Overview of CGS Repurposing Studies Results

Sept. 14, 2023

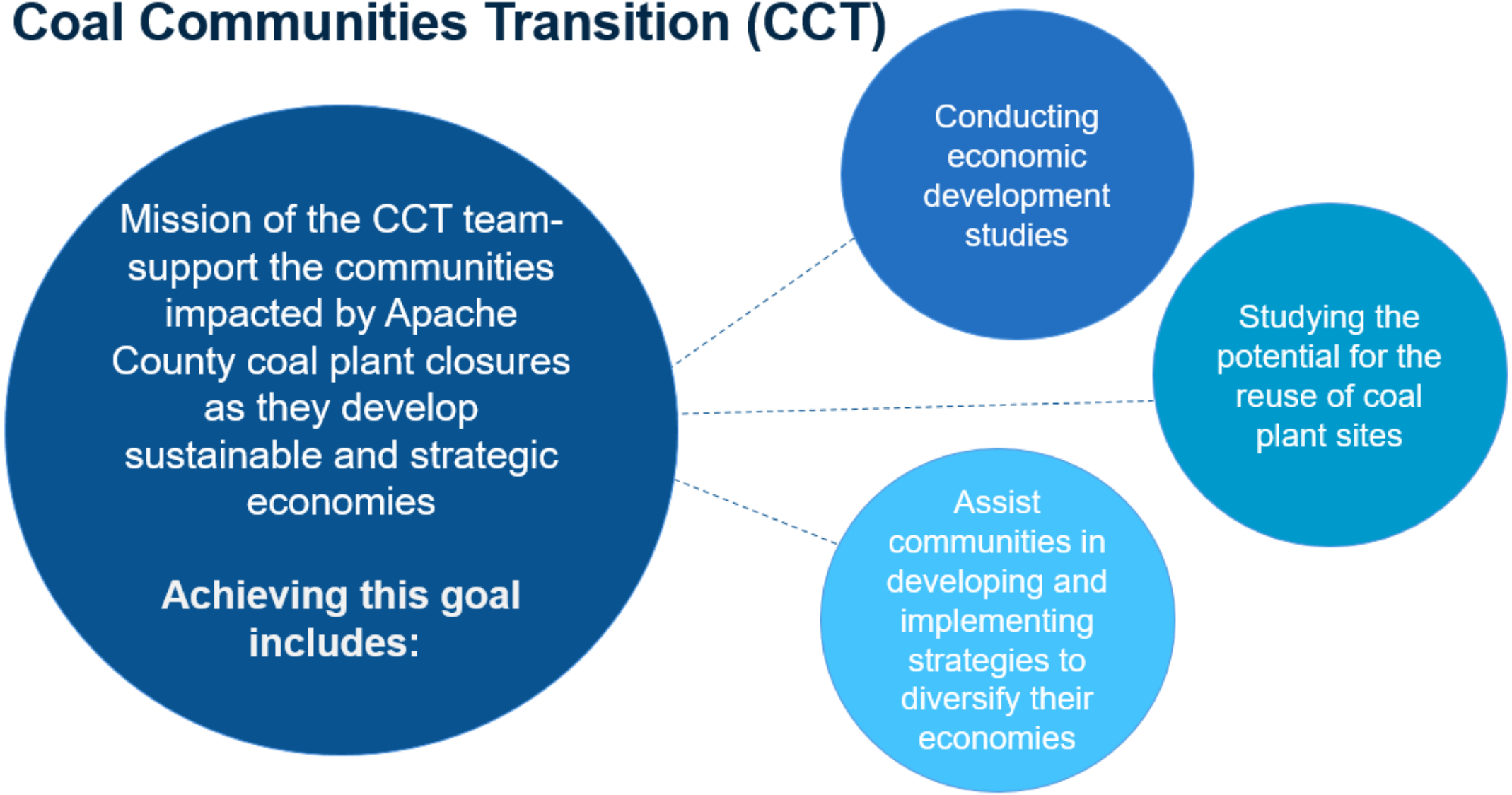
Agenda

- Welcome
- Invocation
- Pledge of Allegiance
- Coal Community Transition Team
- CGS Repurposing Study Results
- GAIN Study Results
- Future Planning Considerations
- Next Steps
- Q&A

Coal Communities Transition Effort

Hunter Moore | CEO | Cazador Consulting

Coal Communities Transition (CCT)

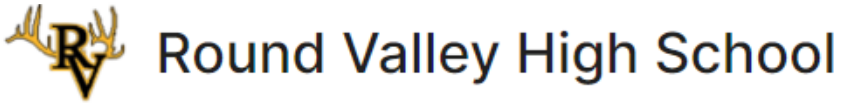


Pillars of Economic Development

Community leaders identified six areas of development as the pillars for building diverse, strategic economies.

- Broadband
- Transportation Infrastructure
- Workforce Development
- Housing
- Commercially Viable Sites
- Community Beautification

Collaboration, Talent and Resources



Yielding Results

Broadband Grants – $12M

- **$9.7M** – AZ Dept. of Commerce
- **$1.7M** – Commnet matching funds
- **$300K** – SRP matching funds
- **$300K** – TEP matching funds

Education Grant

- **$50K** – SRP grant to St. Johns & Round Valley High Schools

Utilities' Grant Funding – SRP | TEP | APS

- **$25K** – City of St. Johns for creation of Regional Energy & Education Tech Center
- **$25K** – St. Johns USD for grant writing to pursue funding opportunities
- **$25K** – City of Show Low feasibility study for business incubator
- **$25K** – Grow Arizona workforce development
- **11** more applications currently under review

Community Level Studies

- Economic Impact Study (ASU) ☑
- Broadband Study ☑
- Economic Development - [in progress]

SRP's CGS Repurposing Studies

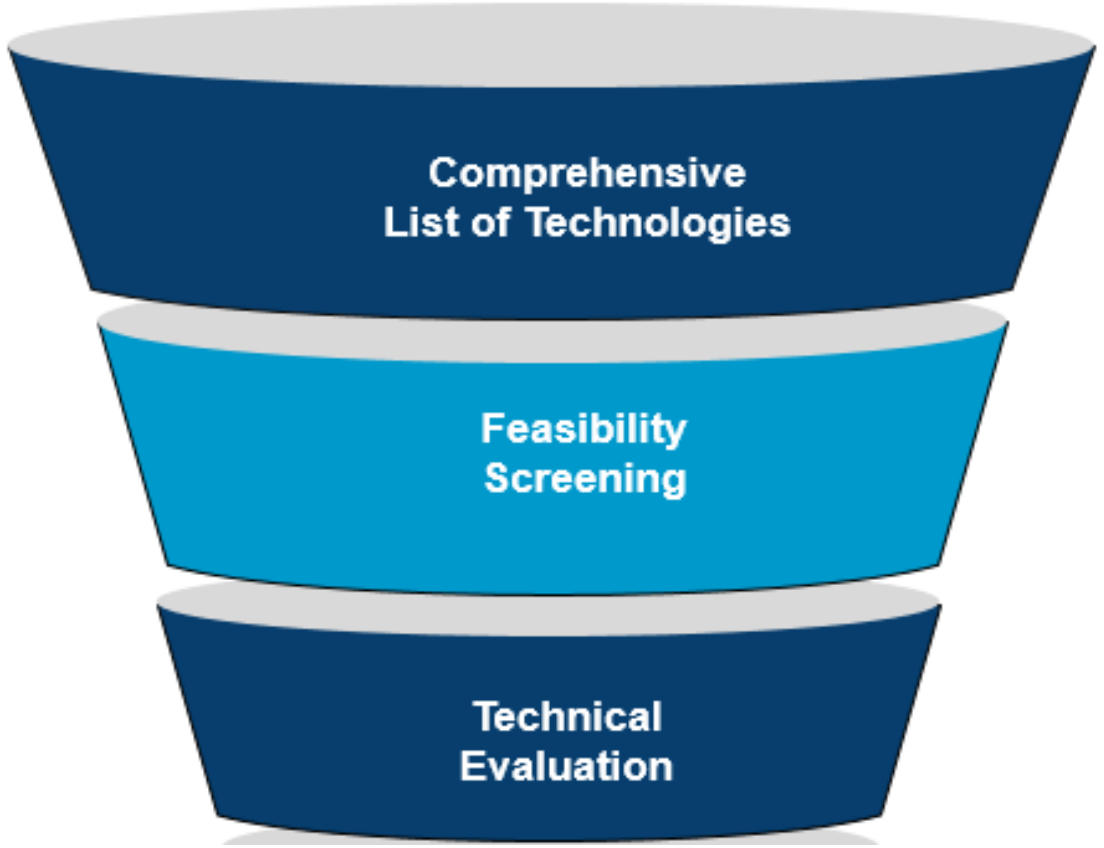
- Kiewit Study ☑
- GAIN Study ☑

CGS Repurposing Study

Kathleen Munroe | SRP | Resource Development

Kiewit Study Process

Blended/Iterative process



Study Results
(with findings from GAIN reports incorporated)

Phase 1

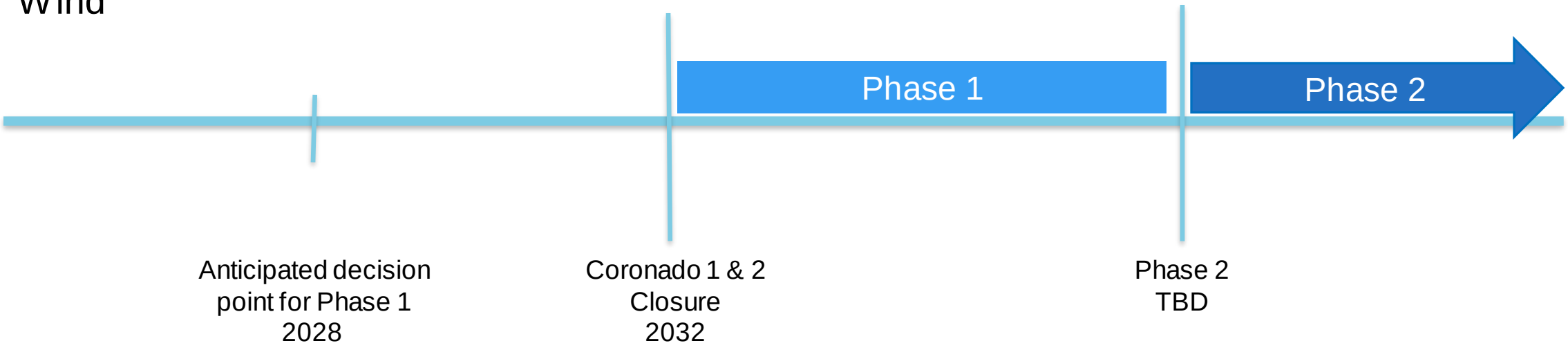
Technologies feasible for deployment at CGS site by 2033

- Battery Storage
- Biomass
- Long Duration Energy Storage*
- PV Solar
- Wind

Phase 2

Technologies that lack the maturity, supply chain or critical infrastructure to be online by Spring 2033

- Advanced Nuclear
- Hydrogen-fired Power Plant
- Long Duration Energy Storage
- Natural Gas Power Plant



*potential near-term R&D pilots

Key Takeaways

- The Kiewit Study confirmed that several low and zero-carbon technologies are site compatible and could be considered for Spring 2033 implementation
- Based on study results and growing energy needs, SRP intends to develop plans to repurpose the CGS site following the cessation of coal operations
- Development plans will likely include two phases:
    - Phase 1 is the period closely following plant closure. The most feasible technology options are Battery Storage, Biomass, Long Duration Energy Storage (LDES), PV Solar and Wind.
    - Phase 2 timing is to-be-determined. These technologies need time to demonstrate reliability (mature). This list includes hydrogen-fired generation, LDES, advanced nuclear, natural gas as a bridge to low/no-carbon generation and others.

Coronado Generating Station – GAIN Repurposing Study Update

September 14, 2023

Christine King, Director
Gateway for Accelerated Innovation in Nuclear (GAIN)

GAIN
Gateway for Accelerated Innovation in Nuclear

INL/MIS-18-50189

Coronado Generating Station – Repurposing Study

Primary Objective: Assess the feasibility of transitioning from coal to nuclear; Learnings can be applied to other coal units within commuting distance from CGS

- Siting Evaluation (leveraging EPRI's Siting Guide)
  - Assess CGS site suitability
  - Identify strengths and weaknesses
  - Support selection of candidate nuclear technologies

- Nuclear Technology Assessment (leveraging EPRI's Nuclear Technology Assessment Guide)
  - Identify candidate nuclear technologies
  - Identify potential next steps

- Economic Impact Assessment
  - Evaluate economic outcomes and community impacts from:
    a) Coal plant retirement
    b) Introduction of a nuclear power plant

Coronado Generating Station
Owned/Operated by Salt River Project
Located in Saint Johns, AZ

CGS Initial Siting Evaluation Results

- No exclusionary or avoidance factors were identified at CGS. Construction of a nuclear power plant at CGS is feasible based on initial screen.

- Ample land, supporting infrastructure, and interconnection access identified as strengths.

- Key siting considerations identified for future evaluation include:
  - Water Availability
  - Ecological Impacts on Endangered or Threatened Species
  - Continued Engagement with Native and Local Communities

- Results of the initial siting evaluation served as inputs to the CGS Nuclear Technology Assessment.

Based on the positive findings from the initial siting evaluation, SRP may want to consider nuclear as a viable replacement technology at CGS.

CGS Initial Nuclear Technology Assessment Results

- Small and medium advanced reactors (50 MWe - 600 MWe) were identified as the candidate technology.

- Several potential designs were identified that could meet SRP's goals and business objectives.
  - Primary purpose is to generate electricity
  - Maturity could support SRP's deployment window
  - Capacity spans range of MW to provide flexibility

Based on the results of this initial nuclear technology assessment and work related to siting, CGS remains a viable location to host one of several potential nuclear reactor designs.

CGS Economic Impact Assessment Results

- The study evaluated regional socio-economic data and provides an estimate for different deployment scenarios

- Nuclear deployment results in significant positive economic impact for communities surrounding CGS. Economic impacts dependent on generating capacity and reactor design.

Annual Economic Impacts	Current CGS Operations	462 MW Nuclear Scenario	924 MW Nuclear Scenario
Employment (County-wide) (direct, indirect, and induced)	450	575	1,000
Labor Income	$40M	$50M	$85M
Economic Output	$300M	$340M	$675M

SRP should continue to engage with CGS surrounding communities to assess readiness to host nuclear power plant at CGS.

Path Forward

- GAIN study is the first step of many required to make decisions regarding nuclear at CGS
- Based on GAIN study results, nuclear continues to be a replacement technology option worth exploring at CGS.
- Should SRP decide to continue to explore nuclear at CGS, the following next steps are recommended:
  - Develop project timeline
  - Engage with design vendors
  - Continue to monitor and evaluate nuclear industry progress
  - Continue to engage with local community and tribal leaders
  - Begin deployment planning in parallel with technology monitoring

Planning Considerations & Next Steps

Kathleen Munroe | SRP | Resource Development

Future Planning Considerations

CGS Specific Considerations

- Decision needed by 2028 for a project to be online by 2033
- Resource allocation for phased development
- CGS site uniquely suitable for certain technologies

Other Considerations

- Transmission preservation / availability
- Impact from other Arizona utility coal retirements
- Phase 2 technology & infrastructure development

Next Steps

- Share findings and key takeaways with the Community
- Establish development plan and timeline
- Develop transmission strategy
- Commence due diligence activities to support a 2028 resource decision
- Based on best available information determine preferred Phase 2 options
- Engage with other Arizona utilities on transmission expansion & Phase 2 opportunities
- Return to SRP Board to seek approval for resource recommendations

Q & A

thank you!