# Welcome to Utility Planning Challenges

The webinar will begin shortly



#### About Today's Session

- Webinar attendees are muted to maintain audio quality
- Questions will be addressed after the presentation
- Webinar attendees can submit questions/ by:
  - By typing into the Question tool on the Webinar toolbar,
  - Or, by using the Raise Hand function to be recognized to verbally ask a question (you will be unmuted to do so)

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# Tennessee Advanced Energy Business Council

#### TNAdvancedEnergy.com @TNAdvEnergy

## What is advanced energy?





#### Advanced Energy Economy

- Advanced energy is a \$1.1 trillion market, globally (2013)
- U.S. market reached \$168.9 billion (2013)

US Advanced	Energy	Market
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Segment	2011 US Revenue (millions)	2012 US Revenue (millions)	2013 US Revenue (millions) (estimated)
Transportation	\$11,709	\$18,045	\$24,113
Fuel Production	43,164	47,337	50,957
Fuel Delivery	227	378	252
Buildings	35,271	39,229	43,966
Industry	4,202	5,452	6,733
Electricity Generation	29,829	45,385	31,273
Electricity Delivery and Management	7,990	14,385	11,605
US Total	\$132,392	\$170,212	\$168,899

Table 2 (Source: Navigant Research)





## TN Companies Seize Advanced Energy

- Volkswagen turns on Tennessee's largest solar park in Chattanooga
- Eastman Chemical Company uses cogeneration to reduce emissions and increase efficiency
- Thompson-Boling Arena saving 80%, annually by using LED lights.
- Alstom cutting-edge clean energy manufacturing, LEED Gold certified, solar array canopy
- Wampler's Farm Sausage, world's first biomass-to-energygasification CHyP system



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#### Mission

## TAEBC champions advanced energy as a job creation and economic development strategy.

- We educate public officials and business leaders about Tennessee's advanced energy assets,
- Establish **partnerships** to connect assets with opportunities,
- Inform policy that **expands and strengthens** the industry.





#### Asset Inventory: TN Energy Education Initiative



Power. Positive. Progress.

#### Tennessee's Advanced Energy Asset Inventory

Edition 1 Energy Efficiency, Renewable Energy And Energy Management

Tennessee Advanced Energy Business Council in partnership with the Tennessee Energy Education Initiative

September 2013









#### **Asset Inventory: Conclusions**

Economic assets unique to Tennessee will shape opportunities for the industry. Cooperation is key to expand our advanced energy economy.







Tennessee Advanced Energy Asset Inventory

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# **Utility Planning Challenges**

Tennessee Advanced Energy Business Council Webinar

Dr. Joe Hoagland, Vice President Stakeholder Relations, TVA

August 15, 2014







- Largest public power provider
- 80,000 square miles in 7 states
- 155 local power companies
- 57 directly served customers
- Federal agency, self-financing



## A Core of TVA's Mission: The Power System

# Supply PowerTransmit ReliablyServe CustomersImage: Supply PowerImage: Supply Power<

#### TVA Must Balance



- Low cost, reliable power
- Environmental stewardship
- Economic development

## TVA Must Meet our Mission and Live Within our Means





## M Historically, Utilities were Filling the Gap

#### Projections of capacity needed are filled by the most cost-effective resource.





## Today However, A Multidirectional Electric System is Evolving



Image Source: EPRI



- Resources:
  - Non-dispatchable
  - Provide energy only
  - Economy of scale
- Customers perceive:
  - Lower price
  - Higher reliability / resiliency
  - Will be green





# In the Middle of:

- Competitiveness Concerns
- Reduced Sales
  - Efficiency
  - Economic Changes
  - Distributed Resources
- Increasingly Uncertain Environmental Regulations



#### **While Keeping the Lights On**



# To Solve these Challenges

- Clear Understanding of Customer Wants
- Engagement of Local Power Companies
- Balanced Generation Portfolio
- Long Term Distributed
  Generation Strategy
- Maintaining High Reliability
- Maintaining Low Rates



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# Questions



# Thank you for your participation



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