From Words to Moving Pictures: Leveraging Data Visualization in Energy Efficiency Reporting

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Introduction

This poster presents two interactive reporting dashboards from distinct jurisdictions and their benefits compared to static reports. Tetra Tech supports utility clients with interactive, online dashboards to report findings, increase transparency, and allow collaboration across teams. While reports tend to be text and table-heavy, presenting results through a dynamic dashboard offers a new, engaging, and user-friendly mechanism that can be tailored to support the reporting objective(s). Filtering and subgrouping allow users to identify important combinations and dimensions of customers, characteristics, and projects that provide specific information for planning future initiatives. The dashboards also remain compliant with client standards for confidentiality.

Customer Dashboard

We evaluated a household energy needs study for a utility and developed an interactive online dashboard to present the results. The dashboard allows the user to filter survey respondents based on their responses and location-based information, such as the poverty rate of the subregion in which the respondents are located. When the filters are applied, a collection of tables and graphics dynamically updates to show the breakdown of the filtered participants, along with a map showing the subregions in which participants are located.

The many filtering and selection options give the user several dimensions to view the survey results, providing them with valuable, targeted information. Standard reporting tables are limited to showing results in the manner prescribed by the author, which may not be the same combination of data and characteristics desired by all stakeholders. The dashboard makes the findings applicable to specified targets, providing results that are useful in more scenarios. For example, it allows users to focus on respondents in a specific geography and income level, with specific heating equipment of a certain age, to offer foundational information for targeting a future low-income heat pump replacement program.

Project Dashboard

We also developed an interactive tracking dashboard for a utility project organization, allowing users to select projects from a specific region that meet defined criteria or within certain ranges. Projects are presented in buckets by realization rate, and when one is selected, the user can quickly access all the relevant documentation, calculations, and decisions made by the evaluation team while determining each project's energy and demand savings. This coordinates the backend documentation and frontend findings, providing easy navigation of project information across the evaluation, utility, and implementation teams.

The reporting dashboard provides the utility with direct, updated access to the evaluation team's activities, eliminating the need for excessive emails about specific projects. The dashboard allows the team to select the project they want, and they are taken directly to a secure portal containing all documentation related to the project. The reporting tool also monitors and reports the progress of data collection activities, such as on-site verifications, desk reviews, and telephone survey attempts and completions.