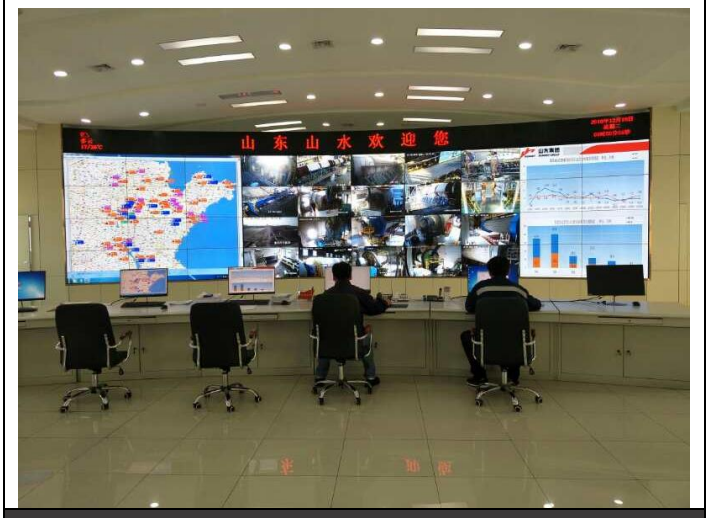
ISO 50001 Energy Management System
Case Study

China

Zaozhuang Innovative Landscape Cement Co., Ltd.



Include caption

Organization Profile & Business Case

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Shandong Shanshui Cement Group Co., Ltd. (referred to as Shanshui Group) is a large enterprise group with cement and clinker production as the leading industry, which integrates the production and sales of mixers, pipes, plastics and aggregates. It is one of the earliest domestic enterprises engaged in the production of new dry process cement, and one of the 12 national large-scale cement enterprises supported by the state.

Zaozhuang Innovative Landscape Cement Co., Ltd. is one of the backbone enterprises of Shanshui Group. It is a large clinker and cement manufacturer. At present, it has a new dry rotary kiln production line with 5000t/d clinker and a cement grinding production line with an annual output of 1 million tons, and a 9MW pure low-temperature waste heat power generation project has been built.

Shanshui Group has set up energy management and control center, established three-level energy network of group headquarters, operation area and sub-company, and established three-level energy network of company, workshop and team.

In order to further implement and implement the national energy saving and emission reduction policy and strengthen the main responsibility of energy management in enterprises, the company has established an energy management and control center with the general manager as the person in charge, and energy management teams in each workshop as the group leader. The three-level management of the company-workshop-team is implemented, and the tasks and responsibilities of energy posts are clearly defined through the post responsibility system and energy management. In the form of consumption quota management, the management system of energy use will be implemented at the grass-roots level and incorporated into the assessment of economic responsibility system. The way of thinking adopts PDCA cycle, and the way of working adopts four long-term mechanisms.

Whether from the understanding of energy management, energy management methods and energy-saving technology innovation can achieve significant results, mobilize the enthusiasm of every employee, accumulate more.

"Add quote from organization about its achievement and success through ISO 50001."
—Name of representative, title

Business Benefits

Through the 135-year energy-saving plan, the company strictly implemented and completed the total amount control target issued by the Development and Reform Commission.

Through defining the tasks and responsibilities of energy posts, through the forms of post responsibility system and energy consumption quota management, the energy use management system will be implemented at the grass-roots level and incorporated into the economic responsibility system assessment. Through the activities of "mass innovation, cost reduction and efficiency enhancement", "energy saving gold ideas", "cost control", "index competition", "comprehensive utilization of resources management and control", more than 500 economic benefits will be created for the company. Ten thousand yuan, of which "dynamic management and control of mine resources" won the second prize of the state.

Companies continue to deepen control measures to improve incentive programs, through various training and competition activities

The company has made remarkable achievements in energy-saving management experience, energy-saving technological progress and energy-saving cultural awareness.

Case Study Snapshot	
Industry	Building material
Product/Service	cement
Location	Taierzhuang District, Zaozhuang City, Shandong Province, China
Energy management system	ISO 50001
Energy performance improvement period	Total number of years for which energy was improved
Energy Performance Improvement (%) over improvement period	1%
Total energy cost savings over improvement period	789077
Cost to implement EnMS	54747
Total Energy Savings over improvement period	31260(GJ)
Total CO_2-e emission reduction over improvement period	2840000KG

Plan

Add text here – Provide an overview paragraph, and then follow with more details in sections with sub-headers. Create your own sub-headers as appropriate for your story.

"An additional quote about usefulness of ISO 50001 and EnMS is helpful. Include where applicable."

—Name of representative, title

Do, Check, Act

Taking the operation of the energy management and control center as the leading factor and the three-level management as the main grasp, the energy consumption will be continuously reduced through the measures of management energy saving, technical energy saving and structural energy saving, so as to achieve the target of coal reduction and substitution work of the Development and Reform Commission. The company has set up an energy management and control center to take charge of the implementation and promotion of the company's energy management; the general manager is in charge, promising to support the energy management system, and continuously improve the effectiveness of energy management, establish the company's energy policy, and ensure the establishment of the company's energy target indicators; the workshop leader is a member to ensure the operation of the workshop's energy management system and ensure the company-level energy target. Each workshop establishes an energy management group, with the head of each workshop as the group leader, and the head of the workshop and the section as the member to ensure the completion of the energy target at the company level; implements three-level management of the company-workshop-team, one-level to-one, team responsible for the position, workshop responsible for the team, and company responsible for the workshop. Set up special funds for energy and formulate incentive schemes.

The company's energy management and control center has 1 registered energy manager, 2 energy managers, 6 professional energy managers and 15 other energy managers. It formulates annual energy-saving plan, defines energy-saving objectives, working direction and formulates monthly energy performance parameters. The energy management and control center set up a special person to issue daily analysis reports, analyze and formulate relevant safeguard measures for the energy consumption of relevant responsible persons; monthly summary, monthly summary through the year-on-year, ring comparison, internal group, the same industry and domestic advanced level of benchmarking. Relevant responsible persons analyze and formulate relevant safeguard measures for daily and monthly energy consumption. The energy management and control center formulates energy consumption plans monthly and annually according to the actual situation of the company, and sends them to relevant workshop departments, and strictly rewards and punishments

Analysis of the current situation: through the enterprise production process, equipment and products, determine the energy efficiency benchmarking index system, carry out statistical analysis, energy audit, energy balance, testing and other basic data of energy efficiency benchmarking index system; determine benchmarking: collect advanced energy efficiency indicators within the group and domestic industry, determine the final benchmarking index; formulate a plan: establish a database, compare. Benchmarking, analysis of their own actual situation, find out the gap, analyze the reasons, determine the energy efficiency benchmarking program, according to the energy efficiency benchmarking program, research and demonstration, determine the best indicators improvement program; Benchmarking practice: according to the best indicators improvement program, formulate plans to carry out energy efficiency benchmarking work, implement relevant responsibilities, after the completion of the phased progress, form the energy efficiency benchmarking implementation effect report. Evaluating standards: formulating evaluation methods, standards and implementation rules of energy efficiency benchmarking, timely evaluation; continuous improvement: optimizing the management process of

indicators, improving rules and regulations, and realizing the daily management of benchmarking. According to the monthly energy performance parameters, the energy management and Control Center analyzed and evaluated the energy performance and whether the target value of the energy performance parameters was reasonable through the year-to-year comparison and other ways combined with the actual production situation.

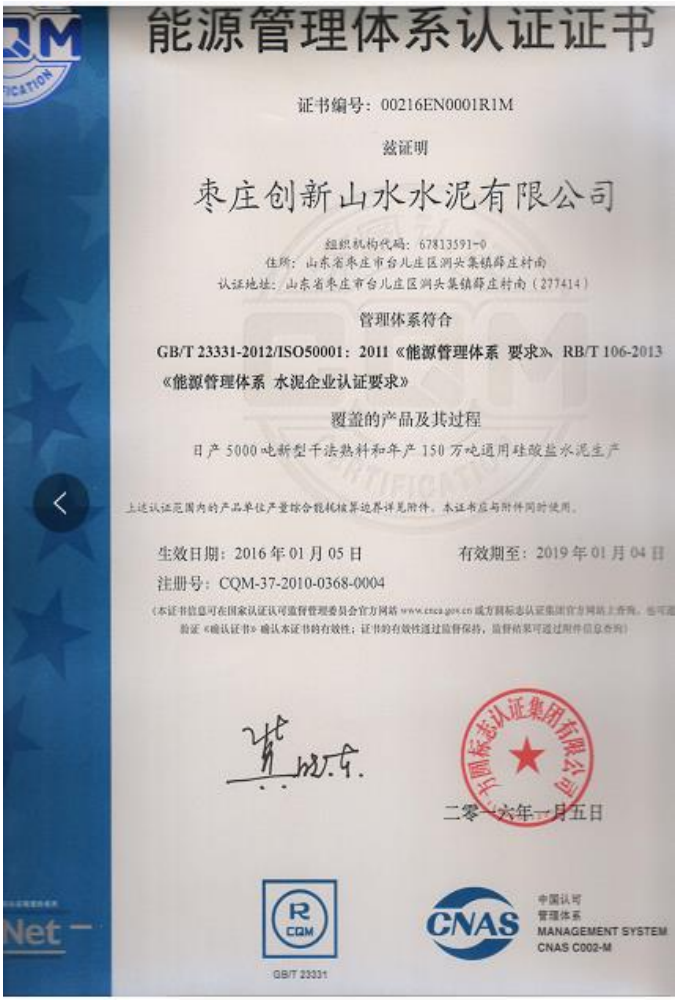
Transparency

According to the third party's Energy Audit Report, our company's comparable clinker power consumption 46.726 kwh/t, comparable clinker coal consumption 92.58 kg/t, comparable clinker energy consumption 98.32 kgce/t, comparable cement power consumption 64.62 kwh/t and comparable cement energy consumption 75.45 kgce/t are all lower than the comprehensive energy consumption limit of unit products, which meet Shandong local standard "Energy Consumption Limit of Cement Unit Products" (DB37/836-2015). And the national standard "Energy Consumption Limit of Cement Products" (GB/T 16780-2012) requirements, in the advanced level in China.

Lessons Learned

At present, the company's energy consumption index data has been in the advanced level of the cement industry, and the space for energy saving is becoming smaller and smaller. First, the demand of building materials market has become smaller in recent years, the overall efficiency of the industry is not optimistic, some new energy-saving technologies and technologies have a large investment, and the return cycle is long. Encouraging mechanism and formulating new energy-saving technology promotion plan should be implemented in stages with less investment and more investment.

Secondly, there is a shortage of high-quality talents, and highly-educated personnel are unwilling to enter the building materials industry; measures: overall thinking, external recruitment and internal promotion; group operation area to build talent strategy, talent in the 21st century, from the outside to absorb high-educated and high-tech talents; more attention is paid to the training of internal personnel, the promotion of the second degree, professional skills learning, comprehensive personnel training, to enhance and develop. Space makes enterprises more attractive



能源管理体系认证证书

证书编号：00216EN0001R1M

兹证明

枣庄创新山水水泥有限公司

组织机构代码：67813591-0

住所：山东省枣庄市台儿庄区涧头集镇薛庄村南

认证地址：山东省枣庄市台儿庄区涧头集镇薛庄村南（277414）

管理体系符合

GB/T 23331-2012/ISO50001：2011《能源管理体系 要求》、RB/T 106-2013《能源管理体系 水泥企业认证要求》

覆盖的产品及其过程

日产 5000 吨新型干法熟料和年产 150 万吨通用硅酸盐水泥生产

上述认证范围内的产品单位产量综合能耗核算边界详见附件，本证书应与附件同时使用。

生效日期：2016 年 01 月 05 日　　有效期至：2019 年 01 月 04 日

注册号：CQM-37-2010-0368-0004

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方圆标志认证集团有限公司

二零一六年一月五日

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管理体系

MANAGEMENT SYSTEM

CNAS C002-M