

# Category Strategy Report

## Arizona State Procurement Office



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## EXECUTIVE SUMMARY

The Arizona Department of Procurement plays a vital role in advancing solar energy initiatives, which is crucial for meeting the state's sustainability goals. To enhance the effectiveness and impact the department has, we are here to recommend strategic shifts on a set timeline.

After an assessment of the ADP's supply process it was apparent that most of their lead time consists of drafting, revising, and negotiating contracts between vendors and the state. To combat this we recommend creating a standardized contract for all state solar initiatives to be prepared to mitigate any political uncertainties and streamline the procurement process.

Most of ADP's spending is with the vendor Veregy Der & Electrical LLC total at around 85% of spend. There is an apparent disparity of spend allocation and we concluded it is because of little to no supplier assessment or gathered data on vendors. It is recommended that ADP starts to gather more information and data on suppliers to be able to properly evaluate them and possibly use that and other suppliers as leverage to renegotiate the main contract with Veregy.

After further analysis of the supplier spend, it was found that Veregy Der & Electrical LLC is over-pricing their equipment leading to a 57-63% profit margin on ADP's contracts. To combat this we recommended to get in contact with other reliable suppliers and leverage them against this main contract for lower prices.

The overall aim is to mitigate external uncertainties, make the procurement process as efficient as possible, and to cut costs by researching, planning, and negotiating.

## INTRODUCTION

The Arizona Department of Administration is a government agency based in Phoenix, Arizona, in charge of public procurement for state-affiliated projects, focusing on high-priority spend categories that support the state's goals. This report focuses on the solar energy systems category, mainly solar panels, which is an integral part of the state's sustainability initiative. Solar energy is closely aligned with Arizona's goals of cutting down carbon emissions and increasing reliance on renewable energy sources. It also promotes economic growth within the state by creating more job opportunities and good relationships with local suppliers. With these changes, Arizona wants to create a resilient sustainable energy sector which will continue to consistently grow with future energy demand and environmental objectives.

In 2020, approximately \$6.3 million was given to the Department's six solar energy suppliers, showing Arizona's commitment to sustainability and economic resilience. This amount of funding supports the necessary infrastructure to make solar energy more accessible and affordable for the residents throughout the state. This report explores Arizona's procurement processes, addresses the challenges and opportunities in supply chain management, and includes insights into the procurement office's spending and demand. Moreover, it shows areas where they can benefit substantially by improving their cost management and supplier relationships. The report offers valuable recommendations for improving efficiency and advancing the state's sustainability objectives in the long run. These insights will improve the state's renewable energy approach and make it a front-runner in renewable energy. With proactive steps, Arizona can keep leading by example, driving meaningful progress toward a greener, more sustainable future.

## SUPPLY MANAGEMENT SITUATION

In this section of the report, our team will utilize a SWOT analysis to showcase the internal and external environments and their impacts on supply functionality for the State Procurement Office. In addition, the established supply management process will be explored as well.

Currently, SPO does not have a competitive strategy in a manner that rivals other businesses, but rather incorporates a strategy that provides leverage when seeking a supplier for certain needs that are identified.

|  |   |
|--|---|
| <b>Strengths</b> <ul style="list-style-type: none"><li>- <i>Established</i> processes and policies</li><li>- <i>Centralized system</i> for purchases</li><li>- Skilled staff</li></ul> | <b>Weaknesses</b> <ul style="list-style-type: none"><li>- <i>Delays</i> in decision-making</li><li>- <i>Limited agility</i> in adapting to new technologies or market agencies</li><li>- Resource constraints</li></ul> |
| <b>Opportunities</b> <ul style="list-style-type: none"><li>- Data driven procurement strategy</li><li>- Sustainability Initiatives</li><li>- Supplier Diversity</li></ul>              | <b>Threats</b> <ul style="list-style-type: none"><li>- Budget <i>fluctuations</i></li><li>- National/local supply chain <i>disruptions</i></li><li>- <i>Regulation</i> changes</li></ul>                                |

Figure 1. State Procurement Office SWOT Analysis

### Internal Organization Environment

#### *Strengths:*

- **Established Processes and Policies:** The existence of an established process and policies for supply chain management for the procurement office provides a great point of leverage. Volatility is low, and if any arises it can be managed as standardization is a crucial aspect of this entity.
- **Centralized System for Purchases:** The Arizona Procurement Portal provides a web-based platform in which all procurement and procurement related activities can be centralized. Examples include information regarding contract award, as well as providing templates for a SOW or similar documentation.
- **Skilled Staff:** A group of skilled staff, ranging from contract managers and directors to interns, allow for a very streamlined process flow.

*Weaknesses:*

- **Delays in Decision Making:** Due to the required adherence to local and federal laws, as well as process delays, decisions such as contract awards may be delayed, causing setbacks.
- **Limited Flexibility:** Rigid processes may hinder innovation and adaptations to evolving procurement technologies or strategies, such as data analytics drivers or the implementation of artificial intelligence.
- **Resource Constraints:** Because this organization is purely a buying organization, every need must be outsourced. This may prove to be more costly and have a longer lead time.

**External Organization Environment**

*Threats:*

- **Budget Fluctuations:** Economic fluctuations or a shift in state priorities may reduce the available funds for certain procurement related projects. In addition, political uncertainty may cause variation in the allocated budget from the state government.
- **National/Local Supply Chain Disruptions:** Any supply disruptions will impact a supply chain regardless, and this is no exception for the state procurement office. This instability may cause shortages in key industries the state depends upon.
- **Regulation changes:** New regulations or compliance requirements could increase complexity and cost in managing procurement contracts.

*Opportunities:*

- **Data Driven Procurement Strategy:** Adoption of data-driven processes, or even the implementation of artificial intelligence, can greatly optimize spending, enhance the supplier selection process, and improve forecasting for demand across various agencies.
- **Sustainability Initiatives:** Expansion into more green vendors in the procurement process, as well as supporting sustainability initiatives in state purchasing and local businesses, may prove to be extremely beneficial.
- **Supplier Diversity:** The potential to enhance programs aimed at increasing businesses with minority, woman, and veteran-owned businesses may prove to have similar benefits as sustainability, as well as increase reputation for the organization.

## Supply Management System

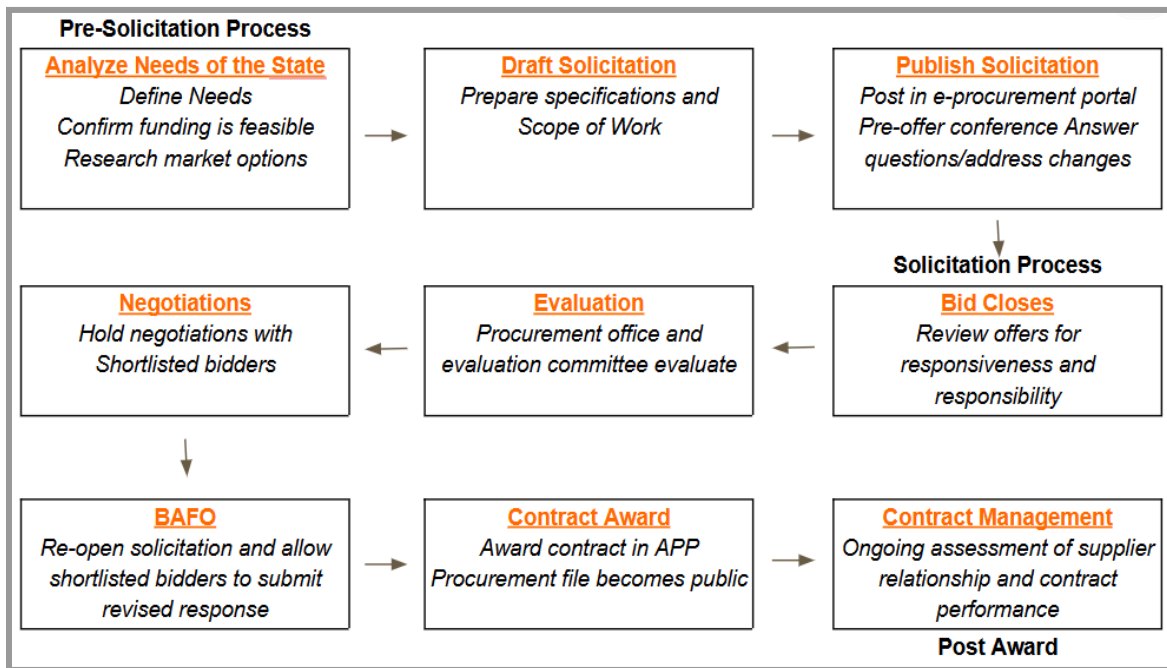


Figure 2. SPO Supply Management Process

The supply chain process for the State Procurement Office begins with a pre-solicitation process. This is initialized with addressment of any current needs the state may have that must be achieved through public solicitation practices. After the need is determined, a solicitation is drafted with contract users that establishes specifications/expectations, as well as the statement of work (SOW). This is then published in the Arizona Procurement Portal (APP), in which any changes to the solicitation are done in the form of amendments, questions are answered, and a pre-offer conference is conducted.

The solicitation process itself is set out within APP, and potential vendors will submit bids if they agree with the contract terms and the scope of work and its various requirements. Once the bid is closed, the offers are received and opened, reviewed for their responsiveness to the states' needs and required responsibilities of the vendor. The evaluation process is done in a committee setting, in which the procurement officer of the solicitation meets with their team to evaluate each response in many different categories, such as cost, quality, lead time, etc. The registry of vendors is then shortlisted to those that fit the evaluation criteria at a meets or exceptional rating, and the said vendors are then negotiated with to ensure that the state is achieving the best possible outcome. The solicitation is reopened again for the new list of bidders to submit the best and final offers (BAFO), which are once again evaluated in a much quicker manner, and a contract is then awarded.

This awarded contract is posted in the supplier exchange or e-procurement system. Following these complex and time consuming steps, the state will then manage the newly awarded contract through ongoing assessment of suppliers and their performance, as well as ensuring that the start date and end date are set, as contracts are either renegotiated or eliminated and re-solicited at their end of their life cycle, which is typically 5 years.

## CATEGORY ANALYSIS

### Spend Analysis

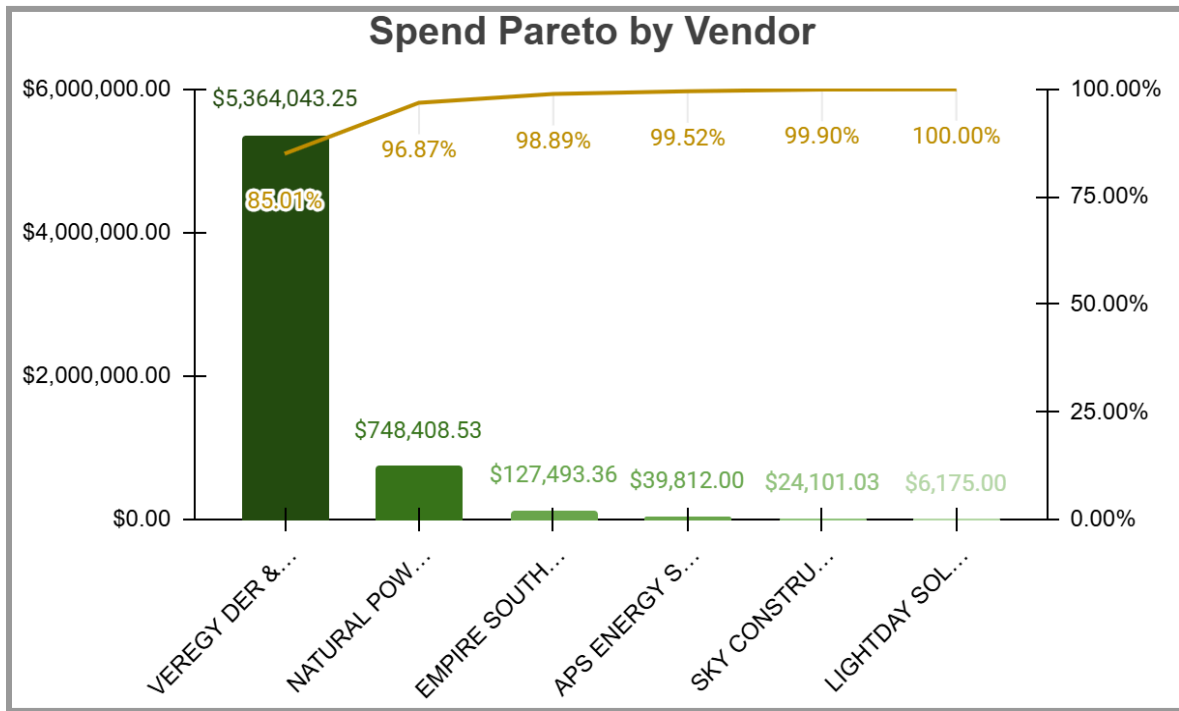


Figure 3. Spend Pareto by Solicited Vendor

Figure 3 above showcases a pareto chart regarding the spend within the solar energy systems contract. The data represented within this graph was obtained from OpenBooks, a spend transparency portal adopted by the State of Arizona. As per the Pareto Principle, it is indicated by the graph that the vendor Veregy Der & Electrical LLC comprises a majority of the spend at \$5,364,043.25, or 85.01% of the total spend over the 8 year period regarding the contract set. The analysis that our team performed shows a very apparent disparity of spend allocation and vendor utilization by the State Procurement Office. On the other end of the spectrum, our lowest spend vendor was Lightday Solar Inc., at \$6,175, or 12.11% of the total spend over the 8 fiscal years.

Although the clear option for our team may be to focus on why this spend disparity exists and how to provide a solution in which the budget is distributed fairly amongst each vendor, or at the least increased utilization of the lowest spend vendors, we decided to focus on the bigger picture. The total spend for this contract of solar energy systems equates to exactly \$6,310,033.17. Our analysis aims to focus on whether or not the state is in-fact receiving a fair price, or if they are a victim of markups.



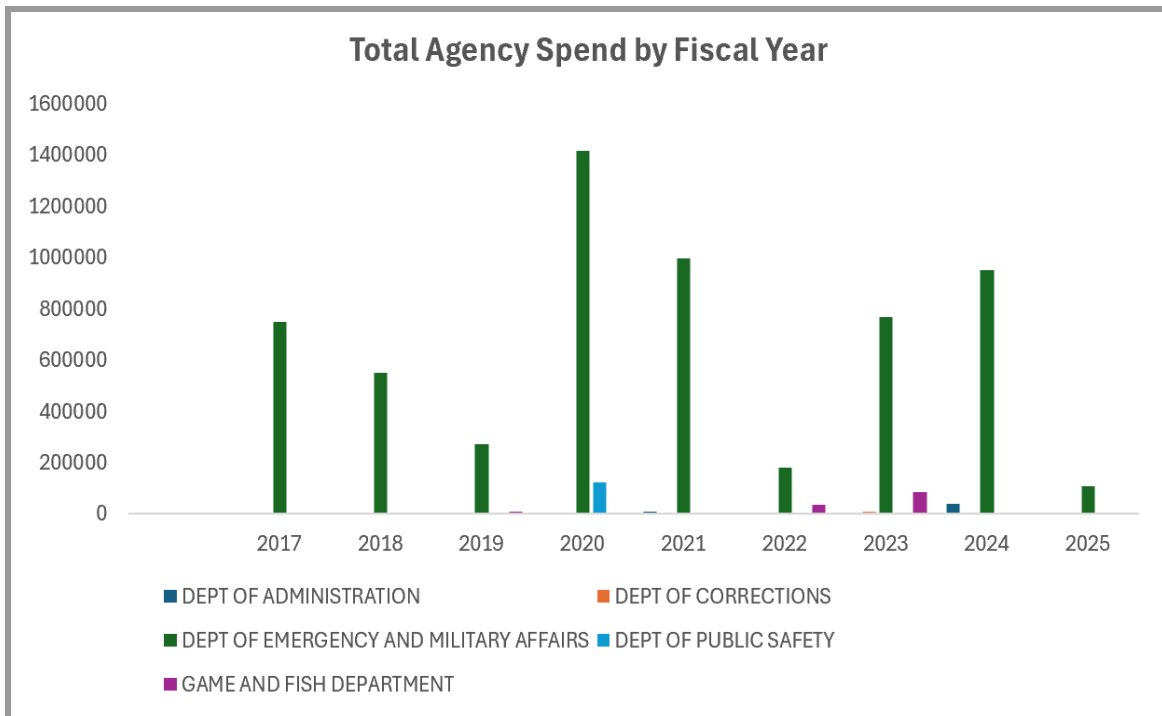


Figure 4. Total Agency Spend by Fiscal Year

Referencing Figure 4, the data suggests that over all of the fiscal years from 2017 to 2025, the highest and sometimes only spend is attributed to the Department of Emergency and Military Affairs (DEMA). Our expectation was to see, through analysis, a more equitable distribution of spend, as well as a broader supplier base. A suggested area of opportunity that we recognized through visualization of the data was the consistency of spend by DEMA, and the purpose for the high spend itself. However, for the sake of the project we decided to shift our attention to the solar energy systems contract itself and whether the contractual pricing is fair as compared to the market

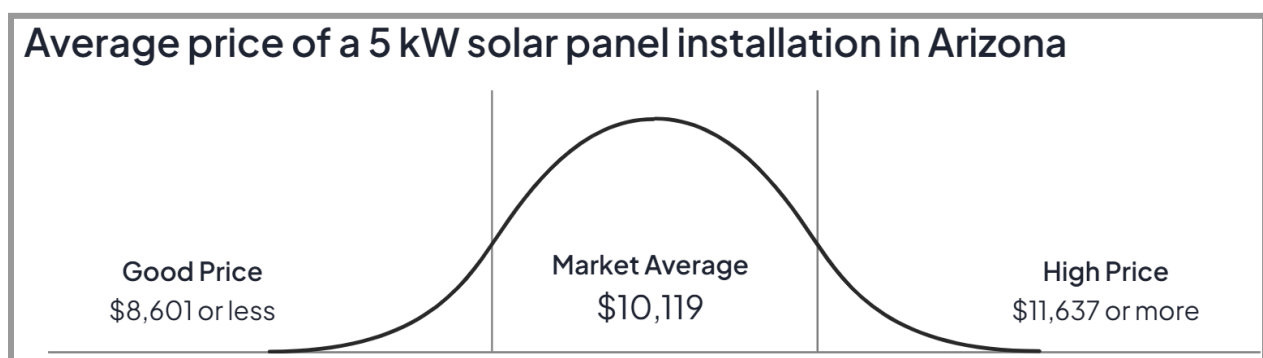


Figure 5. Average Price of a 5kW Solar Panel Installation in Arizona, 2024

Looking at Figure X, the market average for a 5 kilowatt solar panel is \$10,119, as opposed to the contractor Veregey Der & Electrical LLC, which stated in the price sheet \$2,770.75 per kw, or \$13,853.75. This price markup indicates that there is not a fair price offering to the government organization when juxtaposed to the average market price. Therefore,

this report will focus on the suppliers and their offerings, as well as expansion of the supplier base.

## Demand Analysis

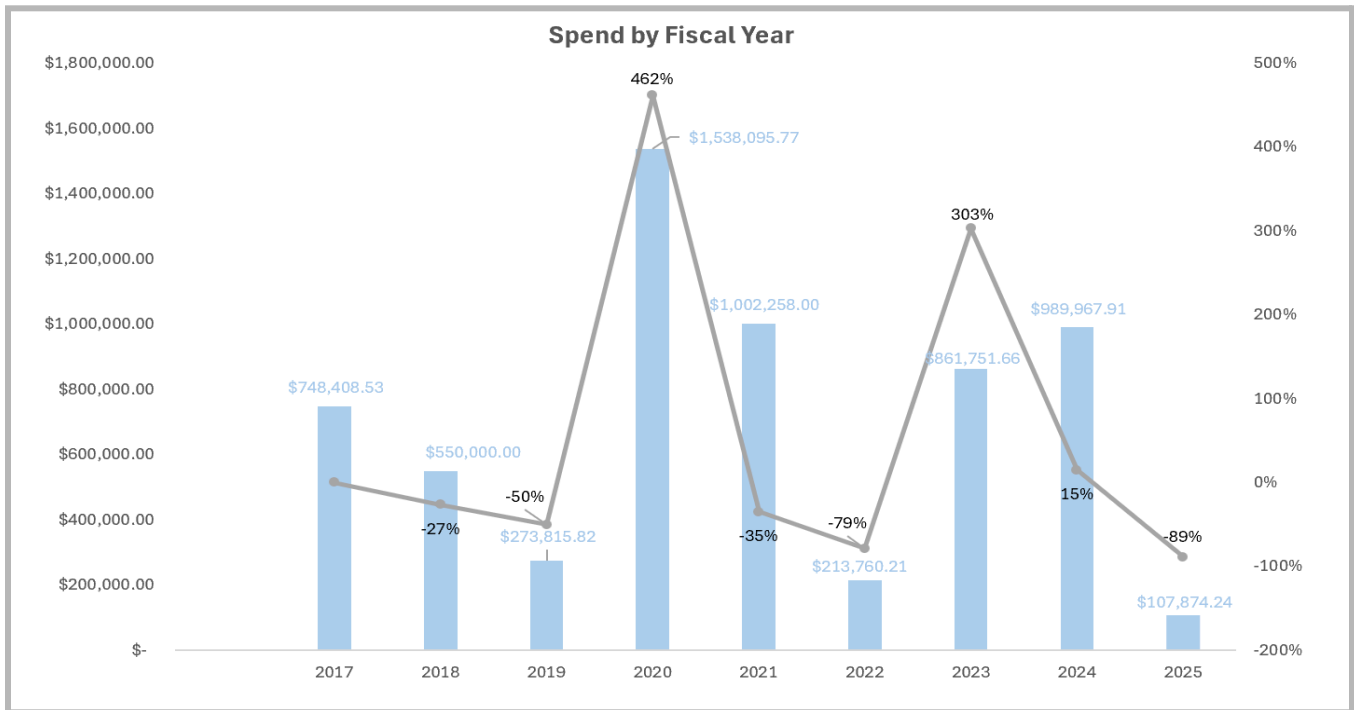


Figure 6. Spend by Fiscal Year

The demand for solar energy systems is one that is quite volatile, but also cyclical. This is primarily catalyzed by the product lifecycle, as solar cell cycles do not have an annual replacement point typically. The factors that impact the demand include innovations in technology, the need for more sustainable forms of energy, or simply saving cost on energy. Solar energy systems have seen a significant increase nationwide, with an annual average growth rate of 25%. (Solar Industry Research Data, 2024). Therefore, it can be said in confidence that the demand internally for the State Procurement Office (SPO) follows the growth as well as solar prices drop and sustainable initiatives make their way into business standards.

Figure X represents 8 fiscal years for SPO, showing a very cyclical pattern over the time period. The highest increase of solar energy procurement occurred in 2020, with a 462% increase from 2019. This can primarily be attributed to the COVID-19 pandemic, which caused a significant demand spike for energy systems to be utilized in areas such as hospitals. Through extensive research, our team found that there was a record number of solar panels installed from 2020 to 2021, an increase of 30%. (Dureva, 2023). Further analysis throughout this report, specifically the spend analysis, points to the fact that most of the demand is generated by the Department of Military Affairs (DEMA). Our team believes that, according to the trend showcased by the demand analysis, that there is indeed a correlation between the overall procurement pattern of solar energy systems by the state and nationwide demand, as well as DEMA and their necessities for military affairs that may utilize solar energy systems.

## Supply Market Analysis

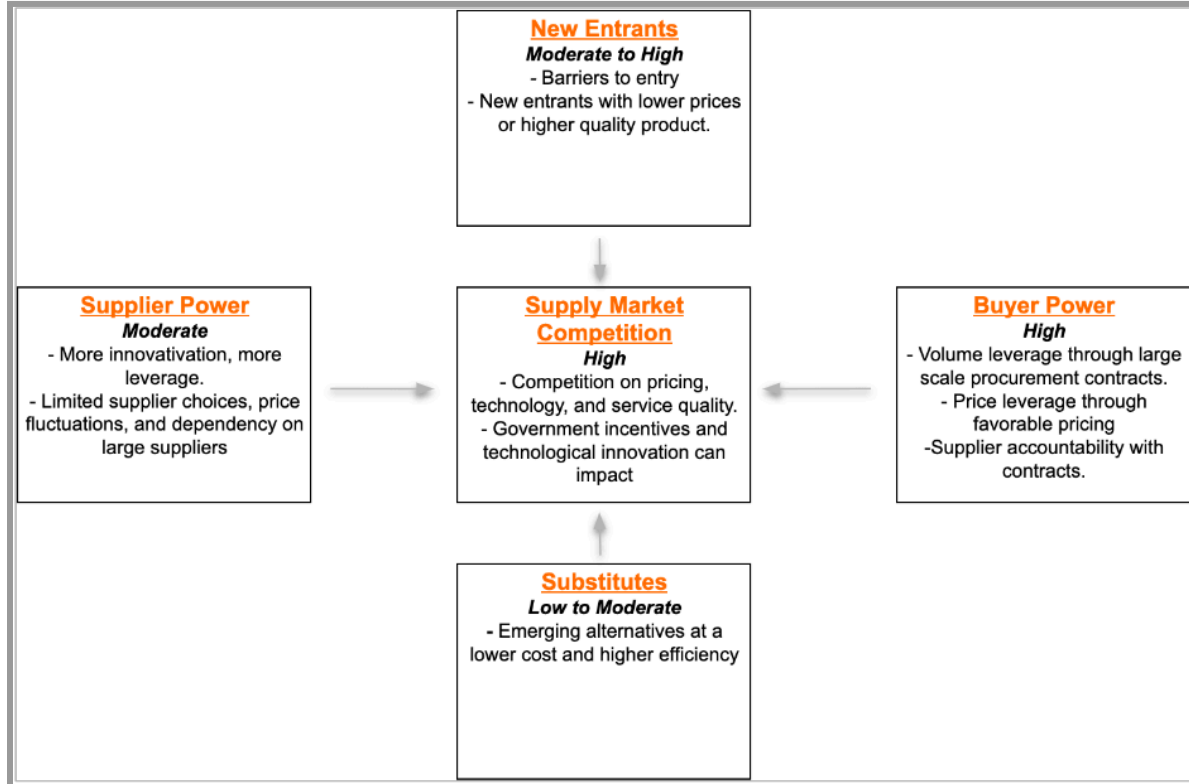


Figure 7. Porter's 5 Forces Supply Market Analysis

In order to analyze the market regarding solar energy systems, our team utilized the Porter's Five Forces model of supply market analysis as pictured above in *Figure 7*. This industry is unique in our situation, as our company is the State Procurement Office, a government agency that solely exists as a nonprofit buying agency. Therefore we do not have the same forces of impact as would a more corporate scenario. Due to this, the buyer power is very high alongside the supply market competition. Being a government agency gives more ability to leverage price and volume, as well as holding certain standards and expectations through the use of formal contracts. This solicitation brings high supply market competition as many vendors submit bids in a reverse auction setting, with each supplier offering different pricing and expectations within the contract, as well as potentially unique technological aspects and processes.

The threat of new entrants within the solar energy systems market is moderate to high, and this is concluded as barriers to entry may exist, making it difficult for newer organizations to enter and access the same resources and costs to create economies of scale. However, these entrants may enter with higher quality products and lower prices, so the threat is always underlying. The supplier market power and substitutes are low to moderate. Better technological innovation and emerging alternatives to solar are a cause for disruption within the industry.

The supply market competition is quite vigorous, especially with the competition being towards a contract with a division of the Arizona Department of Administration. Despite this, as long as suppliers exist and are able to be procured in a formal fashion, SPO will continue to exhibit their strong buyer power in this highly competitive industry.

## Price Analysis

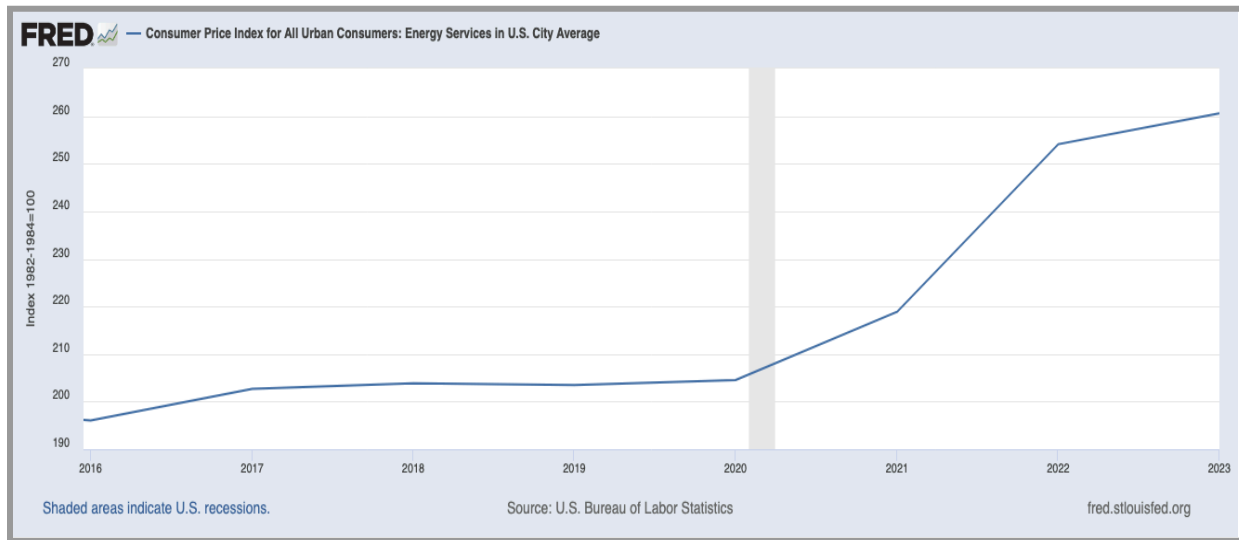
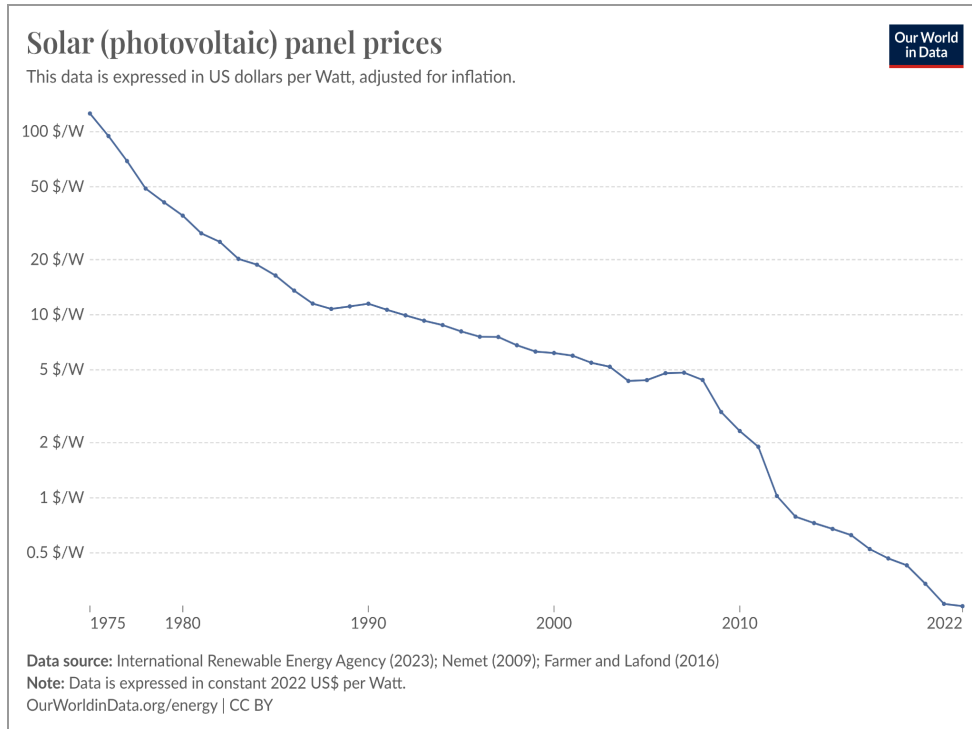


Figure 8. Price Analysis for Solar Energy Services through CPI of Energy Services in Urban Areas (2023)

For the price analysis of solar energy services, our group looked at a few different sets of data. Our first set of data was the CPI of the Energy services in urban areas (Figure 8). The issue with the Federal Reserve Economic Data (FRED) is that it doesn't track any renewable energy services, and especially doesn't track solar energy service prices. However, they do track energy services as a whole. They also separate urban and rural areas. Our group concluded:

- Energy prices have been on a drastic rise since 2020
- This rise in energy service prices is true of how our suppliers have priced us over the years.
- There has been a leveling out effect since 2022 but prices are steadily rising
- This alone gives supply managers the idea that the prices our suppliers are charging our fair but we felt that more analysis was required based on the next graph below.



*Figure 9. Price Analysis of Solar (PV) Panels through CPI of Photovoltaic (PV) panel (2022) in watts(W)*

Figure 9 represents the CPI data of Solar panel prices up until 2022. Solar panels are the main component in what we are buying from our suppliers. Our conclusions are as follows:

- Solar panel prices have been on a drastic decrease since CPI data started being tracked.
- Solar panel prices are at an all time low in 2022: \$0.25 per watt or \$250 kWh (1000 watts in a kilowatt).
- This data shows there is a discrepancy in our supplier pricing, why are we paying more and more every year for energy services while the material prices keep drastically decreasing.
- This preliminary data resulted in our group doing a supplier cost analysis

## Supplier Cost Analysis

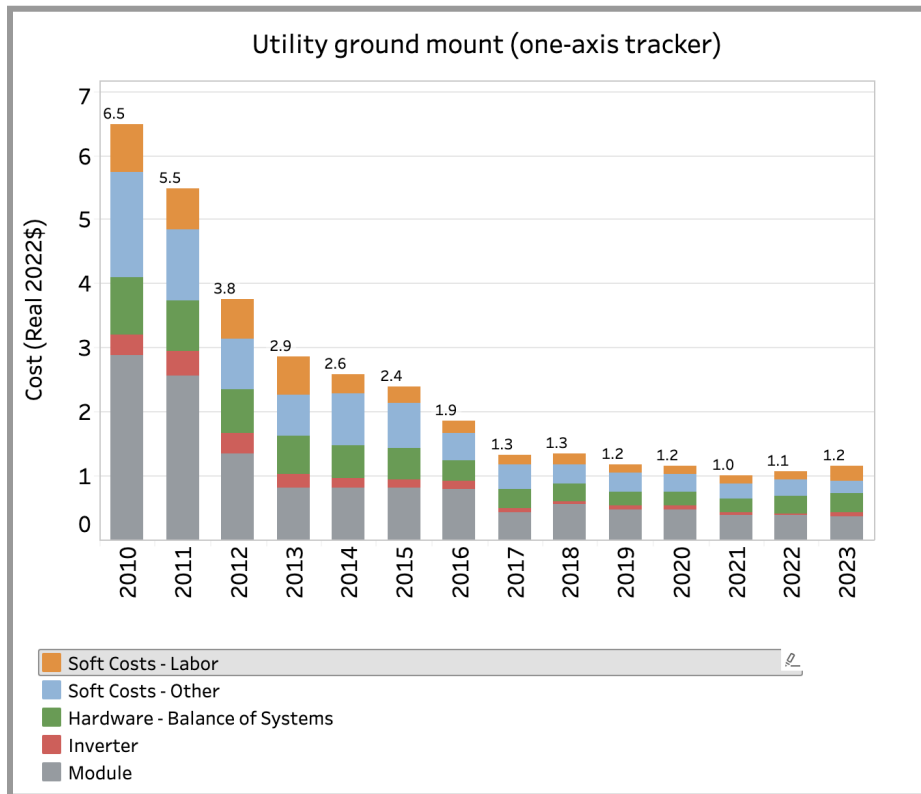


Figure 10. Should cost analysis in watts (W) conducted by NREL's analytics department, 2023

Since our suppliers aren't transparent about what goes into their final quoted price, a should cost analysis had to be done. We were able to find a should cost analysis conducted by a federal government organization named the National Renewable Energy Laboratory (NREL). They conducted their analysis on solar energy services for utility which is power grids and public works projects (what we are in the market for). The price they determined that would be fair to charge with everything included is \$1.2 per watt. This analysis was conducted in watts. A comparison on their should cost analysis price and our top suppliers price (Veregy) was conducted below:

| (kWh)         | Cost \$    | Price \$   | Profit \$  | Profit Margin |
|---------------|------------|------------|------------|---------------|
| VeregyDer LLC | \$1,200.00 | \$2,760.38 | \$1,560.38 | 57%           |

Figure 11. Profit margin analysis on Veregy's recent quote (2024)

Our comparison was conducted on Veregy since they are 85% of our spend category and are our preferred supplier. The calculations above are in kilowatts (1000 watts in a kilowatt) due to all of our supplier quotes being in kilowatts. Based on the price provided by NREL (\$1.2 watts or \$1,200 per kilowatt), there is a massive discrepancy in the \$2,760.38 price that Veregy charges us. They make a \$1,560.30 profit on each kilowatt which is a 57% markup. The NREL finance department also conducted their own should cost analysis:

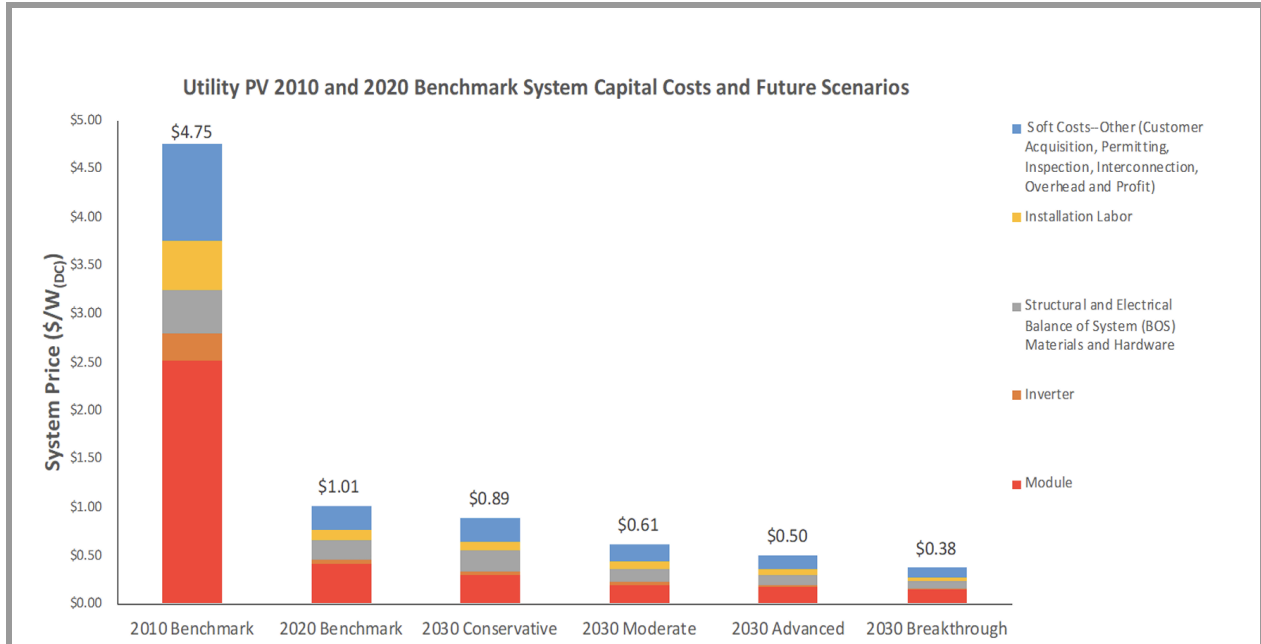


Figure 12. Independent should cost analysis done by NREL finance department in 2020 in watts (W)

Figure 12 shows an independent cost analysis conducted by NREL's finance department. They also included a forecasted price trend analysis. Using their 2020 benchmark price of \$1.01 per watt, another price comparison was conducted below:

| (kWh)          | Cost \$    | Price \$   | Profit \$  | Profit Margin |
|----------------|------------|------------|------------|---------------|
| Veregy Der LLC | \$1,010.00 | \$2,760.38 | \$1,750.38 | 63%           |

Figure 13. Profit margin analysis using finance department should cost analysis price

Using NREL's price again of \$1.01, that gets converted into a kilowatt price of \$1,010. Using Veregy's quoted price of \$2,760.38, this gets calculated as a \$1,750.38 profit or 63% markup.

#### Key takeaways:

- Our top supplier Veregy is giving us an unfair price according to NREL's independent should cost analysis
- This analysis had to be done since one supplier was dominating so much of our spend category.
- As our government organization, taxpayers are responsible for our funding and shouldn't be ripped off.
- Regulatory bodies will also look at this data and see how wasteful we are with our spending. This could result in budget cuts and other negative actions on our department.
- This data is super important since it is tangible and we can bring our findings to Veregy to renegotiate their pricings.
- We need more transparency in our supplier pricing, use other suppliers to leverage Veregy, and stop wasteful spending.

## Portfolio Analysis

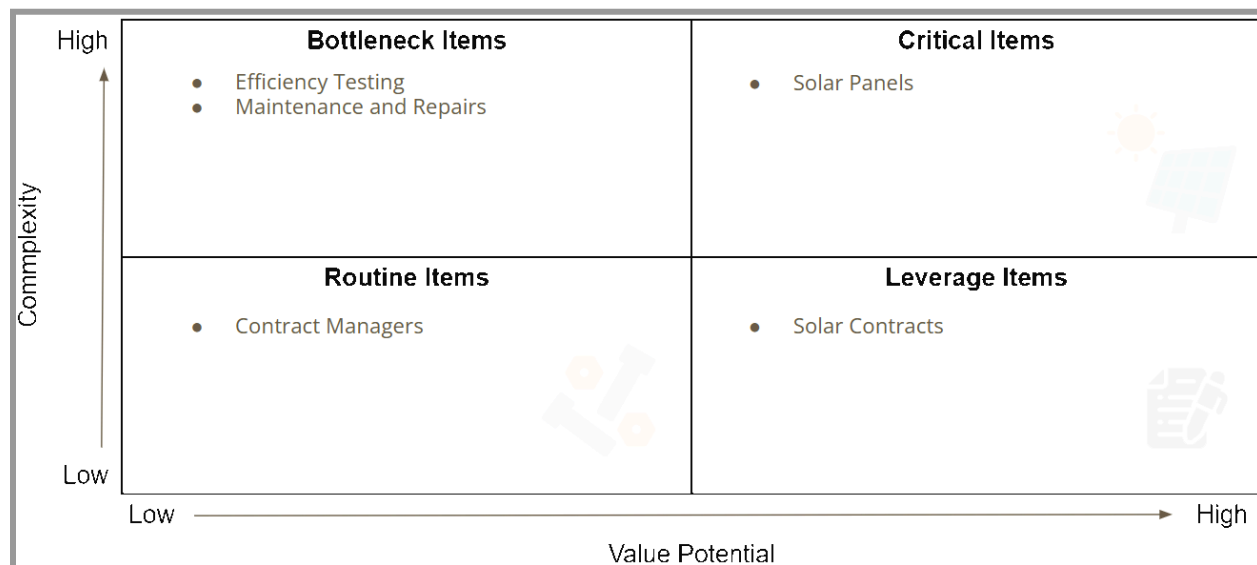


Figure 13. Solar Energy Systems Portfolio Analysis for SPO

Figure 13 showcases the portfolio analysis for the solar energy systems spend category. The bottleneck items include efficiency testing of the panels, as well as the maintenance, repair, and operations (MRO). The critical item is primarily the solar panels/energy systems that the state is procuring. The routine items consist of contract managers, as they must always be present in public solicitations for this organization, and our leverage item is the solar contracts that the contract managers utilize to procure various solar energy systems vendors.

## Supplier Analysis / Evaluation

| Vendor Name                         | Spend          | Quality according to Inspectors | Reliability | Efficiency of Solar Panels |
|-------------------------------------|----------------|---------------------------------|-------------|----------------------------|
| Veregy Der and Electrical, LLC      | \$5,364,943.25 | High                            | 9.7/10      | 25.50%                     |
| Natural Power and Energy, LLC       | \$748,408.53   | Medium                          | 8.6/10      | 22.30%                     |
| Empire Southwest, LLC               | \$127,493.36   | Medium                          | 7.5/10      | 20%                        |
| APS Energy Services Co, Inc.        | \$39,812.00    | Fair                            | 5/10        | 17%                        |
| Sky Construction and Engineering, L | \$24,101.03    | Fair                            | N/A         | 21%                        |
| Lightday Solar, Inc.                | \$6,175.00     | Fair                            | N/A         | 22%                        |

Figure 14. Supplier Analysis

There are currently six vendors that the Department of Procurement uses for supplying their solar panels. Of those six, Veregy Der and Electrical LLC takes up 85% of the Department's total spending on solar panels, and the rest of our suppliers account for the remaining 15% of spending. We utilized several criteria in our supplier evaluation through different categories, including product quality according to inspectors, reliability according to contractors, and solar panel efficiency (measured in percentage of sun's energy captured). Unfortunately, we were not able to find credible data regarding the reliability of two of our suppliers, namely Sky Construction and Engineering and Lightday Solar. As a result, further research is necessary to develop a better understanding of our minority suppliers.

Across our suppliers, it can be seen that Veregy has the highest quality with an inspector valuation of "High", along with the highest reliability rating (9.7) and efficiency of solar panels



(25.5%). This is a good sign, as Veregy is the department's largest supplier. On the other hand, APS has the lowest reliability and solar panel efficiency. According to our assessment, the Department's second biggest supplier, Natural Power and Energy, has the second best quality, reliability, and solar panel efficiency. Therefore, Veregy and Natural Power and Energy would be categorized together as the highest quality of suppliers.

By analyzing the breakdown of supplier usage, we can infer that Veregy Der and Electrical is our primary supplier, and represents a consistent option in terms of volume, quality, price, and availability. Natural Power and Energy and Empire Southwest make up our secondary suppliers, and still provide solid quality at a reasonable volume in support to our primary supplier. The final three tertiary suppliers likely are only utilized on an as-needed, inconsistent basis due to lower quality and availability.

As our goal is to ensure high standards across all of our suppliers, there is still room for growth, especially among our secondary and tertiary suppliers. Most of our vendors provide solar panels with adequate efficiency, but we should encourage them to improve their quality and reliability. We can help our partners identify potential improvements and provide incentives for improvement through increased contract totals. We can also search for new suppliers with existing high-quality products.

Though Veregy is our most reliable and best rated supplier, it would be wise to diversify our supplier base and decrease the 85% ratio, assuming we are able to improve the quality of our other suppliers. This would decrease dependence in the case of unforeseen issues with Veregy, and give the Department of Procurement more leverage with Veregy in contract negotiations. By increasing our number of reliable alternative suppliers, we can increase our bargaining power and negotiate better terms in our existing contracts. However, we still need to prioritize maintaining a good relationship with Veregy due to our reliance and their high quality and reliability.

## **Key Factors and Uncertainties**

The Department of Procurement plays a crucial role in facilitating solar energy initiatives within the state, which is known for its sunlight and progressive energy policies. Several key factors influence this sector including but not limited to its regulatory environment, funding, demand, and sustainability goals. As well as notable uncertainties that may impact future development such as policy changes, political parties, public sentiment, and supply chain issues.

Some key factors like the regulatory environment can impact procurement processes and incentives for solar projects. This can lead to uncertainty regarding future tax incentives, renewable energy mandates, and utility regulations. This directly affects funding and budgeting because our organization is government funded. Since the market for solar energy is volatile and relies on some of our uncertainties, it is hard to prepare or forecast any type due to political uncertainties. As we know, the state has set ambitious renewable energy goals and therefore leads to a higher demand for the Department of Procurement. This does add security in knowing that the state is encouraging the adoption of solar technologies and practices long term.

Most of the Department of Procurement's uncertainties are politically orientated which is what makes them 'uncertain'. Potential shifts in policies and the adoption of certain propositions can directly affect incentives and subsidies. Recent elections have proven Arizona to be a swing

state and therefore the political party in power can directly impact sustainability goals and where it lands on their priority list. The public tends to follow suit with their political party in power so public acceptance and sentiment toward renewable energy goes hand in hand with politics. Lastly, the supply chain is always uncertain. Events like the current dock strike can happen from one day to the next hindering the global supply chain as a whole and there is no way to predict it or stop it from happening.

## CATEGORY STRATEGY

### Recommendations

Based on all of our analyses, we recommend:

- **Streamline our procurement process**
  - Standardize all contracts
- **Improve Supplier Assessment**
- **Collect more data on vendors**
- **Renegotiate our contract with Veregy**
- **Mitigate Political uncertainty**
  - Public policy engagement and outreach

### Strategy Matrix

| Category Strategy Elements   |                                    |   |  |  |  |                                      |  |                                    |
|--|------------------------------------|---|--|--|--|--------------------------------------|--|------------------------------------|
| Business Objectives  | Supply Mgt Objectives              | Major Category Objectives   | Organization   | Supply Base  | Quality  | Costing                              | Contracts                                      | Processes                          |
| To continue to establish solar/renewable energy initiatives across the state of Arizona while receiving the best quality at a fair price | Reduce spending of major suppliers | Collect adequate data on suppliers to improve negotiation process | Data collection is top priority                              | Supplier Scorecards accurate and up to date                          | Improve quality and adopt new solar technologies as needed | Reduce costing through renegotiation | Short term is best in this innovative industry | Require Quotes for all offers/bids |
|  | Streamlined Procurement Process    | Renegotiate Existing contracts that don't have a fair price       | More centralized procurement process with a central data hub | Fair and transparent pricing, this includes breakdowns and footnotes | Make upgrades to existing systems                          |                                      |  | Standardize all contracts          |
|  | Improved Supplier Assessment       | Contract Managers need to prioritize Data Analytics               |  | Increase number of suppliers   |  |                                      |  |                                    |
|  |                                    | Contingencies   | Renegotiation  | Analytics  | Inspector reviews  | Multiple suppliers as leverage       | Lawyers  | Standardized Template              |
|  |                                    | KPIs  | Renegotiation success rate                                   | # of Suppliers   | Quality Ratings  | Total Spend vs reduction goal        | Contract Compliance Rate                       | % of processes not an SOP          |

Figure 15. Strategy Matrix

- **Business Objectives:** The main Business objective is to continue to establish our solar energy initiatives while receiving a fair price which would inevitably reduce spend.
- **Supply Management Objectives:** The main supply objective is to reduce total spend on suppliers while getting more tangible data on our suppliers.
- **Major Category Objectives:** Our major category objective is to collect the proper data, have our supply managers use data properly, and renegotiate our existing contract with Veregy.

- **Organization:** Organizational objectives are to collect adequate data and a more centralized procurement process with one data hub.
- **Supply Base:** Supply base objectives are to increase the amount of suppliers to leverage Veregy and get the fairest price, supplier scorecards up to date, and transparent pricing with a breakdown.
- **Quality:** Our quality objectives are to make upgrades to solar technology as needed and maintain existing systems.
- **Costing:** Our cost objectives are to reduce pricing through renegotiation of our Veregy contract and leverage our other suppliers to get the fairest price.
- **Contracts:** Our goal is to have short term contracts with a 100% compliance rate as this industry is changing quickly and contracts will need to be updated regularly.
- **Processes:** Our goal is to standardize all processes and require transparent quotes for all bids

## Strategic Timeline

Below is our strategic timeline, which indicates the implementation of our strategic recommendations. It is important to note that the key stakeholders will consist of the members of SPO, as well as the various vendors involved in the solar energy systems contract.

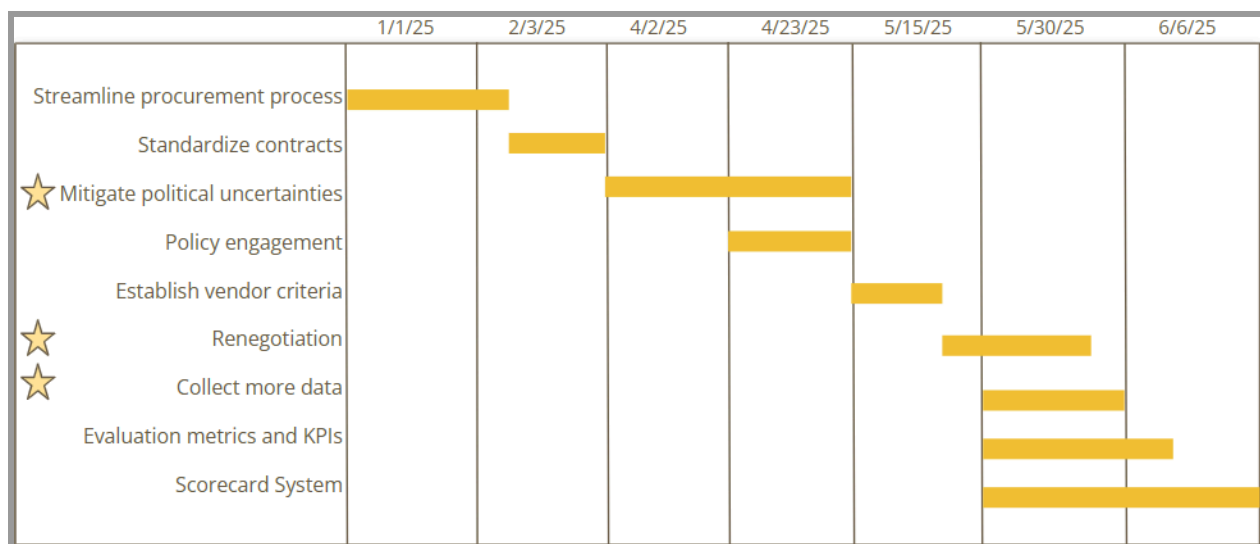


Figure 16. Strategy Implementation Timeline

- **Streamline Procurement Process:** Request more information in every solicitation, so as to standardize the information gathering process, which in turn will make contract management easier as well.
- **Standardize Contracts:** This will ensure that contracts receive the same diligence and information gathering, so any issue with contracts themselves can be solved in a similar manner.
- **Mitigate Political Uncertainties:** A reduction in political uncertainties will help with understanding our budget allocation better, and in-turn help with planning use of said budget.

- **Policy Engagement:** Engaging all members of the State Procurement Office will allow for standardization and knowledge transfer that will allow for this change to be sustained.
- **Establish Vendor Criteria:** Setting a vendor criteria that is standard for all vendors when bidding will allow for the information to be accurate every time it is sought after.
- **Renegotiation:** Renegotiation contract terms, specifically the pricing, will allow the state to receive a fair solar panel price from the vendors.
- **Collect more Data:** Data is a sector in which SPO lacks, as there are no data driven processes. Implementation of such will allow the organization to achieve much higher accuracy in their procurement endeavors, as well as contract management and the like.
- **Evaluation Metrics and KPIs:** Certain key performance indicators and metrics will be utilized to ensure that the changes being suggested within this report are positive, as well as for the use of the state in regards to KPIs such as contract compliance.
- **Scorecard System:** Utilizing a balanced scorecard system with an emphasis on promotion of future capabilities development will be a very important aspect of maintaining and managing the strategic focus.

## Contingencies

- **Renegotiation:** Aim for lower prices on contracts with vendors, communicate positively as to maintain the relationship.
- **Analytics:** Utilize data-driven processes to ensure accuracy in contract management and procurement activities.
- **Inspector Reviews:** Ensure that contract compliance is at an all time high.
- **Multiple Suppliers as Leverage:** Utilize multiple vendors as leverage to obtain favorable terms.
- **Lawyers:** Ensure political risk mitigation and compliance through lawyers.
- **Standardization:** Standardize processes to ensure contract manager and vendor compliance and accuracy.

## Key Performance Indicators

The table below represents the KPIs identified by our team:

| KPI                           | Current         | Goal           |
|-------------------------------|-----------------|----------------|
| Total spend vs reduction goal | \$ 6.31 Million | \$ 5.8 Million |
| Supplier data completeness    | Unknown, low    | 95%            |
| Contract compliance rate (%)  | Unknown, medium | 100%           |
| Number of suppliers           | 6               | 10             |

Figure 17. Key Performance Indicators

## CONCLUSION

Overall, this report analyzes the Arizona Department of Procurement, focusing on the spend category of solar energy, and highlighting challenges and providing recommendations to

enhance efficiency, reduce costs, and support Arizona’s sustainability objectives. Key findings reveal that the current procurement process can benefit from increased supplier evaluation and diversification, improved data management on demand and suppliers, and standardization of contracts to streamline the procurement process.

By reducing the dependency on the main supplier, Veregy, the Department has a higher possibility to decrease costs if they were able to have more reliable alternative suppliers. Furthermore, addressing price disparities could allow there to be a stronger supplier-buyer relationship. These recommendations will position the department to be able to respond more proactively to the market and political uncertainties. Immediate next steps would be to initiate contract standardization, engaging more with alternate suppliers, and developing a supplier assessment framework. By following these recommendations, Arizona can better fulfill its renewable energy goals and maintain its leadership in sustainable practices.

## APPENDIX A

- Organization: Arizona State Procurement Office
- Tej Mistry is a procurement management intern at the organization
  - Met with the primary contact 4 time in regards to the project
- Primary Contact: David Strayer
- Scope of Work: Analyze the contract set and its vendors for solar energy systems

### *Project Management*

| Team Member  | Role  |
|--------------|---|
| Tej Mistry   | <ul style="list-style-type: none"> <li>● Structured the organizational environment and supply management process</li> <li>● analyzed demand and spend</li> <li>● created supply market analysis and strategic implementation timeline</li> <li>● Assisted in creating KPIs</li> </ul> |
| Thomas Citro | <ul style="list-style-type: none"> <li>● Created the strategy matrix</li> <li>● supplier cost analysis and price analysis</li> <li>● Assisted in creating the KPIs</li> <li>● Assisted in creating the recommendations</li> </ul>   |
| Yukun Chen   | <ul style="list-style-type: none"> <li>● Assisted in creation of the supplier analysis table</li> <li>● Created supplier spend pie chart</li> </ul>   |
| Emily Martin | <ul style="list-style-type: none"> <li>● Determined the key factors and uncertainties</li> <li>● Worked on summarization of the</li> </ul>  |

|                      |   |
|----------------------|---|
|                      | results   |
| Evangelos Siourounis | <ul style="list-style-type: none"> <li>Assisted in creating portfolio analysis and recommendations</li> </ul> |

#### *General Project Management*

- Collaboration was achieved through PowerPoint and Google Sheets for analysis and presentation, and Google Docs to write the report
- We met on a weekly basis, but mostly communicated through text.

#### *Milestone*

- 9/20/24: First meeting with the client
- 10/10/24: The team completed their analysis and presentation
- 10/31/24: The team completed their documented report

## **APPENDIX B (about 1-2 pages)**

#### *Group 12 - Ben and Jerry's*

- The SWOT analysis was very thorough and provided many examples with bullet points that were explained well.
- The price analysis did not show price vs. cost.
- Did not provide a gantt chart in their strategy implementation timeline.
- Demand analysis was good and included helpful visuals.

#### *Group 1 - State Procurement Office*

- The slides were quite wordy, which makes it difficult to get the information across to the audience.
- There was no graphic for the supply market analysis.
- Overall the presentation was great and in-depth in regards to their spend category.

#### *Group 10 - Harmony*

- The Porter's Five Forces analysis provided great examples.
- The presentation for the most part was not visually appealing.
- The demand analysis was too wordy and should be condensed with more data to speak towards it.

#### *Group 6 - AmeriPro Roofing*

- Very concise wording and good layout throughout the entire presentation.
- The supplied analysis lacked spend data.
- KPIs utilized should be more relevant to the strategic focus recommendation.
- The strategy matrix layout was nice and easy to understand.

#### *Group 4 - Bagel Gourmet*

- The SWOT analysis had nice visuals and was condensed well.
- The spend analysis was very thorough and included a good visual presentation utilizing Tableau.
- The supply market analysis was concise and included Porter's Five Forces.

- The supplier analysis was done well with a good layout, but it could have utilized a scorecard.

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