

2022 JEA

IRP Stakeholder Engagement Meeting Series



Welcome



Raynetta Curry Marshall
Chief Operating Officer

IRP Stakeholder Meeting Agenda



1) Welcome & Introductions

Raynetta Curry Marshall, Chief Operating Officer, JEA

2) Review of Stakeholder Roster & Engagement Process

Cantrece Jones, President, Acuity Design Group, Inc.

3) January 13 Stakeholder Meeting Recap

Laura Schepis, Chief External Affairs Officer, JEA

4) IRP Scenarios

Brad Kushner, Black & Veatch Consultants

- IRP Development
- IRP Variables & Considerations
- IRP Scenarios and Sensitivities
- Proposed IRP Scenarios

5) Open Discussion & Next Steps

Laura Schepis, Chief External Affairs Officer, JEA

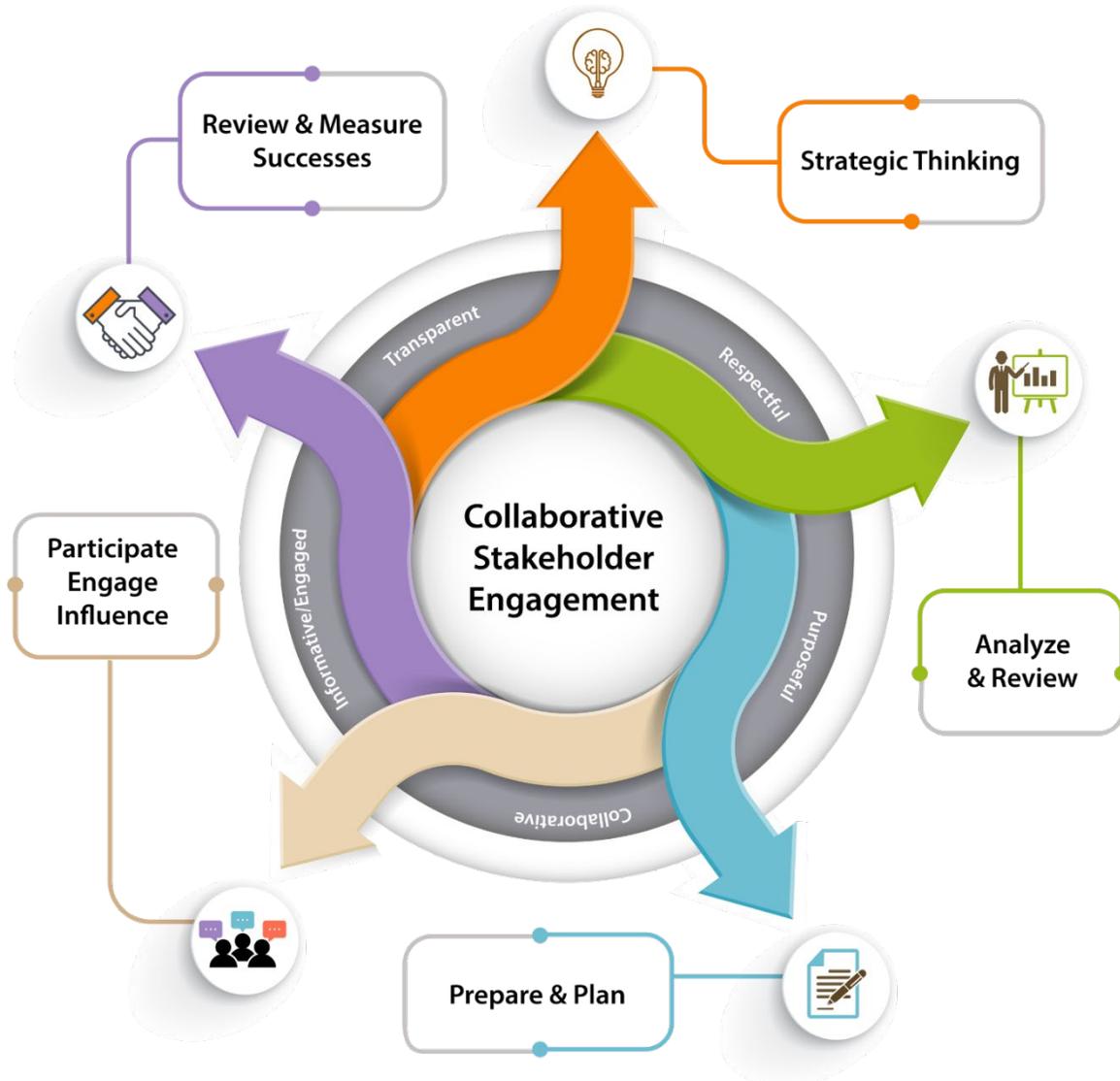


JEA Integrated Resource Plan

Stakeholder Roster & Engagement Process

Cantrece Jones
President, Acuity Design Group

Collaborative Engagement Process



**Open and Inclusive
Participation
with Every Stakeholder**

January Stakeholder Meeting Recap

Laura Schepis
Chief External Affairs Officer



Recap of January Stakeholders Meeting



Provided overview of:

- Stakeholder engagement
- JEA's existing system
- Fundamentals of Integrated Resource Planning

Invited Stakeholders to communicate what is important to the community throughout development of the IRP

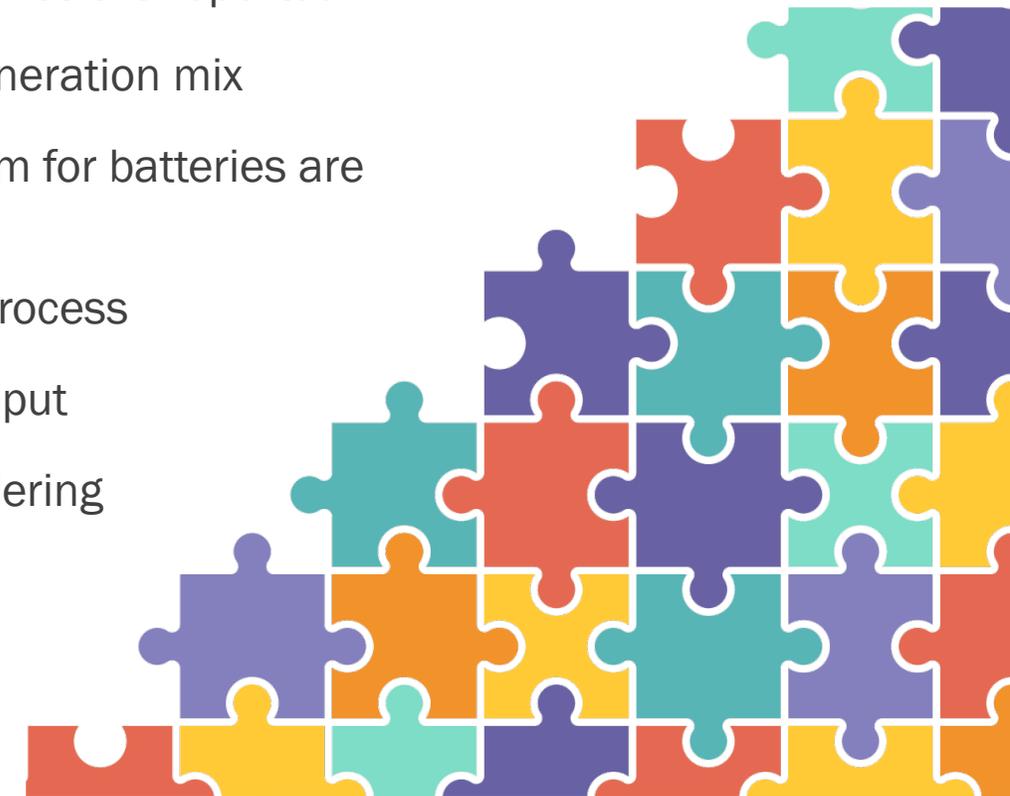


Recap of January Stakeholders Meeting



Stakeholder questions and comments

- Scope of IRP – is it electric only or is it also water and wastewater planning
- How JEA measures carbon emissions and where emissions baselines are reported
- Whether JEA has an internal cost of carbon that drives current generation mix
- How limited materials and hazardous manufacturing/waste stream for batteries are reflected in the planning process
- Social factors and environmental justice as part of the planning process
- Will JEA be conducting local polling in addition to Stakeholders' input
- Opportunities and challenges that Stakeholders should be considering based on the recent water/wastewater IRP
- Consideration of environmental stewardship beyond environmental regulations



IRP Development Recap

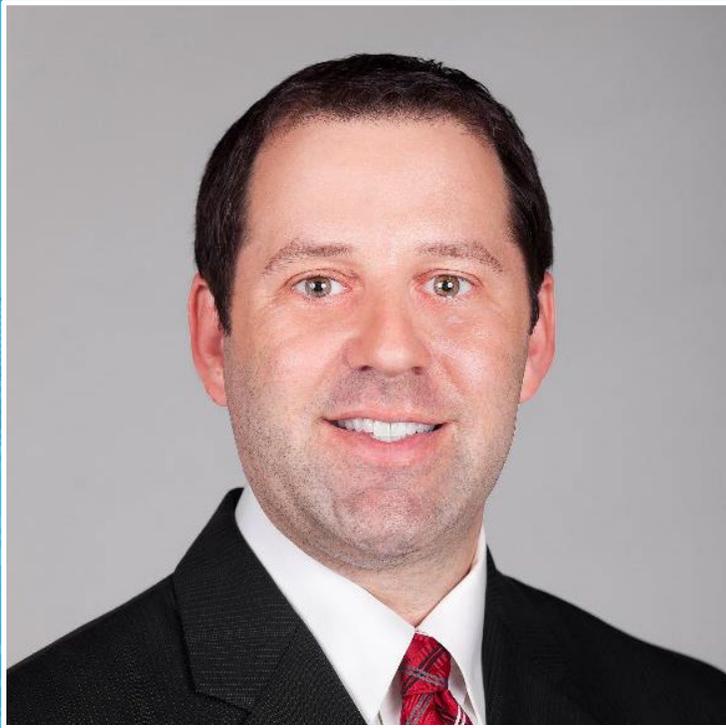


- Used throughout electric utility industry
- Evaluate future need and demand for generating resources
- Evaluate new resource options
- Analyze solutions
- Gather Stakeholder feedback
- Determine preferred portfolio
- Develop action plan(s)



JEA Integrated Resource Plan

IRP Scenarios



Bradley Kushner
Black & Veatch Consultants

IRP Variables and Considerations

IRP Variables

Factors that are evaluated quantitatively

IRP Considerations

Aspects that are qualitatively considered



IRP Development: *Variables*



Variables

01

Load growth

(i.e. customer demand for energy)

02

Fuel costs

03

Environmental regulations

04

Emerging generating technologies

05

Customer-sited generation

(i.e. distributed energy resources)

JEA Load Growth (Customer Demand for Energy)

- Forecast of net energy – how much energy do JEA’s customers require aggregated over each year
- Forecast of net firm peak demand – what is the maximum demand required by JEA’s customers in each year
- Demand-Side Management and Energy Efficiency – what are JEA’s customers doing in their homes/business to reduce energy and demand requirements
- Plug-In Electric Vehicles (PEVs) – how will future adoption of PEVs affect JEA’s energy and firm peak demand
- Electrification – how will future adoption of electric equipment affect JEA’s energy and firm peak demand

Fuel Costs

- Future prices for natural gas
- Future prices for solid fuel

Environmental Regulations

- How will costs for emissions of carbon dioxide (CO₂) affect JEA's generating portfolio
- How will achieving specific percent of energy from resources that don't emit CO₂ affect JEA's generating portfolio

Emerging Generating Technologies

- What types of new generating technologies should be considered

Customer Site Generating (Distributed Energy Resources)

- Customer sited renewables, or distributed energy resources – how will JEA’s energy and firm peak demand be affected by JEA customers installing solar or other energy resources on their homes/businesses

Other

- Cost to build new generating resources
- How long will JEA’s existing generating units continue to operate
- What does it cost to finance construction of new generating resources

IRP Development: *Considerations*



Considerations

Affordability

Maintain system reliability

Environmental justice

Economic development

CO₂ emissions reductions

What else is important to Stakeholders?

Stakeholder Input: *IRP Variables and Considerations*



Stakeholder Discussion Opp

- What variables and considerations are of most interest to you and the community?
- What technologies are important for the IRP to consider?
- What have we missed?



Scenarios and Sensitivities



Scenarios

- Represent potential futures for JEA over IRP timeframe (30 years)
- Reflect what is important to Stakeholders
- Variables change in meaningful ways when compared to other scenarios
 - Different enough to illustrate how future resources may vary across scenarios
 - Allows for evaluation of robustness of future resource decisions

Scenario and Sensitivity Analysis

- Scenario analysis considers changes to multiple variables simultaneously to analyze a potential future
- Sensitivity analysis considers changes to one of these variables at a time within a given potential future

Proposed IRP Scenarios



The following six scenarios are proposed for the IRP, and discussed in more detail on subsequent slides:

- **Current Outlook**
- **Economic Downturn**
- **Efficiency + DER**
- **Increased Electrification**
- **Efficiency + DER + Lower Emissions**
- **Future Net Zero**

Scenario Description

Proposed IRP Scenarios



Current Outlook

Represents potential future in line with current outlook on various considerations

- Expected load growth based on recent historical usage patterns and anticipated customer counts
- Anticipated customer participation in demand-side management/energy efficiency programs, customer adoption of plug-in electric vehicles, customer-sited generation
- Adequate fuel supplies and associated pricing
- Cost to construct new generating alternatives consistent with current trends
- Addition of approximately 250 MW of solar to expand existing renewable energy
- Assess continued operation of Northside Unit 3
- No additional regulations on carbon emissions/cost for emissions of carbon dioxides (will be evaluated as a sensitivity)

Scenario Description

Proposed IRP Scenarios

Economic Downturn

Represents potential future with general prolonged downturn in economic activity

- Reduced load growth and reduced customer adoption of plug-in electric vehicles
- Reduced construction costs for new generating unit alternatives due to decreased demand
- Lower prices for natural gas/solid fuel due to decreased demand

Scenario Description

Proposed IRP Scenarios

Efficiency + DER

Represents potential future in which customers reduce energy consumption in their homes/businesses and shift to other sources of energy generation beyond JEA

- Increased customer adoption of demand-side management and distributed energy resources
- Reduced load growth
- Increased customer adoption of plug-in electric vehicles
- Increased electrification
- Reduced construction costs for new generating unit alternatives due to decreased demand
- Lower prices for natural gas/solid fuel due to decreased demand

Scenario Description

DER: Distributed Energy Resources, or sources of energy that customers own that are located at their homes/businesses

Proposed IRP Scenarios



Increased Electrification

Represents a potential future with significant shift to electric vehicles/equipment

- Increased electrification results in overall increase to load growth
- Increased customer adoption of plug-in electric vehicles
- Increased customer adoption of distributed energy resources
- Increased construction costs for new generating unit alternatives due to increased demand
- Higher prices for natural gas/solid fuel due to increased demand

Scenario Description

Proposed IRP Scenarios



**Efficiency + DER
+ Lower
Emissions**

Represents potential future in which there is sustained reduction of carbon emissions

- New costs for emissions of carbon dioxide
- Specific target for clean energy as a percent of total energy requirements
- Increased customer adoption of demand-side management and distributed energy resources
- Reduced load growth
- Increased customer adoption of plug-in electric vehicles
- Increased electrification
- Increased construction costs for new generating unit alternatives
- Lower prices for solid fuel due to decreased demand
- Higher prices for natural gas due to increased demand

Scenario Description

Proposed IRP Scenarios



Future Net Zero

Represents potential future in which JEA achieves "net zero" carbon emissions by end of IRP planning period

- Net zero carbon emissions by end of IRP planning period
- All of JEA's fossil fuel generating resources retired; with occasional purchases of generation from natural gas resources for reliability
- New supply-side options include only solar, battery energy storage, biomass, hydrogen, and nuclear (small modular reactors)
- Increased natural gas and solid fuel prices prior to retirement of fossil fuel resources
- New costs for emissions of carbon dioxide

Scenario Description

Open Discussion and Next Steps

Laura Schepis

Chief External Affairs Officer



Open Discussion

What is Important to You?

- What would Stakeholders like to see at upcoming Stakeholder meetings?
- Is there anything related to the electric industry you'd like to learn more about?
- Can we improve this experience for you in any way?



Next Steps



Next Stakeholder Meeting

- Next Meeting: March 10, 2022 starting at 12:00 PM
- Topic of Discussion: Present Forecasts
- Engage with Stakeholder Members & JEA Team
- We want your ideas...Share your thoughts and Opinions
- WE APPRECIATE YOU!

