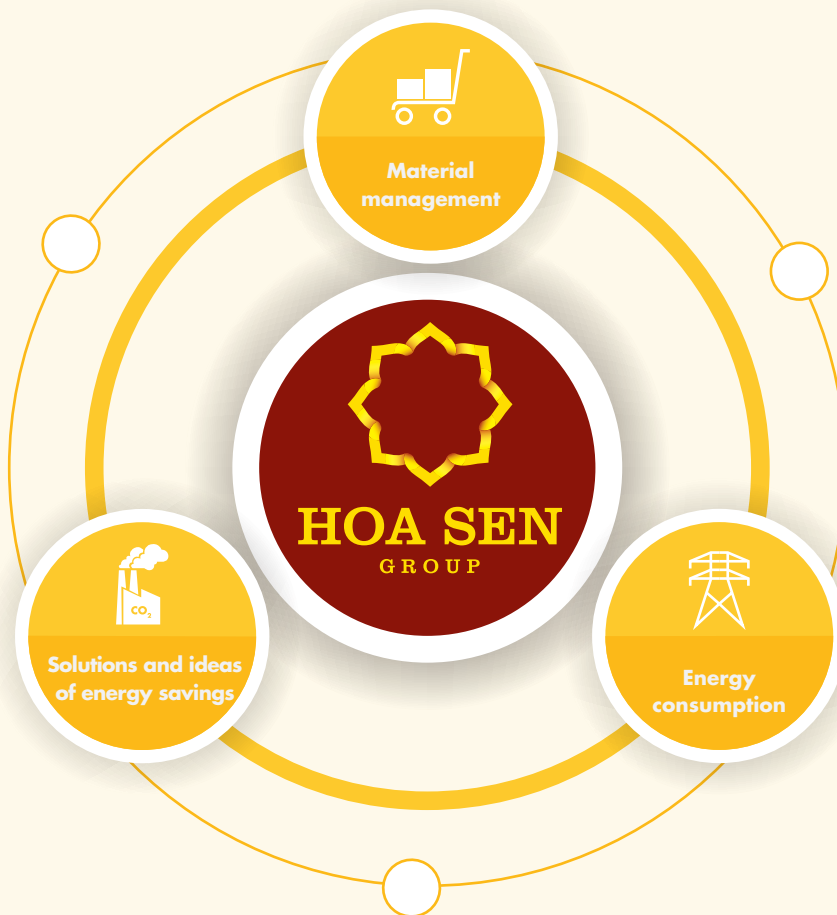




ENVIRONMENT AND ENERGY

“ MANUFACTURING AND TRADING IN STEEL INDUSTRY REQUIRE OPERATIONS OF MANY PRODUCTION LINES WITH GREAT COMMAND OF ENERGY CONSUMPTION AND STRICTLY COMPLYING DISCHARGED STANDARDS TO ENVIRONMENT. BEING AWARE OF THIS ISSUE, HOA SEN GROUP IS CONTINUOUSLY LOOKING FOR SOLUTIONS IN USING SAVING AND EFFECTIVE ENERGY, AS WELL AS MINIMIZE IMPACTS TO ENVIRONMENT DURING PRODUCTION PROCESS.



MATERIAL MANAGEMENT

Input materials which are used in manufacture are qualified to the Hoa Sen Group's general standards. Most of input material orders are verified and approved by Materials division and Evaluation division of Hoa Sen Group. The utilization of materials are controlled and collated among divisions of production, supply, supervision through daily, weekly, monthly reports including inventory status report, material consumption report, and balance report of materials – finished products to ensure the optimization.



ENERGY CONSUMPTION

Direct and indirect energy consumption

In the fiscal year 2016-2017, direct and indirect energy consumption at parent company and its subsidiaries / factories are as follows:

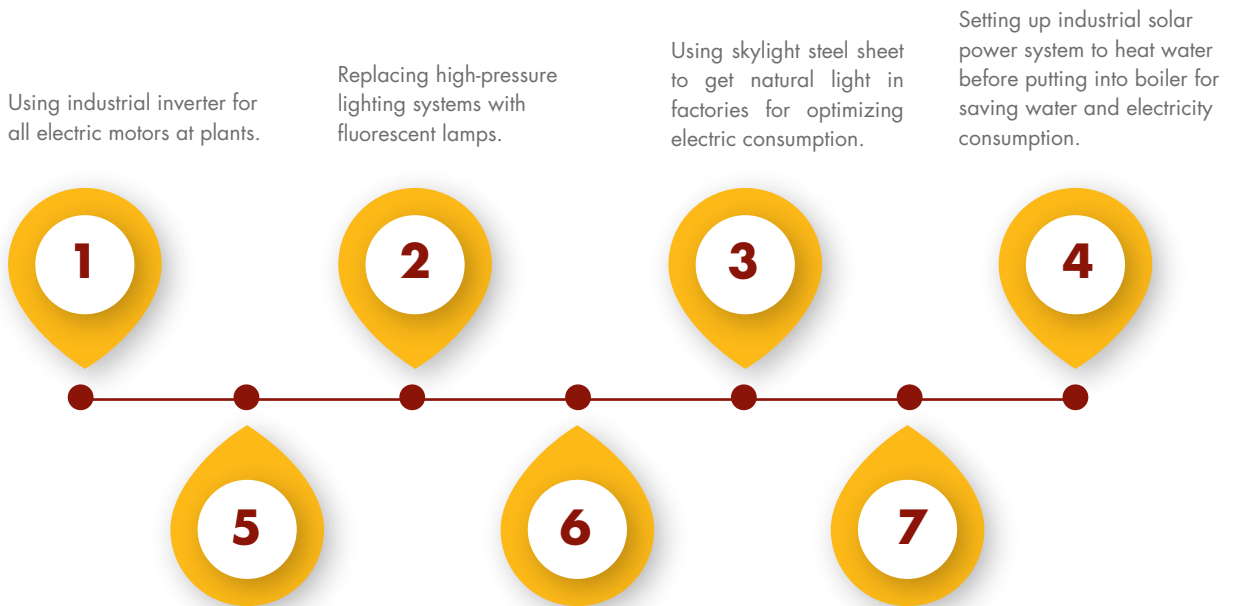
DESCRIPTION	ELECTRICITY CONSUMPTION (Kwh)		WATER CONSUMPTION (m ³)
	For production, supply operations	For office, lightning operations	For production, supply, living, irrigation operations
1. Hoa Sen group	197,434,695	3,295,897	969,496
2. Subsidiaries/ Factories	217,865,861	3,714,302	692,564
Total	415,300,556	7,010,199	1,662,060

Solutions of energy saving are applying

Hoa Sen Group always concerns saving of energy consumption within the limitation that is set by the Group.

All Hoa Sen Group's offices, plants perform energy report regularly. Especially, each production line is always tracked and measured energy consumption in order to detect and adjust timely issues of unreasonable consumption.

Measures of energy savings.



Developing monitor software of electrical consumption system: The technical division has already finished this software which operates as follows:

- Determining excess capacity
- Monitoring all devices to realize under loaded, overloaded state
- Comparing consumption of electrical efficiency to determine equipment or division which is more efficient and higher profitable
- Tracking continuously system and detecting which equipment is unstable operation
- Balancing electrical loading on station, electrical board, etc.
- Improving equipment working life for investment optimization.
- Sending alerts to avoid troubles, analyzing problems that caused by devices or electric supply, and supporting quickly, thoroughly for problems.

Administrative management operation

- Publishing announcements, boards to propagate and require electricity savings in the Group.
- Examining and reminding continuously all divisions that presenting in performance assessment report and minimizing infringe cases.

Planning production and delivery schedule reasonably such as: limited overtime working, operating on peak hours, running machines alternately in low season to optimize electricity consumption.

SOLUTIONS AND IDEAS OF ENERGY SAVINGS

TECHNICAL SOLUTIONS

- Expanding or adding more windows which installed by glass, skylight steel sheets to maximize natural light usage.
- Replacing incandescent bulbs to electrical saving compact lights.
- Installing gutters, covers of lights to increase light reflection and placing lights at appropriate height.
- Replacing overloaded electrical wire to matching electrical wire.
- Replacing old, damaged electrical wire to new ones.
- Repairing joints, cosse head, tangential points, knife switch, connector which are overloaded.
- Allocating transmission which is balanced on every production line in accordance with designed capacity of transformers.
- Implementing reactive power compensation for engines which are high capacity operations.
- Operating transformers in each appropriate mode (norm mode, under loaded mode).

ADMINISTRATION, MANAGEMENT SOLUTIONS

Regulation of electrical equipment usage

- All electric devices in offices are turned off when leaving
- Lightning system for corridor, security:
 - In summer: Turn on at 19pm and turn off at 5am
 - In winter: Turn on at 18pm and turn off at 6am
- The air condition is set temperature at 25 – 27°C and shut down when leaving.
- The computers are used for working only and un-plugged when finishing.
- Photocopy machines, printers are used for working only and un-plugged when finishing.

Tracking and monitoring

- Technical and environment safety division coordinates with administrative office are responsible to check the compliance of using equipment in plant and announce on back board weekly violations of using equipment in each division.

Rewarding and encouraging

- Publishing information of good employee, good behavior in electric saving.
- Innovative suggests of electric saving in plant.

COMPLIANCE WITH THE LAW OF ENVIRONMENTAL PROTECTION

IN PARALLEL WITH IMPROVING BUSINESS PERFORMANCE, HOA SEN GROUP USUALLY CONCERNS ENVIRONMENTAL PROTECTION TO LOOK FORWARD TO PRODUCE ENVIRONMENTAL FRIENDLY PRODUCTS.

Hoa Sen Group has functional division in environment which has high qualification employees graduated from prestigious universities around the country. All employees are usually propagated garbage classification, energy saving regulation (electricity, water, etc.) during production and office operations as well as environmental sanitation regulation.

- All Hoa Sen Group's subsidiaries/plants perform environmental impact assessment/ environmental protection project/ environmental protection commitment before operation. During operation, subsidiaries/plants measure and supervise environment quarterly and report to authorities.
- ISO sections of subsidiaries/plants always update environmental legislations to comply and inform to related divisions. ISO sections also assess the compliance of legislation before the Group's ISO division rechecks every six months.
- To improve supervision and management in environmental protection, Hoa Sen Group has developed, maintained and enhanced environment management system in accordance with ISO 14001:2015 standard which certificated by BUREAU VERITAS.
- In yearly period or when environment management system has been modified, Hoa Sen Group identifies environmental sector to have good control in significant environmental sector as the following:
 - Waste water is treated in accordance with eligible standard before getting in centralized waste water treatment system of industrial park.

- Emissions are treated in accordance with column B – QCVN 19:2009/BTNMT before discharging into environment.
- Solid waste is classified, collected and transfer for treatment in accordance with legislation. Scraps are classified at original source, each kind of scraps is contained in trash can with specific label. When trash can is full, it will be transferred to the company's garbage house at specific area.
 - For hazardous waste, Hoa Sen Group has been issued certification of owning hazardous waste. When the hazardous waste volume has changed, the Group also modifies the certification. In addition, Hoa Sen Group has signed agreement with functional authorities which have license to transport and handle waste.
 - In factory area, to allocate harmony building structure, the Group has used ground for trees, lawns to create beautiful landscape and contribute much for fresh air.
 - In addition, to ensure working environment with high standard for employee's health, the Group applies technical solutions to clear the workshop, reduce noise and equip exhaust fans, industrial fans. Hoa Sen Group also measures environmental parameters periodically in accordance with legislation.

