

**Clarkdale Sustainability Park Vision:
To be an evolutionary solution for a sustainable community.**

Purpose and Objectives of the Study

With the Clarkdale Sustainability Park (CSP or Park), the Town of Clarkdale is taking creative, united and transformative action as it faces many economic challenges which cannot be solved without significant action. The cost of doing nothing in response to these challenges would be unforgivable and detrimental to the health of the community, its future and its future residents. In short, the cost of doing nothing is not an option. Clarkdale is choosing to take transformative action in these toughest of times by seeking effective solutions.

These challenges are not unique to Clarkdale. Our Nation is being called upon to adopt and adapt to fundamental changes for the future. The CSP concept is a serious effort which will not only solve many current problems, but create a new and sustainable future. The severity of the current challenges requires creative solutions which can only be implemented by a united effort. The citizens of Clarkdale are prepared to meet that challenge by building the CSP.

Clarkdale realizes the CSP concept will require the resolve to make tough decisions and overcome unknown adversities. However, it is clearly the right thing to do. Given the vision of Clarkdale's leadership, its community support and creative will, combined with the technological advancements and funding opportunities available, it is clear that now is the time to act, and time is of the essence.

The CSP presents a focused economic development strategy that creates employment and attracts investors and partners. The energy-producing tenants will generate revenues while fostering the Park's concept by supporting each other's role and contributing to its organic charter. Through the CSP, Clarkdale will tackle energy sustainability, reduction of foreign oil needs and reduction of greenhouse gasses on a community level while at the same time providing stable and growing revenues for the town.

The development, production and efficiencies generated by the Park will advance the security, economic well-being, and public and environmental health of Clarkdale. The conservation of water and generation of new water resources will likewise play a central and critical role in the future of our town. All these benefits will also accrue to the State of Arizona, the Verde Valley and other communities that choose to follow similar paths. The Park will provide a supportive setting for the deployment of reliable, innovative energy production.

Study Area

The Clarkdale Town Council has identified three parcels of land that would be excellent sites for the Park. Each site possesses elements that make it suitable for the concept described in this Scope of Work.

Site 1 is a 977 acre parcel owned by Freeport – McMoRan. This site is located in the northeast portion of Clarkdale. There is an existing development agreement on this land for 900 homes and some commercial development. The area is zoned Planned Area Development. Approximately 200 acres of this property was used as a mining tailing site in the past. That section has been capped by two feet of earth as a result of a remediation project. This parcel is adjacent to the Verde River and contains a lake fed by a diversion dam. This land is fairly level with power available to the site.

Site 2 is a 594 acre parcel owned by the Clarkdale Metals Corporation. The site is located in the northern portion of Clarkdale with 400 acres being just outside the town boundary and slated for annexation in to the town. The property within the town is zoned Industrial. This site involves some level land, and an elevation rise of approximately 100 feet. Power is available to the site.

Site 3 is a 522 acre parcel owned by Verde Exploration. This entire parcel is outside of the town, in Yavapai County but could be annexed in to the town limits. There are two ten-year leases on this parcel which would require a release of those leases. This parcel has access off State Highway 89A. This parcel has the greatest elevation changes within the site and does not have power to the site.

Scope of Work

Contractor Qualifications

Project Description

Because of its magnitude of scope and size, the CSP's creation will be carried out in phases. The first phase of the Park will address water sustainability and reduce dewatering of the adjacent Verde River by treating municipal effluent to drinking water standards. This water will then be used as "non-potable reuse" water for irrigation, aquifer recharge and such non-potable uses as secondary water in commercial buildings (toilet flushing, etc.). Producing the energy required for this process on-site will be included in the first phase.

Subsequent phases will welcome other technologies, businesses and educational/research facilities to the Park. The project will become a public-private partnership, and will be sustained primarily by profits on the sale of several renewable energy products. Educational tuitions, water treatment fees, tourism opportunities, and local excise and property taxes will also contribute to revenues. The focused goal will be a production of roughly 50 megawatts of clean, renewable, and carbon-neutral to carbon-negative energy to the grid and production of liquid fuels from a suite of renewable energy-producing tenants.

The commercial, industrial, educational and related business tenants working in concert and, in support of each other, is a critical factor in the organic nature of the Park's concept. Management's adherence to the standards developed will require dedication to the vision of the Park.

The Park will create around 800 well-paying jobs for Clarkdale and the Verde Valley, primarily using current local workforce development. The Town of Clarkdale and the surrounding region will experience a dramatic boost in sustainable economic development from the Park itself and its ancillary businesses. The result will be to allow the Town of Clarkdale to stabilize taxes, maintain the lowest possible water utility rates, and improve services to its citizens.

Phase I Initial Baseline Assessment

Three distinct sites have been identified for evaluation in the Feasibility Study. The three proposed sites will be evaluated on identical criteria resulting in a recommendation of a preferred site. The preferred site will be evaluated in depth in Phase II.

The three sites to be evaluated are illustrated in Attachments 1, 2 and 3.

The evaluation of each site will include the following criteria:

Constructability - This study will identify all areas of construction and associated costs. It will identify labor, materials, engineering, equipment, support services, and any other items required to construct the Park on this site. Construction costs will be identified and be put in a table for evaluation. Include a "spend out" timeline.

Utilities - All utilities on or adjacent to the project site will be identified. They will be evaluated for capacity and interconnection requirements along with associated costs and construction time line, including a permit timeline. Indicate if land easements will be required.

Transportation - A transportation study will be done to determine all routes to the site and identify any upgrades and associated costs. Transportation within the site will be defined and mapped.

Geologic and Soils - A geologic and soils study will be done that will identify any constructability issues with the site.

Fire Protection and Security - Local fire protection resources will be identified and evaluated on capacity and availability to serve the site. If services are required on the site these will be identified along with the costs of construction and operation. Identify if there are special needs in fire protection resources necessitated by the nature of the operations.

Floodplain and drainage concerns - Local flood plain maps will be evaluated and a flood plan will be developed for the site that will identify the scope and costs for a drainage plan. All required permits will be determined along with associated costs and time

Adjacent land use - Adjacent land use will be determined and mapped. Any conflicting land use issues will be identified and solutions to these issues will be presented.

Permitting requirements - All required permits will be identified and listed in tabular form along with the agencies involved with contact information. A time line will also be included in the table along with associated costs for the permitting activities.

Environmental considerations - An environmental assessment will be done to establish the impact of the project site to the local community as well as any existing environmental issues at the site. Any corrective actions required and associated costs will be disclosed.

Solar/wind assessment - An assessment will be done to determine the constructability and operation of solar and wind generating technologies. These will be mapped out and the best fit technologies will be identified and placed into the map. Costs and operational requirements will be identified.

Quality of Life Considerations- Positive and negative impacts to the general quality of life in Clarkdale and to property owners adjacent to each site will be evaluated.

Cost and availability - The total cost of the site development will be tabulated by line item and a delivery schedule attached for each item. Long lead and special delivery items will be identified along with any special requirements.

Summary of Site Assessment - This section of the site assessment will summarize all criteria evaluated in Phase I. It will tabulate items in a manner that can be used for evaluating all aspects of the project and will recommend the ranking of the site (1st, 2nd or 3rd) compared to the other sites evaluated.

Site Recommendation – The completion of the Phase I study should result in the recommendation of a preferred site along with a ranking of the three sites in priority order. It should also include an identification of those issues that need to be part of the detailed study of Phase II.

Phase II Project Feasibility

After completion of the evaluation in Phase I, a detailed study of the preferred site shall be completed in Phase II. The Phase II analysis should include all elements listed below, in addition to criteria identified during the Phase I analysis.

Site Design

Land Use – Review the potential technologies and recommend a land use Planned Area Development plan for the entire site area.

Adjacent land use and issues – Examine the surrounding property uses, both existing and proposed in the General Plan, for compatibility issues and recommend mitigation options.

Technology placement – Review existing technologies and emerging technologies and recommend compatible placements on the site that will encourage the most efficient use of both the site and shared resources.

Infrastructure – In-depth examination of infrastructure needs for the project site and associated cost estimates.

Transportation issues including raw materials and product transport – An examination of the transportation issues of raw material and product both to the site and out from the site. Transportation includes all methods, including street, rail, line and pipe.

Circulation – The site shall be designed to allow uncongested traffic flow to all facilities. Consideration of site expansion will be included in the circulation evaluation. The type of transportation will also be identified i.e. rail, truck, automobile, conveyors, etc. especially for inter-facility transportation of raw materials and products. The need for a centralized product shipping and receiving facility and employee - visitor parking will be determined and identified to keep internal traffic to a minimum. Use of fossil fueled equipment will be minimized for internal transportation needs.

Access - Site access will be located in an area to allow for uncongested traffic flow. At the entrance to the site an area will be designed for security and a system established for secure admittance.

Volume projections - Volumes of peak production for all facilities will be considered during the evaluation of transportation needs. This will also include the maximum needs at site build out.

Utilities - All utilities on or adjacent to the project site will be identified. They will be evaluated for capacity and interconnection requirements along with associated costs and construction time lines. If land assessments will be required these will be identified along with land owner information and costs. Any permits or licensing requirements will be defined along with the required agencies to be contacted. Utility capacity within the site will be such that at build-out all needs are met.

Power supply and distribution both to and from the site - This element shall be identified as a specific Utility sub-element covering only the power supply and distribution to and from this project. Power supply to all facilities will be designed to sustain normal peak production requirements. If additional power is generated on site, distribution between facilities will meet any interconnection requirements of the local utility company. The power supply system will be designed to handle peak loads for site build out. Any other transmission requirements for power generated on the site will be identified and included in the initial design for the site. Required transmission from the site to the interior connect point of the local utility will be identified in order to handle the maximum loads both to and from the site.

Communications - This element shall be identified as a specific Utility sub-element covering only the power supply and distribution to and from this project. All site facility communications requirements will be identified with the ability to handle all internal communication and external communication to and from the site. The communications design will include the needs of the site at build out.

Natural gas supply and distribution both to and from the site - This element shall be identified as a specific Utility sub-element covering only the gas supply and distribution to and from this project. Natural gas supply to all facilities will be designed to sustain normal peak production requirements. If additional gas is generated on site, distribution between facilities will meet any interconnection requirements of the local utility company. The gas supply system will be designed to handle peak loads for site build out. Any other transmission requirements for gas produced on the site will be identified and included in the initial design for the site. Required transmission from the site to the interior connect point of the local utility will be identified in order to handle the maximum loads both to and from the site.

Environmental impacts/ EA or EIS Determination - An environmental assessment that contains analysis, policies and strategies that address anticipated effects, if any, on all major categories such as but not limited to air quality, water quality, archeological sites and natural resources associated with this proposed development. The policies developed under this assessment shall be designed to have community wide applicability and shall not require the production of an additional environmental impact statement or similar analysis beyond the requirements of state and federal law.

Sound consideration – Establish a current noise level baseline for both daytime and nighttime activities for the community and then evaluate the noise level the potential industrial and commercial elements of this project will produce over the established baseline. If the potential noise level is higher than the baseline, develop design measures that can be implemented that will reduce the noise to the current baseline level.

Night sky lighting considerations - Evaluate the outdoor lighting requirements for this project and provide guidelines that will assure advanced lighting practices are used on this project which provide adequate lighting for safety and utility without excessive glare or light pollution protecting our pristine night time environment.

Viewscape considerations - Evaluate the draft Master Plan layout for this project and provide recommendations that will achieve the goal of providing an aesthetically pleasing visual, yet functional, development. Specific consideration shall be given to the existing land use guidelines in Town of Clarkdale General Plan and Zoning Code.

Adjacent property owners concerns - Adjacent land use will be determined and mapped. A survey of the adjacent property owners will be made to obtain their concerns and recommended solutions shall be provided to address each adjacent property owner's concerns. Any conflicting land use issues will be identified and solutions to these issues will be presented.

Verde River impacts - A comprehensive assessment as to what impact this project will have on the Verde River is a major concern that needs to be addressed. The assessment needs to determine the availability and protection of existing sources, water conservation and water quality to and from this project.

Impacts to flora, wildlife, birds and habitat - Identification of any USFWS listed threatened and endangered species or critical habitat that exist in the project site or adjacent areas that may need to be developed. Identify any impacts on the species including action that can be taken to mitigate those impacts.

Historic, Pre-Historic and Cultural Sites- Identification of any concerns relating to historic, pre-historic and/or cultural sites on the property, along with what action can be taken to address the concerns.

Regulatory Issues - All regulatory issues will be identified and listed in tabular form along with the agencies involved with contact information. A timeline will also be included in the table along with associated costs, if applicable, for regulatory compliance.

Permitting schedule - All required permits will be identified and listed in tabular form along with the agencies involved with contact information. A time line will also be included in the table along with associated costs for the permitting activities.

Federal and State land management issues - All Federal and State land management issues will be identified and listed in tabular form along with the agencies involved along with contact information. A timeline will also be included in the table along with the associated solution that can resolve any outstanding issues.

Land entitlements - A survey of all land entitlements will be identified in a tabular form along with contact information. Recommendations relating to land entitlement issues will be included.

Water rights - Identify all water rights in a tabular form and the respective contact information. Any water rights issues will be addressed along with a recommended action.

Asset procurement - Assess the procurement of the various elements of this project to determine the availability and track record of the element along with the long term productivity of the element. All items identified for procurement for this project must meet the current energy efficiency standards.

Asset cost and delivery schedule - Assess the cost of the elements as well as the payment procedure and delivery availability.

Asset delivery issues - transportation to site - Assess the cost of the elements as well as the payment procedure, special transportation needs and delivery availability.

Qualified vendors - Establish a checklist for identifying qualified vendors, focusing on selecting vendors who have a product that is tested, in use, energy efficient and has reputable references.

Site Assessment -

The site assessment will summarize all items in Phase II. It will tabulate items in a manner that can be used for evaluating all aspects of the project.

Market survey

Existing technologies - Develop a comprehensive list of proven technologies in existence that have been or are expected to be commercialized within the next 5 years.

Existing technology risk assessment - Develop an assessment of the positive and negative impacts of these existing technologies from environmental, economic, and sociological perspectives.

Emerging technologies - Identify technologies in the research and development stages that look promising and are compatible with this project and have a potential for commercialization.

Emerging technology risk assessment - Develop an assessment of the positive and negative impacts of these emerging technologies from environmental, economic, and sociological perspectives.

Market conditions - Assess the existing demand for the products offered by this project, the in-kind competition, and what is the differentiation potential of this project's products.

Partner possibilities - Identify beneficial partnership opportunities in academia, private business and government. Assess for all parties involved the potentially beneficial outcomes of these partnerships.

Market costs and revenues - Provide an assessment of the cost to get the project (investment) on-line and capability of penetrating the market, and the anticipated revenues and expenses from this project over the first 5 and 10 years of operation. Identify when the project will break even and become profitable.

Similar projects - Survey the existence of like projects, including nature of products, economics, and lessons learned in their development and operation.

Target industries and markets - Develop a list of industries that would be interested in this project's products and/or would benefit from them.

Park Operation and Management

Development, management and oversight options - Identify overall development, management and oversight options for the Town. Review creative management approaches for public entities including limited cooperatives; public private partnerships; educational centers, new approaches to conventional industrial park operation and management.

Town staffing requirements - Conduct direct, cooperative discussions with affected Town departments. Identify personnel requirements for development, management and oversight of this project. Assess the current Town staffing abilities to meet such requirements.

Training requirements - Determine what management training will be required to meet the development, management and oversight requirements for the project. Utilize models that recognize the need for capacity and staff to evolve over time. Conduct an analysis of engineering and other skills in the Verde Valley required to meet the estimated workforce needs.

Town maintenance costs and schedule - Assess the cost of maintenance for this project over the first 5 - 10 years of operation, including schedules for regular upkeep.

Operational options - Assess how the Town's participation in the Park will be organized, and what functions it will perform; delineate the respective authorities, responsibilities and liabilities, Park owner, Park operator and contractors and financial institutions; prepare a conceptual organizational structure, plan and staffing for the Town.

Public/private options - Assess various possible alternatives for the ownership and/or operation of the Park (public-private, management contract or any other model); recommend the most suitable model. If private sector mode, clearly establish the process rules for the selection of the operator for the Park.

Research and Educational opportunities

Identification of interested institutions - Create a comprehensive list of universities, research institutions, foundations and think tanks focused on sustainability, energy conservation, and cradle-to-cradle manufacturing.

Operational and partnering opportunities - Determine for-profit and non-profit opportunities for partnership across local, state and federal governmental agencies as well as start-up incubator possibilities interested in locating in Clarkdale.

Structure design options - Establish a database of research opportunities to inform the selection of Park participants, creating a symbiotic relationship between each entity selected for participation

Funding - As an element of the identification process, identify available funding tied to research and educational opportunities from local, state and federal agencies plus any funding available from foundations or other institutions.

Economic and fiscal analysis

Cost estimates - Provide cost estimates for the entire project by phase from the Feasibility Study through to the completion of the Park.

Economic analysis - Perform an economic impact analysis of the entire project including direct and indirect estimated benefits, job creation estimates, and workforce needs.

Financial analysis - Create the financial structure for the project including recommended structures (e.g., for profit or non-profit, government owned/operated, or university owned/operated). In addition, develop a timeline of funding needs.

Funding sources: corporate; local, state, and federal agencies; university and Community colleges; local community partners; and institutional partners.

Perform a search and create a resulting database of funding sources including, but not limited to local, state or federal agency funding sources, university or community college sources, corporate and/or institutional sources as well as local, community partners interested in funding the project. For each source identified, provide information germane to the requests for funding including the source's web site, funding ranges, timeframes for application, particular funding appetites, and other information as required.

Community Impact/Quality of Life Assessment

Environmental impacts - Provide an assessment of the natural resource elements of the project area, including but not limited to topography and ground cover, geology and geotechnical conditions, groundwater conditions, habitat conditions and hydrologic conditions including stream flow, run-off and in-stream flow needs. Consider general feasibility and engineering elements of the project design elements.

Infrastructure and transportation issues - Assess intercity freight demand for the project, describing the models and their derivation. Assess intercity traffic flows produced by additional commercial traffic. Determine traffic impedance through the Town and region as a result of the project, as well as mitigation for those impedances. Assess Town power, sewer, and wastewater infrastructure 5-10 years in future.

Socio-economic impacts - Assess the project area by population, including race/ethnicity, age or stage of life cycle, income or socioeconomic status, as well as preliminary 25-year forecasts. Identify an appropriate clustering of industries that will support the project's needs. Identify employment by industry developing a set of categories that meet the project's model.

Local manpower requirements and availability - Identify personnel requirements for development, management and oversight of this project. Assess the current local, regional and state abilities to meet such requirements.

Local technical training facilities - Identify local, regional and state resources which could provide technical training to Town staff, employees at the Park, as well as private contractors.

Community outreach meetings/materials - Conduct community presentations at key stages (prior to the start of the study, after completion of the Phase I draft, after completion of the Phase II draft, upon completion of entire study) to the following audiences, including updated brochures and web information. Groups will include:

Business outreach - Business stakeholders (Chambers of Commerce, higher education institutions, etc.);

Clarkdale residents outreach - Clarkdale residents [those who reside in and around Clarkdale].

Verde Valley community outreach - Verde Valley decision makers and leaders.

Study Schedule

A study timeline will be developed based on recommendations and suggestions by the contractor and the Town of Clarkdale.

Recommendations

Reports and Final Products

Interim Report - To be submitted within 60 days of the commencement of the study, 10 copies. Overview of each functional subject that will be reported on and preliminary assessment. Meet with and provide oral presentation to the Community Development Department, Town Manager and Project Coordinator. Interim Report and all subsequent reports shall be presented as follows in Microsoft Word format or in Adobe Indesign:

Front cover to contain:

1. Report number and date,
2. Title and period covered,
3. Contractor's name and address,
4. Submitted to: Clarkdale Town Manager.

Abstract to contain:

1. Object of report
2. Scope of work covered
3. Table of contents
4. Name of principal investigators
5. Identification of Public Participation Plan

Phase I report - 120 days from inception of study meet with and provide oral presentation to the Community Development Department, Town Manager and Project Coordinator. Report to be presented to Town Council. Consultant will prepare draft technical report with adequate review time. Reports must be provided in electronic format accompanied with 12 hardcopies for non-electronic planning unit member review. Datasets, GIS layers created maps must be provided and will be considered property of the Town of Clarkdale.

Phase II report - 240 days from inception of study meet with and provide oral presentation to the Community Development Department, City Manager and Project Coordinator. Report to be presented to Town Council. Consultant will prepare a draft technical report with adequate review time; respond and incorporate comments from Phase I Report; and prepare final project report of all analysis and work results. Reports must be provided in electronic format accompanied with 12 hardcopies for non-electronic planning unit member review. Datasets, GIS layers created maps must be provided and will be considered property of the Town of Clarkdale.

Draft final report - No more than 12 months after award of contract meet with and provide oral presentation to the Community Development Department, Town Manager and Project Coordinator. Consultant will prepare draft technical report with adequate review time, respond and incorporate comments from Phase I and II Reports, and prepare final project report of all analysis and work results. Reports must be provided in electronic format accompanied with 12 hardcopies for non-electronic planning unit member review. Datasets, GIS layers created maps must be provided and will be considered property of the Town of Clarkdale. The format will be as follows:

Executive Summary

- Legal and Administrative Requirements
 - purpose of the study, study preparation process, legal actions required by government to approve action;
- Project Alternatives
 - description of proposed project, discussion of reasonable alternatives, decision-making process followed during project definition;
- Baseline Environmental Conditions
 - description of baseline environmental conditions in the vicinity of the proposed site;
- Assessment of Environmental Impacts
 - identification of positive and negative impacts, assessment of significance (quantitative and qualitative), identification of key issues;
- Benefit Cost Analysis
 - discuss costs and benefits in qualitative terms, support with quantitative assessment where appropriate;
- Mitigation, Management and Monitoring
 - including institutional responsibilities and procedures for reporting and analysis;
- Conclusions and Recommendations
 - key conclusions, positive and negative impacts of the proposed facility
 - recommendations in relation to acceptability of environmental impacts, and conditions for project approval and/or reasons for project disapproval;
- Appendices
 - supporting data, information and surveys.

Final report - Report to be presented to Town Council. To be submitted one month after the receipt of the comment on the Draft final Report. 10 copies, the same number of copies of summary and 4 sets on standard digital media as specified by the Town.

Public Consultation and Participation Plan

Outline a plan that will identify key audiences (i.e. decision makers, those that influence decisions, etc.); ensure that the “message” is consistent; aggressively seeks input from the public and facilitates their participation. The plan must have metrics associated with it to determine if it is being successful or not.