ISO 50001 Energy Management System
Case Study

China

Jing brand co.,Ltd

Jing brand co.,Ltd achieves energy savings and CO2-e reduction using EnMS

Jing brand co.,Ltd factory aerial view

Organization Profile & Business Case

Jing Brand Co., Ltd. was founded in 1953, and located at Daye, Hubei Province, China. After more than 60 years of steady development,Jing Brand has become a healthy food-specialized company. As China's top leader in health-care liqueur & spirits industry, Jing Brand has developed its renowned flagship product "JING Liqueur" and many lines of other products. Jing Brand owned a 56-acre “Health Liqueur & Spirits Industrial Park”, a 149-acre “Liquor Base Ecological Parks”, and a 176-acre “Health Food Industrial Park”. The production capacity of health liqueur & spirits has reached 180 million liters per year.

Jing Brand began its international business in 2000. After fifteen years of development, “JING Liqueur” has been exported to Hong Kong, Macau, Southeast Asia, Europe, North America, Africa etc,and gained high speed growth every year. Our products have been well enjoyed by consumers all over the world.

The company adheres to the road of sustainable development, takes energy conservation, low carbon emission reduction and environmental protection as the key points of strategic planning, conscientiously implements relevant laws, regulations and policies for energy conservation and emission reduction, and always adheres to green development and environmental friendliness. The concept of sustainable development.

Case Study Snapshot	
Industry	Food Processing
Product/Service	JING Liqueur
Location	Daye City, Huangshi City, Hubei Province, China
Energy management system	ISO 50001
Energy performance improvement period	3 years
Energy Performance Improvement (%) over improvement period	3.5%
Total energy cost savings over improvement period	3.02 million
Cost to implement EnMS	3.56 million
Total Energy Savings over improvement period	328658(GJ)
Total CO_2-e emission reduction over improvement period	29164(Metric tons)

Business Benefits

The comprehensive energy consumption per unit of product reduced by 3.5% per year,and annual saved of $1.01 million in energy costs.

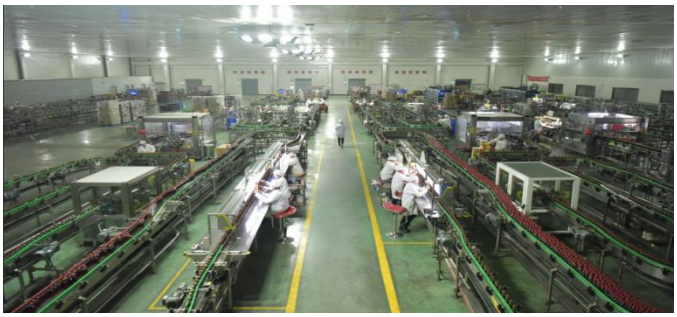
In 2014, it won the “Water-saving Enterprise in Hubei Province”. In 2016, it was included in the “Industrial

Product Ecology (Green) Design Pilot Enterprise” of the Ministry of Industry and Information Technology. In 2017, it was awarded “Hubei Province Industrial Clean Production Demonstration Enterprise” and “Hubei Province Environmental Protection Government Award ”. Awarded the title of "Green Factory" in 2018.

The company has established a three-level energy management organization. The vice president of production and operation is the direct leader of the company's energy management. The production and operation center is the company's energy management and overall management organization. It is responsible for the organization, supervision, inspection and coordination of the company's daily energy conservation management. Each production plant implements the company's energy management. The system and objectives require the establishment of a plant energy management mechanism. Each workshop and team is the grassroots energy management organization of the enterprise. It is responsible for the energy management of the workshop and the team, and forms a hierarchical management model from the top of the management level.

In 2014, the company started the construction of the energy management system and established a leading group and a working group. There are 5 full-time energy management personnel at the company (all participated in the training course of energy management training courses), and 32 persons related to functional source management.

Packaging workshop



Plan

Energy review and planning

1. The company has compiled the 2016-2020 energy conservation plan, and plans to reduce the energy consumption per unit of product by 16% compared to 2015 by 2020. Through the establishment and improvement of the three-level target assessment responsibility system, the energy data will be aggregated, statistically analyzed, analyzed and analyzed objectively, truthfully and dynamically, and the energy assessment will be included in the KPI assessment, and energy conservation rewards and punishments will be carried out.

2. The company conducts energy assessment work every year, and promotes the application of new energy-saving technologies and eliminates them through special energy audits, energy-saving measures such as energy efficiency benchmarking, energy-saving renovation of equipment, and technological transformation and energy-saving measures based on technological transformation of main production processes. Structural energy-saving measures to improve the utilization efficiency of renewable energy such as coal-fired boilers. Focusing on the overall goal of energy conservation and consumption reduction, combined with the actual situation, the company will formulate an annual work plan for energy conservation and consumption reduction.

3. Conduct monthly energy statistics analysis. Through statistics and analysis of various energy-cycle ratios and year-on-year data changes, timely identify energy consumption anomalies and formulate corresponding improvement measures.

4. Regularly organize the analysis and evaluation of the operational effects of the implemented energy-saving technological transformation projects, and continuously improve and improve.

Energy performance improvement

1. Through energy review, using energy balance and other tools and methods, the main energy use types, main energy use systems, key energy use areas, major

energy-consuming equipment and key energy-using positions are identified.

2. Adopt energy-saving technological transformation through contract energy management, formulate energy-saving management technical solutions, clarify the target responsibility of energy-saving work, and rely on project promotion to achieve technical energy conservation.

3. Through the establishment of the system, clear the specific requirements of energy-saving work, timely eliminate high-energy-consuming mechanical and electrical equipment, purchase high-efficiency energy-saving equipment, strengthen the maintenance and operation of energy-consuming equipment, carry out energy efficiency monitoring of key energy-consuming equipment, and achieve management energy conservation.

4. Through the research of the system and in-depth discussion of various variables affecting energy consumption, the controllable variables are clarified in the process technical documents, and the process energy conservation is realized through process monitoring and performance appraisal, continuous adjustment and optimization.

5.The company organizes monthly analysis and summary of the rationality of energy use of each production plant, and checks and reports on the equipment and energy use of each plant. The administrative logistics of each production plant and company headquarters evaluates the energy use monthly. Report, find problems, rectify within a time limit

Professional and communication

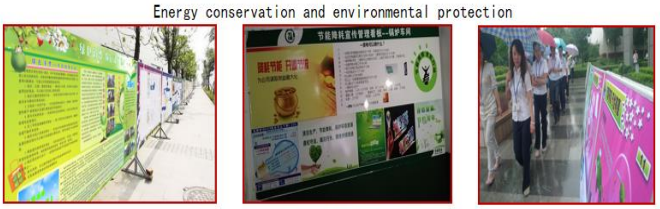
The company has 5 full-time energy management personnel and 32 functional source management personnel. There are 10 professional technicians in electrical, heating and distribution, and 162 key equipment management and operation and maintenance personnel at all levels. The main energy-consuming equipment operators are trained and certified to work.

1. Regularly organize energy conservation training and technical exchanges. Invite the teacher to the company to carry out special lectures on energy conservation knowledge.

2. Participate in external energy conservation and emission reduction related training. Participate in advanced training courses in energy management and energy auditing, participate in clean production work exchanges organized by Hubei Provincial Economic and Information Committee, green design and green manufacturing learning, etc., and improve knowledge on energy conservation and emission reduction.

3. Regularly organize exchange training on energy conservation and consumption reduction cases. Let employees or production technicians who have outstanding performance in energy-saving work carry out relevant energy-saving technologies, lectures on energy-saving excellence, and organize exchanges.

Energy conservation and environmental protection



Energy saving knowledge training

Do, Check, Act

The first "Mechanical Brewing Process for Solid-State Method Xiaoqu Liquor" was appraised by the Ministry of Industry and Information Technology, "The overall technology has reached the international leading level".

Compared with the traditional craftsmanship in the past, the company's new brewing technology reduced the comprehensive energy consumption per ton of wine by 33.3%, the water consumption per ton of wine by 27%, and the quality of the products and the grain production rate were also greatly improved.

Solid-state method Xiaoqu liquor mechanized brewing process

No.	method	Patent No
1	Mechanized grain cooling system	ZL 2011 2 0024934.0
2	Mechanized brewing liquor and its special equipment	ZL 2011 1 0027723.7
3	Tiltable pressure steam tank	ZL 2011 2 0024947.8
4	Automatically add material robot	CN201630211312.7
5	Smart distillery workstation	CN201620613556.2
6	Intelligent material adding machine three-axis multi-dimensional driving mechanism	CN201620644704.7
7	Self-rotating cushioning transmission mechanism	CN201620649026.3

Reduced overall energy consumption by 33.3%

Tons of water consumption reduced by 27%

Tungsible sewage discharge reduced by 44%

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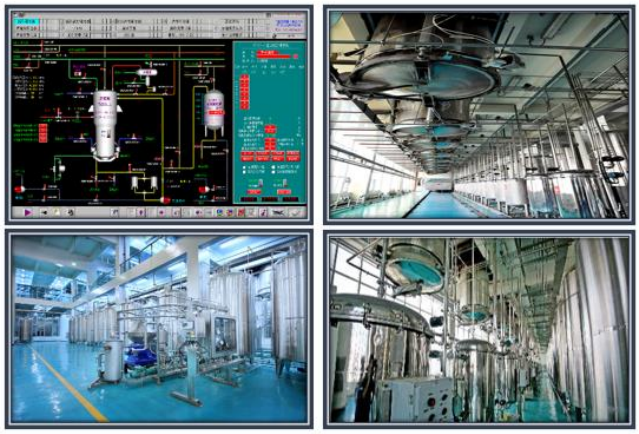
Automated production site

Research on Digital Extraction Project of Traditional Chinese Medicine



1. Lean production boosts the effective implementation of no low-cost plan. Implement lean production management methods to reduce and eliminate unnecessary energy waste in the production process. At the same time, develop rationalization proposals and improve the E-process of the proposal. Achieve full participation and reward reward results every month to increase employee motivation.

2. Establish an energy management system to strengthen energy conservation management. Optimized the company's energy management, making energy management more standardized and standardized.

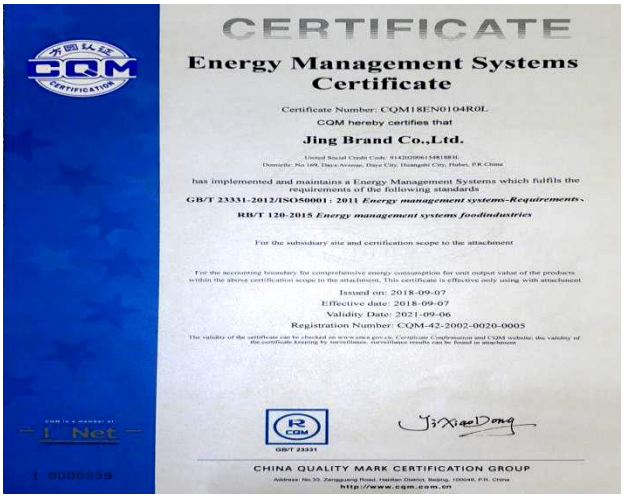
3. Apply the E-P map analysis method to set the energy target. The energy consumption is positively correlated with the output. The E-P map is used to determine the relationship between production and energy consumption. The monthly energy consumption limit indicators are set according to different production sizes, making the energy target more scientific and reasonable.

4. Clean production audit to improve the technical management level. The core of clean production is to find the links with high energy consumption, high material consumption and heavy pollution, so as to determine the audit focus, set targets and propose improvement plans. In order to achieve energy saving, consumption reduction, pollution reduction, and efficiency.

5. Contract energy management promotes the application of energy-saving technologies. The contract energy management model avoids the investment risks of the introduction of new energy-saving technologies. Such as: PV manufacturers invest in the construction of solar photovoltaic power generation systems, the company enjoys the cooperation mode of electricity price concessions.

Transparency

In September 2018,Jing brand co.,Ltd successfully passed the energy management system (EnMS) certification audit organized by Fangyuan Mark Certification Group and obtained the certificate.


CERTIFICATE

Energy Management Systems Certificate

Certificate Number: CQM18EN0104R0L

CQM hereby certifies that

Jing Brand Co.,Ltd.

has implemented and maintains a Energy Management Systems which fulfils the requirements of the following standards

GB/T 23331-2012/ISO50001：2011 *Energy management systems-Requirements*、

RB/T 120-2015 *Energy management systems foodindustries*

For the subsidiary site and certification scope to the attachment

Issued on: 2018-09-07

Effective date: 2018-09-07

Validity Date: 2021-09-06

Registration Number: CQM-42-2002-0020-0005

CHINA QUALITY MARK CERTIFICATION GROUP

Lessons Learned

- Company leadership commitment and the role of the team are crucial.The creation of a committee in charge of a management system allows better coordination of tasks focused on improving energy performance.
- Building an EnMS. Deep understanding of standards and completion of EnMS courses, standardize energy conservation work, and improve energy management.
- Pay close attention to the management of key energy-consuming equipment and improve the ability to analyze and evaluate the energy utilization efficiency of key energy-consuming equipment.
- Establish an energy management center to achieve energy data collection statistics, early warning assessment and analysis improvement.

Quotes and Visuals

Jing brand co.,Ltd insists on innovation and improvement, and takes “Green Wisdom” as the ultimate pursuit of the company. It will play a positive role in the overall upgrade of intelligent production, energy saving and emission reduction, and process innovation in the whole industry, and promote the overall improvement of the image of the wine industry.

Energy saving project

Solar photovoltaic project

Cooling water waste heat utilization project

Steam condensate recovery system

Biogas power generation project

Energy saving activities

Clean production work commendation activity

Energy Conservation Knowledge Competition

Prepare the Low Carbon Life Guidebook and organize the exam

Boiler energy-saving operation competition