GWP 2024 Integrated Resource Plan

Stakeholder Technical Advisory Group meeting 2

July 19, 2023

Agenda

- Quick reminder round of introductions (15 min)
- Setting the scene for scenario discussion (30 min)
  - Presentation from Dhruv Bhatnagar, Strategen Consulting (15 min)
  - Q&A (15 min)
- Brainstorming community-preferred scenarios (60 min)
  - Full group discussion to brainstorm potential 'versions of the future' to model (30 min)
  - Breakout discussions to detail draft scenarios (30 min)
- Break (5 min)
- Full group debrief on breakouts (40 min)
  - Debrief on breakouts and align on STAG-proposed scenarios to present at townhall

Objectives for this meeting

- Brief STAG members on community concerns, questions, and preferences expressed at first townhall
- Gather STAG perspectives on potential community-preferred scenarios to test through modeling process
- Coalesce around STAG-preferred scenarios to be able to present at the next townhall for community feedback

Meeting reminders!

- Feel free to share what we discuss at STAG meetings with your communities, but please remember the Chatham House Rule!
- Please treat other STAG members and our IRP team with respect and aim for common understanding at all times.
- We'll try to allow plenty of time for discussion and Q&A but may need to cut things short to accomplish what we need to accomplish each week.
  - If you have questions or thoughts that we don't have time to get to, please talk to our team so we can capture them.
- We'll aim to vary our discussion setups so we can hear from every STAG member, but please be cognizant of others when speaking or asking questions so everyone has a chance to contribute to the discussion.

Introductions!

- Keep it to 30 seconds!
- Name, affiliation (if any)
- What's one thing you took away from the last STAG meeting?

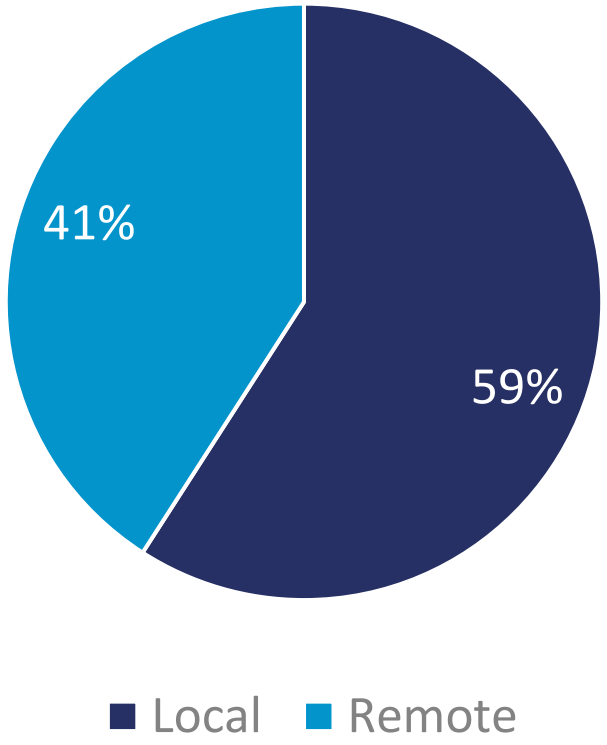
Closing the loop on your questions

- Q: Why isn't the GWP Commission involved in STAG?
  - A: The STAG process is meant to be independent of city staff and officials, and since the GWP Commission is appointed by City Council, their involvement wouldn't be appropriate. GWP Commission will have a chance to review the IRP this fall and provide recommendations as an advisory body, but it doesn't have the authority to make decisions on the IRP.
- Q: Why do industrial customers account for 28% of Glendale's energy use if they only make up 1% of customers?
  - A: Industrial customers are those that hit a certain threshold of energy usage. Because they have such high energy usage, they account for a disproportionate share of GWP's electricity demand even though the total number of customers is small. Examples of industrial customers include manufacturers (GlenAir, Ambrit Industries, Automation Plating Corp) and production studios (Walt Disney, Bunim Murray Productions).

Closing the loop on your questions (cont'd)

- What portion of GWP's resources are in the city vs. outside the city?
  - A: With current and planned contracts, 59% of Glendale's power capacity will be local by 2026.
    - Includes Grayson and Magnolia natural gas units, grid-scale battery storage, Scholl Canyon landfill gas, and natural gas internal combustion engines.

Glendale Power Resource Distribution (Capacity), as of 2026



Major learnings from first community townhall (June 29)

- There was a strong desire for transparency and community input in the IRP process.
- Clean energy seemed to be attendees' top priority.
- The community sees distributed energy resources (customer solar, energy efficiency, demand response) as key resources.
  - Community members expressed that energy efficiency should play a large role and customer training should be a critical part of making it effective.
- For other resources, community concern was generally higher for resources being developed in Glendale vs. outside Glendale.
  - Ex. Attendees expressed concern about local wind projects (due to the view) and concern with customer-sited batteries (due to fire risk).

Resource options presented at townhall

Utility scale resources

- Intermittent
  - Solar
  - Wind
- Firm or flexible
  - Natural gas
  - Green hydrogen
  - Geothermal
  - Small modular nuclear reactors
  - Grid scale energy storage

Customer side resources

- Distributed solar
- Distributed energy storage
- Energy efficiency & demand response

Results of community resource preference activity

Resource	Green stickers	Red stickers
Utility scale solar	9	
Utility scale wind	5	4
Green hydrogen	1	7
Natural gas	5	**22**
Grid-scale energy storage	10	
Small modular nuclear reactors		**17**
Geothermal	4	1
Customer-sited storage	5	8
Customer-sited solar	**16**	
Energy efficiency / demand response	**14**	

Background on scenarios

- GWP's anticipated scenarios will test high-level policy goals:
  1. California mandate: 60% RPS by 2030, 100% zero-carbon by 2045
  2. Accelerated pathway: 100% by 2035
  3. Affordability: Lowest cost portfolio for California mandate compliance
- STAG will be responsible for developing 2 community-preferred scenarios, guided by community input shared at townhalls.
- Examples of potential scenario elements for STAG to consider:
  - Maximum distributed energy resource adoption
  - Maximum grid-scale solar usage
  - Use of emerging technologies, like long-duration energy storage
  - Retirement or conversion of existing natural gas units

Example scenarios

Example scenario 1: DER Heavy

- **Timing:** 2035 - 90% clean target; 2045 - 100% clean
- **Goal:** Customer resources
- **Resources:**
  - Preference on distributed energy resources
    - Maximize local solar + storage in Glendale
    - Aggressive assumption on demand response: EV deployment; customer response
    - Aggressive energy efficiency
  - Retire fossil plants (e.g., Grayson)
  - Utility scale storage in Glendale for flexibility
  - Renewable imports on existing transmission
- **Exclude:** New fossil, green hydrogen, hydropower

Example scenario 2: Fossil Replacement

- **Timing:** 2040 - 100% clean target
- **Goal:** Affordable path to clean energy target
- **Resources:**
  - Convert Grayson and Magnolia to clean fuel (i.e., green hydrogen or renewable gas) for flexibility
  - Renewable imports on existing transmission
  - In-Glendale long duration energy storage
- **Exclude:** New fossil, nuclear

Things to know about the modeling process

- All resource options are "on the table", but Ascend's model prioritizes the lowest-cost resources first.
  - If you don't want the model to consider all available resources, you need to tell it so.
  - If you want the model to select a certain amount of a certain resource (i.e., a certain amount of batteries), you need to tell it to do so.
  - If you want the model to prioritize other factors over cost (i.e., choose customer-located resources first), you need to tell it to do so.
- Ascend will be inputting the predicted future prices of resources and anticipated future electricity demand based on detailed forecasting.
- There is an opportunity to both test different scenarios (different future paths) and run "sensitivity tests" on scenarios that change certain variables.
  - Sensitivities are meant to show how much future portfolio costs might change due to a change in assumptions for variables like load growth and market prices. They can test higher or lower future prices for certain resources, or higher or lower EV adoption, for instance.

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Q&A (15 minutes)

Discussion questions

- What potential 'versions of the future' are you interested in testing through the modeling process?

- Think of….
  - Resources to prioritize
  - Resources to exclude or phase out
  - Timeline for achieving clean energy mandates

- Write your ideas on sticky notes and put them on the whiteboard.

Breakout discussions

Divide into 3-4 groups.

- What resources will you prioritize in your scenario? What resources will you exclude?
- What timeline considerations will you integrate in your scenario?
  - Ex. Phasing out certain resources, meeting clean energy mandates at/ahead of schedule
- How will your scenario balance affordability and achieving environmental goals?

Full group debrief

- Have one person from each group share out about the results of your brainstormed scenarios.
- What is common across these scenarios?
- What areas of difference are there?
- Anything you really like or don’t like in these scenario ideas?
- How can we find a middle ground between these scenarios to take to the townhall?

Upcoming meetings

- **7/24:** Townhall 2
  - Sparr Heights Community Center, 6:30-8:30 p.m.
  - This townhall will be a deep dive into the community-preferred scenarios to be explored in modeling.
  - STAG members should attend if able!
- **8/2:** STAG meeting 3
  - This meeting will be a debrief of the townhall and a deeper discussion on community-preferred scenarios.