

# Reducing the Proportion of Single-source Procurement Management Application

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**Abstract.** Procurement plays a crucial role in modern enterprise management, where the level of procurement management has become a key component of the core competitive advantage for businesses. Enterprises need to tap into the third source of profit, which is the procurement cost of materials, and achieve the goal of increasing profits through procurement management and cost reduction. The article enumerates the reasons for the significant proportion of single-source procurement, emphasizing the theoretical basis and innovations introduced by the Materials Management Center. The establishment of a task force dedicated to addressing challenges in single-source procurement demonstrates the commitment to resolving issues in the procurement process. The article provides a detailed overview of the working methods employed by the Materials Management Center, with a special focus on compliance procurement. It describes the standardization of centralized review processes, overcoming difficulties associated with single-source procurement, and the implementation of annual plans and standardized specifications. Data reveals a consistent decline in the proportion of single-source procurement over the years, accompanied by a continuous increase in procurement efficiency and substantial savings in procurement funds.

**Keywords:** Procurement Management; Single-Source Procurement; Efficiency Enhancement; Enterprise Competitive Advantage.

## 1. Overview

Material procurement is an essential task in modern enterprise management. It not only concerns the control of enterprise procurement costs but also affects the company's external business reputation, ethics, and image[1]. The level of procurement management has become a primary content of a company's core competitive advantage. The renowned management guru Drucker believes that improving processes and reducing raw material consumption are the primary sources of a company's profit. Increasing sales volume and improving the sales profit margin are the secondary sources of profit for a company. However, in the current situation where competition is intensifying and objective technologies are at bottleneck constraints, companies have limited room for efforts in these two aspects. Therefore, to maintain a favorable position in competition, enterprises must develop the third profit source, which accounts for 70% of operating costs, that is, material procurement costs[2]. By emphasizing and strengthening procurement management and reducing procurement costs, companies can increase profits.

The main reasons for a large proportion of single-source procurement are: 1. Insufficient awareness of the harm of single-source procurement. 2. Inadequate recognition of the criticality of mastering professional technology. 3. Insufficient understanding of the importance of compliance management.

## 2. Theoretical Basis and Innovation Points

The Material Management Center firmly grasps the main task of reducing costs and increasing efficiency, and plays a crucial role as the 'third-party profit source.' In the past two years, the center has conducted benchmarking, visiting the material management departments of 8 units affiliated with oilfield companies, State Grid Corporation, and five major power generation groups. Shifting from comprehensive benchmarking to targeted benchmarking, the center has drawn on advanced



management experiences such as annual planning, standardization, and joint acceptance within internal units of oilfields[3]. Additionally, it has learned from successful management models in the domestic factory network industry, including the localization of material demand, cataloging of original factory accessories, substitution of specialized materials, and the broadening of supplier entry with strict management. Based on a comprehensive analysis of the procurement methods, technical characteristics of major materials, distribution of supplier resources, and patterns of user demands in recent years, the center has established a task force for tackling the issue of single-source procurement. Led by the head of the center, the task force includes personnel from material management, procurement management, warehouse management, procurement business, and other related fields. They have determined to adhere to a problem-oriented approach, targeting key issues, grasping the essence of problems, and progressing from the shallow to the deep, tackling easier problems before addressing more challenging ones.

### **3. Main Content and Practices**

#### **3.1. Taking a Comprehensive View, Collaborative Promotion, and Ensuring Unity of Thought and Action**

In the procurement and supply of materials, the risks of corruption are high, and professional ethics are crucial. As the functional management department for material affairs within the power company, the Material Management Center firmly establishes a sense of "political consciousness, overall situation awareness, core consciousness, and alignment consciousness." Through quarterly meetings on material affairs within the power company and regular user quality feedback exchanges, the center has fundamentally transformed the ingrained thinking of leaders[4], managers, business personnel, and production operation and maintenance staff in member units. It fosters the idea of a coordinated approach between the material and production departments, effectively manages divergences in procurement and supply, and achieves a harmonious relationship of "walking together and mutual success."

Regarding the management of material demand, the Material Management Center diligently verifies the content of material demands submitted by grassroots users. It ensures that demand information is complete, clear, and standardized, with quality standards and technical requirements being effective, applicable, and clear. The reasons for vendor selection are accurate, sufficient, and truthful, and the provision of information is timely, detailed, and complete. When necessary, business personnel are required to verify demand and environmental technical conditions on-site. This provides a basis for the centralized review of vendor selection for single-source procurement, ensuring that the constraints proposed in the procurement plan align with reality and that the fairness, justice, and truthfulness of the goods demand are maintained. Through the performance assessment of center personnel and compliance checks on member units, close cooperation between the center and grassroots units is promoted. The center strictly follows the planned declaration process and standards, reducing unjust practices where only a few suppliers familiar with the unit's production situation can provide accurate demand services. This has minimized instances where user-declared demand does not match the actual supply content, including a significant proportion of service fees or other accessory costs, thereby reducing non-compliance. It has also curtailed instances where users recommend or specify manufacturers based on patent technology, matching products, original factory accessories, safety production, etc., or even designate agents based on untrue information. Furthermore, it has reduced artificially imposed non-technical constraints or biased requirements that lead to single-source procurement occurrences.

#### **3.2. Targeting, Employing Multiple Measures, and Gradually Advancing Compliant Procurement**

Following the envisioned "three-step" working plan, the Material Management Center firstly standardized the centralized review process for non-tendered matters in materials management.

Through the collection of vendor qualification data and verification of on-site production information by business personnel from the Materials Procurement Department, the preliminary rationality of the recommended vendors was audited by managerial staff of the department. Periodically, the Materials Management Center's Material Management Office organized centralized reviews for supplier qualifications, technical proficiency, market resources, price trends, and quality standards in positions such as supplier management, price management, quality standards management, procurement management, and material management[5]. To optimize the quality of supplied goods, distinctions were made among agents representing manufacturers of original equipment and spare parts. Only domestically recognized agents of major brands, exclusively designated for PetroChina and successfully awarded contracts, were acknowledged as the sole agents in their regions. They were treated as manufacturers for single-source negotiation procurement, while others were required to submit explicit technical standards, specifications, or equivalent brand standards. The Materials Procurement Department then formulated plans for electronic competitive bidding procurement, effectively reducing the proportion of single-source procurement with insufficient justifications. Through rigorous audit management, previously monopolized markets and inflated prices by authorized agents in the procurement of weighing instrument accessories, electrochemical analysis accessories, oil filtration system filters, thermal instrument accessories, cable connectors, pump and fan accessories, etc., were successfully transitioned to competitive procurement methods, saving procurement funds of RMB 57,000.

The second step involved overcoming the challenges of single-source procurement in a phased manner. The Material Management Center reviewed details of single-source procurement materials in recent years and identified key challenging tender procurement projects, such as 3M cable connectors, graphite grounding electrodes, electric meters, coal conveyor belts, fan grinding impact plates, fan grinding machine accessories, some pump accessories, liquid ammonia, etc. Through in-depth study and discussion of material procurement plan content, the center scientifically and reasonably set qualifications, eligibility criteria, and performance scoring items for bidders' production equipment and special operations. Last year, successful tender procurements were achieved for fan grinding machine accessories, some pump accessories, and liquid ammonia. By forming a supplier inspection team to extensively investigate manufacturers producing cable connectors, graphite grounding electrodes, and fan grinding impact plates with the same quality standards and grades, the center sourced widely, gaining insights into the production processes, inspection methods, and technical proficiency standards of high-quality products. This raised the bar for bidder entry, resulting in satisfactory bid outcomes. While ensuring product quality and maintaining service standards, procurement funds were saved by RMB 1.42 million annually.

The third step involved implementing annual plans and standardized management for single-source materials with stable demand. Drawing on benchmark management experiences, the Material Management Center has been promoting tender procurements for materials such as heater cores, insulation joint boxes, and boiler feed pump accessories in recent years, saving RMB 601,000. The procurement channels for imported materials were comprehensively streamlined, and close collaboration with PetroChina's Material Procurement Center and Daqing Oilfield's Material Equipment Department successfully completed the negotiation procurement of GE gas turbine accessories worth RMB 31.03 million, saving RMB 6 million in procurement costs[6]. This completely resolved the long-standing issue of single-source procurement difficulties for gas turbine accessories by agents.

The fourth step involved strengthening standardized management for single-source demand. Addressing the issue of substantial single-source procurement amounts and associated risks in recent years, the Material Management Center required the four main production units - Thermal Power Plant 1, Thermal Power Plant 2, Power Supply Company, and Electric Power Engineering Technical Service Company - to carefully review details of single-source procurement for materials over the past two years. Combining the current safety operation of in-use production equipment and the application of technology in similar industry products, they compiled a list of 1,591 items for single-

source procurement reporting. Through user-invited collective analysis, the rationality of each single-source procurement was systematically implemented, providing a better understanding of the inventory status of in-use equipment. This laid the foundation for compliant and efficient material procurement.

### **3.3. Seizing Key Points, Proactively Planning, and Intensively Enhancing Professional Skills**

The Single-Source Procurement Tackling Task Force conducted in-depth research on the plagiarized professional technology, understanding the reasons behind the inability of mutual meter reading for substation supporting equipment[7]. After several in-depth on-site investigations, a preliminary understanding of the communication protocols for chips in various brands of electric meters was gained, addressing some of the brand-related mutual meter reading issues. Simultaneously, through researching the technical conditions of the top ten manufacturers with the highest market share in the domestic power grid market, along with on-site testing and inspection of their products, the team selected the top seven suppliers for invitation to tender and achieved success. Compared to historical single-source procurement prices, procurement funds were saved by RMB 567,000, with a procurement benefit of 56%. Under the guidance of the Single-Source Procurement Tackling Task Force, the business personnel of the Materials Procurement Department delved into the patented technology of theft prevention and protection for graphite grounding electrodes. They studied its functions, applications, materials, and value, considering whether similar products could meet production needs. This broke through the limitation of considering only the inherent aspects of materials, broadening the perspective for formulating bid procurement plans based on functional requirements. As a result, successful bid procurements were realized, saving procurement funds by RMB 545,000.

## **4. Implementation Results**

### **4.1. Significant Improvement in Material Procurement Concentration**

By implementing tender procurement for key high-value single-source procurement materials, conducting electronic competitive bidding for materials procured through agents of original equipment supporting components, and achieving standardized batch economic procurement for stable demand single-source procurement materials, the Material Procurement Concentration of the Power Company has reached over 95%. The material tendering rate has exceeded 92%, meeting the assessment criteria set by the oilfield company. The drawbacks of 'one order, one procurement' have been effectively curtailed, resulting in a more compliant and efficient material procurement process.

### **4.2. Noticeable Enhancement in Material Procurement Benefits**

According to the analysis of material procurement statistics from the Power Company, the proportion of single-source procurement has shown a significant annual decrease, accounting for 5.39% in 2023, with a procurement amount of 5.3016 million RMB. Effective control over the proportion of single-source procurement has contributed to a continuous increase in benefits. The procurement benefit has risen from 9.55% in 2019 to 11.65% in 2023, leading to savings of 10.65 million RMB in procurement funds.

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