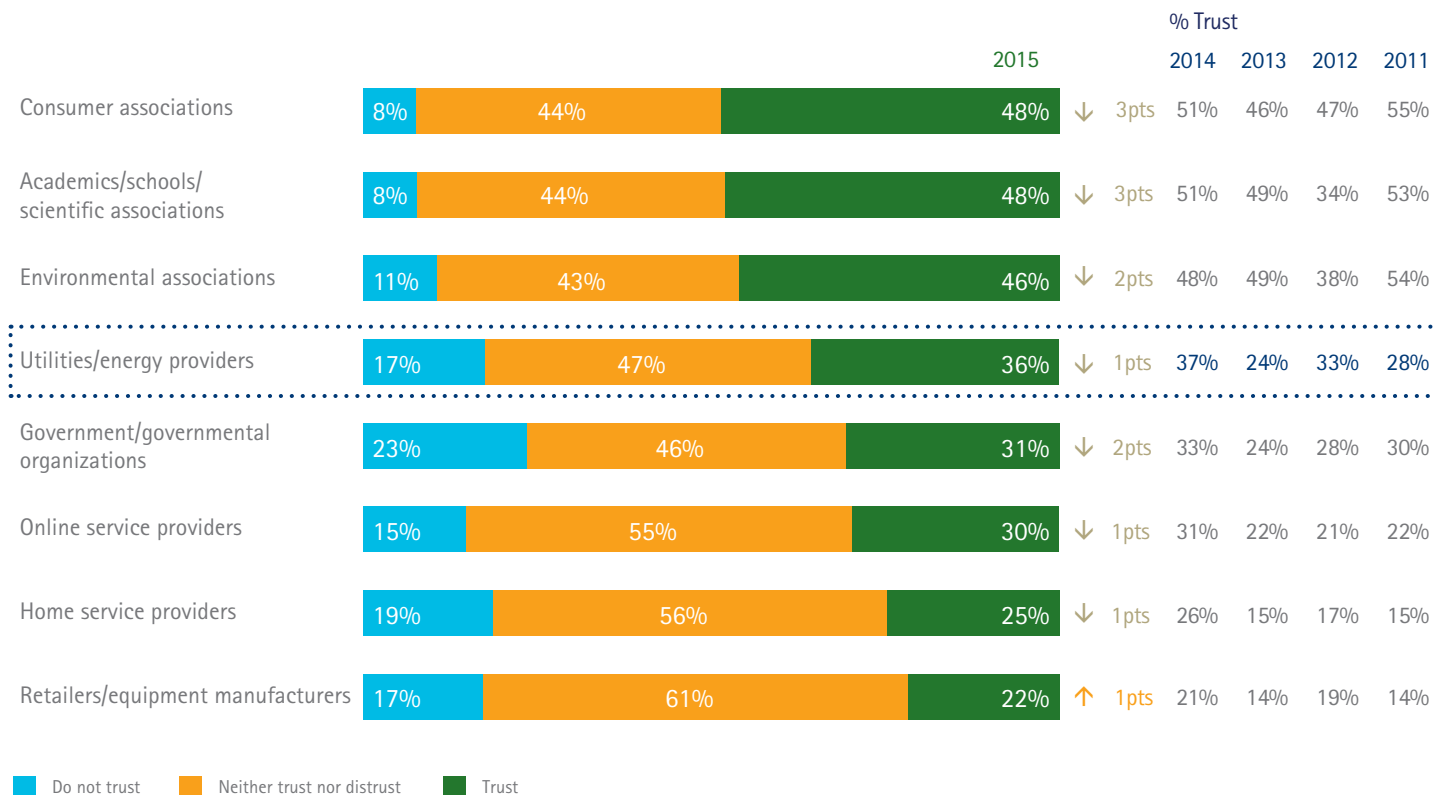
Now is the time for energy providers to take a strategic, systematic approach to transforming their operations— so they can unlock the value of digital energy consumers.

Trust is a must

With many energy providers redefining their role in consumers' lives and moving to the digital world, a foundation of consumer trust and satisfaction is increasingly paramount to success. Accenture's research shows that, overall, energy providers remain well-positioned in the minds of consumers as trusted advisors on optimized energy consumption (see Figure 3). As the energy ecosystem continues to expand and new products and services are introduced, the trust advantage can be a valuable asset that provides strategic advantage over new market entrants. Further, it positions energy providers as potential strategic partners for retailers, equipment manufacturers and other home service providers that have lower levels of consumer trust.

Figure 3. While the opportunity to improve consumer trust remains, utilities/energy providers are still better positioned than alternative providers.

What organizations do you trust to inform you about actions you can take to optimize your energy consumption?

	2015 Do not trust	2015 Neither	2015 Trust		Δ	2014	2013	2012	2011
Consumer associations	8%	44%	48%	↓	3pts	51%	46%	47%	55%
Academics/schools/ scientific associations	8%	44%	48%	↓	3pts	51%	49%	34%	53%
Environmental associations	11%	43%	46%	↓	2pts	48%	49%	38%	54%
Utilities/energy providers	17%	47%	36%	↓	1pts	37%	24%	33%	28%
Government/governmental organizations	23%	46%	31%	↓	2pts	33%	24%	28%	30%
Online service providers	15%	55%	30%	↓	1pts	31%	22%	21%	22%
Home service providers	19%	56%	25%	↓	1pts	26%	15%	17%	15%
Retailers/equipment manufacturers	17%	61%	22%	↑	1pts	21%	14%	19%	14%

% Trust

■ Do not trust   ■ Neither trust nor distrust   ■ Trust

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.
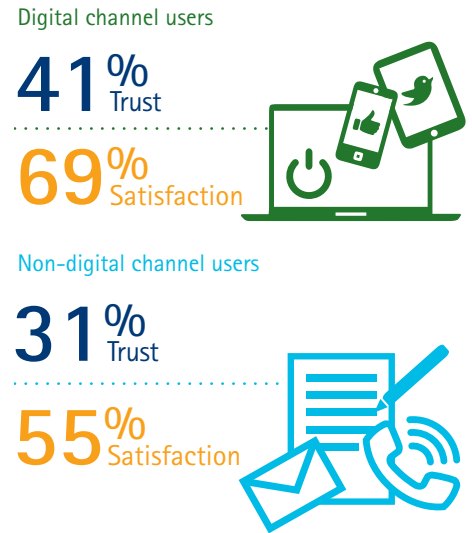
There is a marked difference in consumers' trust in their energy provider to inform them about actions they can take to optimize their energy consumption between competitive and non-competitive markets. In competitive markets, consumer trust was 28 percent whereas, in regulated markets, trust was 44 percent. Regardless of market structure, utilities and energy providers remain better positioned than alternative providers (see Figure 4).

What factors matter most to consumers in building trust with their energy provider? The vast majority of consumers surveyed indicated consistently getting the bill correct (92 percent), receiving reliable energy delivery (91 percent), and getting clear and easy-to-understand pricing information (91 percent) were the most important.[28]

Looking into customer satisfaction, 61 percent of consumers noted that they are satisfied with their energy provider. Trust and satisfaction are both significantly higher for digitally engaged consumers versus non-digital consumers (see Figure 5).

Trust and satisfaction are key components, no matter which strategy an energy provider pursues (for more information, see sidebar: "The four keys to digital trust" on page 18). By focusing on getting the basics right and eliminating areas of dissatisfaction, energy providers can establish a strong foundation for enhancing the customer relationship.
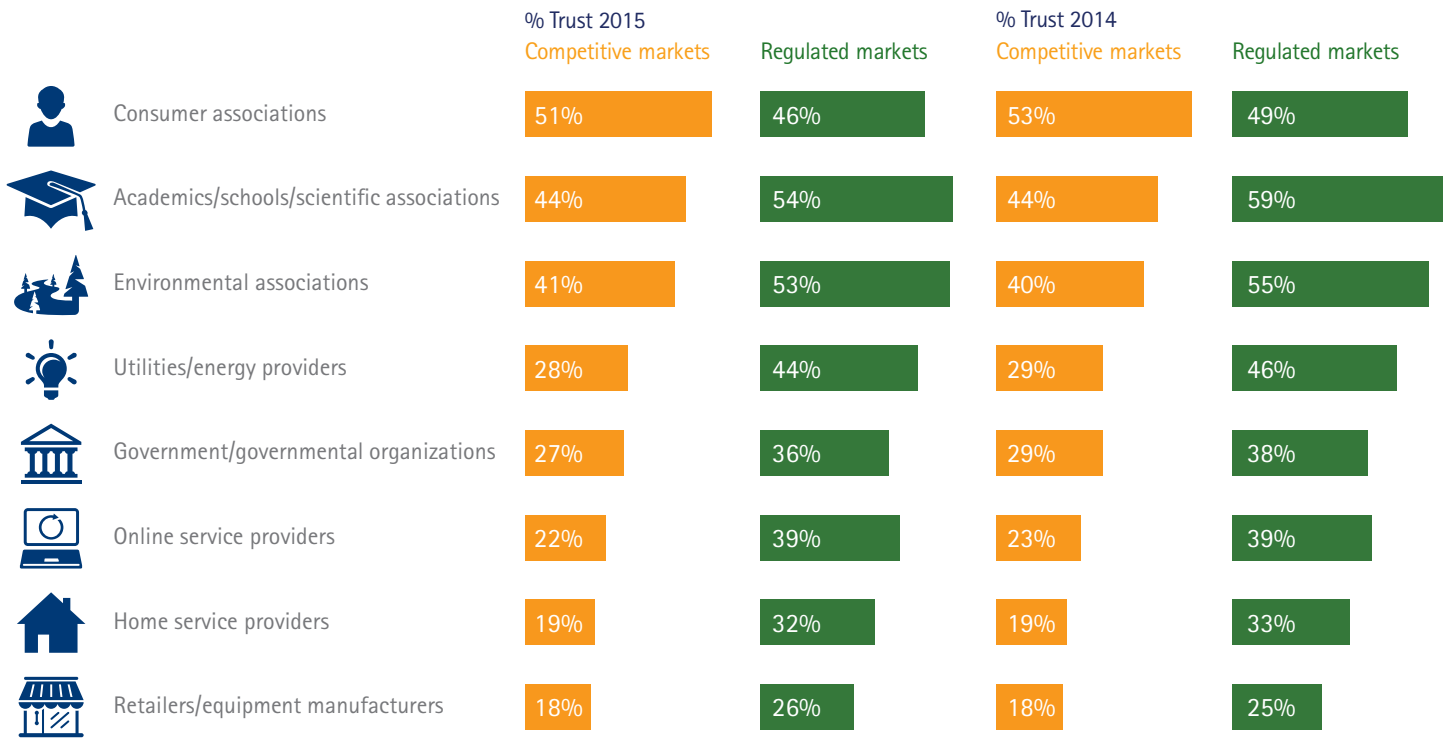
Figure 5. Digitally engaged consumers have more trust and are more satisfied with their energy providers.

Digital channel users

41% Trust

69% Satisfaction

Non-digital channel users

31% Trust

55% Satisfaction

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Figure 4. There is a marked difference in trust of utilities/energy providers across competitive and regulated markets.

What organizations do you trust to inform you about actions you can take to optimize your energy consumption?

	% Trust 2015 Competitive markets	Regulated markets	% Trust 2014 Competitive markets	Regulated markets
Consumer associations	51%	46%	53%	49%
Academics/schools/scientific associations	44%	54%	44%	59%
Environmental associations	41%	53%	40%	55%
Utilities/energy providers	28%	44%	29%	46%
Government/governmental organizations	27%	36%	29%	38%
Online service providers	22%	39%	23%	39%
Home service providers	19%	32%	19%	33%
Retailers/equipment manufacturers	18%	26%	18%	25%

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

The four keys to digital trust

For many companies—financial services, healthcare and energy providers—digital trust is central to the customer relationship. As consumers rapidly adopt new devices, unprecedented levels of personal information about consumers and their habits, preferences and households are available to businesses and their partners. The amount of information businesses can collect and leverage is exploding—magnifying the importance of digital trust.

Accenture defines digital trust as the confidence placed in an organization to collect, store and use the digital information of others in a manner that benefits and protects those to whom the information pertains. Increasingly, customer operations are the digital face to consumers. Energy providers' websites are portals for self-service and, in competitive markets, they are fast becoming the first stop for researching offers.

A breach of digital trust or a cybersecurity incident can quickly result in harmful business consequences—from brand erosion to consumer alienation and churn. As energy providers look to drive further digital self-service adoption and even create new businesses based on digital platforms, all four keys to digital trust—security, accountability, privacy/data control and benefit/value—should be on management's agenda (see Figure 6).

Figure 6. The four keys to digital trust.

Security

- Malware/virus protection
- Proactive data integrity/ hacking prevention
- Data permissions and user identity
- Data encryption standards
- Data access logs and key storage standards
- Data connections (VPN, SSL, etc.)
- Architecting resiliency

Privacy/Data Control

- Company data policies
- Third-party data sharing
- M2M data sharing
- Regional cultural expectations
- Government access

The Four Keys to Digital Trust

Accountability

- Self-governance
- Reactive data integrity/ legal resource
- Global and regional data standards
- Government requisition

Benefit/Value

- Customer value
- Services in-kind
- Revenue
- Brand value/loyalty
- Customer service

Source: The Four Keys to Digital Trust, Accenture, 2014.

Data privacy and security

Digital channels are just one aspect of the shifting digital landscape. Smart meters and smart grid technologies are digitizing supply and distribution, providing vast amounts of customer-related usage information. Consumers, regulators and governments need to feel confident that customer information is safe—particularly because smart meter and connected home data often provides unprecedented insight into consumers' personal lives. With such data, analysts can determine the number of people in the home and how they behave when they are there.

However, consumers are willing to share personal information if they trust the energy provider's privacy and security standards and if they see value in sharing the information. Sixty-five percent of consumers are confident that their energy provider protects their personal and energy usage data and information (see Figure 7). That level of trust is relatively high, considering that only 45 percent of consumers have confidence in the security of their personal data when shared across providers.[29]

In addition to further increasing consumers' confidence in their data protection and security, energy providers have the chance to begin testing and using this data—identifying new ways to deliver value for themselves and for consumers. Data monetization is a growing industry. As just one example, Accenture estimated that while the global market for monetization of data by telecom in just a handful of applications (retail audits, location-based advertising and card fraud, among others) was $22 billion in 2013, it could reach $37 billion in 2015.[30]

Figure 7. Energy providers have an opportunity to enhance consumers' confidence in data privacy and security.

How confident are you that your energy provider secures and protects your personal data and information on your energy usage?
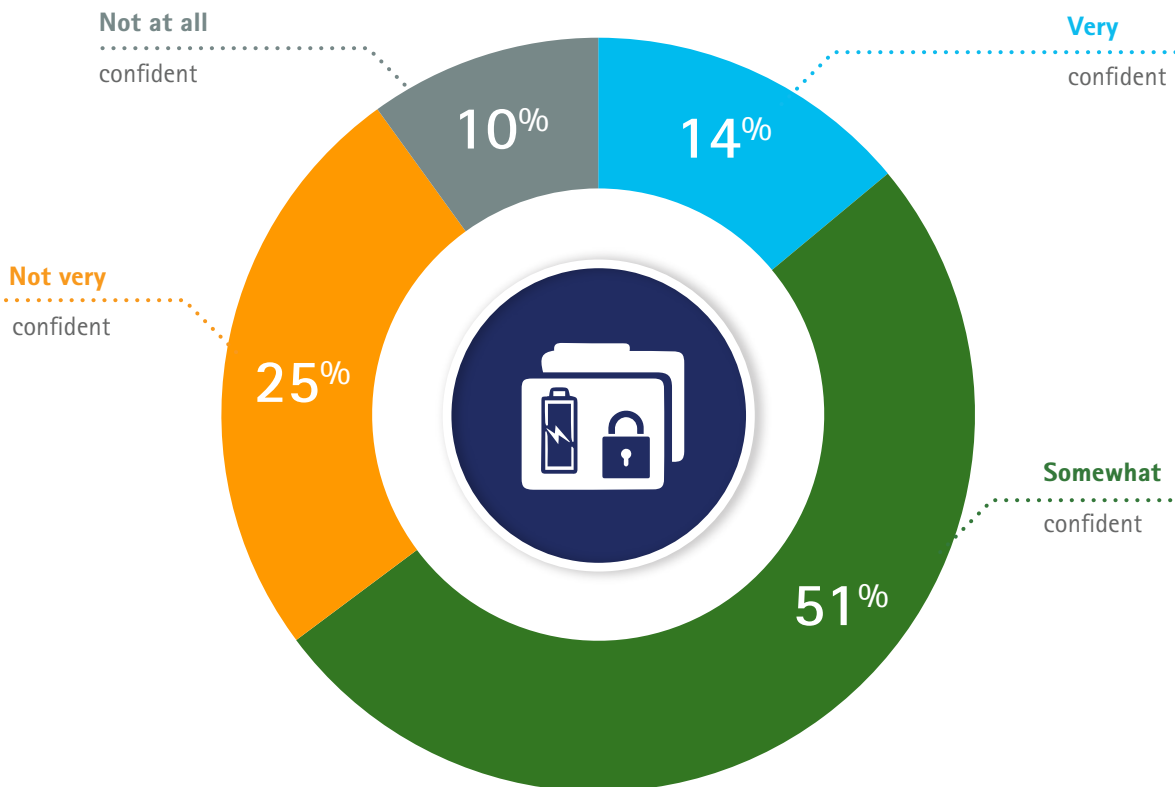
Not at all confident — 10%
Very confident — 14%
Not very confident — 25%
Somewhat confident — 51%

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Interestingly, our 2015 survey revealed that digital consumers are more comfortable sharing their personal data and have a greater degree of confidence in their energy provider's ability to safeguard their data. About three-quarters of digital consumers indicate that they are confident that their energy provider secures and protects their data and would allow that data to be shared with third parties (primarily with permission). By contrast, only a little more than half of non-digital energy consumers express that sentiment (see Figure 8).

As consumers become more digitally engaged, there may be growing opportunities to leverage customer data. To comply with regulations while building trust with consumers, energy providers need to be very transparent about how they are using consumer data and whether and how that data will be shared with third-party providers.

Energy providers can put the decision of sharing information back into the hands of consumers with simple, convenient approaches. For example, San Diego Gas & Electric® (SDG&E®) has more than 15 certified third parties that are part of its Green Button Connect My Data program. Through the program, residential and business customers can authorize SDG&E to share their usage information with specified third parties on an ongoing basis. Some of these third parties charge a fee for value-added services, such as energy audits or analytics, while others are free.[31]

As consumers—especially those who are digitally engaged—become more comfortable sharing their energy-related data with third parties, energy providers that get bogged down in the data privacy debate may miss opportunities. Google, through the Nest Learning Thermostat, is gathering a wealth of home-energy and other behavioral information. To create and capture value over the long term, energy providers need to stop debating and start formulating a deliberate and proactive data and analytics strategy.

Figure 8. Digitally engaged energy consumers are more confident about their energy provider's ability to secure and protect their data and more willing to share their information.
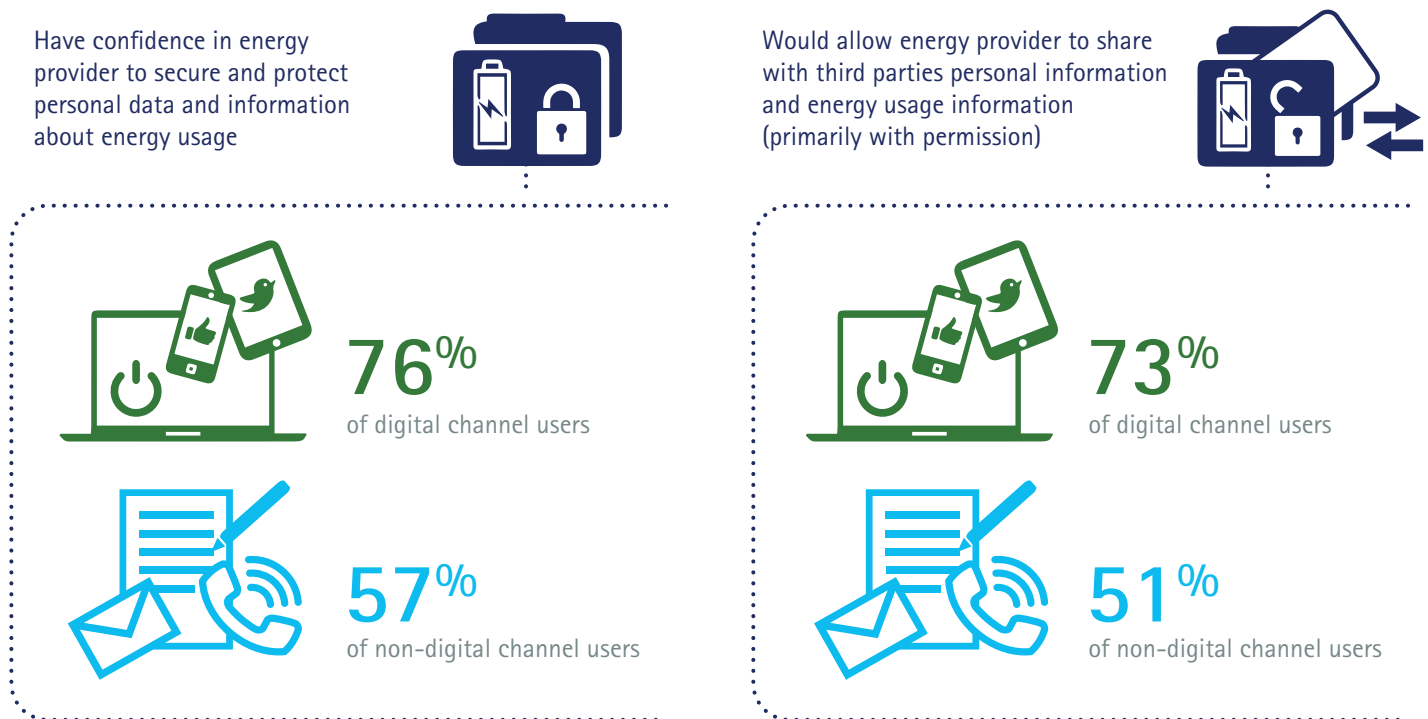
Have confidence in energy provider to secure and protect personal data and information about energy usage

76%
of digital channel users

57%
of non-digital channel users

Would allow energy provider to share with third parties personal information and energy usage information (primarily with permission)

73%
of digital channel users

51%
of non-digital channel users

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Service design is a new critical capability

As energy providers look to create more enticing digital experiences—those that will drive stickiness of current digital consumers and attract new consumers—they need to reframe the problems and reimagine the possibilities. One viable approach is service design. Service design embraces a holistic view of problems and objectives that considers the situation, context, business objectives and consumer behaviors to redesign how consumers interact with the world around them. It yields digital experiences that are simple, innovative and empowering for consumers.

When it comes to engaging digital consumers, design is a critical capability. Well-designed experiences go beyond enhancing consumer engagement; they actually simplify by anticipating services and experiences for consumers and energy providers alike. For example, Internet television network Netflix used micro data to predict that the show *House of Cards* would be successful before they started filming it.[32]

Accenture conducted a pilot with a large telecommunications company to effectively resolve customer inquiries through a digital assistant that combines live monitoring, artificial intelligence and automation to optimize customer interaction across channels. Live agents supervise and collaborate with robots—which handle the majority of routine interactions—only

intervening opportunistically or as needed. Combining humans and automation resulted in more than 80 percent of inquiries resolved online, and employee engagement and satisfaction increased as their focus shifted to high-value, non-repetitive customer interactions.[33]

To date, typical approaches to digital user experience, system design and development have reinforced a current state and inward-looking mindset defined by today's processes, systems and operations. The No. 1 reason customers would want to use their energy provider's digital channels is quick, convenient service. Yet, 41 percent of consumers still believe the digital experience with their energy provider is more difficult than with their other service providers, with younger consumers more likely to have that perception (see Figure 9).

Figure 9. Energy providers have an opportunity to improve consumers' digital experience compared to other providers.

When considering Web and mobile interactions with your energy provider, do you believe your digital experience with your energy provider is more difficult than interacting with other types of providers (e.g., telecommunications, retailers, cable providers)?

41% of consumers believe their digital experience with their energy providers **is more difficult** than with other types of providers

48% 18–24 years

52% 25–34 years

38% 35–54 years

21% 55+ years
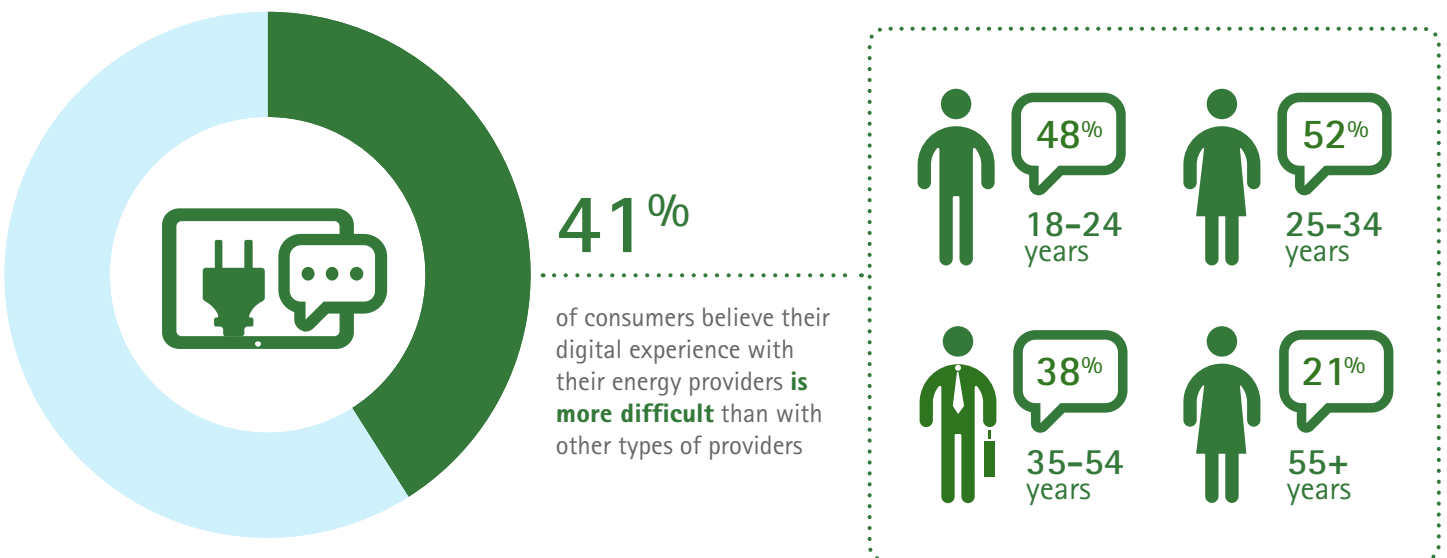
Base: All respondents who interacted with their energy provider through online portal/website or mobile application over the past year.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Leading providers will move to a progressive service design experience, one that begins where the consumer starts and leads them logically through the various methods of service available: online, social, mobile, voice and in-person. Winning digital brands will seek to bridge the gaps between experiences, services, devices and places. Such gaps cannot be avoided, but they can be managed more effectively through scalable platforms.

For evidence of the power of service design, consider Scandinavian mobile operator 3. The company engaged Fjord to help increase self-service adoption and improve customer satisfaction by helping consumers truly understand their bills. To that end, 3 used a service design approach to develop a mobile application that reinvented how its customers view their mobile phone usage and bills (for more on this approach, see sidebar: "Putting design at the heart of your digital business").

Recognizing that phones are all about connection with family and friends, the app offers a view of recent social history, a dynamic phonebook of favorite friends, a view of typical daily usage, and engaging visualizations of the bill.

This breakthrough innovation has led to significant customer adoption, higher engagement (with 70 percent of customers using the app monthly) and lower call volumes (half of users report calling customer support less often because of the app).[34]

Whether energy providers want to engage digitally oriented consumers or wish to increase digital adoption, digital service design is a core capability that transcends traditional channel strategy (for an example, see sidebar: "Future-proofing a retail energy business").

Putting design at the heart of your digital business

Fjord, a design agency that is part of Accenture Interactive, believes that effective digital design services are essential in this era of the digital transformation of everything. To meet ever-growing consumer demands, energy providers will benefit from an emotional, customer-centered approach combined with rational business analysis and underpinned by technology and organizational transformation.

The *2015 Trends Impacting Design & Innovation* report, Fjord's annual edition, highlights the impact of digital on the real world and explores how digital is shaping both consumer expectations and service design.

It also distills Accenture's thinking on nine core ideas and trends aimed at provoking, informing, inspiring and, above all, providing actionable insight.

Future-proofing a retail energy business

New Zealand's Powershop claims to be the world's first retail online energy market.[35] When launched in 2009, the energy retailer set out to establish a profitable new business model—one that would future-proof it against disruptive market forces, including the risks of new entrants, inevitable and ongoing technology change, and intensifying regulatory pressures.

Leveraging a smartphone app, analytics and a strong brand, Powershop is winning energy consumers not only in New Zealand, but also in the highly competitive Australian retail market. Powershop recognizes that to capitalize on commodity sales, it needs to be responsive to the needs and values of its consumer base. From their smartphones, customers can monitor home energy consumption, be notified when a consumption spike occurs and choose the source of their electricity. Sources include alternative energy projects such as wind, solar or even sugarcane processing and landfill generation.

Powershop's social media strategy is designed with a primary focus on customer choice, convenience and control. All of its social media channels, including Facebook and Twitter, offer consumers effortless access and support, making it easy to do business with the company. Powershop also uses its social media channels to build its fun and quirky personality and brand.

Customers can also take advantage of energy specials, such as energy that is discounted for a period of time or a monetary incentive for recommending Powershop to friends. These specials are not emailed to consumers; instead, they are shared publicly on social media. This reflects the company's preference to engage consumers in a two-way conversation and incent them to use social media by rewarding them for their "like" or "follow" actions. The retailer is also exploring the potential to use its platform to feature quasi-crowdfunding programs, where consumers could invest in energy projects to offset future energy costs.

Powershop's brand and digital campaigns are disruptive, relevant and entertaining, turning many apathetic consumers into passionate followers. These digital consumer-centric capabilities and offerings have fueled Powershop's success in acquiring and retaining consumers.

Mobile on the move

As energy providers work to transform the digital consumer experience, mobility remains central to the digital landscape. Smartphones have become nearly ubiquitous across geographies and consumer segments. *The Accenture Digital Consumer Tech Survey 2014* found that, globally, 69 percent of consumers own a smartphone, and more than half (52 percent) plan to buy a new smartphone in the next 12 months.[36] The dramatic growth in mobility adoption—particularly of smartphones—means that consumers now consider anytime, anywhere access as a basic expectation. What's more, satisfaction with digital experiences is increasingly defined by what consumers can or cannot do through their mobile devices.
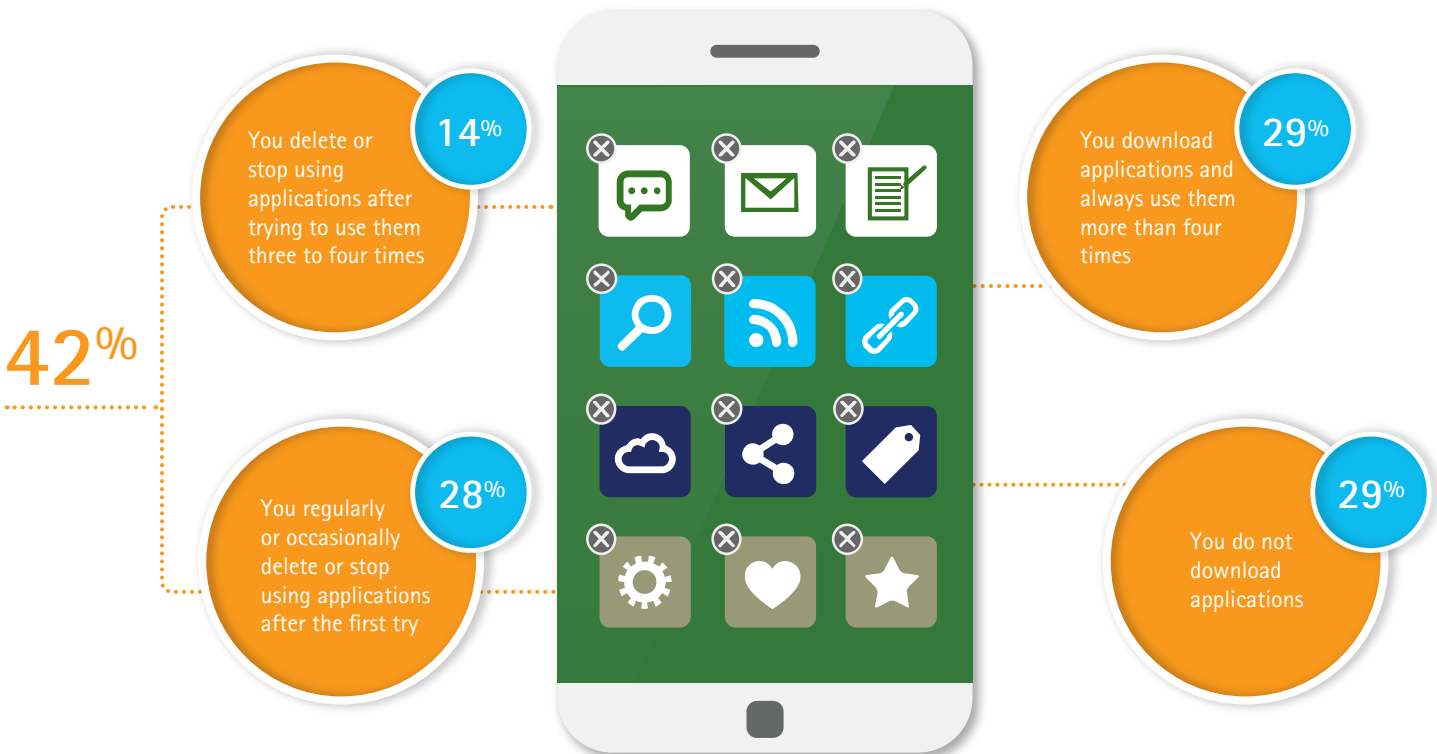
Of course, mobility also creates an extremely comparative experience. With just the swipe of a finger, consumers can shift between mobile websites or applications. Energy provider apps live alongside banking apps that have simplified nearly every routine transaction. In addition to viewing account balances and transferring funds to different accounts or people, consumers can snap pictures of checks to deposit them. They also can set savings targets and monitor progress, as well as make appointments with bank employees for more complex interactions. Consumers increasingly expect that same level of convenience and ease from all providers. The bar for mobile experiences will continue to rise, with a recent Accenture C-suite survey revealing that mobility is the top area of digital focus among cross-industry executives.[37]

In the utilities industry, the potential for mobility has not gone unnoticed. The number of providers with mobile-enabled websites and mobile applications has grown exponentially in recent years. Some providers have achieved considerable success, particularly in geographies where storms and other dramatic weather events have paired well with mobile outage capabilities.

In many situations, however, energy providers face a battle for share of screen. In the United States, for example, consumers spend more than 30 hours a month using phone apps and use, on average, 27 different apps each month.[38] Standing out in this digital ecosystem is no easy task—and our research shows that consumers are quick and unforgiving in their judgment of mobile applications. In fact, 42 percent of consumers say they routinely delete or stop using mobile applications after just a few tries (see Figure 10).

Figure 10. Getting the mobile app experience right is critical.

Which of the following best describes your use of mobile applications?

42%

You delete or stop using applications after trying to use them three to four times — **14%**

You regularly or occasionally delete or stop using applications after the first try — **28%**

You download applications and always use them more than four times — **29%**

You do not download applications — **29%**

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

The top two reasons are related to functionality issues (see Figure 11). Consumers expect energy providers to seamlessly deliver the appropriate functionality in a way that is simple, intuitive and very responsive. Getting the mobile app experience right the first time is critical.

While energy providers may be inclined to take a wait-and-see or piecemeal approach to mobility, our research suggests this approach is becoming risky, as consumers' interest in mobility has reached a tipping point. Sixty percent of energy consumers say they would use a simple and intuitive mobile app from their energy provider. More specifically, billing and outage capabilities top consumers' list of expectations, followed closely by energy usage information (see Figure 12).

Consumers expect their energy provider to deliver a personalized experience that helps them in some way. That expectation has been shaped by consumers' daily experiences with other industries—including health bands and fitness monitors for tracking and improving health; banking apps that monitor financial goals and monitor progress; and music streaming services, such as Pandora,[39] which learns an individual's preferences and produces playlists based on those insights. In our latest research, 62 percent of consumers said they would allow their utility's mobile application to leverage their location information via GPS for value-added services. Specifically, they would support such usage for reporting or receiving outage notifications and updates, identifying the closest payment
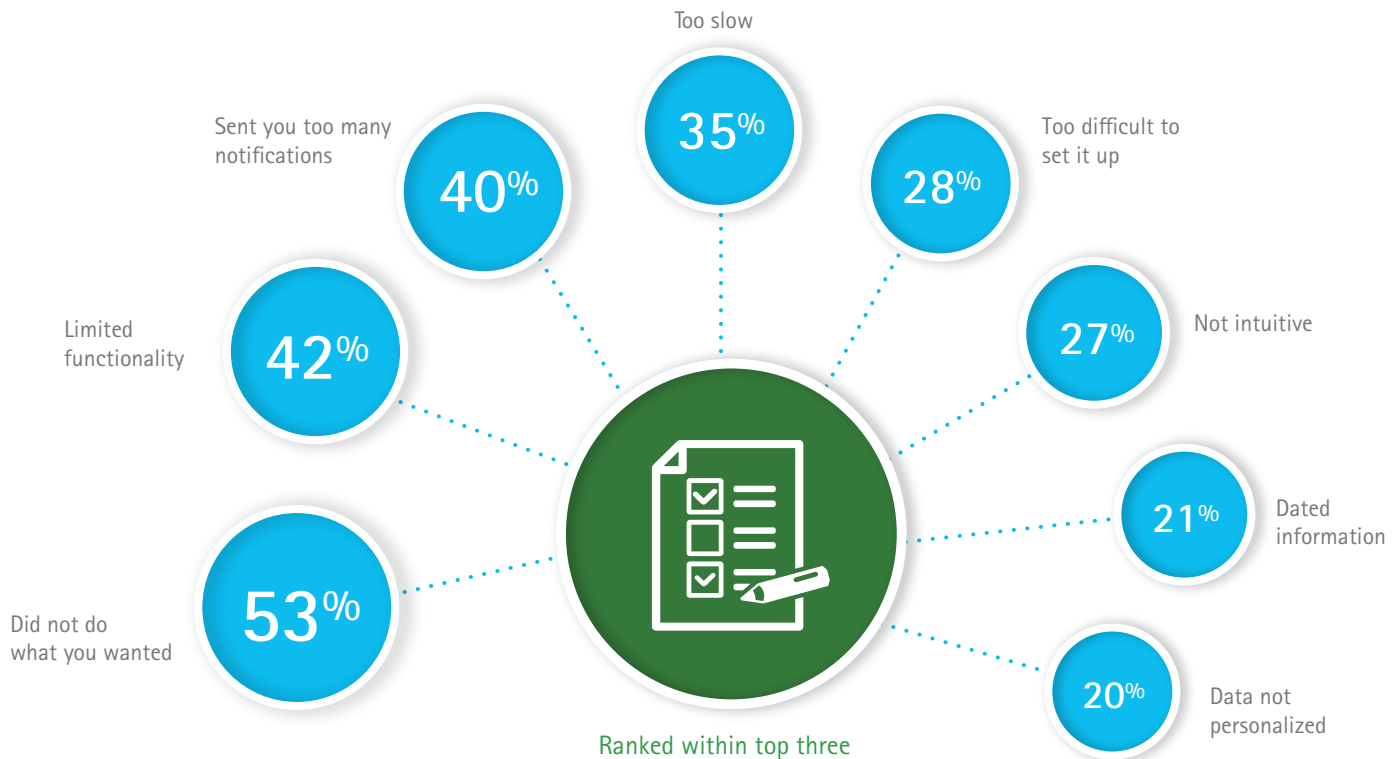
center, and receiving retail promotions and coupons for energy-related products and services while shopping.

As mobile apps continue to proliferate, the issue of consumers' mobile real estate becomes a consideration. Successful mobile app designers not only consider the implications of adding real estate, but also determine how the wider ecosystem would work with an addition. Providers also have the ability to offer mobile solutions across the spectrum such as responsive Web, or leveraging social apps to custom apps.

Mobility can enable new value and help redefine the energy provider value proposition. The key is making sure that consumers are able to successfully address their needs.

Figure 11. A wide range of mobile dissatisfiers need to be addressed.

Usually, what are the main reasons for deleting or not using an application after the first try?

Ranked within top three

- Sent you too many notifications — 40%
- Too slow — 35%
- Too difficult to set it up — 28%
- Not intuitive — 27%
- Limited functionality — 42%
- Dated information — 21%
- Did not do what you wanted — 53%
- Data not personalized — 20%

Social @ scale

Energy providers have noticed the growing power of social networks. In mass outages and natural disasters, social networks have become the primary vehicle for customer communication and message broadcasting. Social media also has become an integral part of public relations, corporate communications and branding. However, energy providers continue to work to develop a holistic approach that delivers tangible benefits.

Social can be leveraged as a platform for engaging consumers, gathering data and driving new revenue. American Express has pioneered several successful online initiatives that monetized the features of
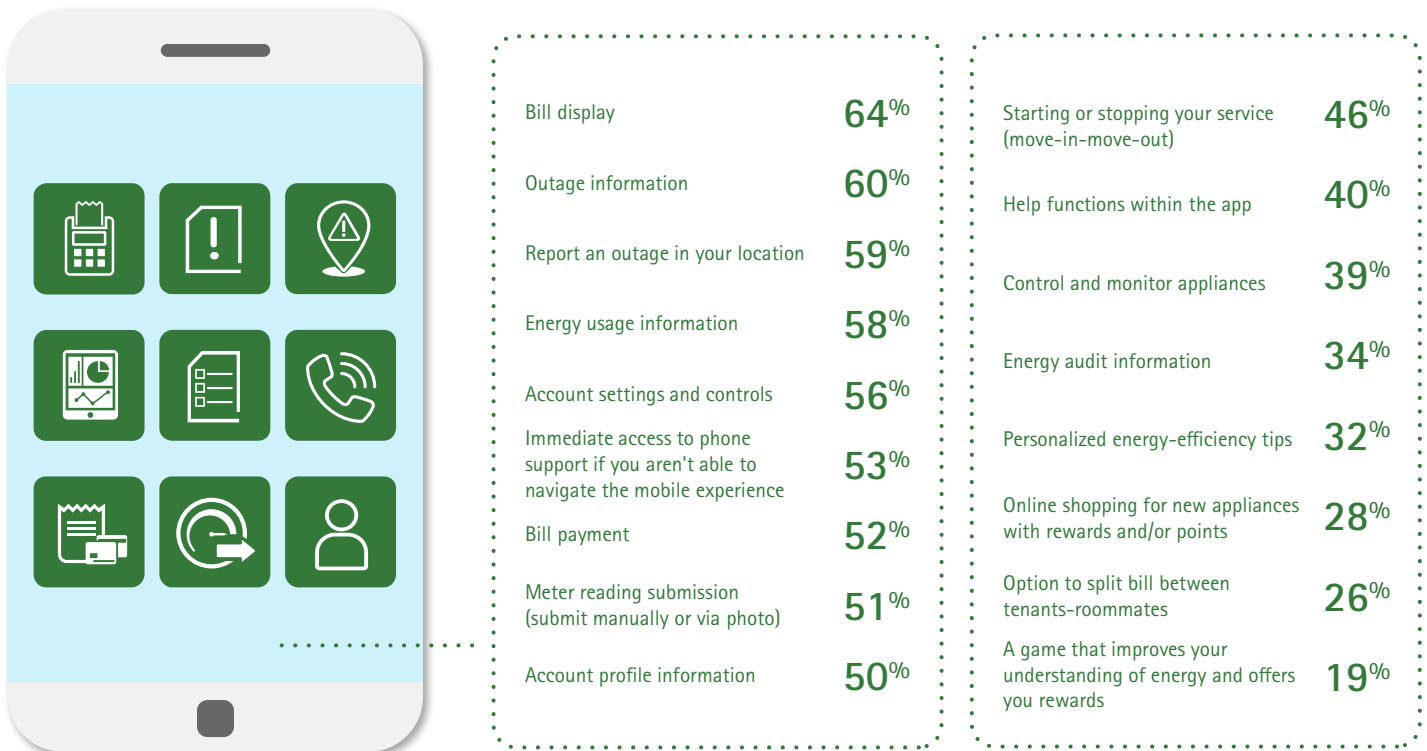
social media. They included discounts for location check-ins via Foursquare, as well as discounts through Facebook.[40] Texas-based Bounce Energy has taken a similar approach, using Facebook and Twitter as core customer acquisition channels. In addition to special offers for followers, Bounce maintains an ambassador program that rewards consumers for sharing corporate marketing content.[41]

Importantly, social media is not just about marketing. It also can be a valuable mechanism for gathering consumer feedback. Energy providers have largely embraced social listening as a way to judge sentiment and identify early warnings of media and customer service issues.

Social networks can also be a vehicle for crowdsourcing ideas. Over a one-year period, ComEd ran a social media campaign to help redesign its bill. It created a Facebook app to allow customers to provide feedback on potential designs. When it launched the new bill, the entire journey was driven through social channels.[42]

Figure 12. Consumers prioritize bill display and outage information as "must haves" for mobile apps.

Which features or functionalities would you expect when considering using a mobile application to interact with your energy provider?

Feature	%
Bill display	64%
Outage information	60%
Report an outage in your location	59%
Energy usage information	58%
Account settings and controls	56%
Immediate access to phone support if you aren't able to navigate the mobile experience	53%
Bill payment	52%
Meter reading submission (submit manually or via photo)	51%
Account profile information	50%

Feature	%
Starting or stopping your service (move-in-move-out)	46%
Help functions within the app	40%
Control and monitor appliances	39%
Energy audit information	34%
Personalized energy-efficiency tips	32%
Online shopping for new appliances with rewards and/or points	28%
Option to split bill between tenants-roommates	26%
A game that improves your understanding of energy and offers you rewards	19%

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Such social programs will become increasingly important to engaging energy consumers. Accenture research shows that the number of consumers interacting with their energy providers through social media is set to double in the next two years (see Figure 13).

For consumers, social is becoming another channel for learning about products and services and receiving customer service. Energy providers need to approach these networks accordingly. Success hinges on understanding the relevant social audience, mapping customer needs to a social experience the organization can deliver and, most importantly, confirming the organization has the appropriate capabilities to execute. Successful energy providers will confirm that social monitoring reports are not treated as interesting reading. Instead, they will deliver such reports—along with actionable insights—to stakeholders across the organization. In addition, they will treat socially-based service not as a side job, but as an integrated channel with tracking and performance monitoring. And they will approach social marketing not as an afterthought, but as a central element in planning and designing every campaign.
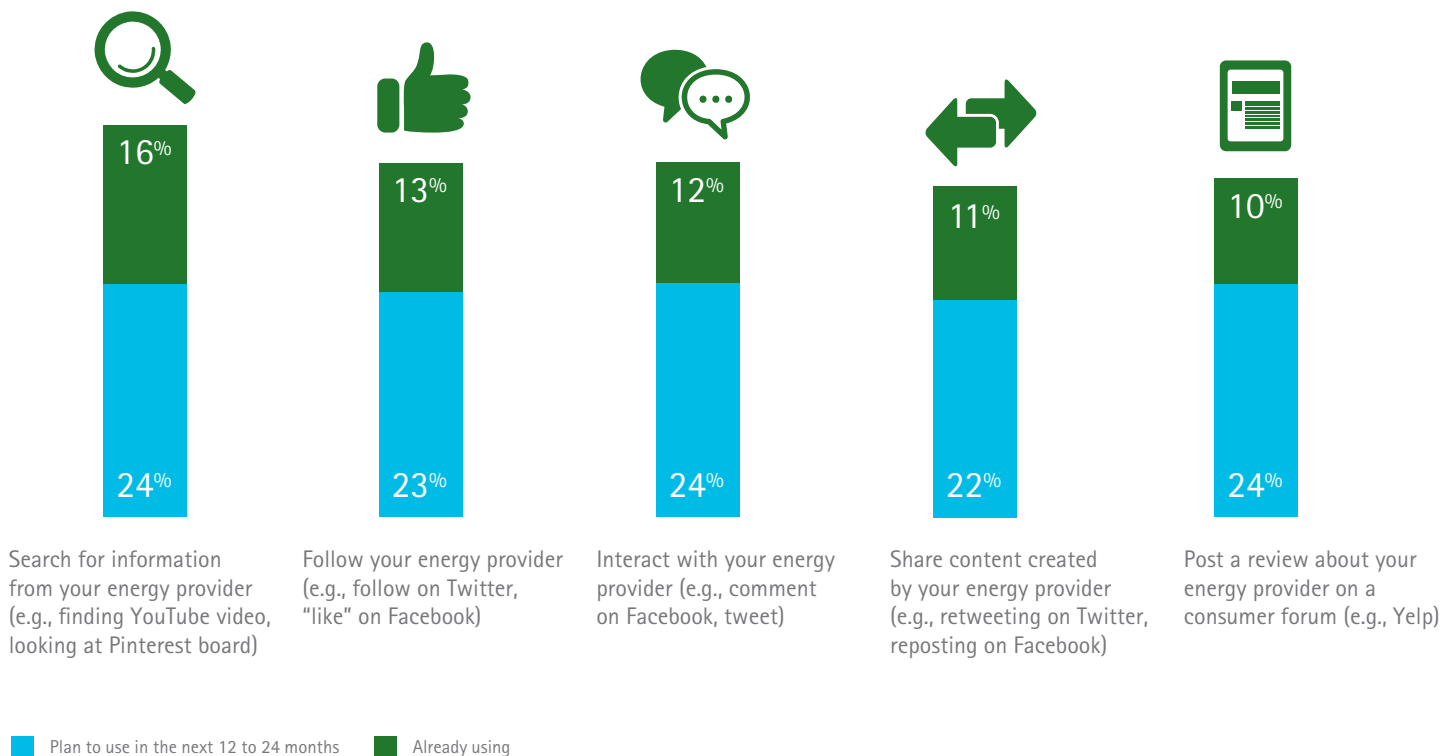
With this integrated approach, energy providers can reap the benefits of social—and may even be able to do so without significant additional cost or processes.

Creating digital dividends

Even with progress to date, energy providers have room to improve the digital experience—and now is the time to accelerate digital adoption. As energy providers seek to strengthen and expand digital consumer engagement, they will need to change the fundamentals of the digital experience, from building digital trust to designing services to integrating digital experiences. Doing so will not only unlock value from current business models, but also unleash opportunities to offer new products and services.

Figure 13. Consumers using social media in the next two years could double.

Are you already using or do you plan to use your energy provider's social media (e.g., Facebook, Twitter, blogs, discussion forums) for any of the following actions?

16%	13%	12%	11%	10%
24%	23%	24%	22%	24%

Search for information from your energy provider (e.g., finding YouTube video, looking at Pinterest board)

Follow your energy provider (e.g., follow on Twitter, "like" on Facebook)

Interact with your energy provider (e.g., comment on Facebook, tweet)

Share content created by your energy provider (e.g., retweeting on Twitter, reposting on Facebook)

Post a review about your energy provider on a consumer forum (e.g., Yelp)

■ Plan to use in the next 12 to 24 months ■ Already using

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Extending the value proposition

As adoption of rooftop solar and other distributed generation technologies increases, consumers' knowledge and interest in home energy management solutions is on the rise. Energy providers have the opportunity to forge new paths to value by expanding their portfolio of products and services.
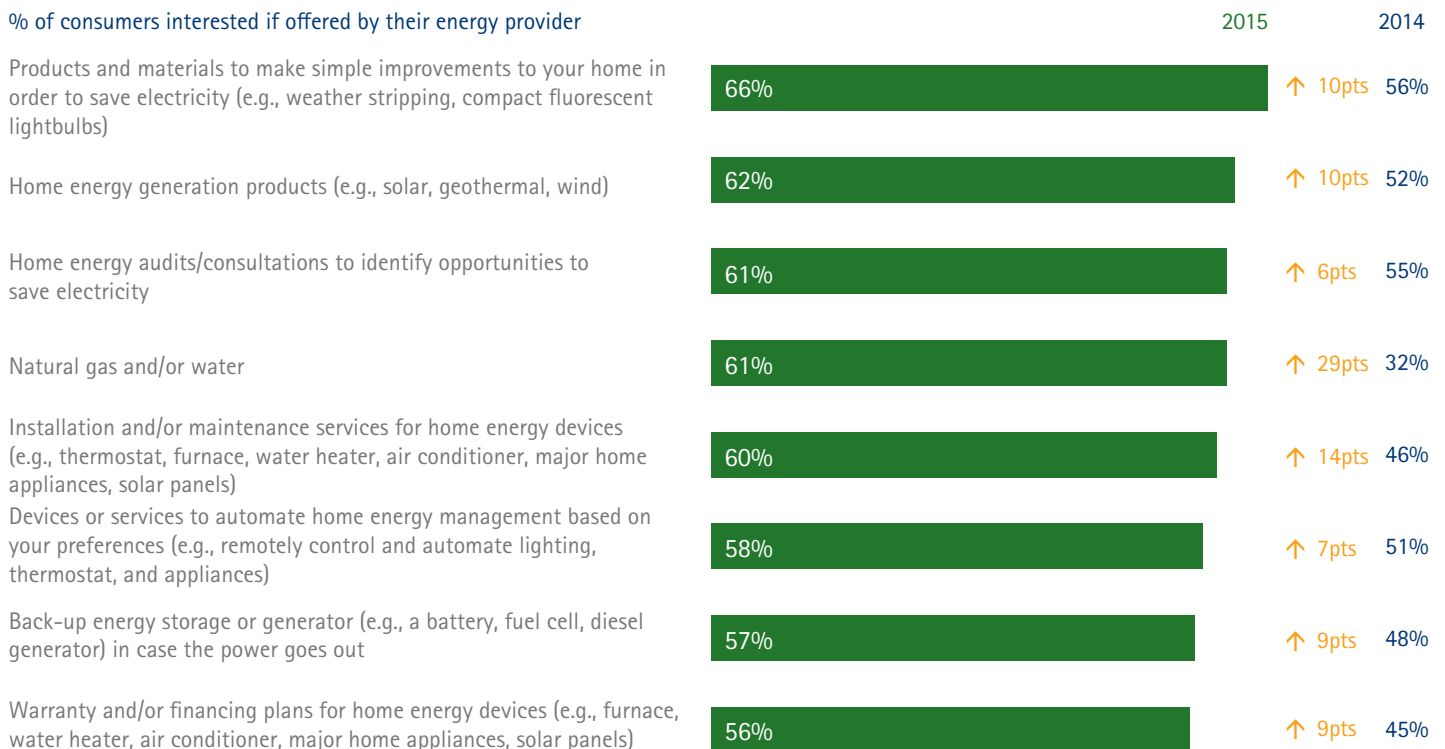
Extending traditional consumer value

As consumer and energy provider relationships become more multifaceted, so does the availability and range of products and services that energy providers can offer. In competitive markets, leaders are blazing the trail with bundled offerings and connected home solutions. For example, Endesa is offering a wide range of home-related services, such as EV charging stations and smart communication portals.[43]

Through our research program, Accenture has been tracking consumer interest in value-added products and services and has witnessed a substantial rise. Driven perhaps by technology convergence or consumers' broader view of the energy ecosystem, consumer interest in signing up for energy-related products and services appears to be gaining momentum across the board—with more than half of consumers interested in a wide range of products and services from their energy providers (see Figure 14).

No longer are value-added products and services niche market opportunities. In competitive markets, there are opportunities to create significant new revenue streams by offering additional home-related products and services, extending the value proposition to dual fuel and providing financing plans or maintenance services. In a regulated marketplace, opportunities also exist for utilities. Energy providers should consider innovative partnerships or information services as a way to create more value for consumers—and extend the mindshare for energy-related products and services.

Figure 14. Interest in energy-related products and services has significantly increased over the past year.

% of consumers interested if offered by their energy provider

	2015		2014
Products and materials to make simple improvements to your home in order to save electricity (e.g., weather stripping, compact fluorescent lightbulbs)	66%	↑ 10pts	56%
Home energy generation products (e.g., solar, geothermal, wind)	62%	↑ 10pts	52%
Home energy audits/consultations to identify opportunities to save electricity	61%	↑ 6pts	55%
Natural gas and/or water	61%	↑ 29pts	32%
Installation and/or maintenance services for home energy devices (e.g., thermostat, furnace, water heater, air conditioner, major home appliances, solar panels)	60%	↑ 14pts	46%
Devices or services to automate home energy management based on your preferences (e.g., remotely control and automate lighting, thermostat, and appliances)	58%	↑ 7pts	51%
Back-up energy storage or generator (e.g., a battery, fuel cell, diesel generator) in case the power goes out	57%	↑ 9pts	48%
Warranty and/or financing plans for home energy devices (e.g., furnace, water heater, air conditioner, major home appliances, solar panels)	56%	↑ 9pts	45%

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

While interest is high among all energy consumers, digitally engaged consumers may represent even greater value. Digitally engaged consumers consistently express a higher level of interest, up to 22 percentage points higher than their non-digital counterparts (see Figure 15).

Accenture believes that we have "turned a corner" with consumer interest in energy-related products and services on the rise, creating new opportunities for energy providers.

Expanding energy consumerism

As consumers' interest in energy-related products and services increases, the real question is around when and how energy consumers will expand their purchasing behaviors beyond the commodity. When thinking about home energy management, home energy generation, or other such solutions and services, approximately three times as many digitally engaged consumers say they will invest in the next year (see Figure 16). Energy consumers who indicate their intention to purchase or sign up for energy-related products and services are highest for home energy management reports and in-home energy management solutions, followed by home energy generation–related products and services and, finally, EV charging solutions. Interestingly, consumers also indicate an interest in financing services for energy-related products and services. As consumer adoption of energy-related products and services continues to evolve, energy providers will need to determine their products and services portfolio strategy.

Nurturing the multifaceted solar prosumer

Rooftop and small-scale solar installations are one of the first technologies to become a cost-effective micro-generation solution for residential and commercial consumers. With the cost of producing, installing and managing solar panels falling exponentially in recent years, certain geographies have already reached grid parity.

Our New Energy Consumer research program has sought to understand the increasing market for solar-related generation options, as well as the opportunity available for energy providers. Overall knowledge of solar energy products and services appears to be low, with only about a third of customers knowledgeable about rooftop solar products and even fewer claiming knowledge of community solar projects or solar services. Nevertheless, while only a handful of respondents (9 percent) had solar products in 2014, 55 percent said they were considering purchasing or signing up in the next five years.[44]

Given rising adoption and consumer interest, a variety of innovative companies are entering the market in an effort to disrupt the traditional utility value chain. We also see a growing array of solar home solutions and community solar projects, as well as a host of supporting services—from automated support to financing instruments. In many geographies, energy providers have moved quickly to offer solar products and services directly or via partnerships in an effort to prevent margin erosion and/or increase customer engagement.

Based on our findings, energy providers are well positioned to capture value by deploying solar-related products and services. While consumers' top choice (in 2014) may be specialized providers (74 percent), energy providers were a very close second at 71 percent. Further reinforcing these trends are consumers' "moments of truth" when making decisions to sign up for solar products and services. With 46 percent saying they would engage in a discussion when their energy bill is higher than expected, energy providers already have a significant opportunity to leverage existing relationships and data in order to connect with consumers in a more meaningful manner.[45]

In this context, it is clear that distributed energy resource solutions like solar are set to be game changers. Consequently, a growing number of utilities' consumers should be viewed as partners—which introduces a host of complexities around billing, customer support and field maintenance. Successful energy providers will be those currently building a prosumer-centric approach and a new platform for creating and delivering consumer value.

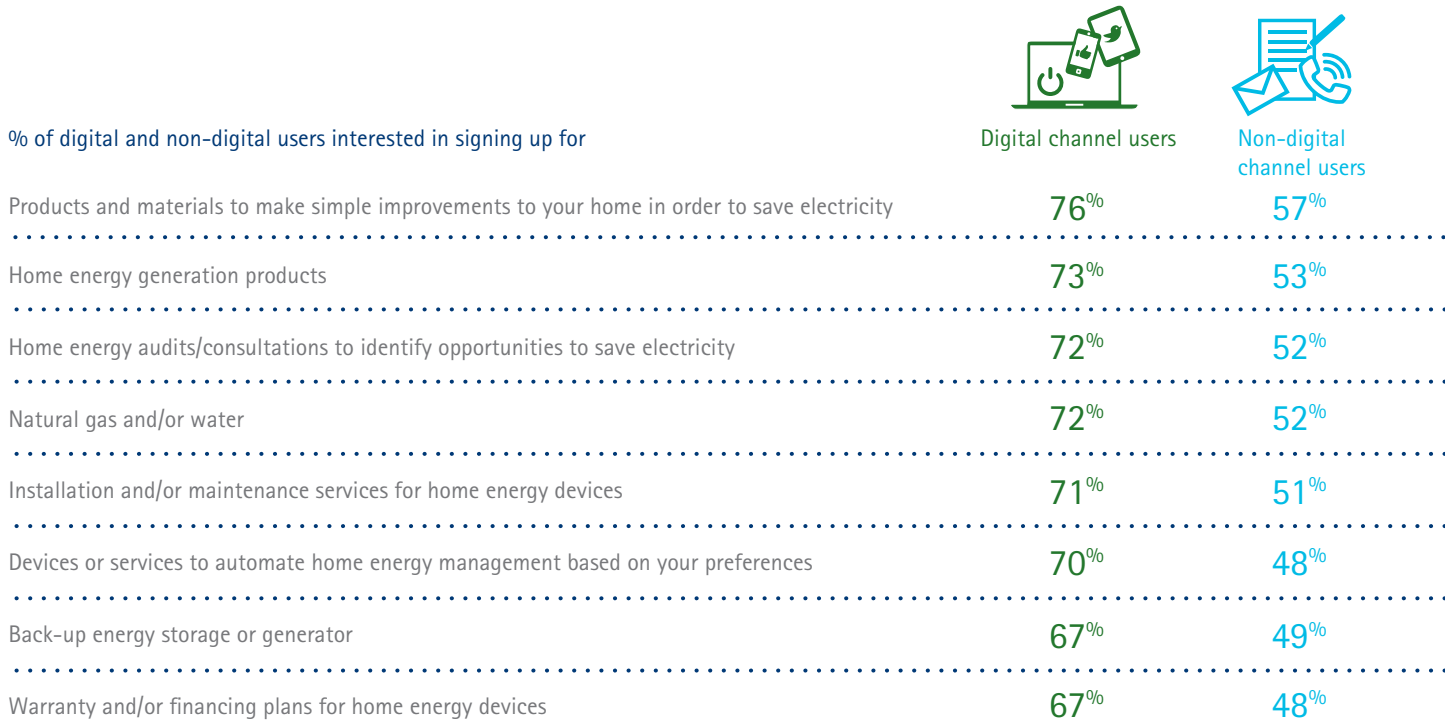## Getting comfortable in the connected home

The connected home has become a reality and consumers have become increasingly accustomed to connected devices. These devices are proliferating and, with greater intelligence embedded within them, consumers can select a set-and-forget approach, manual control or a happy medium to suit their preferences. Appliances, televisions, thermostats, lights, locks, phones and computers are all getting smarter—with energy remaining the primary connector.

In *The New Energy Consumer: Architecting for the Future*, Accenture highlighted that while consumer knowledge of connected home devices was relatively low, 53 percent were likely to purchase monitoring and control services from their energy provider. Consumers indicated that, second only to companies that specialize in connected products and services, energy providers are the most preferred providers for monitoring and controlling these devices.

Some energy providers and non-utility players are already entering the connected home market through innovation, partnerships and acquisitions. For instance, Facebook has announced it will offer a software development kit for the Parse platform to developers building connected devices,[46] and Apple has announced its HomeKit solution.[47] And while the connected home remains a fragmented market, exciting opportunities are emerging to make energy management so seamless that, in time, it will be invisible to consumers. A number of utilities and other providers are already working to make that vision a reality:

British Gas. In a deal worth $100 million, British Gas acquired AlertMe, a developer of platforms for running smart home devices. British Gas now owns AlertMe's Hive product, which allows consumers to control their heating and hot water remotely. The acquisition allows British Gas to launch a family of smart home products to bring consumers innovative ways to help them reimagine how they live in their homes.[48]

Figure 15. Digitally engaged energy consumers are significantly more interested in signing up for products and services.
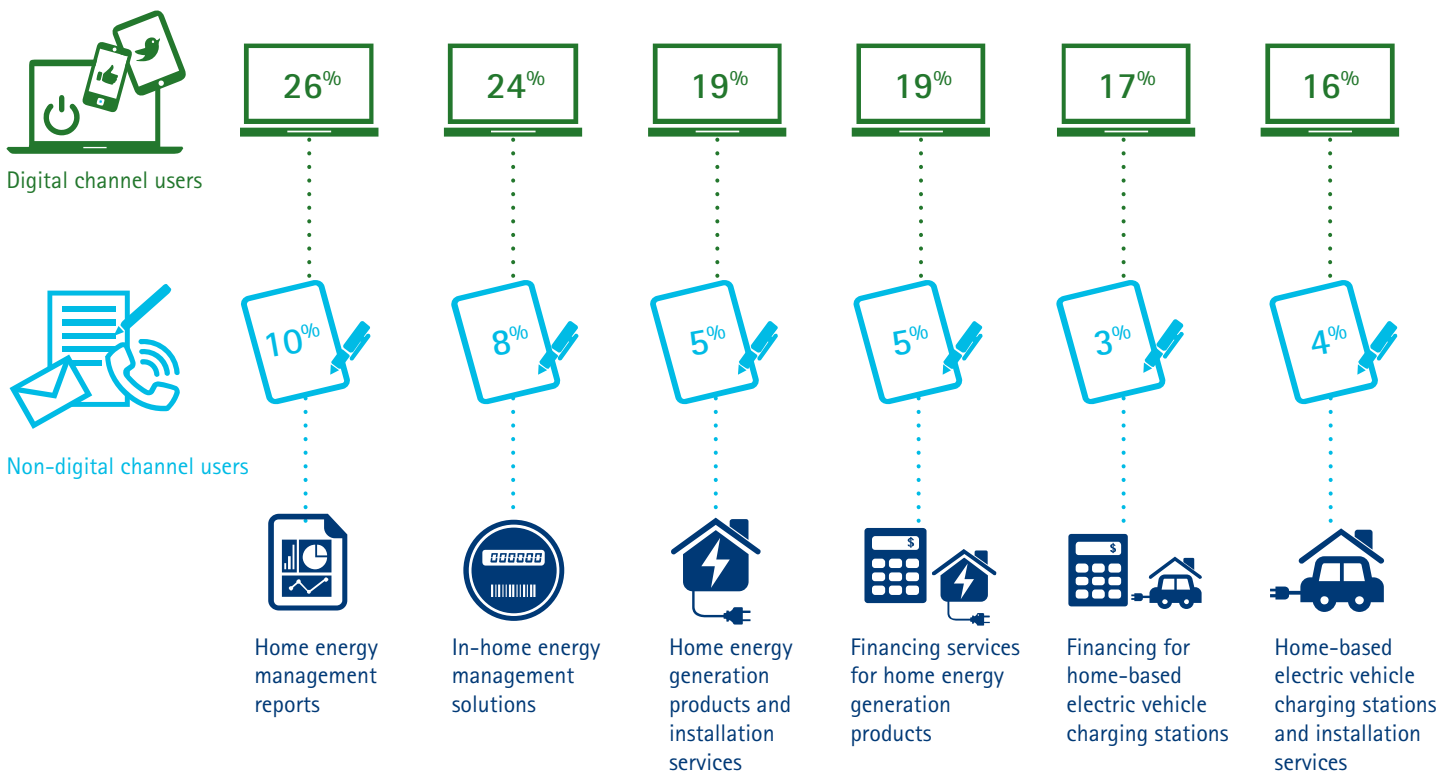
% of digital and non-digital users interested in signing up for	Digital channel users	Non-digital channel users
Products and materials to make simple improvements to your home in order to save electricity	76%	57%
Home energy generation products	73%	53%
Home energy audits/consultations to identify opportunities to save electricity	72%	52%
Natural gas and/or water	72%	52%
Installation and/or maintenance services for home energy devices	71%	51%
Devices or services to automate home energy management based on your preferences	70%	48%
Back-up energy storage or generator	67%	49%
Warranty and/or financing plans for home energy devices	67%	48%

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Figure 16. Digitally engaged energy consumers are significantly more likely to purchase or sign up for home energy products and services in the next 12 months.

Share of respondents that plan to purchase within the next 12 months

Digital channel users

| 26% | 24% | 19% | 19% | 17% | 16% |

Non-digital channel users

| 10% | 8% | 5% | 5% | 3% | 4% |

| Home energy management reports | In-home energy management solutions | Home energy generation products and installation services | Financing services for home energy generation products | Financing for home-based electric vehicle charging stations | Home-based electric vehicle charging stations and installation services |

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Home Depot. Home Depot has launched a series of connected home appliances compatible with its Wink platform. Wink-enabled products are operated either through the Wink app or the Wink Hub. Through the app, consumers can control their air conditioners, blinds, door locks and garage doors. There are no monthly fees to use the app service and Wink is compatible with a number of wireless technologies—Wi-Fi, Bluetooth LE, Z-Wave, ZigBee and Lutron Clear Connect.[49]

Although there are currently no clear winners in the increasingly crowded connected home environment, many players are vying for different parts of the ecosystem, ranging from platforms to hardware. Energy providers can play a role in the connected home by determining whether it is "owning" the home or engaging with the ecosystem—to support their primary business objectives.

Plugging in to the EV market

Global sales of electric vehicles (EVs) have been increasing. Investments from firms such as Tesla are driving technological advances, decreasing costs and increasing mileage capabilities—removing many of the traditional barriers to EV adoption. Meanwhile, Apple is among the major new players potentially spurring EV innovation and consumer adoption.[50]

In *The New Energy Consumer: Architecting for the Future*, Accenture explored the rising interest in EVs and consumer preferences around related products and services. While EV adoption has continued to grow steadily, forecasts call for demand to increase sharply over the next five to 10 years. More than half of consumers were considering an EV for their next car purchase, representing a continuing opportunity for energy providers to increase revenues and engage consumers (see Figure 17).

When considering the rising interest in connected home technology and micro-generation, the electric vehicle may be considered the unifying technology, providing a true solution for daily energy engagement.

Energy providers have opportunities to establish their presence in the EV market. In fact, energy providers are well positioned to be a preferred vendor of home-based EV products and services, such as those for installation, maintenance and energy management.

Figure 17. More than half of consumers are considering an electric vehicle for their next car purchase.

76% % of consumers who are planning on buying a car in the next 10 years

53% are considering buying an electric vehicle

14% Within the next 3 years
17% Between 3 and 5 years
22% Between 5 and 10 years

% of consumers by demographic who are considering buying an electric vehicle

58% 18–24 years
60% 25–34 years
52% 35–54 years
42% 55+ years

59% Urban
48% Suburban
39% Rural

47% Low income
$
High income 61%
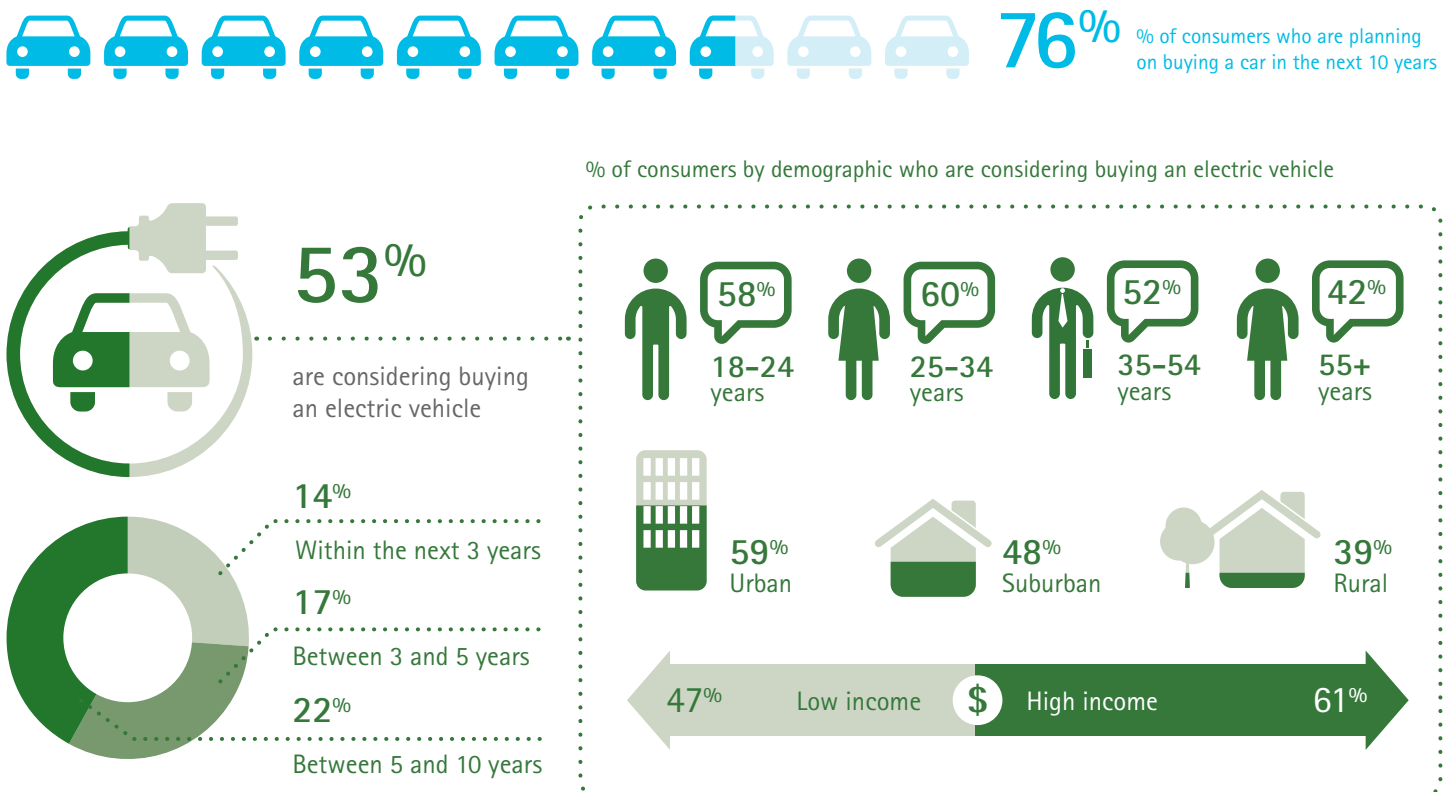
Base: All respondents.
Source: *The New Energy Consumer: Architecting for the Future*, Accenture, 2014.

According to our 2015 research, when it comes to EV home-based charging solutions from their energy provider, consumers responded with the following level of interest:

- 42 percent in a home-based solution that automatically charges the EV during times of the day when electricity is cheapest
- 39 percent in the installation of an EV home-based charging station
- 26 percent in maintenance services for an EV home-based charging station

Some progressive energy providers are collaborating with fellow energy providers or local governments to provide charging station products and services. For example, CLEVER is a leading provider of EV charging stations in Denmark.[51] Owned by five large Danish energy providers that together service more than 60 percent of the Danish market

(SEAS-NVE, SE, NRGi, EnergiMidt and Energi Fyn), CLEVER provides public and home-based charging solutions.

Consumers are beginning to realize that their EV batteries could be used to store excess solar generation during the day for use at night. The Tesla Model S battery can reportedly already store enough energy to power the average US household for three and a half days.[52]

EV manufacturers and energy providers are forming strategic alliances to develop a common platform to communicate between EVs and the smart grid.[53] As consumers begin to use the batteries in their EVs as a power source for their home, the energy provider could expand its offerings to these consumers to include home energy management solutions that help maximize the charge and life of the battery.

Power "on demand"

New business models have emerged that enable consumers to get services "on demand." When you consider home entertainment, the traditional approach of offering a standard cable package and optional bundles has been overtaken by alternate forms of media consumption (e.g., YouTube, Apple TV, Netflix) where consumers choose what, when and how they watch. "On-demand" consumption of products and services, coupled with the emergence of the sharing economy, are beginning to impact how consumers perceive and consume energy.

Consumer interest in energy independence is significant, with 57 percent of consumers globally saying they would consider investing in becoming power self-sufficient (see Figure 18).

Figure 18. More than half of consumers are looking for a short investment payback period for becoming power self-sufficient.

Would you consider investing in becoming power self-sufficient so you would not have to buy energy from your energy provider (e.g., by installing solar panels and storage)?

What would be the acceptable payback period (i.e., the time it takes to recover your initial investment) for you to invest in technologies to become power self-sufficient?
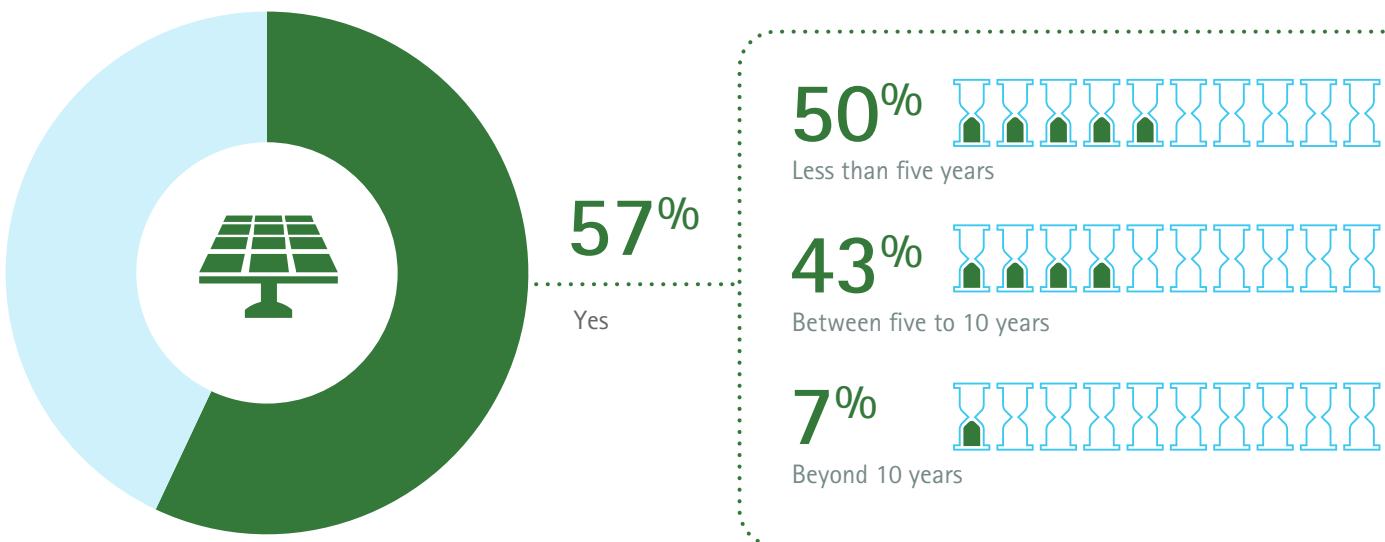
57% Yes

50% Less than five years

43% Between five to 10 years

7% Beyond 10 years

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Base: Interested in investing to become power self-sufficient.

Interest is highest in the 18- to 34-year-old range, which may provide an early indication of a growing market for distributed generation and storage technologies. However, the switch to self-sufficiency needs to make financial sense for the consumer. Indeed, half of interested consumers would like a payback period of fewer than five years, with more than 90 percent looking for a payback period of less than a decade.

As discussed in Accenture's Digitally Enabled Grid 2014 research, the feasibility of achieving sustained power self-sufficiency is currently out of reach due to the current maturity and cost of energy technologies. A large number of consumers have practical limitations on roof availability, such as building ownership, or lack the appropriate orientation of roof space for solar PV. In addition, the amount of storage capacity required to be self-sufficient is prohibitively large. However, the evolutionary improvements in technology efficiency and the associated cost reductions may make energy independence a viable option in the future.

Despite consumers' interest in increasing energy independence, they also recognize the need to remain connected to their energy provider to address what Accenture calls "outage anxiety." Consumers expect that their relationship with their energy provider would be focused on back-up power services. Of the 57 percent of consumers willing to consider investing to become power self-sufficient, 89 percent would look to mitigate the risk of having to go without power (see Figure 19). By developing products and services that meet prosumers' specific needs, energy providers can reposition themselves as the go-to source for reliable energy support.

Building digital value

Digitally enabled consumers have a higher interest and likelihood to be first movers, and acquiring their share of spend is pivotal. In competitive markets, digitally enabled consumers are likely to become the battleground in the hunt for value and additional revenue. In regulated markets, these consumers offer prime opportunities to engage around energy management. As consumer interest and propensity to purchase energy-related products and services grow, energy providers have the opportunity to realize new value. Leading energy providers are already architecting for the future and considering the cultural, business and technology impacts of new products and services.

Figure 19. Consumers are interested in back-up power services from their utility/energy provider to minimize the risk of having to go without energy.

Would you consider investing in becoming power self-sufficient so you would not have to buy energy from your energy provider (e.g., by installing solar panels and storage)?

If you were to install technologies to become power self-sufficient, would you be interested in back-up power services that may be offered by your energy provider to minimize the risk of running out of power?
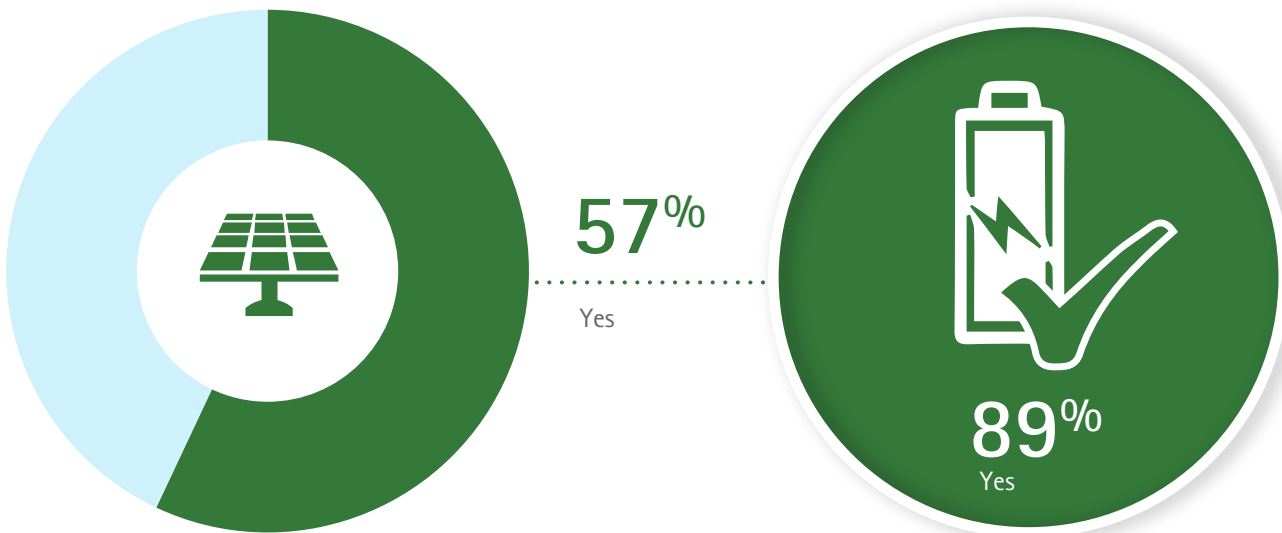
57% Yes

89% Yes

Base: All respondents.
Source: Accenture, New Energy Consumer research program, 2015 consumer survey.

Base: All respondents who would consider investing in becoming power self-sufficient.

The digital energy platform (r)evolution

While product and service opportunities abound, the future will not be about a single product, process, service or solution. Rather, it will be shaped through digital industry platforms and ecosystems that fuel breakthrough innovation and disruptive growth.

While many businesses are using digital initiatives to harness social, mobile, analytics and cloud technologies, forward-looking leaders are offering consumers more by unifying such initiatives under a platform. The *2015 Accenture Technology Vision* identifies the platform (r)evolution as one of five key trends fueling the next generation of breakthrough innovation and disruptive growth. Already, platform-based companies are capturing more of the digital economy's opportunities for strong growth and profitability. In fact, according to the Massachusetts Institute of Technology, "In 2013, 14 of the top 30 global brands by market capitalization were platform-oriented companies—companies that created and now dominate arenas in which buyers, sellers and a variety of third parties are connected in real time."[54]

For companies across sectors, it is no longer enough to simply develop and launch digital tools and products with the expectation that consumers will adopt them. Rather, companies need to apply their industry knowledge to build flexible platforms that enable rapid innovation—including development and deployment of the products and services needed to drive their digital business strategies. Such a foundation supports more effective ways of operating and creates opportunities for new revenue streams and customer satisfaction.

Digital platforms enable developers to build applications that facilitate collaboration, workflow and value across industries and geographies more seamlessly and more quickly than ever before. In fact, 81 percent of industry executives surveyed as part of The *2015 Accenture Technology Vision* believe that in the future, industry boundaries will dramatically blur as platforms reshape industries into interconnected ecosystems. In short, platform-based ecosystems represent new competitive arenas for meeting consumer demands.

While digital industry platforms have unleashed tremendous value and disruption in other industries, Accenture believes that when it comes to gas, electricity and water, the industry is poised on the brink of a platform (r)evolution.

For energy providers, the imperative is not determining how to fit digital into an established ecosystem—it's recognizing that companies in nearly every industry are already beginning the process of creating these new digital ecosystems. Bringing these ecosystems to life in the utilities industry will require thoughtful consideration.

Shift in mindset from "me" to "we"

As enterprises move to platform-based models, their technology capabilities are rapidly changing—and so are their ambitions. Innovative companies are embracing platforms as a way to increase their capabilities so they can attack larger opportunities, solve bigger problems and serve their customers better. Innovators know they cannot do all of that alone. They realize that their fortunes depend not only on their own successful efforts ("me"), but also on the success of all players in their platform-driven ecosystems ("we").

Whether players include competitors, vendors, employees, consumers or all of the above, digital platforms are creating a level playing field and facilitating competition as well as coordination. As one example, China's smart city platform approach is enabling Siemens and major providers such as Schneider Electric to take an integrated, scalable and repeatable approach to addressing complex urban transportation, building and energy management challenges.[55]

Digital technologies by their very nature require rapid, modular, agile, flexible capabilities. The best digital solutions take the power of information technology and put it in the hands of the broader ecosystem—and this ecosystem includes management, front-line users, end customers, partners and developers. The fundamental shift in mindset from me to we means that utilities and energy providers must embrace a mantra of not building it themselves, but instead leveraging what is available through the broader ecosystem to address their business requirements (see sidebar: "Nest Thread weaves together connected home 'web'" on page 38). The power of collaboration continues to be a fundamental current of change in the industry.[56] Energy providers need to build a core competence in partnering with a variety of players within the digital energy ecosystem.

Ecosystem as an innovation sandbox

Admittedly, it may not be easy for large, established companies to innovate rapidly. Increasingly, leading companies have begun to drive innovation in an unusual way: allowing others to innovate for them. By opening their platforms to external companies, organizations can further expand such efforts—with platforms serving as an "innovation sandbox" in which alliance partners, startups and even consumers can safely and creatively experiment.

With digital, businesses can more easily find fresh talent to solve new and complex challenges. Consider Kaggle[57]—the largest community forum for data scientists worldwide. Participants compete to solve analytical problems, and a quick search of energy-related contests shows topics such as load forecasting, solar or wind energy forecasting, and energy disaggregation. Those who offer a successful solution may be invited to consult on interesting projects for some of the world's largest companies. Businesses are not just outsourcing operations; they are now crowdsourcing problem solving and tapping into a much broader talent pool than they may have been able to access in the past.

Teaming up with third parties can create value in a number of areas. For example, Eneco has partnered with Tesla to offer consumers a charging service for electric vehicles. With the consumer's specified timeline and battery preferences, the service automatically charges the car battery when the price is low. Eneco plans to extend the platform to other car manufacturers.[58] Another example is MeterHero, which lets smartphone users pool their water, electricity and natural gas usage data to more effectively manage consumption across the three commodities. The tool helps users monitor real-time usage and offers cash rebates to consumers who conserve energy.[59]

Nest Thread weaves together connected home "web"

In the connected home market, Nest has partnered with Samsung and four other companies to offer consumers Thread.[60] This new wireless IP protocol is designed to integrate the growing numbers of connected home devices being adopted. The Google-owned company launched this new IP protocol as a wireless mesh standard for the smart home. By using a low-power platform and existing radio hardware (courtesy of ZigBee devices),[61] Thread does away with the traditional hub-and-spoke model where multiple devices rely on one centralized device to communicate with one another.

Nest Thread links together supported smart home devices to work in harmony with each other without requiring additional hardware in the home or burdening existing home wireless networks with more devices. The platform manipulates frequencies into a true lattice network, introducing the possibility for standardization to the connected home market. Although the mesh network can already support more than 250 connected devices, the Thread platform has been designed for long-term extensibility as new devices emerge and are adopted.[62]

Such innovative solutions can benefit energy providers and consumers alike (see sidebar: "Mosaic: Crowdfunding community solar projects"). The network multiplier effect—which states that a product or service becomes more valuable overall as its adoption increases—comes into play here. Apple's App Store is a prime example. The quantity and variety of apps encourage more users to join the platform and more developers to build apps for it. As the shift to a shared economy and innovation ecosystems continues, we will see more adoption of alternate business models and next-generation solutions.

Real-time (consumer) business models

Real-time operations are nothing new for the energy trading and delivery side of the business. For the consumer side of the business, however, real time represents new territory. Digital platforms enable breakthrough consumer capabilities— including buying and selling excess energy, providing outage updates, and enabling alerts for switching providers when prices reach a certain threshold.

The ability to transact in real or near-real time will enable new value creation and fundamentally disrupt business models of the past.

Energy providers have a unique opportunity to provide real-time (or near-real-time) demand-response services to consumers through a platform that leverages smart meter and other data. In Accenture's research, *Delivering the New Energy Consumer Experience*, 93 percent of consumers reported they would like to learn more about smart meter functionalities. More specifically, they cited a desire for personalized advice on actions, products and services to reduce bills, as well as early notifications when the bill may be higher than normal.[63]

As machine-to-machine communications become more prevalent in consumer energy technologies, devices will be able to exchange information and make decisions based on specified parameters. Machine-to-machine communications could enable real-time energy exchange for energy consumers: a homeowner's solar panels produce more energy than required, but the neighbor's home needs power, and the homeowner, neighbor and energy

provider could all benefit from such a value proposition. Devices that can transact with each other based on predefined business rules will enable seamless, peer-to-peer information exchange and transactions in (near) real time.

For energy providers, operations will also be required to address consumer expectations, needs and preferences in (near) real time. In a very short period of time, digital enablement has transformed some processes and interactions for utilities. Consider outage notifications: for mass outages, mobility and social media have become the preeminent channels for real-time updates and even service interactions. In day-to-day operations, the real-time ability to understand customer journeys in digital channels, to resolve customer requests, and to take proactive actions in customer-facing online environments is becoming more critical. Consumers' continued move to online channels and their digital experiences are creating an environment where real time is the new normal.

Mosaic: Crowdfunding community solar projects

As consumers become more comfortable with online investing—including peer-to-peer investment platforms—Mosaic[64] has found success with crowdfunding community-based solar projects. Through the Mosaic platform, consumers can pledge funds and offer crowdfunding loans for solar development projects.

It offers benefits beyond investment returns—namely, a sense of contribution to uptake of clean, sustainable energy for the future. In addition to facilitating investments, Mosaic enables consumers to apply for solar financing at any time, on any device.

Energy platforms for the future

From peer-to-peer platforms to storage, EVs and renewables, a variety of technology advances are creating new ways for consumers to obtain, store and even sell energy. Many of these options no longer require the traditional utility role. As energy storage becomes more viable and widely adopted, dependence on centralized electricity generation decreases, and consumers are able to move toward energy independence. Online communities are emerging to help connect local consumers with renewable producers in their area—bypassing the need to use the utility.

These changes are beyond evolutionary. In fact, they represent the broader transition of the utilities industry to operations that are digitally enabled and integrated with renewables. Such operations include:

- Offerings that extend beyond traditional services; examples include remote monitoring, home energy management solutions and smart metering.

- The ability to manage real-time demand and supply and optimize grid performance using location, asset and consumer information.

- Real-time energy usage information to enable consumers to track, manage, optimize and automate energy usage decisions.

Value-added industry platforms and digitally enabled offerings and services can span the entire industry value chain and extend beyond traditional boundaries (see sidebar: "Energy platform characteristics"). Consider online retailer Amazon: it has upended traditional industries like books and publishing, cloud-computing and video streaming and continues to innovate, pushing its own boundaries into smartphones.[65] The digital platform has enabled Amazon to transform how other players in the value chain interact and realize value, extend its core business capabilities into offering new revenue, and

explore value at the edge of its platform. In fact, it has extended the boundary of the platform beyond what may have originally been intended. The challenge for each energy provider is to determine where it can provide value and where it has the capabilities to deliver. While there are a number of distribution-oriented platform opportunities, from a consumer value perspective, Accenture sees a range of platform types emerging.

Data and information services – using an interoperability platform and Web portal or other channels to provide energy usage information and associated insights to consumers.

- In Texas, mytruecost[66] energy Web portal compares prices and deals offered by 24 utilities, with side-by-side comparisons to help consumers choose the best plan for their household. The portal allows users to create a personal account and provide their smart meter information. Based on their previous consumption pattern, the portal generates a comparison of the available electricity plans. The mytruecost portal also includes all surcharges and any hidden charges from each utility, giving consumers an accurate estimate of their monthly bill if they were to sign up.

- Energy Vikings,[67] an initiative of Alphacomm Energy Solutions BV in the Netherlands, is an independent smart meter monitoring application that offers consumers direct insights into their electricity and gas consumption. Users can remotely read their smart meters to quickly see how much their past usage has cost them. They also can access day-by-day spend to help manage bill cost, access information about available utilities and assess whether or not solar would be a wise investment for them.

Home management services – offering products (such as smart devices) and services (such as home automation systems, security systems or demand-response programs) to manage all aspects of the home.

- RWE SmartHome[68] offers consumers a smart home solution for the heart of their intelligent home. When used with smart home appliances, RWE's home automation device offers maximum convenience and optimized energy management. The platform offers consumers peace of mind—integrating in-home management services with home security features to control door and window sensors, motion and smoke detectors, and remote shutter controls. It also syncs with lighting, heating and other in-home smart devices that consumers want to control from their mobile phones, and is designed for extensibility as consumers bring more devices home.

- As part of its three-pronged strategy toward "Sustainable, Decentralized Together" by 2030, Eneco has developed the TOON platform.[69] Initially offering a smart thermostat, the platform has the capability to manage a large range of home devices—such as lighting, home security, electric vehicle charging, carbon monoxide alerts, supply interruption alerts and information about solar panel performance. TOON is Eneco's play in the smart home management market, but it is also the provider's preparation for the impact of technology on energy as a service.

Energy aggregator – aggregating multiple energy sources (including consumers) into a virtual power plant to manage supply and demand.

- In the United Kingdom, Flexitricity[70] can be described as a "virtual power station" or aggregator, giving sites with smaller flexible capacity the chance to be involved in demand-side balancing reserve. It takes the individual capacity contributions of a number of smaller businesses and offers the reductions to National Grid in a large, useable way.[71]

Energy platform characteristics

To become a standard and widely accepted solution in the marketplace, an energy platform must create value both for consumers and for the utility. Enhancing speed, efficiency and transparency can create value for all platform participants and beneficiaries: businesses, energy providers and consumers.

Regardless of a platform's specific value proposition, well-rounded platforms should reflect or support these characteristics:

Choice. Consumers value choice and want a selection of products and services that meet their needs. Platforms offering more choice increase the likelihood of both the "network multiplier effect" and consumer stickiness. Streamlined search and an easy-to-use interface will be critical to consumers' ability to navigate through a range of products and easily make a selection.

Level. A strong platform can level the playing field. A utility of any size can succeed as long as it has the basic capabilities for creating, implementing and supporting the platform. Similarly, any third party or partner may also develop successful applications for the platform—just as Apple's App Store offers applications from large players, such as Zynga, as well as individual developers.

Open. A platform will create a new marketplace for businesses and consumers to interact and transact. While Amazon and Alibaba are well-known examples of this type of solution at scale, Airbnb has similar characteristics in that it has created a marketplace for hospitality services and revenue that provides a value proposition for homeowners and travelers.

Standardized. Standardization encourages cooperation and information sharing across platforms, applications and data sources. It also can encourage consumer adoption of the platform through the ease of linking data across applications. As the industry platforms evolve, efforts to establish standards are underway. In the United States, the Green Button[72] initiative is setting the standard for sharing smart meter data. When a platform is widely adopted, its developers may be able to establish the standard; in any case, standards enable participants in the ecosystem to maximize the reach and effectiveness of their platforms.

Networked. The parts that make up the whole of any platform are as important as the whole itself. Developing a platform ecosystem approach that encourages coopetition and third-party involvement will lead to a platform that provides increased choice, a richer experience and potentially greater consumer adoption.

Secure. To support personalization, any platform is likely to collect location, personal, transactional and other data. To safeguard it—and maintain consumer trust—platforms must protect against unauthorized access of content by third parties and also reflect a strong governance approach for access to personal consumer data.

Energy marketplace – facilitating a marketplace open to all energy participants to buy and sell offerings and to trade supply and demand.

- With the region's growing interest in renewables, Netherlands-based Vandebron[73] created a (disruptive) platform that lets local consumers buy energy—including wind, solar, biofuel and gas—directly from local producers. Its Web portal even offers profiles about local energy producers.

Customer service platforms – collaborating with consumers remotely, providing customer relationship management (CRM) and pricing capabilities.

- The British Gas smartphone app[74] lets HomeCare consumers book, manage and track engineer callouts. Consumers can make new appointments and specify whether they need routine maintenance or a repair. Consumers also enjoy visibility to their designated crew's location and can reschedule or cancel an appointment through the app.

Energy solutions optimizer – combining technologies, transactions and insights (for example, distributed generation, demand response, storage and real-time notifications) in one easy-to-use consumer solution.

- Reposit Power,[75] based in Canberra, Australia, has launched a platform that uses solar grid storage on residential premises to monitor and trade power back to the network. The company believes that consumers will realize the benefits of greater independence from grid pricing and greater control over energy flow. Reposit's platform helps consumers identify the optimal strategy to feed power back into the grid from their solar photovoltaic or battery storage—helping to ensure that consumers maximize the financial benefits of selling their surplus energy.

Digital transactional processing – enabling more seamless processing of energy-related transactions. These platforms could be a combination of business-to-business and/or business-to-consumer, including other providers participating through a variety of digital payment mechanisms.

- Simple Energy[76] has launched Marketplace, an online e-commerce portal that offers consumers a fast, easy and convenient way to shop for appliances, including the ability to receive energy-efficiency rebates instantly. Simple Energy intends for partner utilities to white-label the platform, enabling access to consumers' usage profiles and identification of personalized recommendations and savings.

While a range of platform types are emerging, digital innovation will continue to expose gaps in the market and opportunities to bridge platforms. In the future, we expect the differing platform types to blur as providers push beyond industry boundaries.

Enabling the agile business

For many energy providers, a platform solution will be a fundamental shift in the way the business and IT work together. When architected with flexibility in mind, digital technologies enable rapid, modular and flexible environments where the power of the technology can be placed in the hands of participants outside the IT department. Further enhancing consumer choice, convenience and control, successful digital platforms will be based on application protocol interfaces (APIs) that enable communication with other solutions within and outside the utility.

To truly understand the evolutionary shift a platform approach can unlock for the business, consider the recent Accenture experience building a platform for a large, global mining company. The platform was built in approximately two months—a very

short timeframe compared to traditional IT development—and without buying new hardware or software. The tablet-based solution features an intuitive user interface and leverages the vast data already available—putting insights and analytics in the hands of the front line. Leveraging a devOps approach (see sidebar: "Building agile platform capabilities" on page 43), operators in the mine (not the IT department) are able to restart the server when required at the click of a button. By looking at the available data, infrastructure and business in a new way, the platform fundamentally changed the way they operate.

Reimagining the enterprise

The implications of a platform solution on a business can fundamentally affect its strategy, business model, operating model and capabilities for the future. Envisioning future value propositions and the interactions with new energy consumers in the context of the shifting industry landscape will require a nimble, learning mindset and a culture of continuous innovation. While strategic decisions about future business models will require some thoughtful consideration, energy providers should not wait for "perfect" information. Others will choose and launch their business model, enabled by digital, and stand to disrupt existing businesses and customer relationships.

Building agile platform capabilities

When developing and delivering innovative IT solutions for digital industry platforms, energy providers are wise to consider DevOps and Agile approaches to accelerate time to market and improve IT agility.

Information technology capabilities are a critical enabler of success with a platform-based value proposition. As the pace of digital change accelerates, one of the key capabilities needed is agility in IT development, implementation and continual improvement. To unleash value, energy providers need the appropriate combination of people, skills and technologies.

Using a "DevOps" approach to communication, collaboration and integration can unlock previously untapped value for an organization. DevOps seeks to close the gap between software development and IT infrastructure/ operations. It enables developers to create their own environments—standing up software solutions in less time and automating techniques for deployment, environment setup, configuration, monitoring and testing. It can also put the power of IT in the hands of end users. DevOps can deliver value to energy providers in the form of lower costs, increased speed to market, reduced delivery risks and higher rates of throughput.

Combining DevOps with an Agile software development approach can increase quality and efficiency. Agile, which some organizations have already adopted, is a flexible, lean software development methodology. While traditional waterfall or iterative software development methods may remain appropriate in certain situations, Agile is particularly useful when implementing consumer-facing Web-enabled platforms. It enables developer teams to iteratively and continuously improve software products— reducing time to market, eliminating inefficiencies and increasing quality. Agile approaches allow the utility application world to operate at the speed of the business: fast operations, with developers empowered to deliver secure, business outcome–oriented development.[77]

Thriving in the digital energy era

The utilities industry is undergoing a fundamental, unprecedented transformation. Devices are getting smarter and consumers' worlds are becoming more digitally connected. Competitive forces are at play, regardless of market structure, with new entrants and traditional competitors offering differentiated products and services.

Consumers' interest in energy is growing and energy is increasingly ubiquitous, with the ability to charge devices in public spaces becoming more seamless and more commonplace.

Consumers already prefer online, mobile and social media as channels for interaction—and their broader online digital experiences are continually refining and resetting digital customer experience expectations. That reality makes service design a critical capability to continuously enhance an effortless customer experience.

While solar technologies, smart home offerings and EVs are all gaining traction, consumers' overall interest in energy-related products and services is on the rise—and energy providers are uniquely positioned in consumers' minds to extend their value propositions.

Digital is unleashing new opportunities for value, especially when it comes to industry platforms. Leading energy providers will identify the market opportunities most relevant for their business strategies to build, collaborate and participate in industry platforms. Furthermore, non-traditional energy providers will implement platform solutions in the market and may further disrupt the industry value chain.

Despite disruption and uncertainty, energy providers can apply a digital lens to identify ways to drive profitable growth, reduce costs and improve customer experiences. Digital tools, systems, capabilities and skills will be critical to enabling success in the years ahead, and providers must consider how the tectonic market shifts will impact future operating models.

Energy providers must consider six key imperatives in their future-forward strategies:

• Build "digital DNA"

• Deliver effortless experiences

• Architect resilient platforms

• Drive analytics-powered insights

• Innovate at speed

• Strengthen strategic partnerships

Successful providers will embrace the challenges and opportunities unleashed through digital. A critical first step will be selecting digital business models for the future, and changing the organizational mindset to break down traditional operating models and methods. Leading energy providers of the future will be completely different than those we see today.

Key strategic imperatives
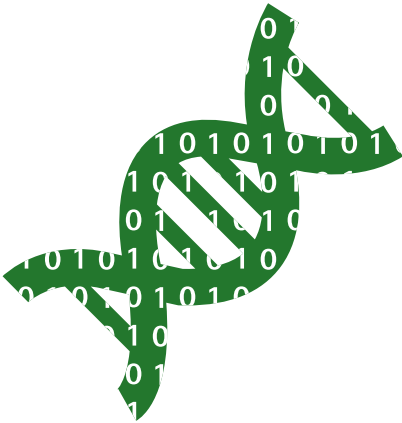
Build "digital DNA"

Apply a digital lens to reinvent the business—from strategy and business models to operating and governance models.

Consider:

- How will digital help us grow and reinvent our business, enter new markets and strengthen our position in the market?

- What are our core strengths? How do they lend themselves to digital?

- How can we leverage digital disruption to reinvent our business model?

- How does our digital strategy integrate with our business and IT strategies?

- How will we align business units, talent and priorities to govern digital across the organization?
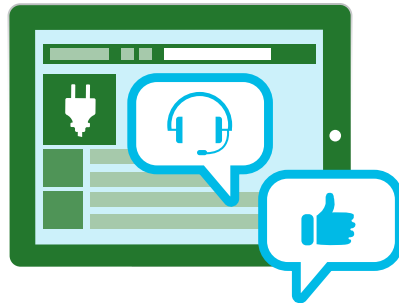
Deliver effortless experiences

Enhance the customer experience by advancing next-generation digital customer capabilities, optimizing self-service interactions and proactively addressing consumers' needs.

Consider:

- How can we minimize consumer effort when using digital or self-service channels?

- How can we effectively and proactively deploy digital customer technologies?

- How can we attract and retain consumers to digital self-service solutions?

- How can we deploy digital solutions to improve business process efficiency and reduce channel complexity?

- How can digital create an effortless customer and employee experience?
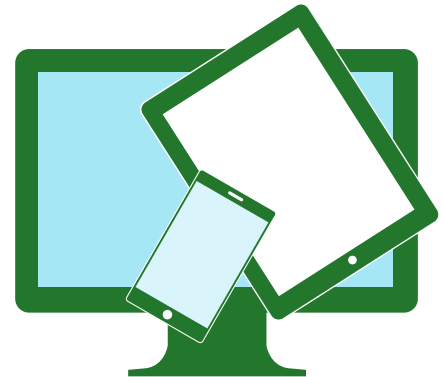
Architect resilient platforms

Establish digital platforms for real-time business models, emerging energy solutions and customer-powered innovation.

Consider:

- How would a value-based platform impact and benefit our business strategy, business model, operations and consumers' experience?

- How resilient is our technology architecture?

- How will our architecture be able to support emerging energy solutions and customer-powered innovation?

- How can we leverage our core strengths and others' capabilities to enable new platform-based value?

- How could a platform extend the boundaries of our capabilities?

Drive analytics-powered insights

Improve customer-centric decision making and business effectiveness with real-time actionable insights and analytics capabilities.

Consider:

- How do we maximize the value of data to support decision making?

- How are we using real-time actionable insights to build business effectiveness and consumer relevance?

- What analytics capabilities do we need to develop or enhance to derive the desired data insights?

- What strategies do we need in place to proactively address cybersecurity?

- What is the most effective way to organize our analytics capabilities to drive the most business value quickly?
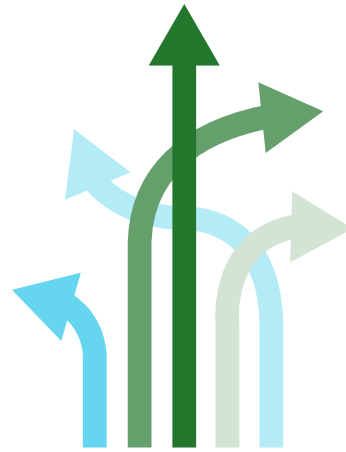
Innovate at speed

Fuel growth and realize greater long-term value by seizing new opportunities, empowering consumers as marketers and co-creators for the rapid development and launch of new products and services.

Consider:

- How do we prevent existing cultural values from stifling innovation? What are the core utilities industry beliefs about what customers want? What if the opposite were true?

- How does our culture support innovation? Does it support risk taking, reward success and encourage teams to learn from failures?

- How will we assess innovative ideas that may cannibalize the existing business or require re-prioritizing investments?

- How will we organize our innovation capabilities?

- If we could hire an innovation team, what unconventional skills would they have and why?

Strengthen strategic partnerships

Accelerate value creation by partnering with other providers and forming unconventional alliances.

Consider:

- How could other providers strengthen or complement our capabilities?

- How are we leveraging service providers on shore, nearshore and offshore?

- How could we team up with competitors and new entrants to create new market opportunities?

- How should we set up, manage, track and measure our alliances and partnerships to maximize benefits for all stakeholders?

- How willing are we to consider completely new ways of working with others?

The New Energy Consumer research program

Accenture undertook the multiyear New Energy Consumer research program to help gas, electricity and water utilities understand emerging consumer needs and preferences, to identify new challenges and opportunities, and to bring focus to the critical competencies required to succeed in the evolving energy marketplace.

Collecting consumer insights from interviews with more than 60,000 end consumers around the world, the initiative has explored a range of topics.

2010

Understanding Consumer Preferences in Energy Efficiency offers a consumer view to support the increasing industry focus on smart metering and demand management. This first study produced valuable insights into consumer preferences in energy efficiency, awareness, readiness and willingness to take action.

2011

Revealing the Values of the New Energy Consumer explores the emergence of a new energy marketplace through a worldwide end-consumer survey looking at preferences, opinions and priorities in beyond-the-meter products and services offered by utilities or other providers.

2012

Actionable Insights for the New Energy Consumer focuses on developing actionable insights and tactical implications for the emerging energy marketplace. This study explores consumer choice, connection and loyalty, and provides a fresh view of how consumers want to interact with their energy providers, the products they value and what drives their purchasing and loyalty behavior.

2013

The New Energy Consumer Handbook looks to the path ahead for energy providers addressing key consumer "dissatisfiers" and offers views to help deliver on the diverse expectations and needs of residential consumers and small and medium businesses (SMBs).

2014

The New Energy Consumer: Architecting for the Future explores new opportunities in virtual customer interaction, the connected consumer, distributed energy, and new products and services. It also offers Accenture's view of the energy consumer of the future.

2015

The New Energy Consumer: Unleashing Business Value in a Digital World explores the ways in which energy providers can capture digital value. It discusses opportunities for energy providers to extend the value proposition through innovative offerings and new ways of engaging energy prosumers. The research explores the growing potential of platform-based models in the digital energy ecosystem.
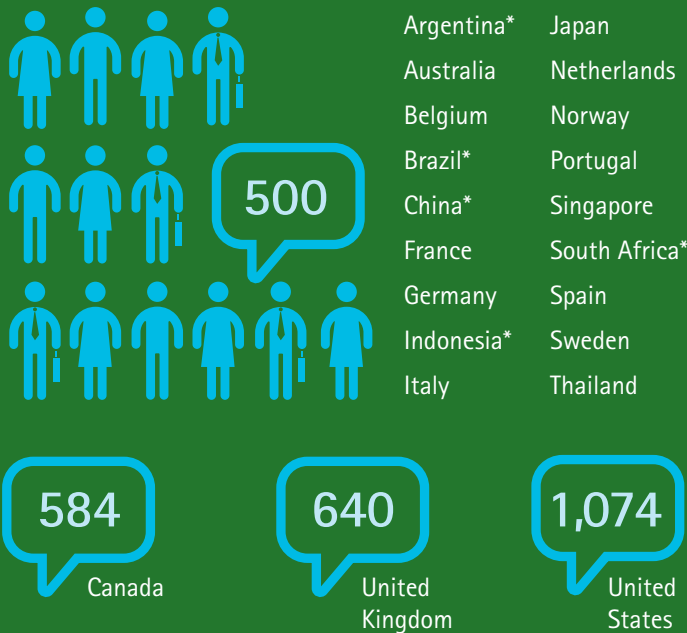
The New Energy Consumer research methodology and sample

Accenture's global research surveys are based on questionnaire-led interviews with end consumers. Surveys were conducted online in native languages for Accenture by Harris Interactive. The selected countries represent a range of regulated and competitive markets.

For residential consumers, the survey sample was statistically representative of the general population in each country, with the exceptions of Argentina, Brazil, China, Indonesia and South Africa, where the sample was representative of the urban populations. For countries with large and/or diverse populations, participants were selected from a broad spectrum of locations. The surveys included attitudinal, behavioral and demographic questions.

A total of 11,298 interviews in 21 countries

interviews by country

500

Argentina*	Japan
Australia	Netherlands
Belgium	Norway
Brazil*	Portugal
China*	Singapore
France	South Africa*
Germany	Spain
Indonesia*	Sweden
Italy	Thailand

584 Canada

640 United Kingdom

1,074 United States

Regulated markets: Argentina, Brazil, Canada (some provinces), China, Indonesia, Japan, Portugal, Singapore, South Africa, Thailand, United States (some states)
Competitive markets: Australia, Belgium, Canada (some provinces), France, Germany, Italy, The Netherlands, Norway, Spain, Sweden, United Kingdom, United States (some states)

Breakdown by gender, age, income:

Gender
48% / 52%

Age
17% 18–24 years
24% 25–34 years
34% 35–54 years
25% 55+ years

Income
25% Low (bottom 25% in every country)
52% Medium
23% High (top 25% in every country)

Notes:
*Sample representative of the urban population
The maximum margin of error is of +/- 1 point on the total sample and +/- 4.5 points at the country level
Trend data: Countries have been added/removed from the scope in the 2015 survey compared with previous years; however, this change does not impact trends

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Accenture Energy Consumer Services delivers energy provider customer solutions for both competitive and regulated markets globally. We help our clients achieve three key business imperatives: cost effectiveness, revenue assurance and extension, and customer satisfaction. Guided by New Energy Consumer insights, our electricity, gas and water clients can realize higher value through industry-specific strategy, digital, technology and operations capabilities and world-class expertise, assets, tools and accelerators.

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Accenture Research is Accenture's global organization devoted to economic and strategic studies. The staff consists of 200 professionals in economics, surveys and data modeling from Accenture's principal offices in America, Europe, Africa and Asia/Pacific. The New Energy Consumer research program involved our experts in survey research.

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