

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

This document supplies Yavapai County Development Services with comments from Keep Sedona Beautiful on the V2 draft of the Energy Element component of the updated County Comprehensive Plan.

The following information is included below:

- Comments that apply to the entire Comprehensive Plan.
- A set of questions and comments that apply specifically to the Energy Element.
- A version of the Energy Element that includes our suggested changes, deletions and additions, with specific comments and questions **highlighted in yellow and bolded**. Wording we're suggesting be added shows in red.

Comments that apply to the entire Comprehensive Plan

1. The Comprehensive Plan needs a glossary of terms.
2. We suggest that “Goals, Objectives and Recommendations” be reframed as “Goals, Policies and Action Items,” and each of these are uniquely identified, so a reference to one is unambiguous. Goal E1 can be referred to rather than Goal 1 of the Energy Element. The County Team agreed to this in the Growing Water Smart Workshop.
3. Citations and footnotes are needed throughout.
4. We suggest the County add a section on the progress made over the last 10 years on meeting goals, objectives and recommendations from the 2012 Comprehensive Plan. What policies and/or programs resulted from the 2012 Comprehensive Plan’s implementation?

General Questions and Comments on the Environmental Element

5. Document needs a stronger statement (up front) on the need for sustainable development and the meaning of “sustainable” and “sustainability” used within the comprehensive plan.
6. County should identify overlay districts, with specific restrictions, to conserve fragile environments such as riparian or wilderness bordering areas. (Note that this could instead be documented in the Environmental Element).
7. Can you please identify the overlay districts already created in Yavapai County?
8. Has the County identified criteria and guidelines/reasoning for determining areas where large scale solar generation is appropriate and encouraged? If so, please include information on this. If not, we suggest this be addressed in the Plan.
9. Yavapai County should strive to move toward self-sufficiency regarding the generation of power. We suggest this be a stated goal in the Plan.
10. We suggest that the Energy Element include sections on:
 - Conservation and Energy efficiency
 - Distributed generation of energy
 - Utility-scale generation of energy

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

VI. ENERGY ELEMENT 2.0

Introduction

Keep Sedona Beautiful suggests that this section of the plan be augmented recognize the impact of climate change as a driver prompting development of an energy strategy.

Arizona Revised Statutes (A.R.S.), 11-804 Comprehensive plan; contents – states that the Comprehensive Plan must account for:

“Planning for energy use that:

- a) Encourages and provides incentives for efficient use of energy.*
- b) Identifies policies and practices for greater use of renewable energy.”*

The Energy Element of the Comprehensive Plan addresses the need and opportunity for energy-efficient technologies and behaviors. It also promotes the use of clean energy sources, such as solar, wind, geothermal, and biofuels. **Acting on the goals, objectives and recommendations set forth below will place** the County in a stronger economic, environmental, and social position for development in the future.

Keep Sedona Beautiful suggests adding the following language.

In order to guide the development of this Comprehensive Plan, Yavapai County conducted a series of surveys that provided residents an opportunity to express their priorities and opinions.^{1 2} While some residents felt they did not have enough information or were neutral on the survey items, residents strongly agreed or agreed with these statements as follows:

- 74% - Residential solar power should be encouraged and incentivized.
- 69% - Building codes should be updated to require greater energy efficiency.
- 60% - Increased use of renewable energy will support economic development.
- 59% - Commercial solar farms and wind farms should be permitted in areas that do not harm wildlife corridors, streams, wetlands or scenic vistas.
- 56% - The availability of electric vehicle charging stations should be increased throughout the county.
- 53% - The county should set an atmospheric carbon reduction goal, and use that goal in planning decisions.

Yavapai County strives to be a leader in innovative and responsible energy and natural resource management, while supporting secure and clean energy technologies for its residents. This section addresses ways to support vibrant economic growth and balancing that growth with the protection of the County’s natural resources and the quality of life for residents. It outlines the County’s strong interest in increasing local energy resources by:

- Articulating goals that promote energy conservation and energy efficiency in new and existing buildings
- Providing support for the development of locally produced energy with renewable energy projects

¹ The results of the initial survey, responded to by 906 residents can be found at:

<https://experience.arcgis.com/experience/c4212562e8a546b88a0297213a8b0550/?draft=true>

² Results of follow-up surveys can be found at: <https://storymaps.arcgis.com/stories/2ba0fcec9cad4583890aea94b79703e3>

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

Specific goals for energy conservation and locally produced energy projects are identified below along with policies that:

1. Support the development of local renewable energy sources, including, but not limited to dispersed solar generation (rooftop) and use of parking lot shade structures for solar placement
2. Provide guidance for the expansion of renewable energy sources, while avoiding, minimizing and mitigating adverse impacts
3. Account for the value placed on distinctive natural landscapes
4. Promote the conservation of natural resources to sustain the unique ecosystems of our region
5. Encourage sustainable development and measure progress toward goals

Purpose

The word “sustainability” needs to be defined in a glossary. Sustainable growth could mean a steady growth, but not “responsible” growth.

The Yavapai County Energy Element is an important component of the Comprehensive Plan. By developing a comprehensive energy strategy now, the County can be prepared to shape sustainable economic growth. Through the Energy Element, the County can encourage the efficient use of energy and promote clean, renewable sources of energy production. The regional environment can be affected by the method of energy generation and distribution. **It is important for Yavapai County to promote energy conservation while protecting sensitive areas in the regional environment.** To minimize the impact and issues of siting large-scale facilities, key items will need to be addressed such as noise, visual aesthetics, water usage, protection of sensitive areas, and energy storage.

For the preceding paragraph Keep Sedona Beautiful notes:

- a) **Are there any plans to develop locally sourced power generation with the capacity to store excess capacity?**
- b) **Are there any plans to encourage additional solar use by, for example, covering parking areas within cities and towns with solar arrays?**
- c) **Along with the 5-star energy program, the county can promote changing the R value of the home envelope, such as encouraging the use of 6” wall studs. This can be promoted by educating residents on how it will lower air conditioning bills for the life of the home.**
- d) **Energy programs should include more insulation, energy efficient windows and high efficiency heating/cooling systems.**

The county should follow the latest state of the art developments in the field of building for energy conservation, and update plans in a timely manner with conservation incentives.

The County can also encourage responsible energy use by supporting enhanced building construction design to provide additional energy efficiencies, as well as by encouraging mixed sustainable land uses. Sound energy policies can provide economic and environmental benefits for the County residents. There is new societal awareness of the use of renewable energy resources and technologies as a departure away from the primary non-renewable energy resources. This increased awareness is due in part to local, State, and Federal incentive programs along with the requirements and guidelines for various agencies beyond Yavapai County.

For the preceding paragraph Keep Sedona Beautiful notes:

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

- a) What are the local, State, and Federal incentive programs? In particular, what has Yavapai County done to incentivize responsible energy use and conservation?**
- b) County needs to aggressively seek out federal incentives.**
- c) County needs to promote a tiered price structure, i.e., the more kilowatts used, the more cost. Same with water.**

Background

In 2020, the US Congress streamlined the process for the energy policy by building on the Energy Policy Act of 2005 to incorporate energy-related tax provisions. It updated a variety of energy efficiency provisions, including authorizing funding for energy efficiency programs such as weatherization and energy efficiency improvements in federal buildings, public schools, and data centers, and provides incentives for combined heat and power. A new Smart Energy and Water Efficiency Pilot Program were also created, providing grants to water authorities that provide water, wastewater, or water reuse services. Additionally, the bill reauthorizes the existing Weatherization Assistance Program (WAP) through fiscal year 2025.

The bill focused on several areas of Energy production and distribution which included: Nuclear Energy, Renewable Energy and Storage, Carbon Management & Removal, Industrial and Manufacturing Technologies, Critical Minerals, Grid Modernization, Department of Energy Innovation, Hydrofluorocarbons (HFCs), and Energy Tax Credits

The bill also reauthorized the Department of Energy's (DOE) wind energy research program, including, onshore, offshore, and distributed as well as creating a wind technician training grant program to spur job creation. The department's solar energy research program was also reauthorized and includes a directive for research on photovoltaic heating and cooling, grid integration, and others, while also creating a manufacturing initiative to enhance domestic capabilities.

The bill directed the DOE to create an Energy Storage System Research, Development, and Deployment Program at DOE, to improve technologies ranging from distributed batteries and control systems for their associated grid integration to long-duration storage technologies such as pumped hydro and compressed-air energy storage. A new grant program was also created to assist rural electric cooperatives and public utilities to assist with designing and demonstrating energy storage and microgrid projects that use energy from renewable sources.

Relatedly, the Department of Interior is directed to procure at least 25 gigawatts of solar, wind, and geothermal production on public lands by 2025, and also provides flexibility to the secretary to ensure that those projects are cost competitive.

The bill included several provisions intended to encourage the development and evaluation of technologies that would "serve to increase the technological and economic competitiveness of U.S. industry and manufacturing," while decreasing non-power sector industry emissions. To accomplish this, the bill establishes a research and development program focusing on decarbonization strategies for various industrial sectors including steel, aluminum, and chemical manufacturing in addition to emission reductions from shipping, aviation, and other long-distance transportation.

The original Energy Policy Act which passed in 2005 was seen as an attempt to address the country's growing energy concerns and allowed for "net metering". Net Metering is **described as follows:**

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

“Each electric utility shall make available upon request net metering service to any electric consumer that the electric utility serves. For purposes of this paragraph, the term ‘net metering service’ means service to an electric consumer under which electric energy generated by that electric consumer from an eligible on-site generating facility and delivered to the local distribution facilities may be used to offset electric energy provided by the electric utility to the electric consumer during the applicable billing period.”

Current Conditions

In 2010, the Board of Supervisors adopted definitions for solar and wind energy development into the Planning and Zoning Ordinance for both small scale (residential on-site use) and large scale (commercial production for off-site use) power generating facilities. The adopted rules allow for net metering to be allowed as a matter-of-right as long as specific criteria are met. Further, to expedite and remove regulatory impediments for solar developments in Yavapai County, since 2018 no building permits were required for the installation of solar panels. Several studies have been done about the viability of renewable energy sources in the State of Arizona by the National Renewable Energy Laboratories (NREL), the U.S. Department of Energy, and non-governmental agencies. There have been no specific studies produced in Yavapai County for either solar, wind, or other renewable energy sources. **Such studies should be planned and conducted as soon as possible.**

For the preceding paragraphs Keep Sedona Beautiful notes that net metering was discontinued, and replaced by using an “export rate”. The county should work to reinstate net metering as a strong incentive for consumers to install residential solar.

The Arizona State Legislature passed ARS §11-254.07 which established the concept of Renewable Energy Incentive Districts (REID) patterned loosely after the Growing Smarter Act’s existing infill incentive districts which was adopted under House Bill (HB) 2336 in 2009. This enables County Supervisors to establish a REID district provided the proposed area meets specific criteria.

For the preceding paragraph Keep Sedona Beautiful asks:

- a) Have any REID districts been established in Yavapai County? If not, why not?**
- b) Is a REID district also known as an overlay?**

The Development Services Department adopted the 2006 International Energy Conservation Code (IECC) standards for new residential construction. The Leadership in Energy and Environmental Design (LEED) certified commercial buildings and Energy Star home construction is on the rise in Arizona. To earn the Energy Star rating, a home must meet strict guidelines for energy efficiency set by the U.S. Environmental Protection Agency (EPA). These homes include additional energy-saving features that typically make them at least 20–30% more efficient than standard homes. The trend towards energy efficiency will only increase as sustainable renewable energy solutions remain at the forefront of the nation’s agenda.

Keep Sedona Beautiful suggests that the preceding paragraph be followed by a discussion of the role that the County intends to play in fostering and incenting this trend.

On December 6, 2020, the Board of Supervisors approved a Use Permit for the 1874 Solar & Storage Project. The application was approved as a permanent and transferrable Use Permit for a solar facility. The proposed construction and operation of the 1874 Solar and Storage Project ("the Project"), a renewable energy power plant to be situated on approximately 1,116 acres of private property located east of Prescott Valley in Yavapai County, AZ. The Project will consist of an

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

approximately 95-megawatt ("MW") ground-mounted, single-axis tracking solar photovoltaic energy generation facility with an integrated Battery Energy Storage System (BESS) with supporting structures and associated electrical equipment. The Project will transmit renewable solar electricity to the Arizona Public Service system via a new utility-owned substation to be situated near the Project and connecting to the existing APS-owned Lonesome Valley-Yavapai 69 kilovolt ("kV") transmission line.

Solar Conditions - Currently in Yavapai County there are two large-scale solar power generating facilities each over 100 acres that have been approved by the Board of Supervisors. Since the last update of the Comprehensive Plan in 2012, there have been approximately 513 on-site residential solar permits issued by Yavapai County. These permits include solar water heating units, roof-mounted solar systems, and ground-mounted solar systems. As mentioned earlier, to expedite and remove regulatory impediments for solar developments in Yavapai County, as of December 2017 a Building Safety Permit is no longer required for residential grid-tied Photovoltaic systems and Solar Water Heating systems, including systems with generators as long as they are installed by an Arizona Licensed Contractor. Solar development will only increase as time goes on, both as technology becomes more efficient and as benefits of solar increase which include rebates and tax credits, lower energy costs, and less expensive technology.

Wind Conditions - There have been studies done to analyze the wind energy potential in Arizona statewide; however, these studies are only as accurate as the data that is collected. There have not been studies that have focused on Yavapai County in particular. A possible reason for the lack of specific information on Yavapai County wind possibilities is that there are very few meteorological towers (MET) that have been erected in the County. MET towers are towers generally 60 meters tall that are constructed for the purpose of collecting meteorological data. The data collected from these MET towers would be used to determine whether an area would be suitable for harvesting wind energy. Recently, several MET towers have been constructed in Yavapai County. The Yavapai County Board of Supervisors has approved one wind power generating facility. Staff continues to receive many inquiries for potential future wind projects. Regarding on-site (typically residential) wind power generation, Yavapai County issued 10 permits between the years 2008-2010.

For the preceding paragraph Keep Sedona Beautiful asks:

- a) How many MET towers have been constructed in the last 10 years?**
- b) Has the county studied the viability of wind energy in the last 10 years?**
- c) Is wind now a viable alternative?**

Geothermal Conditions - There are a variety of geothermal resources that can be used on both large and small scales. A utility company can use the hot water and steam from reservoirs to drive generators and produce electricity for its customers. Other applications apply the heat produced from geothermal directly to various uses in buildings, roads, agriculture, and industrial plants. Still, others use the heat directly from the ground to provide heating and cooling in homes and other buildings. Additional geothermal resources exist miles beneath the earth's surface in the hot rock and magma. In the future, these resources may also be useful as sources of heat and energy. The National Renewable Energy Laboratory (NREL), which is a division of the U.S. Department of Energy, predicts that up to 20 geothermal power generating facilities could be built in Arizona within the next 10 years. Yavapai County has permitted 8 residential geothermal systems. These systems can provide heating, cooling, and hot water to a home.

For the preceding paragraph Keep Sedona Beautiful asks:

- a) What has been the activity in the last 10 years?**

Keep Sedona Beautiful Comments and Questions on the V2 Draft of the Energy Element

b) Is geothermal a viable alternative for Yavapai County?

Hydroelectrical Conditions - Hydropower has been used for millennia in most countries of the world. Within the last 100 years, hydropower was applied to the conversion of its kinetic energy to electrical energy. Today, hydropower produces 24 percent of the world's electricity and supplies more than 1 billion people with power.

The obvious advantage of generating electricity in this manner is the very high (around 90%) conversion efficiency (compared to a typical conversion efficiency for a fossil fuel power plant of about 35%.) Additionally, there are no emissions to the atmosphere associated with this generation. The most controversial drawback is that flooding is produced behind the dams.

[If there are no implications of this for Yavapai County, the following paragraph should be removed.]

Well-known examples of hydroelectric facilities in Arizona include Hoover Dam (on the border with Nevada) and Glen Canyon Dam (near the border with Utah). Together these dams can generate about 3,000 MW of electrical power. The reservoirs that each dam creates (Lake Mead and Lake Powell) are heavily used for recreation. Other hydroelectric dams include those on the Salt River and the Colorado River below Hoover Dam. Several sites have been suggested over the years for additional large projects. These have been successfully resisted in all cases because they would infringe on scenic areas, such as Grand Canyon.

Keep Sedona Beautiful suggests adding the following sections.

Conservation and Energy Efficiency

One way in which Yavapai County will have a direct impact on the future of its energy needs is by strengthening provisions in building codes that promote energy conservation and energy efficiency. In addition to reducing the demand for energy, these provisions will reduce residential, commercial and industrial utility costs, reduce the need for upgrading existing utility infrastructure as growth occurs and reduce emissions from fossil fuel energy plants.

To encourage energy efficiency in new construction, Yavapai County will consider adopting the most current International Energy Conservation Code (IECC)³, which increases efficiency compared to the 2006 code through increased requirements for insulation, air tightness of exterior walls and increased lighting and heating system efficiency. Building codes will also be enhanced to allow and encourage energy conservation technologies, such as solar water heaters and small-scale geo-exchange systems, which use the constant earth temperature at shallow depths for home heating and cooling. This process requires digging onsite trenches into which exchange systems are placed, and the trenches are then backfilled. These systems can be laid under landscaping, parking lots or driveways.

Yavapai County will also:

1. Require builders to use the ENERGY STAR standard
2. Provide a checklist of sustainable building materials and technologies to builders

³ <https://energyefficientcodes.org/iecc/>; <http://www.florenceaz.gov/wp-content/uploads/documents/Directory%20of%20Documents/codes/International%20Energy%20Conservation%20Code%202012%20Edition.pdf>

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

3. Offer a Sustainable Building Award to builders who use such materials and technologies or who retrofit existing buildings using them, based on energy audits
4. Publicly recognize builders and developers who use passive solar, thermal mass, insulation, overhanging eaves and vegetation to significantly reduce a building's energy consumption

Dark sky ordinances also provide energy conservation by requiring more efficiently directed night lighting and by capping their lumen output.

Distributed generation of energy⁴

In addition to the reduction of energy consumption through conservation, alternative energy sources are needed to meet projected future energy demands within Yavapai County. Fortunately, new distributed power generation technologies are emerging. These clean and renewable technologies are a rapidly growing segment of the energy sector. In addition to providing power, distributed power generation technologies provide a higher level of resilience and security to the power grid by diversifying and localizing energy production.

Photovoltaic technology is rapidly becoming more efficient and affordable. The installation of distributed residential solar energy systems within Yavapai County has expanded greatly due to falling costs, combined with state and federal subsidies and the availability of more than 300 days of sunshine per year. The County will encourage and incentivize further development of residential and small-business solar.

In addition to residential and small-business solar energy installations, there is now an emergence of localized utility-scale solar energy systems. As more and more distributed energy sources come online, new energy systems will reduce the need for new transmission lines by making more efficient use of existing transmission lines and corridors. In doing so, they also reduce the adverse impacts to wildlife and other natural resources.

In addition, the County will encourage installation of net-energy-generating systems on buildings. Such buildings combine conservation and efficiency measures with on-site solar power production to generate more energy than they use. This power is then distributed via the existing grid to neighboring areas. A provision will also be made for issuing conditional use permits that allow subdivisions and multifamily residential units to install shared solar energy systems and community micro-grids.

“A Community Microgrid is a coordinated local grid area served by one or more distribution substations and supported by high penetrations of local renewables and other distributed energy resources (DER), such as energy storage and demand response.

Community Microgrids represent a new approach for designing and operating the electric grid, relying heavily on DER to achieve a more sustainable, secure, and cost-effective energy system while providing indefinite, renewables-driven backup power for prioritized loads. Community Microgrids provide communities unparalleled economic, environmental, and resilience benefits.”⁵

By generating significantly more of our energy locally, Yavapai County can increase energy security, provide greater resiliency and reduce emissions.

⁴ <https://www.epa.gov/energy/distributed-generation-electricity-and-its-environmental-impacts>

⁵ <https://clean-coalition.org/community-microgrids/>

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

Utility-scale generation of energy

As part of their ongoing AZ Sun program, APS plans to develop 500 MW of utility-owned photovoltaic solar power plants in Arizona by 2025. APS has already installed a 20 MW photovoltaic solar power plant in Chino Valley. That power plant has over 80,000 solar panels and spans 235 acres north of Prescott.

These utility-scale solar energy projects impact surrounding communities and the natural environment much more than smaller solar energy systems on residences and small businesses. Adverse impacts include disturbing large land areas, constructing new roads and other infrastructure and obstructing scenic viewsheds, as well as impacts on neighbors, such as noise, lighting, introduction of noxious weeds, existing views, dark skies and reduction of property values.

The siting of these projects will involve tradeoffs between the need for clean, renewable energy and the costs to wildlife, vegetation and mitigating erosion. Ground-mounted, utility-scale, solar facilities may require extensive clearing of vegetation, grading and fencing, which can fragment large areas of habitat and disrupt wildlife movement. Fortunately, these adverse impacts can be mitigated by mounting options that allow elevated solar panels to reduce impacts to the land and wildlife.

The installation of needed new substations and transmission lines on utility-scale solar energy projects also has adverse impacts. Building fewer substations and shorter transmission lines can considerably reduce these impacts. Therefore, the County finds it preferable for utility-scale projects to be sited as close as possible to existing transmission lines and power substations.

Utility-scale, short-term power storage systems

APS is now adding batteries to their Chino Valley solar farm to provide short-term power storage for its customers after the sun sets.⁶ Battery storage does provide some limited amount of short-term power storage. While battery technology is not yet adequate to meet the large-power storage needs of utilities such as APS, that technology is rapidly advancing and prices are dropping.

Pumped water storage is another technology that is being used to supply electricity when renewable sources like solar cannot.⁷ While the Big Chino Valley Pumped Storage Project has been proposed and may be built in Yavapai County near Seligman, building additional such facilities in a water-poor area is inappropriate in arid Northern Arizona. The large amounts of water needed for both initial and ongoing operations would come from our aquifers. Such facilities are excellent solutions for water-rich areas, but not in Yavapai County.

At least 22 sites have been identified in Arizona for pumped storage facilities, that is, ones that use off-peak power to pump water back behind dams, making the water again available for the generation of electricity during periods of peak demand. At least 37,000 MW of potential installed capacity has been identified for the state. To date, only a few have been built, all of which are associated with existing dams.

⁶ <https://www.aps.com/en/About/Our-Company/Newsroom/Articles/APS-moving-forward-to-bring-new-clean-energy-projects-online-for-customers>

⁷ <https://www.energy.gov/eere/water/pumped-storage-hydropower>

Keep Sedona Beautiful
Comments and Questions on the V2 Draft of the Energy Element

Keep Sedona Beautiful recommends that County add a section on the progress made over the last 10 years on meeting goals, objectives and recommendations from the 2012 Comprehensive Plan.

Meeting the Goals, Objectives and Recommendations from the 2012 Comprehensive Plan

2012 Goals and Objectives	Progress/Status
<p>Goal 1: Encourage and provide incentives for efficient use of energy.</p> <p>Objective a: Identify areas that could be conducive to large scale renewable energy production.</p> <p>Objective b: Encourage the creation of criteria in order to minimize potential issues/impacts with large scale facilities (i.e. noise, visual aesthetics, preservation of wildlife corridors, microclimate and sensitive habitats, and energy storage).</p> <p>Objective c: Encourage the formulation of a volunteer renewable energy group to formulate ideas and plans on different size projects.</p> <p>Objective d: Encourage proponents of utility scale renewable energy projects to consult early with and comply with direction provided by the Arizona game and Fish Department and US Fish and Wildlife Services and their Renewable Energy Guidelines, to reduce impacts to resources identified in Goal #1, objective b.</p>	
<p>Goal 2: Identify policies and practices for the greater use of renewable energy.</p> <p>Objective a: Provide non-financial incentives for the incorporation of renewable energy in new and existing construction, both residential and commercial, in order to promote local and on-site energy production and sustainability.</p> <p>Objective b: Adopt residential and commercial codes to encourage energy efficiency.</p>	

Keep Sedona Beautiful
Comments and Questions on the V2 Draft of the Energy Element

<p>Goal 3: Encourage education of the public regarding renewable energy.</p> <p>Objective a: Promote and encourage education to County residents regarding types of renewable energy and potential benefits of renewable energy.</p>	
<p>Goal 3: Encourage education of the public regarding renewable energy.</p> <p>Objective a: Promote and encourage education to County residents regarding types of renewable energy and potential benefits of renewable energy.</p>	
<p>2012 Recommendations</p>	<p>Progress/Status</p>
<p>Encourage dialogue with internal and external agencies both State and Federal, on placement of large scale renewable energy facilities.</p>	
<p>Continue to encourage the preservation of wildlife corridors in the siting of large scale renewable energy facilities by providing potential applicants with various agency guidelines during the planning process.</p>	
<p>Encourage the development of renewable energy sources that are not water intensive.</p>	
<p>Encourage on-site renewable energy infrastructure as part of the technological design for public and private facilities.</p>	
<p>Streamline the permitting process with pre-engineered plans for renewable energy projects.</p>	

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

As an alternative to the Goals, Objectives and Recommendations drafted by Development Services, Keep Sedona Beautiful offers the following alternative set of Goals, Policies and Action Items.

Please note that the Goals, Objectives and Recommendations from the County's V2 Draft are accounted for below.

Goals, Policies, and Action Items:

Goal E1: Reduce energy consumption, by increasing energy conservation and efficiency and by providing incentives for the efficient use of energy.

- | | |
|-------------------|---|
| Policy E1.1: | Become a leader in reducing energy consumption and strive for buildings to be energy self-sufficient. |
| Policy E1.2: | Recognize and incent reduction in energy consumption. |
| Policy E1.3: | Recognize and incent the construction of new developments (as well as commercial, industrial and multifamily residential buildings) that are energy self-sufficient. |
| Policy E1.4: | Promote energy conservation and efficiency across the County. |
| Policy E1.5: | Support, foster and adopt building efficiency programs and energy standards (including national programs such as ENERGY STAR and LED) that reduce per-capita consumption. |
| Policy E1.6: | Become a model of sustainable design and energy efficiency in the construction of new County buildings and renovations. |
| Policy E1.7: | Promote energy conservation in new construction and remodel/retrofits through building codes and incentive programs. |
| Policy E1.8: | Encourage and incentivize the use of solar generation in new residential construction. |
| Policy E1.9: | Encourage and incentivize the addition of solar generation at existing residential units. |
| Policy E1.10: | Design new and remodeled County facilities to be as energy efficient as possible and practical, emphasizing use of technologies such as photovoltaic solar, providing an example to businesses and residents. |
| Policy E1.10: | Support educational opportunities for workforce programs, job training, and employment opportunities related to green energy jobs. |
| Policy E1.11: | Assist residents to identify achievable strategies that reduce energy consumption. |
| Policy E1.12: | Promote water conservation, reducing the energy needed to treat and distribute. |
| Policy E1.13: | Promote the use of electric hot water heaters, including on-demand spot heaters. |
| Action Item E1.1: | Encourage and incentivize new technologies as energy sources to homes and businesses to provide a variety of options and be at the |

Keep Sedona Beautiful

Comments and Questions on the V2 Draft of the Energy Element

- forefront of renewable energy by providing flexible development code language which can adapt quickly to new technology.
- Action Item E1.2: Institute a program that incents the construction of energy self-sufficient developments and buildings.
- Action Item E1.3: Pursue grants and other funding opportunities for weatherization programs.
- Action Item E1.4: Collaborate with educational institutions and community partners to promote energy conservation and efficiency across the County.
- Action Item E1.5: Update building codes and implement incentive programs that promote energy conservation in new construction and remodel/retrofits.
- Action Item E1.6: Identify areas that could be conducive to large-scale renewable energy production with proximity to interconnection points.
- Action Item E1.7: Develop criteria to minimize potential issues/impacts with large-scale facilities (i.e. noise, visual aesthetics, preservation of wildlife corridors, and energy storage).
- Action Item E1.8: Establish a volunteer renewable energy group with specialists in the field to help review plans and design on large-scale projects and for a better understanding of development projects.
- Action Item E1.9: Create zoning ordinance standards which enable large-scale renewable energy production facilities to move through the entitlement process efficiently and within a calendar year.
- Action Item E1.10: Require proponents of utility scale renewable energy projects to consult early with and comply with direction provided by the Arizona Fish and Game Department and US Fish and Wildlife Services and their Renewable Energy Guidelines, to reduce impacts to resources identified in Action Item E1.7.
- Action Item E1.11: Provide incentives for the incorporation of renewable energy in new and existing construction, both residential and commercial, in order to promote local and on-site energy production and sustainability.
- Action Item E1.12: Adopt residential and commercial codes to encourage energy efficiency and water efficiency fixtures.
- Action Item E1.13: Adopt reduced County fees, where applicable, for the replacement of old fixtures for new energy and water-saving fixtures for a more sustainable County.
- Action Item E1.14: Encourage and incentivize new facilities and building to utilize practices similar to the LED design and development practices for sustainable and low-energy buildings, this does not require them to be specifically certified as LED buildings.
- Action Item E1.15: Encourage and incentivize the development of renewable energy sources that are not water intensive.
- Action Item E1.16: Encourage and incentivize on-site renewable energy infrastructure as part of the technological design for public and private facilities.
- Action Item E1.17: Streamline the permitting process with pre-engineered plans for renewable energy projects.

Keep Sedona Beautiful
Comments and Questions on the V2 Draft of the Energy Element

Goal E2: Develop efficient and appropriate solar and wind energy generation, while avoiding and minimizing impacts to the natural environment, wildlife, human health and community character.

- Policy E2.1: Review codes and ordinances on a regular basis to assure adaptation to changing technology and best practices in distributed energy systems.
- Policy E2.2: Facilitate the installation of distributed energy systems by homeowners and small businesses through building code accommodations, and by providing education and resources.
- Policy E2.3: Encourage job training programs and other educational opportunities to create a local workforce of experts in distributed energy systems.
- Policy E2.4: Collaborate with agencies, residents, businesses and communities to pilot distributed energy projects.
- Policy E2.5: Site utility-scale distributed energy systems and utility-scale short-term power storage systems near existing substations and transmission lines to minimize the amount of infrastructure and land disturbance required for energy production and distribution.
- Policy E2.6: Consider the following when siting utility-scale projects and transmission lines: protecting viewsheds, reducing the potential for noise disturbances to adjacent residential areas, conserving species, habitats and water resources, preserving prehistoric, historic and cultural sites, conserving scenic corridors and protecting the character of public lands. In order to protect viewsheds, burying transmission lines is preferred.
- Policy E2.7: Encourage the siting of utility-scale projects on previously disturbed lands and in areas that are close to existing transmission interconnections.
- Policy E2.8: Encourage the siting of utility-scale energy projects that allow for continuation of traditional land uses, such as ranching and hunting. The ability to retain multiple uses of the land, such as combining elevated solar installations with agreements to keep ranches intact is recommended.
- Policy E2.9: Discourage the siting of utility-scale energy projects where they will conflict with critical wildlife habitat, sensitive species, movement corridors, riparian areas and areas of significant topographic relief, such as canyons and cliffs.
- Policy E2.10: Encourage utility-scale renewable energy projects that employ innovative research and operational procedures that are consistent with current best practices and scientific knowledge. These best practices may include wildlife study designs that utilize off-project comparison sites, wind turbine curtailment during migratory periods and other practices designed to improve the understanding of adverse project impacts. Reduce these impacts.
- Policy E2.11: Encourage utility-scale energy projects that protect water supplies. Projects using water conservation methods or reclaimed water are

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Comments and Questions on the V2 Draft of the Energy Element

preferred over more water-intensive systems.

- Policy E2.12:** Advocate for changes to federal regulations, allowing for visual warning systems using radar to activate aviation safety lights, or other new technologies to protect viewsheds and dark skies. The County will encourage these radar-activated systems for all projects required to install safety lighting by the Federal Aviation Administration.
- Policy E2.13:** Give preference to utility-scale energy projects that can demonstrate significant local and regional benefits. Ask developers to list how they are specifically benefiting Yavapai County in their application for conditional use permits.
- Policy E2.14:** Require mitigation measures concerning air pollution, viewsheds, clear skies, collection methods, land disturbance, dark skies and emissions when considering utility-scale projects.
- Policy E2.15:** Discourage and oppose further implementation of pumped hydro storage facilities.
- Policy E2.16:** Continue to advocate for the preservation of wildlife corridors in the siting of large-scale renewable energy facilities by providing potential applicants with various agency guidelines and incentives during the planning process.
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- Action Item E2.1:** Facilitate the installation of distributed energy systems and community micro-grids by homeowners and small businesses through building code accommodations, and by providing education and resources.
- Action Item E2.2:** Site utility-scale distributed energy systems and utility-scale short-term power storage systems near existing substations and transmission lines to minimize the amount of infrastructure and land disturbance required for energy distribution.
- Action Item E2.3:** Advocate for legislative changes that allow groups of citizens to create renewable energy districts.
- Action Item E2.4:** Collaborate with appropriate federal and state agencies to balance the adverse impacts of utility-scale energy projects on local residents and the natural environment against local benefits.
- Action Item E2.5:** Engage in dialogue with internal and external agencies both State and Federal, on the placement of large-scale renewable energy facilities for solar, battery, and hydroelectric facilities. Wind energy should be used only where appropriate and so as to have no negative impacts on the surrounding environment.
- Action Item E2.6:** Provide a code amendment for reduced parking requirements for facilities that provide electric vehicle charging stations on-site for public use.

Goal E3: Design and implement educational programs for the public regarding renewable energy.

- Policy E3.1:** Provide education to County residents regarding types of renewable

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Comments and Questions on the V2 Draft of the Energy Element

energy and potential benefits of renewable energy options.

- Action Item E3.1:** Communicate sustainable building and design practices to residents on how to minimize energy consumption on their property utilizing a variety of techniques and material choices.
- Action Item E3.2:** Create a booth at the County Fair to distribute information about energy conservation and encourage utility providers to partner.
- Action Item E3.3:** Design and implement a builders rating system to identify energy conscious builders.