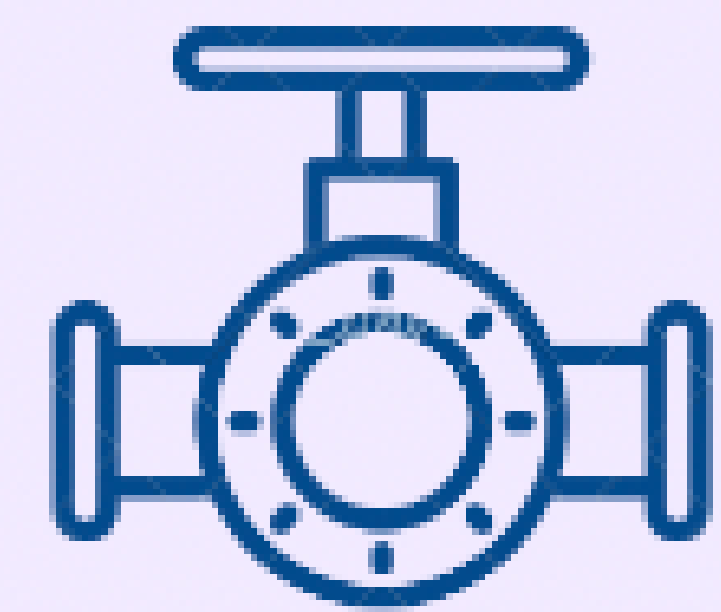




SUSTAINABLE VALVE SOLUTIONS

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INTRODUCTION

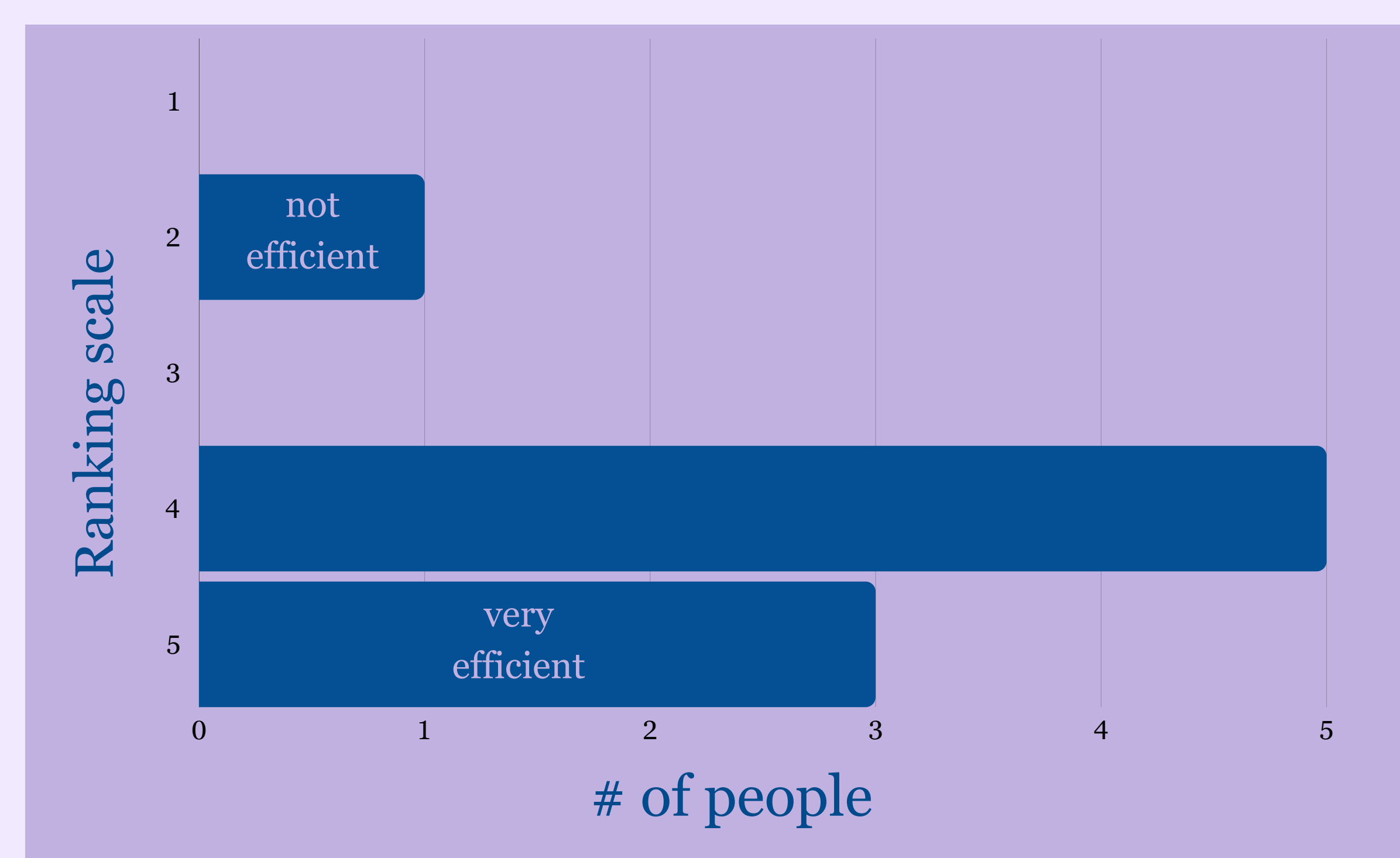
In the face of escalating environmental challenges and increasing customer pressures, the industrial sector is being urged to reassess its operational practices. Particularly with regard to energy consumption and sustainability, efficiency is often set against performance. Within the valve development sector, this shift is evident as end-user demands increasingly push manufacturers toward sustainable practices. It is crucial for sellers and product owners to understand these trends and actively seek out eco-friendly solutions. Such technologies will not only reduce energy demand but also enhance energy reliability. **This research endeavor aims to examine the current state of energy efficiency in valve systems, exploring the recent push towards sustainable solutions and highlighting the incentives driving this change.**

METHODOLOGY

Data for this study was collected through a two-step procedure to assess the industry's general perception of sustainable practices in valve development. The first step involved detailed **research** into the elements that influence valve design, including features, materials used, and operational parameters that contribute to energy efficiency. I also explored regulations that may incentivize manufacturers and industries to shift their perspectives on the importance of eco-friendly products. The second step involved conducting a **survey** to capture the perspectives and insights of professionals within the field. This survey was distributed to Emerson's product managers and engineers to assess their collective awareness, attitudes, and understanding regarding sustainability in valve development.

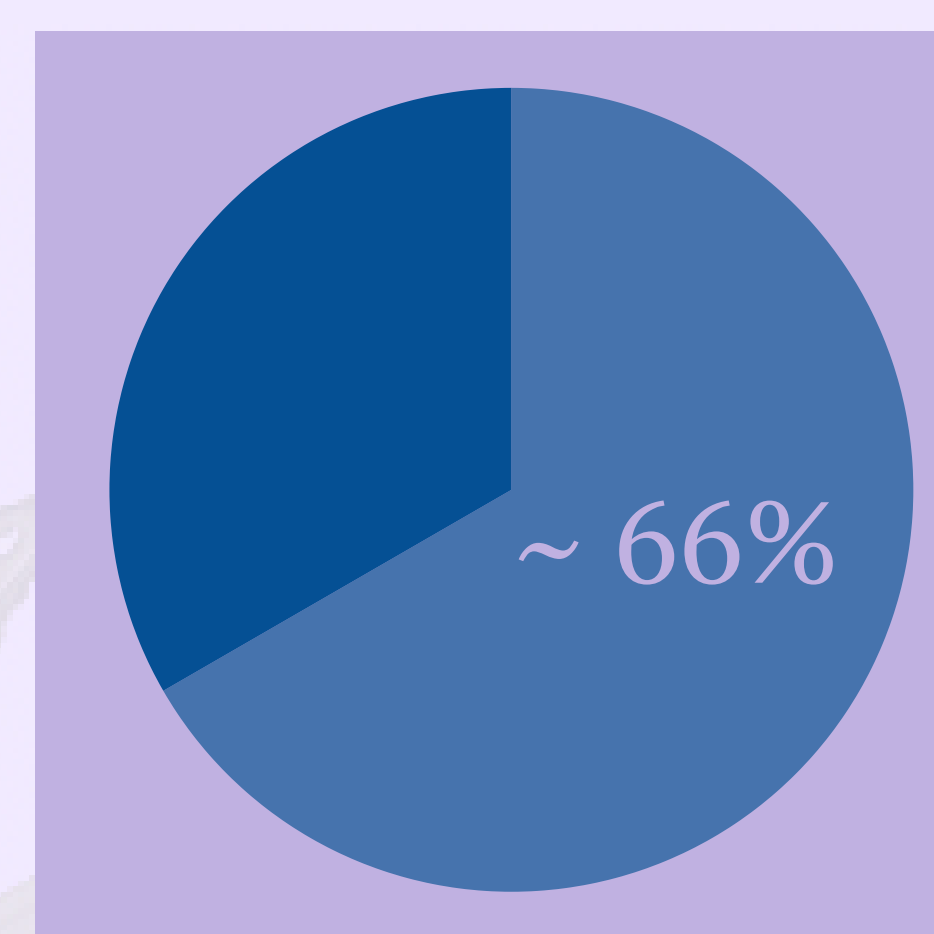
FINDINGS

How would you rate the energy efficiency of your current valve?



Why do you need to focus on sustainable development?

"Due to regulation changes... requiring customers to reduce emissions. We have seen a demand to move away from the traditional Oil and Gas market to producing **cleaner fuels** that will require new products to support the infrastructure development for end users"



Roughly **60%** of Emerson's Product Managers/Engineers believe customers are actively seeking out sustainable valve solutions. This is due to a variety of factors including the "Inflation Reduction Act" and "Carbon Credits."

After reviewing the survey responses and researching **EPA** guidelines, I discovered that the restrictions on carbon emission rates. Consequently, industries are actively searching for products that perform the same functions but emit less, thus avoiding the need for new government permits. The pressure on companies is intensifying due to demands from investors and customers, a trend driven by increasing societal awareness and education.

DISCUSSION

The general **trends** indicate a significant shift in many industries toward more sustainable initiatives, prompted by a combination of government regulations and customer preferences. Balancing safety and functionality with reduced emissions remains a constant challenge. In response to government and EPA restrictions, industries are exploring products, such as valves, that fulfill their operational requirements (like PRVs) but with lower emissions. This shift is facilitated by the development of new **technologies** (ex. pilot valves), enabling companies to avoid the need for new permits that would allow higher emissions. Additionally, pressure from investors and customers for companies to achieve net zero emissions is intensifying, driven by a societal trend towards greater environmental awareness and education.

NEXT STEPS

"This research underscores the importance for manufacturers and customers to continuously **pursue sustainable solutions** through the adoption of cutting-edge technologies like smart valves and pressure-independent control valves, which maintain optimal performance while conserving resources. Additionally, implementing targeted training programs can raise awareness and ensure that all employees understand and effectively leverage these technologies. By revising corporate **policies** to place energy efficiency at the core of business operations and collaborating with industry bodies to standardize practices, companies will not only boost their operational efficiency but also contribute significantly to environmental conservation and attract a broader customer base.