



Sustainable Environment Developers









From the CEO's Desk

In a rapidly changing technology driven environment, it is imperative to have technologically advance equipment for the industry, which is not only high-tech but energy efficient too. As CEO of Sustainable Environment Developers (SED), it gives me great pleasure to share with you that after successfully providing energy efficient equipment to the sugar industry in Pakistan since 2005, SED is now all set to expand its environment friendly green solutions to other industries too.

As a trend setter, we are in a journey of continuous improvement, made possible by the sheer hardwork of a team of dedicated professionals which is the backbone of our company. With our experience and expertise in heat transfer, automation and project management, we are now focusing on developing energy efficient solutions and equipment that are vital for the survival and growth of the industry in Pakistan.

In the next five years, we will In sha Allah become a hub of innovative technological research and development. Quality, of course, will remain our paradigm. Our ultimate goal is to contribute as an innovative player, and contribute to the economic growth of our beloved country making it technologically independent. To achieve this goal, we are collaborating with leading universities and research centers too, thus reducing the gap between the industry and the academia.

Needless to add, that alone we won't be able to realize this dream. Hence, we need prayers, support and cooperation of our industry partners. I am hopeful that as a TEAM, together we will achieve more!

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Sustainable Environment Developers (SED), previously known as Spray Engineering Devices, is an ISO 9001:2015 certified, Pakistan based firm, providing high end energy conservation solutions, mechanical fabrication and erection services to the sugar and allied Industries since 2005. At SED, our motto and focus remains on Unleashing Excellence!

Over the years, SED has carved a niche for itself in the sugar industry, specializing in equipment which reduce steam consumption and lead to energy conservation. With our technically advanced equipment and specialized design, we have enabled our clients to reduce steam consumption from 55% to 35% on cane. Our automated condensing system collectively saves 15000 MW of electricity every crushing season.

To achieve these results we have a team of specialized engineers, technical staff and quality assurers, who look after each process related to manufacturing, fabrication, installation, commissioning and support of high tech equipment designed to improve energy efficiency of the industry. We also have a dedicated team for automation of equipment. We have implemented SCADA systems using various platforms and have the capacity to produce tailor made solutions as per client requirements. Currently, we

are providing equipment and maintenance services to 63

sugar factories, across Pakistan.

Today after 17 years of successful operations in the sugar industry, we are all set to expand our horizon and serve a broader range of environment friendly products and services. Our workshop, located in Karachi, is fully equipped and capable of providing fabrication and installation of machinery, vessels, steel structure and steel piping for all types of manufacturing industries.

May Allah be our Guide and Protector!

Research & Development (R&D) SED is distinguished by a strong focus on needs of the industry. Striving to meet increasingly complex process modifications as well as offering proven and reliable solutions. Our continuous investment in research and development enables us to deliver standard setting solutions across the industry. **Process & Project Management** 147 118.7 9 C FR 21 fft 43 GP (3 I Bat 1.01 39.7 V SED has a team of Chemical Engineers Fill 6 headed by Industry's most experienced Sugar Technologist. Engineering infor-0 0 E mation developed with years of experi-Bar 1,03 | 100,5 |*C ence for project use has become an 18 D important strategic asset for SED. Thus Bot 1.02 [100.0] providing, improved project execution through best-of-class project delivery and management solutions (e.g., materials and project controls) that effec-R/PS-1 tively use engineering information. R/PS-2 d JUICE REATING Clarifier Vapors 1st Vapors 10.46 t/h 6.23 t/h 2.91 t/h R/24vDC 137.1 kPa 117.6 kPa 164 6 kPa 101 4 kPa U/24vDC 105.8 °C 109.6 °C 114.6 °C 100.2 °C 104.2 °C (Sat.) 108.7 °C (Sat.) 114.2 °C (Sat.) 100.0 °C (Sat.) 345.16 t/h 345 16 t/h 345.16 t/h 345.16 t/h J.U °C 68.0 °C 95.0 °C 105.0 °C 85.0 °C 12.75% DS 12.51% DS 12.51% DS 12.51% DS 12.51% DS 297 86 t/h 82.20% Purity 81.33% Purity 81.33% Purity 81.33% Parity 81.33% Purity ity 70.0 °C 12.75% DS 6.88 t/h 82.20% Purity 6.00% TDM 6081 RJ 1 st Heating RJ 2nd Heating RJ 3rd Heating DJ 1st Heating DJ 2nd Heating DJ 3rd Heating HS:500 m² HS:700 m² HS:700 m² Cond. Heater) HS:700 m HS:700 m² ∰S:500 m2 HTC:230 W/m HTC:341 W/m 2.0 HTC:297 W/m 2.0 HTC:401 W/m 2.C 6221 HTC:172 W/m2. S.B: 350 m 2 S.B: 500 m² SB: 350 m² SB: 350 m² SB: 350 m² To Process To HW Tank To Process To Process To Process To Process 6.55 t/h 10.46 t/h 6.23 t/h 6.30 t/h 96.7 °C 104.2 °C 114.2 °C

Instrumentation & Automation Division

Our instrumentation and automation wing is fully responsible for maintaining maximum efficiency of the equipment / process to increase the performance of the system by taking care of the process fluctuations & monitoring field parameters. We provide services like application software development, detailed automation project planning, engineering & execution, design and supply of electrical & automation systems, instrument selection, procurement, testing, inspection & maintenance etc.

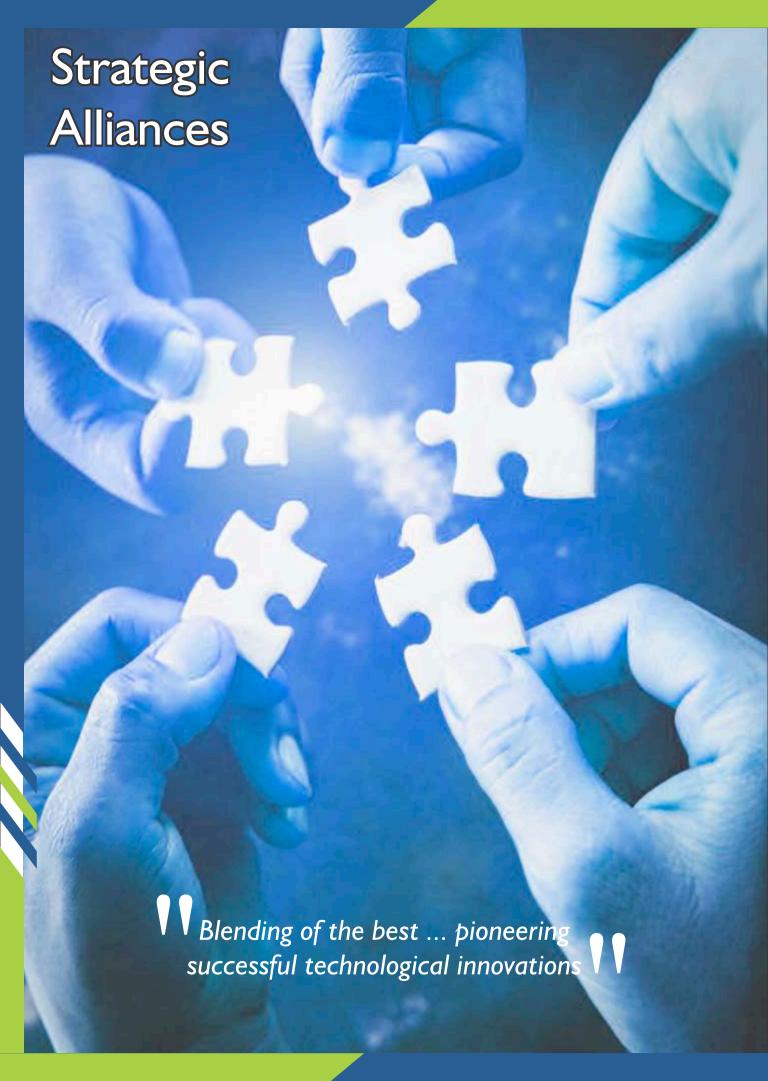
Process Design & Engineering

SED has unparalleled expertise in providing effective and reliable solutions to the process industry. Our team of highly skilled & committed process engineers are capable of designing energy efficient processes, mass and energy balance calculation, preparation of P&IDs, thermal designing & sizing of heat transfer equipment and process simulation & optimization etc.

Trouble Shooting & Servicing

SED has an excellent trouble shooting and servicing division, which is available online 24x7 and offers extensive after-sales service, which is maintained throughout the life cycle of our installed machinery and equipment.

The benefits for our customers are enhanced with availability of higher efficiency and safety through reliable assistance with all problems including maintenance and repair. Our highly qualified expert staffs provide the necessary assistance wherever they may be needed.



Product: Process House Equipment Status: Licensed Manufacturer







Product: Complete Range of Valves

& Actuators

Status: Reseller / Distributor

Origin: United Kingdom



Product: Motors & VFDs

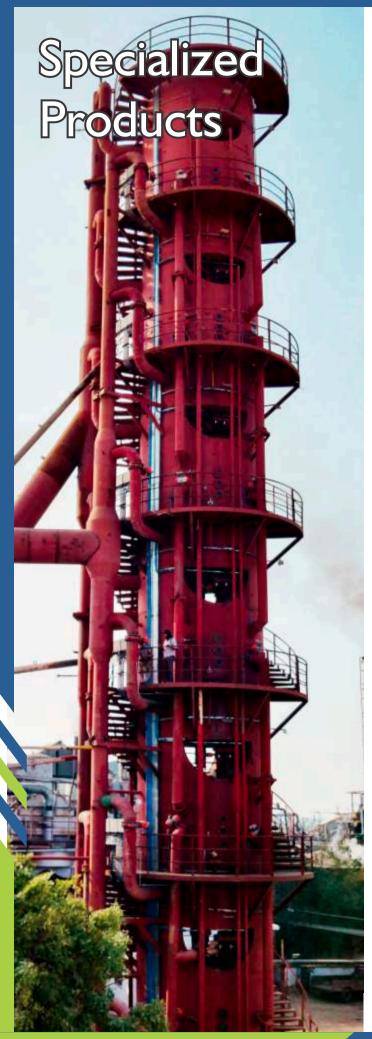
Origin: Germany







Product: H2S Removal System Status: Authorised Reseller Origin: Switzerland















Automated Condensers

Installed Units: 976

Sugar Clients: 63





Spray Continuous Pan

Installed Units: 03

Sugar Clients: Ranipur Sugar Mills

Faran Sugar Mills

Falling Film Evaporators

Installed Units: 14

Capacity Installed: 57,000m²

Sugar Clients: 08





Molasses Conditioners

Installed Units: 93

Sugar Clients: 22

Spray Pond Solutions

Installed Units: 3170

Sugar Clients: 26



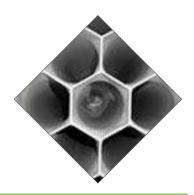


Bio Gas Generation & H₂S Removal System





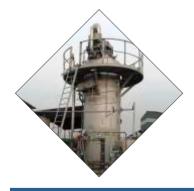
Honey Comb Calendria





Tobacco Barn Automation





Water Recycling Unit





Jaggery Plant



SED Clients

Faran Sugar Mills

Pakistan Tobacco Company

Hamza Sugar Mills

Mirpurkhas Sugar Mills

Al Noor Sugar Mills

IDW Sugar Mills

Habib Sugar Mills

Ramzan Sugar Mills

Layyah Sugar Mills

Madina Sugar Mills

Ranipur Sugar Mills

Mehran Sugar Mills

Matiari Sugar Mills

Dewan Sugar Mills

JK Sugar Mills-I

Deharki Sugar Mills

Abdullah Shah Ghazi Sugar Mills

Etihad Sugar Mills

IDW - II (United) Sugar Mills

Al Moiz Sugar Mills

Al Abbas Sugar Mills

Ghotki Sugar Mills

Chanar Sugar Mills

Fatima Sugar Mills

Ashraf Sugar Mills

Jauharabad Sugar Mills

Mianwali Power

Sheikhoo Sugar Mills

Sind Abadgar's Sugar Mills

RYK Mills Limited

Alliance Sugar Mills Pvt. Ltd.

Noon Sugar Mills

JK Sugar Mills-2

Sanghar Sugar Mills

Brothers Sugar Mills

Khoski Sugar Mills

Hussain Sugar Mills

Bawany Sugar Mills

Pattoki Sugar Mills

KhairpurSugar Mills

Adam Sugar Mills

Ittefaq Sugar Mills

Tando Allah Yar Sugar Mills

Pangrio Sugar Mills

Colony Sugar Mills

G-Sumundri Sugar Mills

Shahmurad Sugar Mills

Chaudhry Sugar Mills

Kashmir Sugar Mills

Colony Sugar Mills - Mian Chunnu

Chambar Sugar Mills

Popular Sugar

Zamund Sugar Mills

Hunza Sugar Mills

Rehman Hajra Sugar Mills

Kiran Sugar

2 Star Industries (Kamalia)

Al Arabia Sugar Mills

Huda Sugar Mills

SGM Sugar MIlls

Safina Sugar Mills

Indus Sugar Mills

Pasrur Sugar Mills





The quality policy of SED is based on the following key principles:

- Customers, both external and internal, shall be the primary focus of our quality management system.
- Systems and controls shall be designed to ensure complete understanding of customer requirements and to consistently provide accurate and reliable products & Services.
- Suppliers are integral to the quality process and our team shall work in close coordination with them to meet customer's needs.
- SED Team shall be encouraged and empowered to participate in quality improvement activities through teamwork and consultation.
- Company management is fully committed to the Quality Policy through provision of resources, active participation in quality improvement activities and leadership by example.

The SED Family





Sustainable Environment Developers (Formerly Spray Engineering Devices)