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## 2016 Deloitte Alternative Energy Seminar Setting new sights

Retrospective →

Deloitte Center *for*  
Energy Solutions



## Opening address: Setting new sights

The Deloitte Center for Energy Solutions hosted the 2016 Deloitte Alternative Energy Seminar at The Scottsdale Resort at McCormick Ranch in Scottsdale, Arizona, from November 14-16, 2016. The conference theme of “setting new sights” invited executives, researchers, entrepreneurs, regulators and investors from around the world to share their viewpoints on where the renewable energy sector is heading next, given its remarkable growth and increasing mindshare among consumers and businesses.

Marlene Motyka, Principal, US Renewable Energy Leader, Deloitte Transactions and Business Analytics LLP, set the tone for the day’s discussion by announcing that “we will now be referred to as renewable energy.” She explained that the new name, which will apply to the seminar as well as Deloitte’s practice, reflects the sector’s movement into a new era, where renewables are now mainstream and not alternative. This new era is represented by ongoing technology advancements, increasing cost competitiveness, abundant financing options, evolving regulatory policy, growing corporate involvement, and an international movement toward reducing greenhouse gas emissions. Building upon these themes, this retrospective provides an overview of memorable insights from the event, along with links to other conference materials.

*Click on the navigation tabs below to get started.*

“The sector is moving into a new era: renewables are mainstream, and not alternative.”

Marlene Motyka, Principal, US Renewable Energy Leader, Deloitte Transactions and Business Analytics LLP



2016 Deloitte Alternative Energy Seminar opening video



Setting new sights

# Overview of seminar themes



## State of the industry and election impact

Declining costs and ongoing state support are likely to continue to drive US renewable energy growth, even if some aspects of existing federal energy policy are challenged by the incoming Administration.

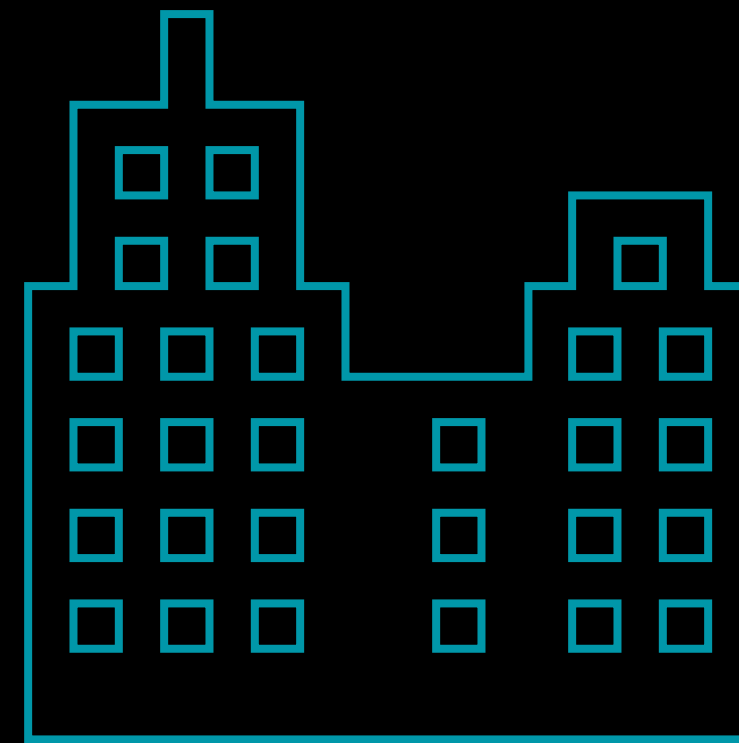


## Global perspectives

A key driver for clean energy investment worldwide continues to be declining costs, with more reductions to come.

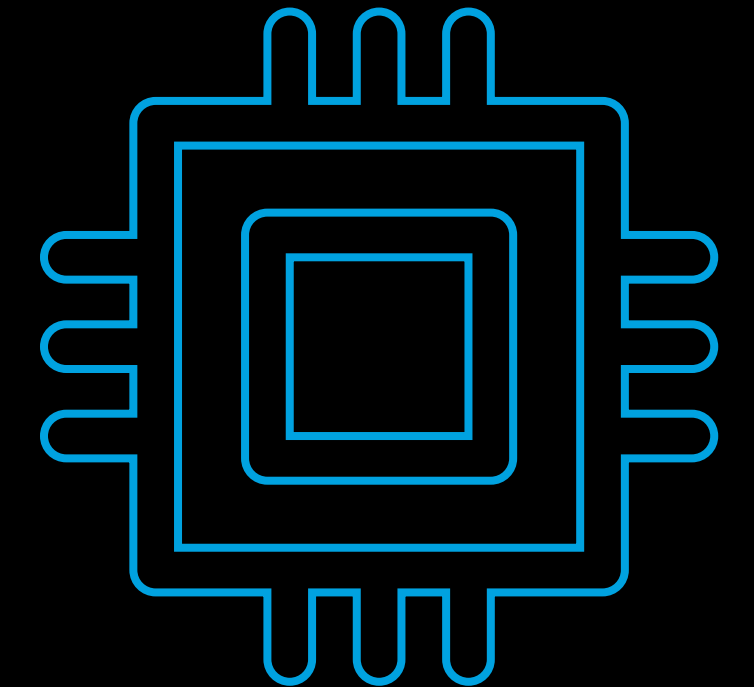
## Corporate involvement in alternative energy

Corporations increasingly see investing in renewable energy solutions as essential to achieving their business objectives.



## Emerging and disruptive technologies

In order to bring more clean technologies to market, researchers must better understand the problems they are solving and the value their technologies offer to potential customers.



## Growing utility involvement

New developments, such as community solar, energy storage, smart grid technologies, and innovative rate design, are helping utilities to maintain reliability while integrating increasing amounts of intermittent renewables into the grid.



## Financing options for alternative energy

Liquidity is still abundant for financing renewable projects, with private investors in the US and abroad maintaining keen interest in the sector.



## Plenary sessions

- ➔ [State of the industry and election impact](#)
- ➔ [Growing utility involvement](#)
- ➔ [Corporate involvement in alternative energy](#)
- ➔ [Global perspectives](#)
- ➔ [Emerging and disruptive technologies](#)
- ➔ [Financing options for alternative energy](#)

*Click on session titles to go to the highlights.*

## State of the industry and election impact

The seminar began with a discussion of what lies ahead for the renewable energy industry under the incoming US Administration. Christine Tezak noted that only some elements of Obama's legacy on energy and the environment are vulnerable to change. Obama's Climate Action Plan and "greenhouse gas guidance for federal agencies" are policies that could be walked back quickly. However, the federal Investment Tax Credit (ITC) for solar and Production Tax Credit (PTC) for wind, are unlikely to be terminated after last December's five-year extension.

The panel also suggested that states will likely step in to support renewable energy expansion with policies such as increased renewable portfolio standards (RPS), and that declining costs of wind and solar will continue to bolster growth. William Siwek pointed out that wind is the cheapest source of energy for power generation in many US locations, even without subsidies. In the solar sector, Christopher Mansour projected US solar installed capacity will triple to 118 gigawatts (GW) in 2021, largely driven by the ITC, and installations will only dip temporarily when the tax credit expires.

Recent modest US economic growth will likely continue, Patricia Buckley suggested, because the powers of the president on the economy are fairly limited. Overall, the panel predicted only gradual changes ahead for the renewable energy industry.

Patricia Buckley, Managing Director, Economic Policy and Analysis, Deloitte Services LP  
Christopher Mansour, Vice President of Federal Affairs, Solar Energy Industries Association

William E. Siwek, Chief Financial Officer, TPI Composites, Inc.

Christine Tezak, Managing Director, Research, ClearView Energy Partners, LLC

Moderated by Marlene Motyka, Principal, US Renewable Energy Leader,  
Deloitte Transactions and Business Analytics LLP



"The Obama legacy won't be undone completely, but some elements are vulnerable to change."

Christine Tezak, Managing Director, Research,  
ClearView Energy Partners, LLC

## Growing utility involvement

How will utilities integrate intermittent wind and solar resources into the electric grid without impacting reliability? Storage, smart grid technologies, community renewables, and innovative rate design.

Rapidly improving storage technologies are helping to manage intermittency on the supply side, while increasing deployment of smart grid technologies should boost flexibility on the demand side.

Diversifying the geography and scale of generation sources can also play a role. Community solar is an effective solution that is being adopted by several major utilities, noted Paul Spencer. Richard Weech indicated that while utility scale renewables may be more cost-effective than community renewables, building new transmission lines and managing land use and aviary issues can be challenging. This makes localized community energy an attractive option, and combining it with battery storage helps to ensure reliability.

Ultimately, rate design will be a key enabler of these mechanisms, according to Jeff Guldner. As customers link their energy use to what they pay, electricity demand becomes more flexible and can be a tool to help utilities integrate intermittent renewables.

While fossil-fuel peaking generation is necessary to manage the intermittency of renewables in the near term; community renewables, storage, smart grid technologies, and innovative rate design offer more avenues for the long term.

Jeff Guldner, Senior Vice President, Public Policy, Arizona Public Service

Paul Spencer, Chief Executive Officer, Clean Energy Collective

Richard Weech, President, BHE Renewables

Moderated by John McCue, Principal, Deloitte Consulting LLP

“When we flip the switch, we expect the lights to come on 100 percent of the time. People take for granted how easy utilities make our lives.”

Paul Spencer, Chief Executive Officer, Clean Energy Collective

## Corporate involvement in alternative energy

Today, companies across industries are looking to renewable energy solutions to help them achieve their business objectives. These goals are far-ranging and not just related to improving sustainability and reducing carbon emissions. They include achieving greater resiliency, leveraging tax credits, reducing fuel price volatility, and optimizing asset up-time, among others.

The solutions available to companies are evolving rapidly and often involve integrating multiple technologies, such as battery storage, smart technologies, renewable generation, and demand response. Dan Shugar sees “software as the next frontier” since it provides the data and control necessary for optimizing these solutions. Brian Janous echoed this sentiment noting that integration is fundamentally a data problem, and that data centers represent the “power plants of the 21st century.” He further explained that while electrification underpinned nearly every innovation in the 20th century, data is the driving engine of innovation today. Philippe Bouchard additionally noted that collaboration among corporations, utilities, and solution providers is increasing, and these alliances are driving innovative, mutually-beneficial solutions.

Based on panelists’ observations, corporate involvement in renewable energy is expected to grow. As Phil Graves summarized, this involvement increasingly makes sense in terms of the risk/reward ratio.

Philippe Bouchard, Vice President, Business Development, Eos Energy Storage

Phil Graves, Managing Director, Patagonia/Tin Shed Ventures

Brian Janous, Director of Energy, Microsoft

Dan Shugar, Chief Executive Officer, NEXTracker

Moderated by Brian Goncher, Managing Director, Deloitte Services LP



“Data centers represent the power plants of the 21st century.”

Brian Janous, Director of Energy, Microsoft





## Global perspectives

How fast has clean energy investment grown globally and what does the future hold? From 2004 to 2015, global clean energy investment surged 600 percent—from \$50 billion to \$350 billion, noted Colleen Regan. Of that, 80 percent was invested in wind and solar and the rest in biofuels, electric transport, and smart grid technologies. Moving forward, from 2016–2040 the world will invest \$11.3 trillion in clean energy.

Where will clean energy spending be focused? About \$5.5 trillion will be invested in Asia, including approximately 2.4 terawatts in China and 888 gigawatts in India.

A key driver for clean energy investment worldwide continues to be declining costs. This is good news for consumers of renewable energy, particularly in developing countries. In light of these developments, BNEF expects global solar power generation capacity to rise 6.5 percent annually from 2016 to 2040 and wind capacity to increase 2.6 percent per year, while fossil fuels, nuclear, and hydro power capacity is anticipated to fall.

But the additional investment in clean energy by 2040 won't cut greenhouse gas emissions enough to keep global temperatures from warming another two degrees Celsius, a goal of international climate talks. That would take about \$12 trillion, Colleen Regan concluded.

“The energy auctions have been impressive in their ability to incentivize competition.”

Colleen Regan, Head of North America Power and Environmental Markets, Bloomberg New Energy Finance

Colleen Regan, Head of North America Power and Environmental Markets, Bloomberg New Energy Finance  
Moderated by Jane Allen, Partner, Global Renewable Energy, Power & Utilities, Deloitte Canada

## Emerging and disruptive technologies

What are the challenges of bringing emerging and disruptive energy technologies to market, and if venture capital is not the best solution for financing these technologies, what is? From 2006 to 2011, venture capital firms spent more than \$25 billion funding clean energy technology start-ups and lost more than half of that.

Historically, venture capital firms want to create large stand-alone companies and not all promising energy technologies support that financing model. Matt Price suggested a better model, one which gives people access to research resources and provides relatively small levels of funding until a prototype is produced. Investors can then step in to take a more proven product to market.

Richard Adams added that appropriately addressing early-stage financing is critical for creating investment opportunity. In addition, companies must have a clear view of the problem they are solving and the value proposition the technology offers to potential customers. Dustin Muscato agreed, recommending that investors and technology developers understand the end-use of the product, the market being addressed, and distinct path to that market.

In the future, panelists envision that US power and utility companies will ramp up their investments in emerging energy sector technologies and that new financing models will emerge.

Richard Adams, Director, National Renewable Energy Laboratory

Dustin Muscato, Vice President, Asset Management, GPB Capital

Matt Price, Managing Director, Activation Energy

Moderated by David Dollihite, Senior Manager, Deloitte Services LP



“In order to achieve our energy goals, it will be important to educate researchers about understanding value to the market.”

Richard Adams, Director, National Renewable Energy Laboratory



“Everyone is looking at opportunities wherever they can to keep the growth going.”

Elizabeth Waters, Managing Director, MUFG

## Financing options for alternative energy

Despite the possibility that the new US Administration could rescind some policies favorable to renewables, the sentiment within the financing sector generally remains positive. Liquidity is still abundant for financing renewable projects, with private investors “from everywhere” leading the way. Highlights from the panelists:

- Foreign investors are still interested in taking advantage of tax equity plays and the growth in the US market—at least for now.
- US-based renewable energy companies and investors are “going international”, participating in strong development activity in Latin America, Mexico, and Japan.
- Corporations are playing an expanding role in driving renewable growth as they buy power purchase agreements (PPAs) and invest in new projects to improve sustainability and manage risks.
- Public financing for renewables remains subdued, with few YieldCo IPOs on the horizon; nonetheless, the YieldCo thesis remains valid and this form of financing is expected to survive and eventually rebound.
- Mergers and acquisitions (M&A) is likely to continue throughout the sector, as utilities seek growth, and upstream and downstream players consolidate.

While potential policy changes in the US are a legitimate concern, speakers emphasized that the global nature of the alternative energy sector will continue to open up new avenues and support the flow of capital.

George Revock, Managing Director, Capital Markets, Alternative Energy Finance, Capital One, North America

Elizabeth Waters, Managing Director, MUFG

Raymond S. Wood, Managing Director, Head of Global Power & Renewables, Bank of America Merrill Lynch

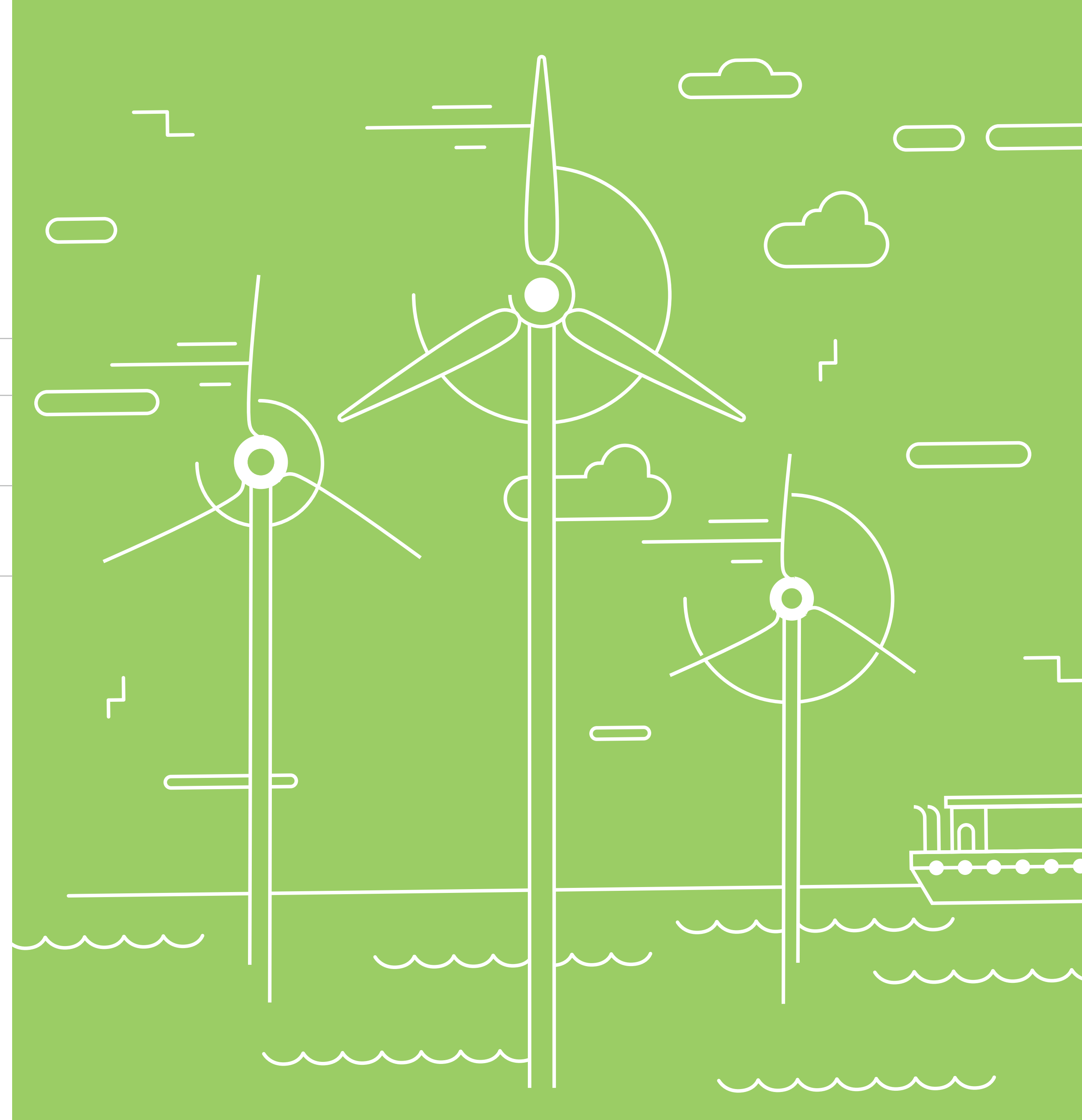
Moderated by Tom Stevens, Partner, Deloitte Tax LLP

## Elective sessions: Featured topics

Several elective sessions were offered concurrently throughout the seminar. Some provided insights into broad special topics while others delved into the technical aspects of accounting, tax and finance as applied to alternative energy.

- ➔ [The smart power ecosystem: The evolving role of microgrids](#)
- ➔ [Supply, demand, and other fundamentals that can shape the forward curve](#)
- ➔ [Managing commodity risk: Approach, benefits, and accounting implications of a more strategic proactive approach](#)

*Click on session titles to go to the highlights.*





“In addition to cost, customer decisions to adopt microgrids can involve reliability, regulatory, social, and environmental issues.”

Donald Wayne Morrison, Principal, NRG Energy

## The smart power ecosystem: The evolving role of microgrids

Where do we see the broader power ecosystem going and what is the role of microgrids in that evolution? Panelists responded that distributed generation is forcing the overall electricity grid to evolve and accommodate two-way data and power flows, and there are many facets to customers' interest in microgrids. Utilities and service providers are being challenged to understand and respond to what their customers seek to accomplish by adopting a microgrid. For instance:

- Resilience is a major motivator of microgrid adoption, as many utility customers are willing to pay a premium for higher levels of reliability and resilience.
- Although customers increasingly view microgrids as an option, in general they don't want to be responsible for managing the network themselves.
- Accordingly, some regulated utilities see an opportunity to provide microgrid-as-a-service offerings and to rate base the associated investments.
- Third-party providers also see opportunities to work with utilities, and directly with end users, to provide microgrid services.
- A new wave of state-level restructuring could advance the growth of the microgrid market, especially if it includes nodal pricing on the distribution network so that the true value of more localized, distributed assets can be realized.

Andres Carvallo, Chief Executive Officer, CMG

Donald Wayne Morrison, Principal, NRG Energy

Robert Welch, Smart Cities Infrastructure Director, Schneider Electric

Moderated by Jim Hendrickson, Principal, Deloitte Consulting LLP

## Supply, demand, and other fundamentals that can shape the forward curve

Supply and demand pressures on natural gas are at a crossroad. The forward curve is currently in backwardation and fairly flat around \$3 per million British thermal units (MBTU) because of uncertainty about the direction supply and demand could go as well as the changing political climate. Panelists commented on these and other factors influencing natural gas markets:

- Natural gas demand used for electricity generation has been rising steadily yet natural gas prices remain low: Could renewables be edging out natural gas?
- Rapid technological advances combined with tax incentives and legislative mandates for renewable energy are making wind and solar highly competitive as a generation source.
- Falling natural gas prices have incentivized upstream producers to “sharpen their pencils” and drive production costs low enough to remain in business and continue producing natural gas.
- Beyond electricity generation, rising demand for natural gas is also expected to come from LNG export terminals coming online and additional pipeline capacity being built into Mexico—both of which signal new markets.
- Whether or not new sources of demand will increase natural gas prices is still in question. So, for now, the forward curve remains subdued.

Matt Davis, Partner, Deloitte & Touche LLP

Martin Lin, Specialist Leader, Deloitte MarketPoint LLC



“Unprecedented changes in natural gas have both supply and demand engaged in a game of tug-of-war with the forward curve. Supply has been winning, but demand has a chance to overpower supply in the coming years.”

Martin Lin, Specialist Leader, Deloitte MarketPoint LLC

“If designed correctly, a hedging strategy can offer some of the same downside protection as a PPA would, as well as create some upside opportunities.”

Steve Engler, Managing Director,  
Deloitte & Touche LLP



## Managing commodity risk: Approach, benefits, and accounting implications of a more strategic proactive approach

In the power and utilities industry, PPAs have traditionally provided risk mitigation, but they are increasingly not sufficient to manage commodity risk in today's complex marketplace. Thus, companies increasingly need to take a more strategic approach to managing commodity risk, which often involves designing and implementing an effective hedge program. Panelists dispelled some common misconceptions around hedging and shared their views on what an effective program should entail:

- The problem is that hedging means different things to different people, and many mistake hedge tactics, such as options and swaps, for a well thought-out, effective hedge program.
- A rigorous, strategic hedge program demands a quantitative approach across risk profiling, program design and tactical planning.
- Hedge programs can provide both downside protection and upside potential.
- Success is really about balancing the trade-offs.
- In order to strike that balance, accountants should be involved early in the process, since they know how different hedge tactics need to be reported as well as how the upside potential can be maximized.

Jeff Craft, Partner, Deloitte & Touche LLP

Steve Engler, Managing Director, Deloitte & Touche LLP

Tim Metts, Senior Manager, Deloitte & Touche LLP

## Elective sessions: Technical and business topics

- ➔ [Accounting for the new revenue recognition standard](#)
- ➔ [Beginning of construction rules and planning, including project repower considerations](#)
- ➔ [Financing alternative energy and associated accounting](#)
- ➔ [Hypothetical liquidation at book value \(HLBV\) concepts](#)
- ➔ [HLBV modeling case study](#)
- ➔ [Lease accounting and implementation considerations for ASU 2016-02](#)
- ➔ [Lease tax-equity structures: Tax perspectives](#)
- ➔ [IRS guidance update](#)
- ➔ [Partnership flip structuring: Tax perspectives](#)
- ➔ [SEC reporting considerations](#)
- ➔ [Tax controversy trends and changes to IRS audits of partnerships](#)

*Click on session titles to go to the highlights.*







## Concluding perspectives

The renewable energy sector is setting new sights from a vantage point that was unimaginable only a few years ago. Having navigated both grid integration challenges and the vagaries of public policy, renewable energy has transitioned from being an “alternative” to being an integral part of the global energy solution set. Today, ongoing innovation, strong policy support from US states, and expanding utility and corporate involvement is propelling the sector forward—and this momentum is unlikely to dissipate, even if federal policy shifts unfavorably. There is perhaps no more exciting sector to participate in, as we collectively respond to customers’ growing demand for greater affordability, resiliency, and environmental stewardship.

**We look forward to seeing you next fall at the 2017 Deloitte Renewable Energy Seminar.**



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# References

- 1 On August 2, 2016, the White House Council on Environmental Quality released final guidance for Federal agencies on how to consider the impacts of their actions on climate change in their National Environmental Policy Act reviews. <https://www.whitehouse.gov/the-press-office/2016/08/02/fact-sheet-white-house-council-environmental-quality-releases-final>
- 2 MIT report, *Venture Capital and Cleantech: The Wrong Model for Clean Energy Innovation*

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Through the Center, Deloitte’s Energy & Resources group leads the debate on critical topics on the minds of executives—from the impact of legislative and regulatory policy, to operational efficiency, to sustainable and profitable growth. We provide comprehensive solutions through a global network of specialists and thought leaders.

With locations in Houston and Washington, DC, the Center offers interaction through seminars, roundtables, and other forms of engagement where established and growing companies can come together to learn, discuss, and debate.

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