Elite Energy Consulting

Final Report

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Executive Summary

Purpose and Background

Elite Solar Consulting has been collecting data throughout several years of operation as they provide clean energy products to the market. The company wishes to compile this data into comprehensive and visual tools that they could then utilize in decision-making throughout different levels of management. The data visualization would also be used for their sales representatives to track personal progress compared to company goals as a form of motivation and evaluation. Over the past few months, our objective has been to organize data into visualization dashboards to facilitate a greater understanding of Elite Solar Consulting's processes and activities and achieve the stated desires of the company.

List of Activities

Our focus centered on two main deliverables given to us by Elite Solar Consulting, the first is a sales leaderboard that displays various metrics surrounding their sales representatives' achievements. This dashboard attempts to show total kilowatts sold per sales representative, number of opportunities created, type of kilowatt systems, and total number of contracts signed from month to month. A mobile version of this dashboard was created so that the sales representatives can have access to this information from their mobile devices while working.

The second deliverable is a dashboard tracking different stages of a job until it is completed. We created various displays showing the quantity of contracts created, contracts signed, sites assessed, and installation completed. We also included cancellations and reasoning, along with a timeline showing the number of contracts signed from month to month. The target audience is management hoping that they can use this data to make decisions and evaluate progress.

As time permitted, we began the groundwork for a third dashboard highlighting individual, team, and company-wide achievements displayed as total revenue earned and compensation paid.

Impact of Activities

These visualization tools will allow management to evaluate their strengths and weaknesses which should give them power to make future decisions. It also provides their employees with the ability to track their personal progress and make improvements.

Description of Work Plan

Our work plan consisted of assigning tasks to each team member that were to be completed during the week. We set deadlines for rough drafts, 2nd drafts, and our final project each week filled with edits and revisions. Each team member participated on each dashboard.
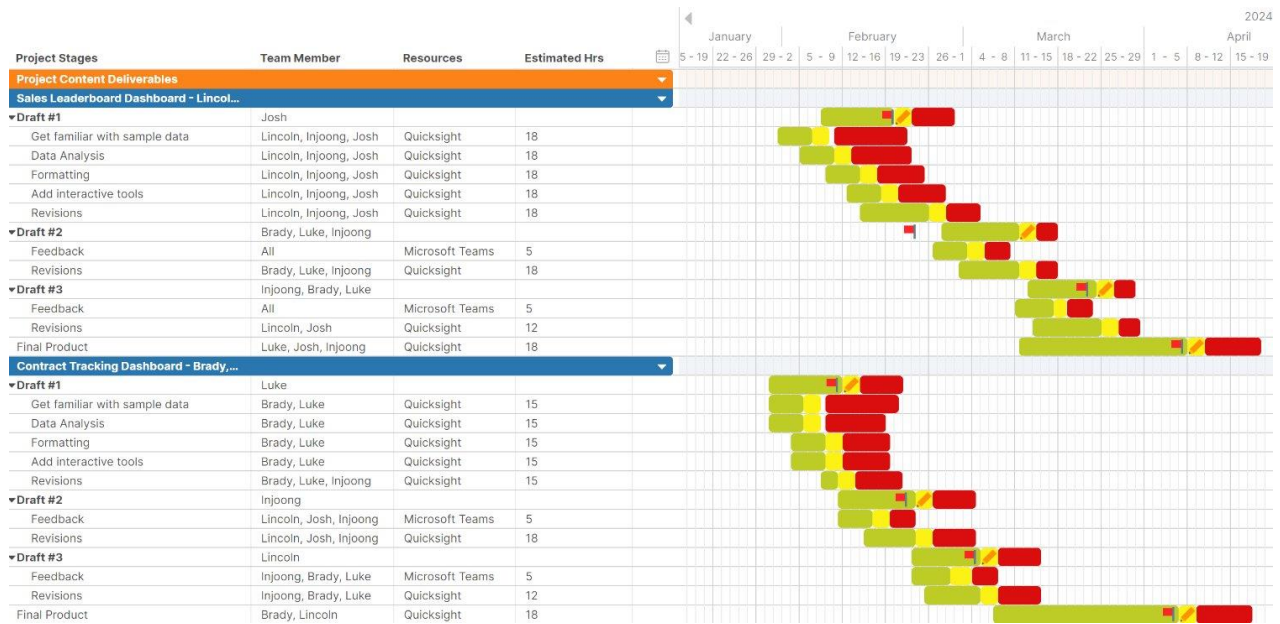
Project Overview

Project Process

We have spent the last four months working on creating these dashboards. This has included countless steps, including team role assignments, project deliverable formation, project scheduling, coordination with project sponsors and team members, etc. Each piece was a crucial part of creating these dashboards.

Before we met with Michael, our team sponsor, we assigned several roles to each team member to handle various aspects of the leadership requirements that would be needed in completing this robust project. Each team member oversaw a specific aspect of the project. Examples of this were Team Leader, Project Manager, and Sponsor Liaison. Doing so allowed us to focus on specific tasks and skills that we would contribute to the team. We also needed to plan when we would meet and with our project sponsor to have effective communication and collaboration throughout the project.

Once we made it through much of the bookkeeping and logistical setup of the project, we then began to focus on the project scheduling. We knew that we had a finite allotment of time. We needed to finish this project by the middle of April. To achieve project success in this time frame we utilized a Gantt chart as shown in **Figure 1**. In this chart, we planned on splitting the work of Sales Leaderboard and Contract tracking amongst ourselves and working as two separate teams. Afterwards, we planned various milestones that needed to be hit on certain dates. This was to ensure we spaced out the work of creating the dash correctly and plan enough time to clean up the dashboard. A significant concern in creating our dashboards was ensuring we spent a long time making them presentable to many people.

Project Stages	Team Member	Resources	Estimated Hrs		January			February				March				April	
					5 - 19	22 - 26	29 - 2	5 - 9	12 - 16	19 - 23	26 - 1	4 - 8	11 - 15	18 - 22	25 - 29	1 - 5	8 - 12	15 - 19
Project Content Deliverables																		
Sales Leaderboard Dashboard - Lincol...																		
▼Draft #1	Josh																	
Get familiar with sample data	Lincoln, Injoong, Josh	Quicksight	18															
Data Analysis	Lincoln, Injoong, Josh	Quicksight	18															
Formatting	Lincoln, Injoong, Josh	Quicksight	18															
Add interactive tools	Lincoln, Injoong, Josh	Quicksight	18															
Revisions	Lincoln, Injoong, Josh	Quicksight	18															
▼Draft #2	Brady, Luke, Injoong																	
Feedback	All	Microsoft Teams	5															
Revisions	Brady, Luke, Injoong	Quicksight	18															
▼Draft #3	Injoong, Brady, Luke																	
Feedback	All	Microsoft Teams	5															
Revisions	Lincoln, Josh	Quicksight	12															
Final Product	Luke, Josh, Injoong	Quicksight	18															
Contract Tracking Dashboard - Brady,...																		
▼Draft #1	Luke																	
Get familiar with sample data	Brady, Luke	Quicksight	15															
Data Analysis	Brady, Luke	Quicksight	15															
Formatting	Brady, Luke	Quicksight	15															
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Revisions	Brady, Luke, Injoong	Quicksight	15															
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Feedback	Lincoln, Josh, Injoong	Microsoft Teams	5															
Revisions	Lincoln, Josh, Injoong	Quicksight	18															
▼Draft #3	Lincoln																	
Feedback	Injoong, Brady, Luke	Microsoft Teams	5															
Revisions	Injoong, Brady, Luke	Quicksight	12															
Final Product	Brady, Lincoln	Quicksight	18															

Figure 1: Project Gantt Chart

After creating our project schedule, we then intended on beginning to work on the dashboards using Amazon Quicksight. However, there was some delay in obtaining Quicksight credentials for each of us and so we needed to delay beginning the work in that aspect. Instead of working in Quicksight we began to look at other examples of sales leaderboards and dashboards created by other companies. This was to generate ideas of what might be good to place on our dashboards. We created lists of features and styles that we may have wanted to use.

Once we had access to Quicksight we immediately began assembling our first drafts. There was a large learning for everyone on the team. This was especially true for the team members who had little experience with data visualization software such as Tableau. We were able to figure out the basics of Quicksight quickly and we helped each other as we learned new things. In only a few short weeks we had a solid rough draft of the Sales Leaderboard shown in **Figure 2**.
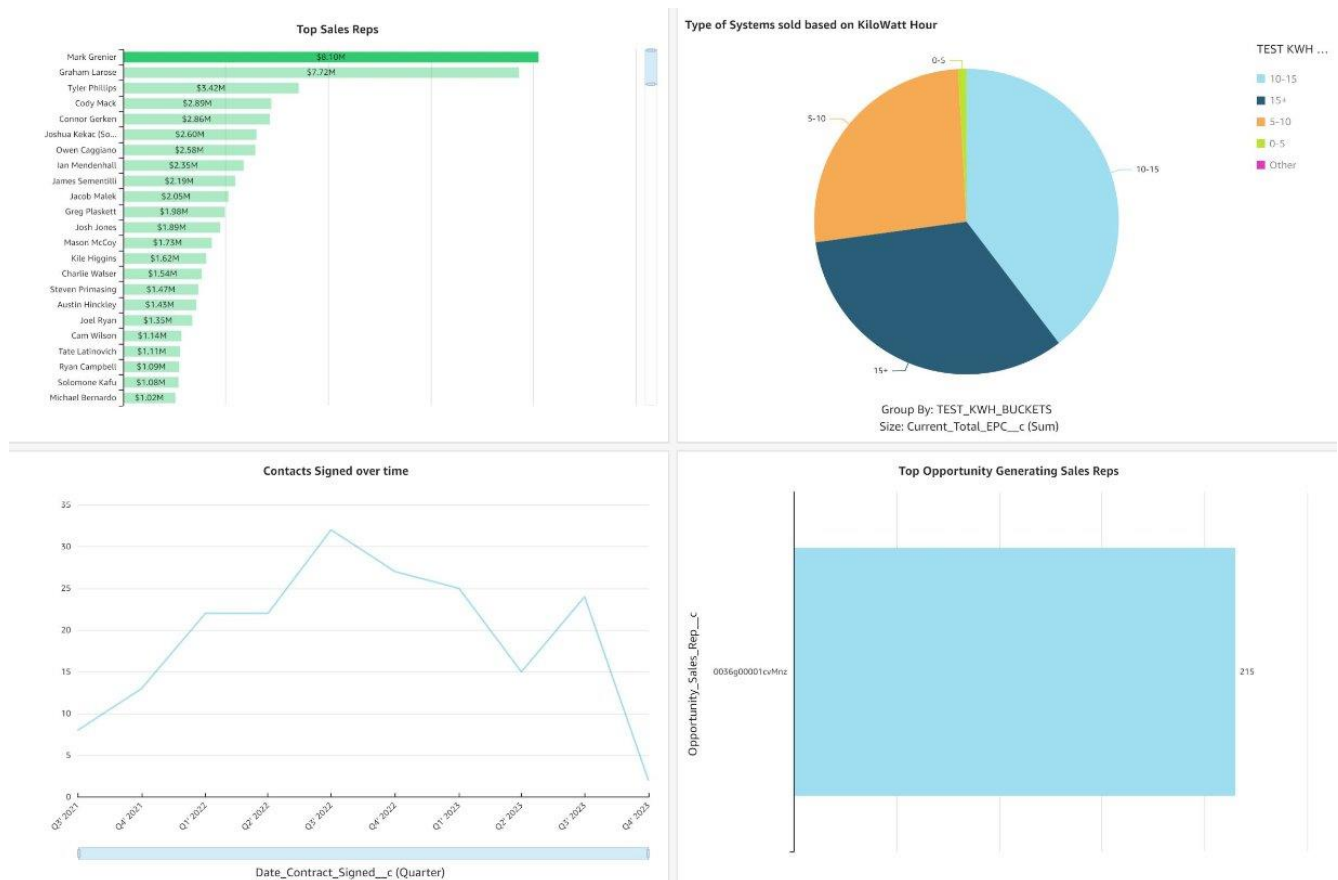
Figure 2: First Rough Draft of the Sales Leaderboard

There were several analyses in the dashboard that we wanted to do that were not natively supported in tableau. One example of this was creating buckets for the types of Kilowatt Hour systems sold. Quicksight could only display the exact type of the system and it could not create groups or ranges of systems. In order to get around this we had to create calculated fields in Quicksight. Quicksight does not explain how to code in these. For what we used it resembled a simplified form of python as seen in **Figure 3**. This was the hardest portion of the project. Luckily several members of our team had sufficient coding experience to complete the required analyses. Code was needed many times throughout the project, especially for the Contract Tracking dashboard.

```
1 ifelse({Current_System_Size_kW__c} >= 0.0 and {Current_System_Size_kW__c} <= 5.0 , '0-5',
2 {Current_System_Size_kW__c} > 5.0 and {Current_System_Size_kW__c} <= 10.0 , '5-10',
3 {Current_System_Size_kW__c} > 10.0 and {Current_System_Size_kW__c} <= 15.0 , '10-15',
4 {Current_System_Size_kW__c} > 15.0, '15+', 'Other')
```

Figure 3: Example of Quicksight Code Used for the Sales Leaderboard

The contract tracking dashboard was much more complex than the sales leaderboard dashboard. The contract tracking dashboard has a large variety of features. There are many basic data visualizations like projects completed per month and a list of canceled projects. However, the main goal of the dashboard was to understand where each project is in the product timeline. As seen in **Figure 4,** code was written to evaluate when the last date was entered and what kind of date it was.

```
1 ifelse(isNull({Date_Contract_Signed__c}) and isNotNull(CreatedDate), 'CreatedDate', isNull({Date_Site_Survey_Complete__c}) and
  isNotNull(CreatedDate) and isNotNull({Date_Contract_Signed__c}), 'Contract Signed', isNull({Date_Permit_Approved__c}), 'Site
  Surveyed', isnull({Date_of_Installation__c}), 'Permit Approved', isNull({Date_M2_Approved__c}) and isNull(
  {Date_Of_Substantial_Completion__c}), 'Installed', isNull({Date_Of_Substantial_Completion__c}) and isNotNull({Date_M2_Approved__c}),
   'M2 Approved' , 'Project Completed')
```

Figure 4: Code Used for Contract Tracking

Using this new calculated field so many of our planned analysis was made possible. We were able to track the number of jobs in each category, the average amount of time spent in each phase of the product timeline, and which jobs are running behind the typical timeframes. This took several months to create these features as they went through several iterations and bug fixes.

Meanwhile, during this process other team members could begin working on the project's visualization aspects. The dashboards needed to look very well because it would be seen all the company employees. One other major consideration was that many of the employees were going to view these dashboards on their phone. Several iterations of visual layouts were created and tested to find what would work best in these situations. We decided to create a separate version of the sales leaderboard that could be seen on mobile phones. A portion of this new version is shown in **Figure 5**.
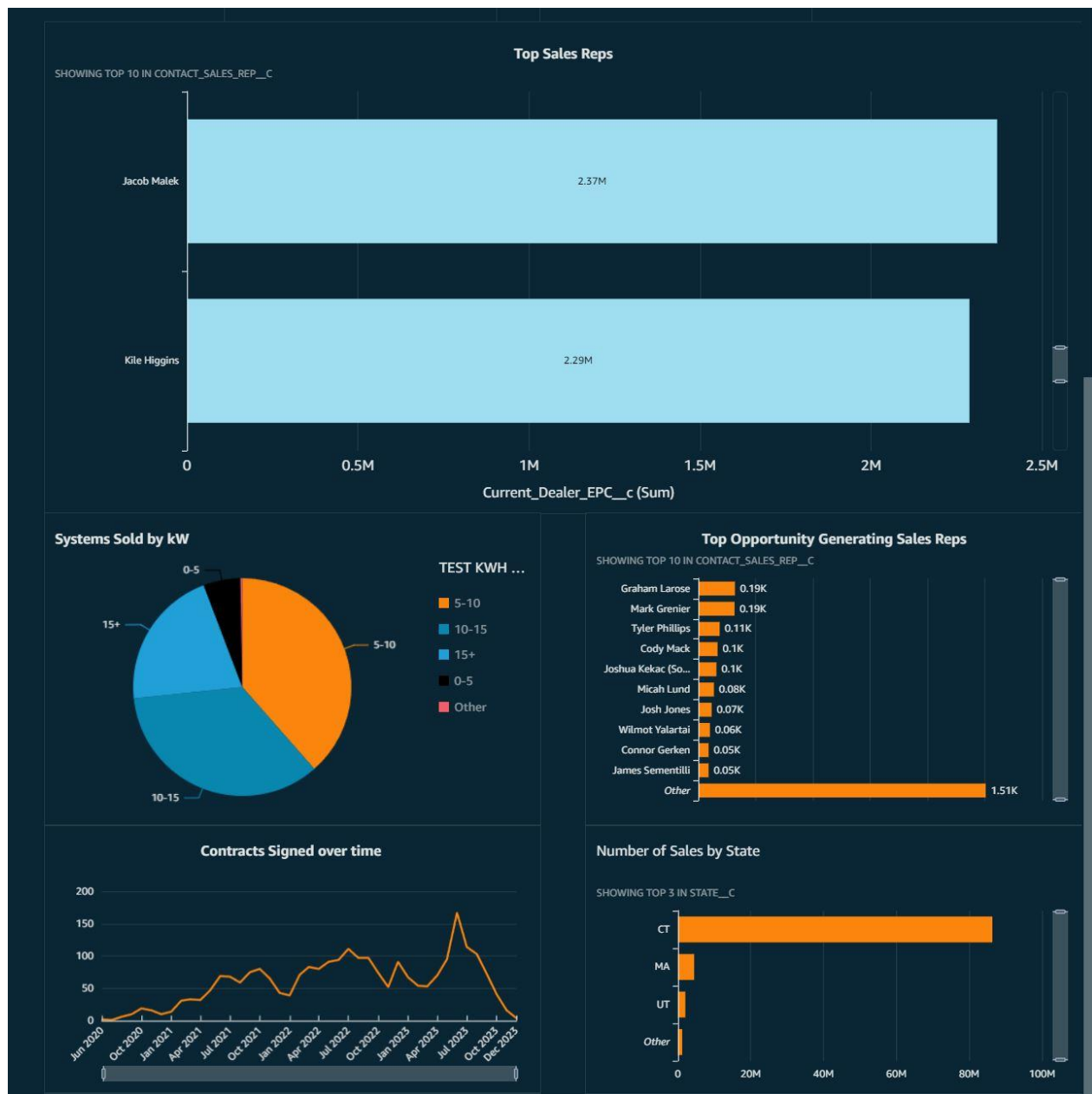
Figure 5: Example of Sales Leaderboard for Mobile

Once we had created new versions for the mobile and cleaned up the visualizations the only main task left was to ensure that this dashboard could run untouched for a long time. Since we will not be able to work on this project after the semester is over, the dashboards must be self-sufficient. This meant all fields needed to be self-updating. We went through and ensured that each of the pieces of the dashboards were done this way. To wrap up our work in this project we created this Final Report and Final Presentation to ensure that the sponsor would have proper documentation of our project and if any work needed to be done in the future by another person, they could refer to these things for support.

Impact

The purpose of the sales leaderboard dashboard is to streamline sales performance tracking in upper management and boost individual motivation and drive among the sales representatives. Having organized and clean data to analyze is crucial to every company, especially a company such as Elite Energy Consulting, who must stay up to date on every trend in the data to maximize productivity. Organized data acts as the backbone to managerial decisions and can be a deciding factor between the success or failure of a company.

One impact that we hope the sales leaderboard dashboard will have been a boost in efficiency and motivation among each individual sales representative. Much like tracking progress in a gym, tracking progress in sales is a natural way to help representatives strive to reach higher goals. As salespeople see their performance metrics fluctuate, they'll be able to better focus on those sales strategies that bring them the most success. In upper management, we hope that the sales leaderboard dashboard will give them the ability to analyze the overall success of their sales strategies. As they try out different tactics among groups of sales representatives, they will be able to actively see its level of success on a self-updating dashboard.

The contract tracking dashboard aims to allow upper management to get a grasp on where their projects are and where operations can be sped up. The longer projects take, there becomes the chance of them stalling, so optimizing the time spent to complete a project is paramount for company success. The impact we intend to have for this dashboard is to prevent projects from falling through the cracks, identify cancellation trends, and assess the progress of projects currently on the docket.

The dashboards are equipped with large sweeping filters that will give quick access to any type of metric the management hopes to see. We are sure that the use of this dashboard will give the leaders at Elite Energy Consulting the necessary tools to take their business to the next level.

Recommendations

While the sales leaderboard dashboard is vitally important to the company, we believe that the use of interactive dashboards can be implemented in many ways within the company. Some options can include a dashboard to track commission payments, project statuses, and customer satisfaction. We believe that as the company begins to make use of these interactive dashboards, they will find that their potential to boost work efficiency and streamline managerial decisions will be of great worth.

User's Guide

Purpose

The Sales Leaderboard and Contract Tracking Dashboard have been developed to address needs within Elite Solar Consulting's operational landscape. The purpose of these tools is multi-faceted:

1. **Enhanced Sales Performance Monitoring**: The Sales Leaderboard Dashboard offers a centralized platform to monitor and analyze sales performance metrics. By consolidating data on kilowatts sold, opportunities created, system types, and contract signings, this tool enables management to identify top-performing sales representatives, evaluate peak performance periods, and recognize successful sales strategies.
2. **Streamlined Decision-Making**: By presenting comprehensive visualizations of sales data, the dashboard empowers management with actionable insights. These insights aid in making informed decisions regarding resource allocation, sales tactics refinement, and overall business strategy enhancement.
3. **Motivational Tool for Sales Teams**: The leaderboard aspect of the dashboard serves as a motivational tool for sales representatives. Visibility into individual and team performance fosters healthy competition, encourages goal setting, and drives continuous improvement among sales teams.
4. **Contract Management Optimization:** The Contract Tracking Dashboard provides insights into contract statuses, commission payments, cancellation trends and project progress. This component streamlines contract management processes, ensuring timely payments and efficient project tracking.

Desired Output

The Sales Leaderboard and Contract Tracking Dashboard aim to deliver the following outcomes:

- Data Visualization: Clear and intuitive presentation of sales and contract-related metrics.
- Performance Analysis: Identification of top-performing sales representatives and trends influencing sales success.
- Contract Management Optimization: Streamlined monitoring of project statuses and customer interactions for enhanced contract management.

Description of the Tool

The Sales Leaderboard and Contract Tracking Dashboard consist of the following elements:

- Sales Leaderboard Dashboard
    - Key Metrics Display: Visual representation of total kilowatts sold per sales representative, number of opportunities generated, dealers' EPC by states, and total contracts signed monthly.
    - Interactive Features: User-friendly interface with interactive filters (e.g., date range, sales teams, states) for customized data analysis.
    - Graphical Representations: Graphs, charts, and tables illustrate performance trends, allowing for quick interpretation of sales data.
- Contract Tracking Dashboard
    - Project Status Monitoring: Real-time updates on project statuses, highlighting milestones and completion stages.
    - Contract Status Visualization: Clear depiction of contract statuses (e.g., active, pending, completed) for effective management.

Filters Guide in Dashboards

Understanding Filters

Filters in the dashboards allow us to dynamically refine and focus the displayed data based on specific criteria. By utilizing filters effectively, we can extract actionable insights and customize the dashboard to meet the analytical needs.

Sales Leaderboard Dashboard Filters

1. State Filter: Select one or multiple states from the available options to view sales performance specific to selected states.
2. Time Range Filter: Choose the desired start and end dates using the date picker to analyze sales performance over a specific period.
3. Sales Team Filter: Select the desired sales team(s) from the dropdown list to assess performance by specific sales teams or individuals.

Contract Tracking Dashboard Filters

1. Date Project Cancelled Filter: Use the date picker or predefined options to choose the start and end dates for the period that you want to analyze.

General Tips for Using Interactive Filters

1. Combining Filters: Experiment with using multiple filters simultaneously to narrow down data views (e.g., filter by state and time range together).

2. Observing Real-Time Updates: Notice how the dashboard dynamically refreshes as you apply or adjust filters, providing immediate feedback on selected criteria.

By using these interactive filter functionalities within the dashboards, we can efficiently navigate through vast datasets, uncover insights, and make data-driven decisions to drive business success.

Warnings and Limitations

- Data Accuracy: Ensure data input is accurate for reliable dashboard outputs.
- System Access: Restricted access based on user roles may apply.
- Dashboard Updates: Real-time data updates may depend on system synchronization.

Troubleshooting

- Data Integrity Check: Verify input data for accuracy.
- Browser Compatibility: Ensure the dashboard is accessed through a compatible browser.
- Technical Support: Contact Project Liaison for assistance with system-related issues.

Contact Information

For technical support or further assistance, please contact:

- Project Liaison: Michael Clawson, michael.clawson@elitesolarpros.com

Appendix

<u>Contract Tracking Dashboard Figures</u>

```
1  ifelse(isNull({Date_Contract_Signed__c}) and isNotNull(CreatedDate), 'CreatedDate', isNull({Date_Site_Survey_Complete__c}) and
   isNotNull(CreatedDate) and isNotNull({Date_Contract_Signed__c}), 'Contract Signed', isNull({Date_Permit_Approved__c}), 'Site
   Surveyed', isnull({Date_of_Installation__c}), 'Permit Approved', isNull({Date_M2_Approved__c}) and isNull(
   {Date_Of_Substantial_Completion__c}), 'Installed', isNull({Date_Of_Substantial_Completion__c}) and isNotNull({Date_M2_Approved__c}),
   'M2 Approved' , 'Project Completed')
```

Code Used for Contract Tracking
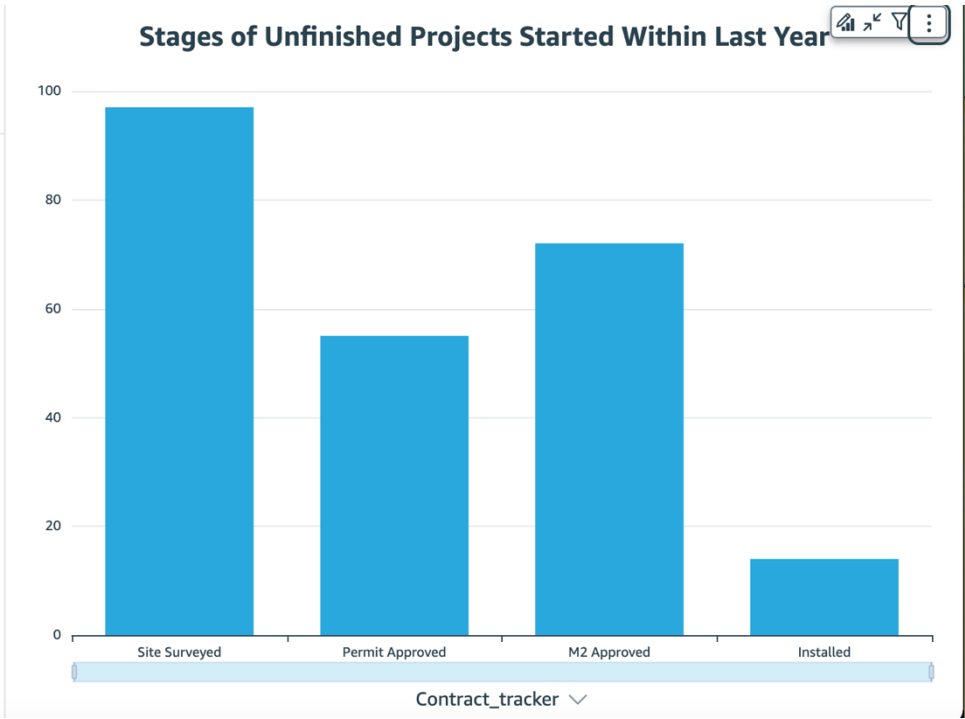
Contract Tracking Dashboard – Bar Chart with Stages of Unfinished Projects

Open Projects

Account__c	Customer_Name__c	Date_Contract_Signed__c	CreatedI
001Pd000003gHKTIA2	Phillip Tombaugh	Jan 18, 2024	Dec 14, 2
001Pd000003v3qgIAA	Timothy Lincoln	Dec 21, 2023	Dec 26, 2
001Pd000004HWqoIAG	Umberto Spada	Dec 19, 2023	Dec 19, 2
001Pd000003fMAxIAM	Kevin Carrier	Dec 1, 2023	Nov 30, 2
001Pd000003e9hCIAQ	Kevin Moore	Nov 28, 2023	Nov 27, 2
001Pd000003NjE3IAK	Jane Novak	Nov 17, 2023	Dec 1, 20
0016g00002eBFpCAAW	Robert Hayden	Nov 16, 2023	Nov 8, 20
001Pd000003JGtoIAG	Jared Burhoe	Nov 15, 2023	Nov 16, 2
001Pd0000036tT9IAI	Annmarie Olsen	Nov 9, 2023	Nov 10, 2
001Pd0000036vgHIAQ	Talena Vanzetta	Nov 9, 2023	Nov 11, 2
0016g00002egLpVAAU	Christopher Mccarthy	Nov 8, 2023	Oct 20, 2
0016g00002fhOYDAA2	Sandra Talbot	Nov 7, 2023	Nov 7, 20
0016g00002aJtE3AAK	Robin Jaworski	Nov 1, 2023	Oct 27, 2
0016g00002OkG1mAAF	Vincent Colangelo	Oct 27, 2023	Oct 27, 2
0016g00002fgRPyAAM	Lori Beckington	Oct 25, 2023	Oct 26, 2
0016g00002aSBceAAG	Kevin Clawson	Oct 24, 2023	Aug 14, 2
0016g00002bw0dDAAQ	Cathleen Perry	Oct 21, 2023	Aug 17, 2

Contract Tracking Dashboard – Projects that have not been closed

Contract Tracking Dashboard – Count of Contracts Signed in Last Year

Reason For Cancellation in Last Year

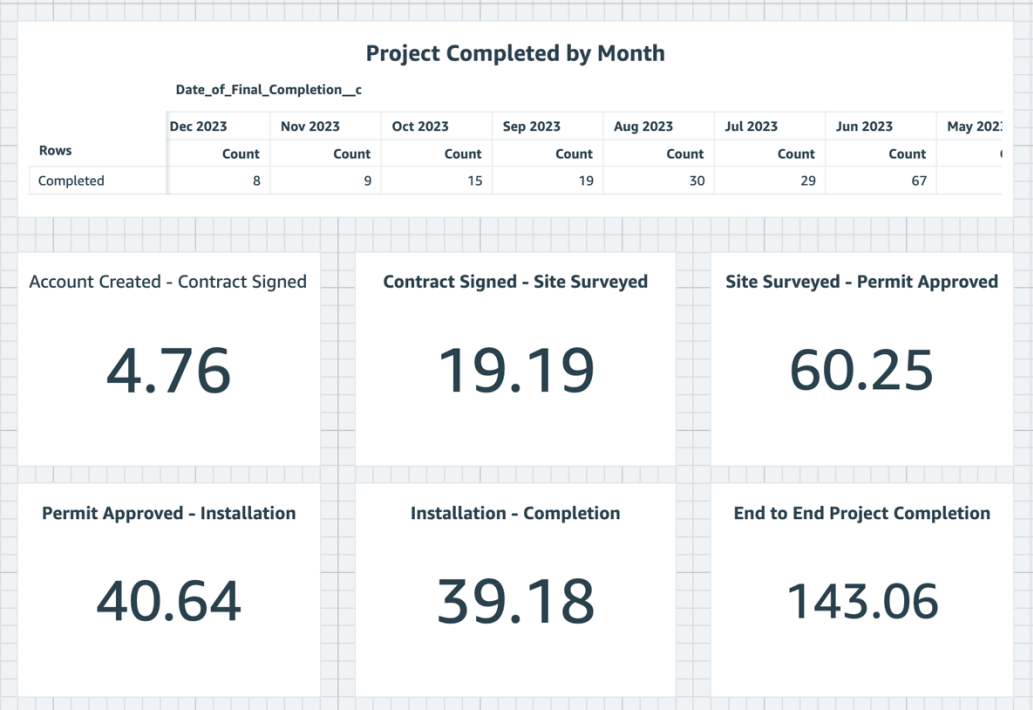|	Date_Project_Cancelled__c	
	Feb 2024	**Jan 2024**
Rows	Count	Count
⊟ **Cancelled**	**2**	**50**
Customer No Longer Interested	1	9
Customer Unresponsive		7
Lost To Competitor		4
Other (See Notes)		28
Roof Issues	1	2

Date_Project_Cancelled__c

Previous year

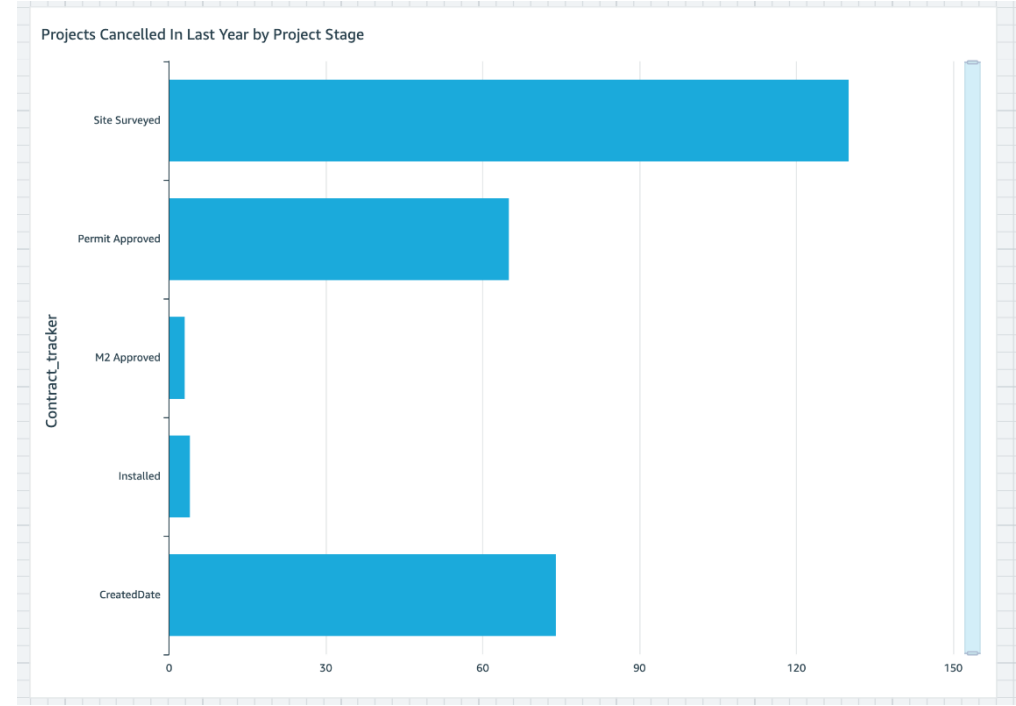2023/01/01 to 2023/12/31

Contract Tracking Dashboard – Cancellation Reasons

Late Projects

Id	Date_Contract_Signed__c	Customer_Name__c	Contract_tracker	Days_Since_Last_
a016g00000WUuigAAD	Sep 10, 2020	JOHN SELDON	Site Surveyed	
a016g00000ZarhcAAB	Sep 26, 2020	Carlos Rios - Solar	Site Surveyed	
a016g00000aK5QCAA0	Oct 26, 2020	Marianne Toledo	Permit Approved	
a016g00000bZKKSAA4	Nov 27, 2020	John Loricco	Site Surveyed	
a016g00000c8ZhwAAE	Dec 15, 2020	Melanie Steller	Site Surveyed	
a016g00000c8exlAAA	Dec 7, 2020	Charles Buchanan	Permit Approved	
a016g00000dkAVDAA2	Jan 23, 2021	Vincent Dcosta	Site Surveyed	
a016g00000dnGLMAA2	Feb 5, 2021	Dennis Ciardiello	Site Surveyed	
a016g00000eH3ZqAAK	Feb 13, 2021	Jennipher Pickford	Permit Approved	
a016g00000eH3ajAAC	Feb 13, 2021	Edward Walsh	Permit Approved	
a016g00000eIEk2AAG	Feb 19, 2021	Victor Siles	Site Surveyed	
a016g00000eY1UOAA0	Dec 15, 2020	Gregory Troisi	Site Surveyed	
a016g00000eYHv0AAG	Feb 26, 2021	Leah Levinger	Site Surveyed	
a016g00000eaxIwAAI	Mar 6, 2021	Bastian Reyes	Site Surveyed	
a016g00000eb4jkAAA	Mar 9, 2021	Jeff Poynton	Site Surveyed	
a016g00000eb5QTAAY	Mar 9, 2021	Jason Palmquist	Permit Approved	
a016g00000f1q4mAAA	Mar 12, 2021	Jerry Butler	Site Surveyed	
a016g00000f1q4nAAA	Mar 16, 2021	Denny Matias	Permit Approved	
a016g00000fOjL5AAK	Mar 23, 2021	Lindsey Cassarino	Site Surveyed	
a016g00000fOjLAAA0	Mar 24, 2021	Peggy Patenaude	Permit Approved	
a016g00000fPWBqAAO	Mar 27, 2021	Joel Lopez	Site Surveyed	
a016g00000fPWHwAAO	Apr 2, 2021	Paul Janowicz	Site Surveyed	

Contract Tracking Dashboard – Late Projects

Project Completed by Month

Date_of_Final_Completion__c

Rows	Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023
	Count	Count	Count	Count	Count	Count	Count	
Completed	8	9	15	19	30	29	67	

Account Created - Contract Signed	Contract Signed - Site Surveyed	Site Surveyed - Permit Approved
4.76	19.19	60.25

Permit Approved - Installation	Installation - Completion	End to End Project Completion
40.64	39.18	143.06

Contract Tracking Dashboard – Avg Time between Project Stages

Projects Cancelled In Last Year by Project Stage

Contract Tracking Dashboard – Cancelled Projects by Stage

Cancelled Projects

Customer_Name__c	Contract_tracker	Cancellation_Reason__c	Cancellation_Notes__c
Scott Wilcox	Site Surveyed	Customer No Longer Interested	1/10 Rep indicated that customer
Scott Ralston	Contract Signed	Customer No Longer Interested	1/10/24 Cancelled this as there ha
Danielle Pinkus	Contract Signed	Customer No Longer Interested	1/10/24 Customer texted in that t
andrea pinto	Contract Signed	Other (See Notes)	1/10/24 cancelled, rep offboarded
Adam Powell	Contract Signed	Other (See Notes)	1/10/24 credit has expired for this
William G Lufkin JR	Contract Signed	Customer No Longer Interested	1/10/24 customer called into canc
Juan Gonzalez	CreatedDate	Other (See Notes)	1/10/24 never a sold deal, cancelle
John Sciretta	Contract Signed	Customer No Longer Interested	1/11 Customer very angry, does no
Shawn Cole	Contract Signed	Roof Issues	1/15/24 Unable to obtain structur
Philip D'Antonio	Permit Approved	Other (See Notes)	1/15/24 financing expired, all part
Michael Ballintyn	Contract Signed	Customer No Longer Interested	1/16 Received SMS today from Mr.

Contract Tracking Dashboard – Cancelled Projects Table

Sales Leaderboard Figures

```
1  ifelse({Current_System_Size_kW__c} >= 0.0 and {Current_System_Size_kW__c} <= 5.0 , '0-5',
2  {Current_System_Size_kW__c} > 5.0 and {Current_System_Size_kW__c} <= 10.0 , '5-10',
3  {Current_System_Size_kW__c} > 10.0 and {Current_System_Size_kW__c} <= 15.0 , '10-15',
4  {Current_System_Size_kW__c} > 15.0,  '15+', 'Other')
```
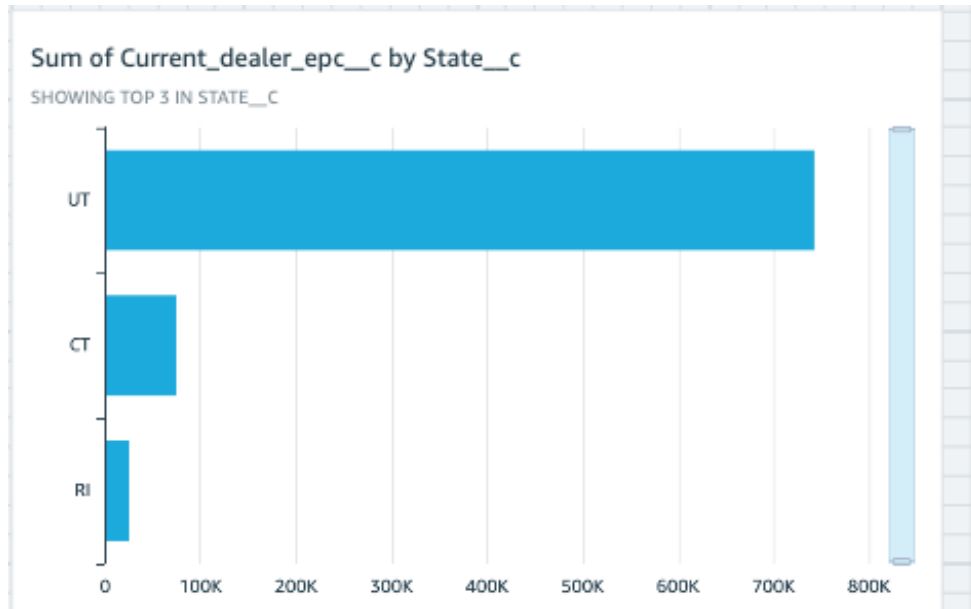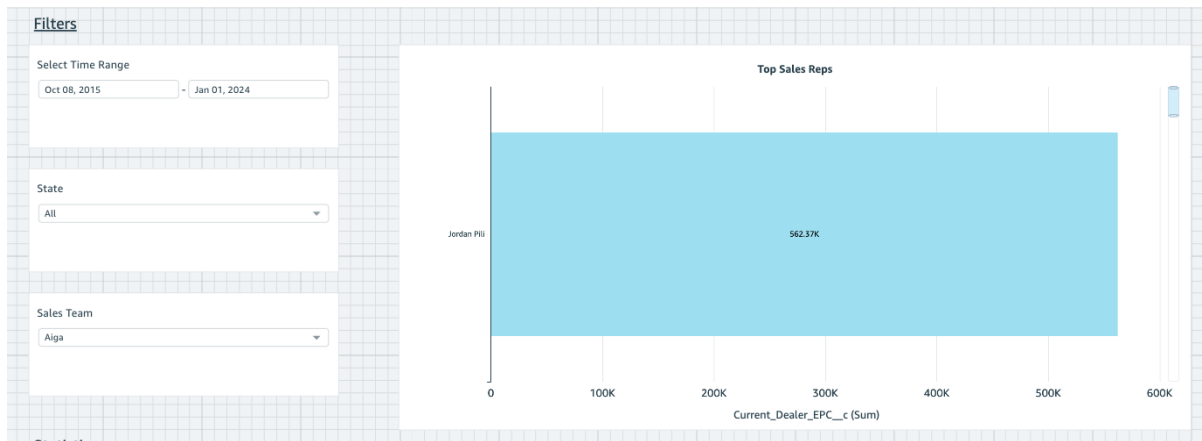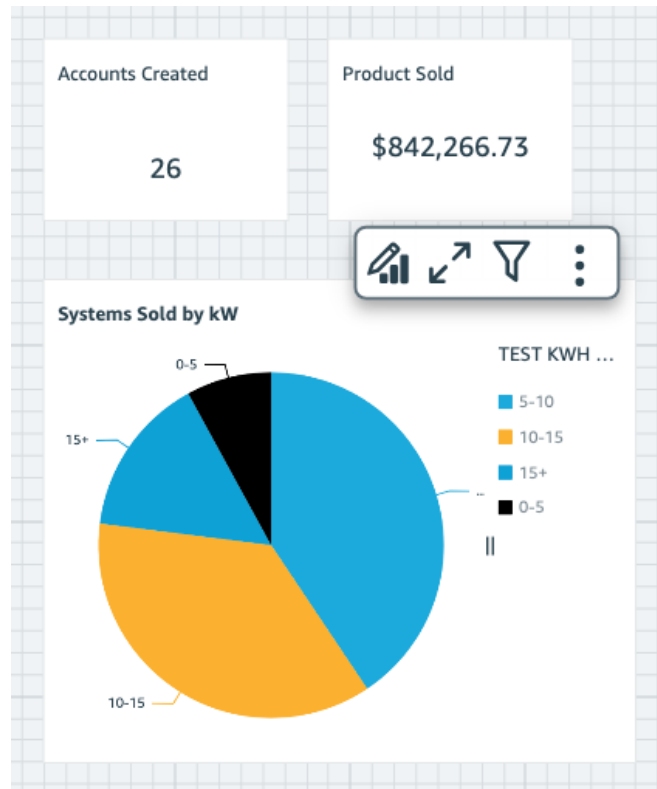
Figure 3: Example of Quicksight Code Used for the Sales Leaderboard
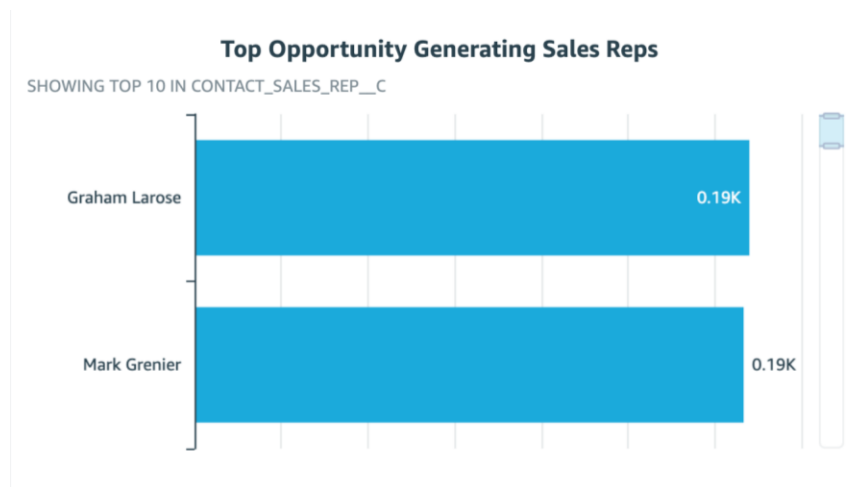
Sales Leaderboard – Dealer EPc by State

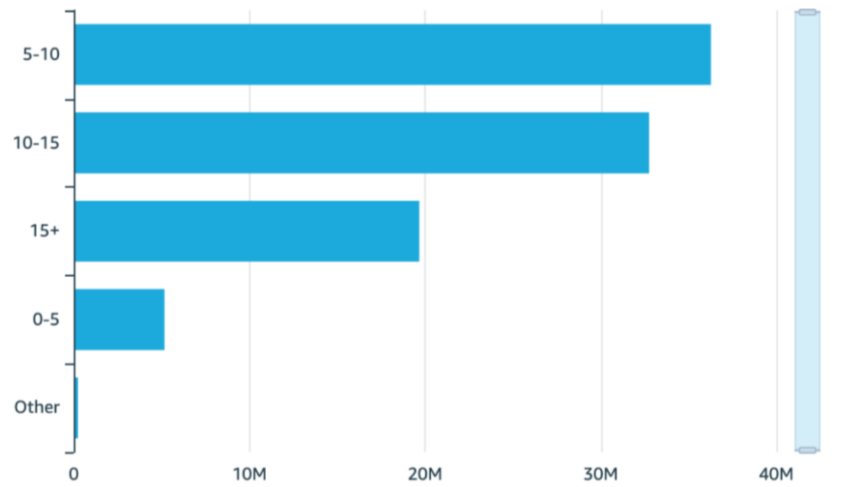Sales Leaderboard – Top Sales Reps & Filters

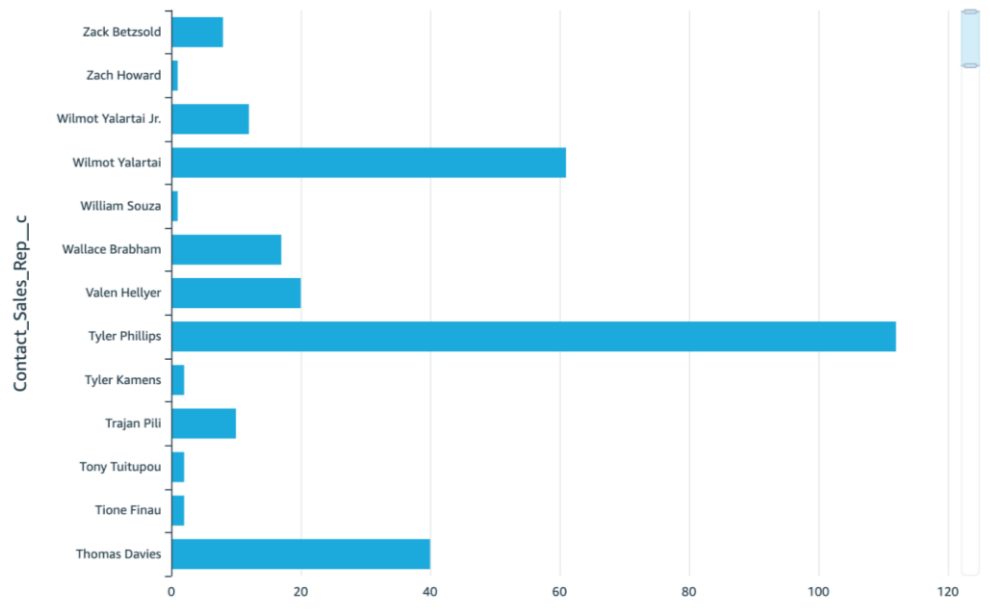Sales Leaderboard – Systems Sold by Size of System Pie Chart

Sales Leaderboard – Sales Rep and Opportunities Generated

Sum of Current_dealer_epc__c by Test_kwh_buckets

Bucket	
5-10	
10-15	
15+	
0-5	
Other	

Sales Leaderboard – Dealer EPc by System Size Buckets

Count of Records by Contact_sales_rep__c

Sales Leaderboard – Contacts Per Sales Rep