



Enriching Lives

**KIRLOSKAR BROTHERS LIMITED**

A Kirloskar Group Company  
Established 1888



**Our Manufacturing Facilities**

Kirloskarvadi Works - Kirloskar Brothers Limited,  
Kirloskarvadi. Dist. Sangli 416 308, Maharashtra (India)

Tel : +91 2346 222301 To 222305,  
222361 To 222365  
Fax : +91 2346 222311

Dewas Works - Kirloskar Brothers Limited  
Station Road, Dewas 455 001, Madhya Pradesh (India)

Tel : 07272-227397  
Mktg : 07272-227401 / 405 / 409  
Fax : +91 7272 228747

Shirwal Works - Kirloskar Brothers Limited

Gat No. 117, Shindevadi, Tal. Khandala,  
Dist. Satara - 412 801, Maharashtra (India)  
Tel : +91 2169 244360, 244370, 244322  
Fax : +91 2169 244165

Kondhapuri Works - Kirloskar Brothers Limited

Gat No. 252/2 + 254/2, Kondhapuri, Tal. Shirur,  
Dist. Pune - 412 208, Maharashtra (India)  
Tel : +91 2137 240021 / 240030 / 240025 / 240022

Kolhapur - The Kolhapur Steel Limited -

Kirloskar Brothers Limited  
Pune Bangalore Highway, Shirol (Pulachi),  
Tal. Hatkanangale, Dist. Kolhapur  
Pin 416 122 Maharashtra (India),  
Tel : (0230) 2468061 / 62 / 63  
Fax : (0230) 2468761

Coimbatore Works - Kirloskar Brothers Limited

S. F. No. 324/1 - Moperipalayam Road,  
Thattampudur, Kaniyur Village, Karumathampatti Post,  
Coimbatore - 641659. Tamil Nadu (India)

Ahmedabad Works - Kirloskar Brothers Limited

254/1 Chharodi Village, Sanand,  
Ahmedabad Viramgam Highway,  
Ahmedabad - 382 170, Gujarat (India)

Global Headquarters: 'Yamuna', S.No. 98/3-7, Baner, Pune - 411045, India. Phone: +91-20-27214444 Email: marketing@kbl.co.in  
Registered Office: Udyog Bhavan, Tilak Road, Pune - 411 002, India. Phone: +91-20-24440156 Fax: +91-24440156

**SERVICE TOLL-FREE NO.: 1800 103 4443**



Enriching Lives



**UNLEASHING  
THE HIDDEN POWER  
OF WATER**

# A CENTURY OF EXCELLENCE

Kirloskar Brothers Limited (KBL) is a world class pump manufacturing company with expertise in engineering and manufacture of systems for fluid management. Established in 1888 and incorporated in 1920, KBL is the flagship company of the \$ 2.1 billion Kirloskar Group. KBL, a market leader, provides complete fluid management solutions for large infrastructure projects in the areas of water supply, power plants, irrigation, oil & gas and marine & defence. We engineer and manufacture industrial, agriculture and domestic pumps, valves and hydro turbines.

In 2003, KBL acquired SPP Pumps, United Kingdom and established SPP INC, Atlanta, USA, as a wholly owned subsidiary of SPP, UK to expand its international presence. In 2007, Kirloskar Brothers International B.V., The Netherlands and Kirloskar Brothers (Thailand) Ltd., a wholly owned subsidiary in Thailand, were incorporated. In 2008, KBL incorporated Kirloskar Brothers Europe B.V. (Kirloskar Pompen B.V. since June 2014), a joint venture between Kirloskar International B.V. and Industrial Pump Group, The Netherlands. In 2010, KBL further consolidated its global position by acquiring Braybar Pumps, South Africa. SPP MENA was established in Egypt in 2012. In 2014, KBL acquired SyncroFlo Inc., the largest independent fabricator of commercial and municipal domestic water booster pumps.

To further strengthen its global position, in 2015, Kirloskar Pompen B.V. acquired Rodelta Pumps International, The Netherlands.

KBL has joint venture cooperation with Ebara, Japan since 1988 for the manufacture of API 610 standard pumps. Kirloskar Corrocoat Private Limited is a joint venture cooperation with

Corrocoat, UK since 2006. KBL acquired The Kolhapur Steel Limited in 2007 and Hematic Motors in 2010.

KBL has eight manufacturing facilities in India at Kirloskarvadi, Dewas, Kondhapuri, Shirwal, Sanand, Kaniyur, Kolhapur and Karad. In addition, KBL has global manufacturing and packaging facilities in Egypt, South Africa, Thailand, The Netherlands, United Arab Emirates, United Kingdom and United States of America. KBL has 12,700 channel partners in India and 80 overseas and is supported by best-in-class network of Authorised Centres and Authorised Refurbishment Centres across the country.

All the manufacturing facilities at KBL are certified for ISO 9001, ISO 14001, ISO 50001, BS OHSAS 18001 and SA8000. In addition, the Kirloskarvadi plant is also certified for N & NPT Stamp. KBL's corporate office in Pune is certified for ISO 9001 & SA8000.

The factories deploy Total Quality Management tools using European Foundation for Quality Management (EFQM) model. The Kirloskarvadi plant of KBL is a state-of-the-art integrated manufacturing facility having Asia's largest hydraulic research centre with testing facility up to 5000 kW and 50,000 m<sup>3</sup>/hr.

KBL is the ninth pump manufacturing company in the world to be accredited with the N and NPT certification by American Society of Mechanical Engineers (ASME).



## Industrial and Engineered Pumps, Hydro Turbines



KIRLOSKARVADI - WESTERN INDIA

## Agricultural and Domestic Pumps



DEWAS - CENTRAL INDIA

## Domestic Pumps



KANIYUR - SOUTHERN INDIA

## Submersible Pumps



SANAND - WESTERN INDIA

## Valves



KONDHAPURI - WESTERN INDIA

## ADDING RELIABILITY AND EFFICIENCY TO HYDRO POWER

Optimized Pumping and Hydro Power solution  
– From concept to commissioning across market segments

For us practicing innovation is more important than being innovative. We have always been an exponent in implementing innovation in every segment of our business and no less than in our products. We understand our market and it is our long-practiced research methodology to study the market pain areas in order to give a direction to our innovative thought process. Once the requirement is clearly studied, our engineering expertise is coupled with an innovation and design products accordingly.

- Being the largest manufacturer and exporter of Centrifugal Pumps from India, we export to over 80 countries across 6 continents. KBL Hydro turbines are also working well in India as well as abroad.
- We are the preferred choice in micro, small and medium hydro turbine business.
- Hydro Power turnkey solutions on “Concept to Commissioning” and “Single Window concept” basis.
- Unique energy efficient solutions for variety of heads, discharge and power rating for different terrains.
- KBL is the only turbine manufacturer having one roof manufacturing solution for electromechanical equipment including its own foundry.
- One of Asia's largest Hydraulic Research Centre with state-of-the-art testing facilities.



The Company can take up single point responsibility from “Concept to Commissioning” with fully equipped facilities.

- Well-equipped research & development centre
- State of the art integrated manufacturing facilities
- Modern in-house foundry and machining facilities
- System engineering for design of high efficient system
- Complete Mechanical/ Electrical/ Instrumentation design in-house capability
- Comprehensive Project Management capabilities
- Enterprise resource planning
- Installation, Testing & Commissioning of equipment
- Quality Control and Assurance
- Integrated site services and support
- Performance guarantee testing
- Operation & Maintenance

No matter how complicated your fluid-handling problems of tomorrow, there's one place you'll find all the answers  
**“KIRLOSKAR BROTHERS LIMITED”.**

Kirloskarvadi - Western India | Dewas - Central India  
Shirval - Western India | Kondhapuri - Western India



HORIZONTAL FRANCIS TURBINE



HORIZONTAL PELTON TURBINE



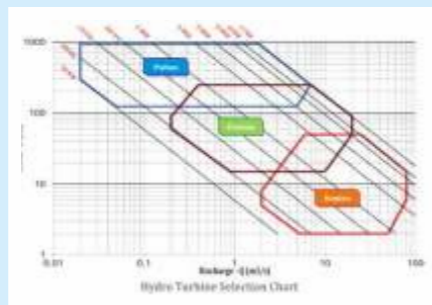
HORIZONTAL KAPLAN TURBINE



VERTICAL FRANCIS RUNNER WITH SHAFT



VERTICAL KAPLAN TURBINE



PUMP AS TURBINE



BUTTERFLY VALVE

## PRODUCT RANGE

- Francis / Kaplan / Pelton / Pump as Turbine (PAT)
- Horizontal & vertical configuration
- Single unit capacity up to 20MW

## Computational Facilities in KBL

- Pro Engineer (wildfire) Solid Modeling Software
- Ansys CFX Suite Computational Fluid Dynamics studies
- Turbodesign-1 Inverse design for turbo machines
- FEMAP/MSC-Nastran Structural analysis
- ANSYS Mechanical Mechanical behavior of the System
- Surge Analysis Package (SAP2) Surge Analysis/Transient Studies
- Pro Mechanics For preliminary structural analysis

## Well-Equipped Corporate Research & Engineering Division

KBL conducts research in order to provide fluid handling solutions, achieve technological break-through using advanced computational and experimental techniques and develop reliable and state of the art products that suit current needs. Corporate Research & Engineering Division (CRED) of KBL is equipped with the latest computational facilities to incorporate the latest technologies for high performance product development. The applied research work conducted in KBL has resulted in appropriate technology for development of Pumps, Hydro Turbines, Valves, Motors and many more to come. The experimental facilities are available at its manufacturing plants at Dewas and Kondhapuri in addition to Kirloskarvadi.



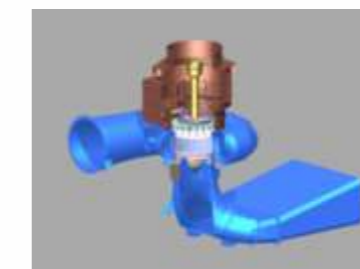
- One of Asia's largest Hydraulic Research Centres with state of the art testing facilities at duty conditions upto 5000kW (3.3/6.6/11kV) and discharge upto 50,000 m<sup>3</sup>/hr
- Conceptualized and Built under the guidance and supervision of British Research Association
- Computerized data acquisition system

## KBL provides the following services in the field of fluid handling:

- High Performance and New Product Development
- Experimental Sump Model Studies
- Sump Model Studies using CFD Techniques
- Cavitation's Test Analysis
- Fluid Structure Interaction
- Structural Analysis
- Seismic Analysis
- Thermal Analysis
- Vibration Analysis
- Transient Analysis
- Shock/Impact analysis
- Surge Analysis
- Piping Fluid Flow analysis
- Heat Transfer



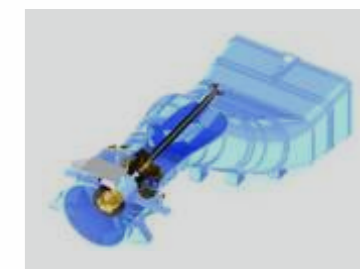
3-D Model of Horizontal Francis Turbine



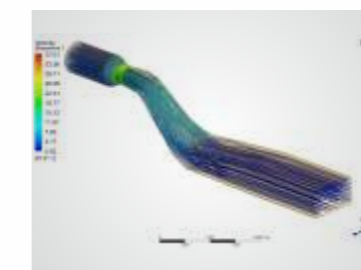
3-D Model of Vertical Kaplan Turbine



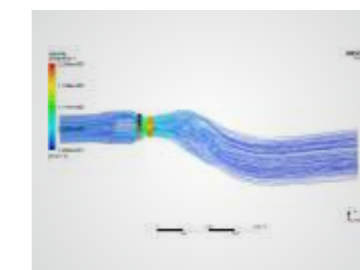
3-D Model of Twin Jet Pelton Turbine



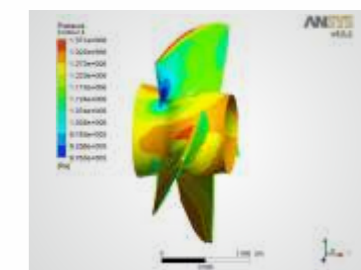
3-D Model of Horizontal Kaplan Turbine



Velocity Streamline of Kaplan Runner



Pressure Contour of Kaplan Runner



Streamline of cross-flow turbine

# MANUFACTURING EXCELLENCE & INFRASTRUCTURE

## Foundry & Machining Facility

It is our constant endeavor to upgrade and implement the latest and most advanced technology for smooth functioning of our facilities for uninterrupted production and seamless services. At Kirloskarvadi foundry, the set-up is equipped with centralized pattern shop, mechanized sand processing system, automatic moulding machines and metal pouring system. There are independent units for Cast Iron, Alloy Steel, and Non-Ferrous Metals. The Cast Iron foundry is capable of producing a single casting weighing up to 16000 kg and the Steel foundry

Captive Foundry Heat Treatment Shop Cast Iron Foundry Material Testing Laboratory Alloy Cast Steel Foundry Non Destructive Testing Laboratory Non Ferrous Foundry Machine Shop with CNC Machines Replicast Foundry Fully Equipped Assembly Shop



METAL POURING AT FOUNDRY



KAPLAN RUNNER HUB MACHINING ON CNC VBM



STRESS RELIEVING FURNACE



AUTOMATED FOUNDRY



FRANCIS SPIRAL CASING MACHINING ON SK40 VTL



TUBULAR KAPLAN CASING MACHINING ON WOTON CNCHBM



FRANCIS RUNNER MACHINING ON CNC VBM



## Quality Assurance & Testing Facilities

Non-Destructive testing facilities comprising of radiography, ultrasonic testing, magnetic particle testing and dye penetrate testing.

- Material testing laboratory conducting transverse, compression, shear & hardness tests and impact tests.
- This laboratory also has spectrometer for chemical analysis of materials.
- Standards room with instruments of international standards

# PROJECT MANAGEMENT

Complete Project Management  
Concept to Commissioning

BASIC & DETAILED ENGINEERING

RESEARCH & DEVELOPMENT

MONITORING THROUGH MSP

MANUFACTURING (TURBINE & MAIN INLET VALVE)

PROCUREMENT (MATERIAL & BALANCE OF PLANT)

QUALITY ASSURANCE

SUPPLY OF ELECTRO-MECHANICAL EQUIPMENT

ERECTION, TESTING & COMMISSIONING

INTEGRATED SITE SERVICE & SUPPORT

OPERATION & MAINTENANCE

HANDING OVER OF PLANT

## PROJECT MANAGEMENT EXPERTISE

The strength of KBL lies in its long experience in designing, manufacturing, Installation and commissioning of Hydro Electric Generating System with commitment to innovation, quality and continuous technological advancement, making KBL a one-stop-solution for complete electromechanical package.

KBL's focus on developing unique, well designed, precisely engineered solutions to solve complex fluid handling problems has earned reputation. KBL's dedicated teams of resourceful engineers using the latest tools and techniques have consolidated KBL's standing as a company who enable timely execution of each project.

## PROJECT MANAGEMENT OFFICE

Project Management Office (PMO) at KBL, is an apex organizational body or entity assigned with various responsibilities related to the centralized and coordinated management of various projects under its domain. PMO is more like an umbrella entity within organization that overlooks such project management activities. This division strives to standardize and introduce economies of repetition in the execution of projects. The PMO is the source of documentation, guidance and metrics on the practice of project management. Such as,

- Providing policies, methodologies and templates
- Providing support and guidance on how to manage projects
- Providing training in the Project Management practices and Project Management Software tools.
- Compiling MIS and raising Red Flags.

### Why PMO?

- To reduce the risk of projects failing to deliver in time, cost and quality targets.
- To increase the success of projects in delivering the business values expected by customers.
- To get visibility and predictability in the projects.
- To keep constant control on various deliverables in the project lifecycle and provide necessary directions to various stakeholders

## WATER TO WIRE SOLUTIONS

The Company offers complete turnkey hydro turbine solutions, from Concept to Commissioning with a special emphasis on Planning, Engineering, Design, Manufacturing, Supply, Transportation, Insurance, Erection, Testing & Commissioning of the complete electro-mechanical equipment for complete "Water to Wire" solutions for hydro projects. KBL Scope of Supply includes

Turbine & Accessories    Generator & Accessories  
Main Inlet Valve    Gearbox    Oil Pressure Unit    Governor  
Cooling water system    Transformer    Drainage & Dewatering  
Control & Protection System    Illumination System  
Control & Monitoring System    Ventilation System    DC System  
EOT Crane    Cable & Cable Trays    Earthing & Lightning Protection  
Switchyard equipment    Supervision, Installation and  
Commissioning    PG Testing Support    Operation & Maintenance

## SYSTEM ENGINEERING

The company is engaged in conceptualising solutions and providing system engineering for Turnkey Projects. We excel in providing reliable, innovative and energy efficient water handling solutions. Our System Engineering team has the expertise in adding exceptional value across a variety of verticals like Power Plants, Water Supply, Irrigation; Pumping Solutions for Industries, Defense & Marine and Commercial Building Services and Hydropower. We have a immense acquaintance and experience in complete hydro power system engineering. We have gained a wide recognition for our highly efficient and cost effective system design and customer support in India as well as abroad.

Hydropower system engineering covers the hydro-mechanical, electro-mechanical, mechanical and electrical components along with instrumentation, PLC, SCADA.



POWER HOUSE INDOOR EQUIPMENT



CONTROL & PROTECTION PANELS



SWITCHYARD EQUIPMENT

### Engineering Highlights

- Basic and Details Engineering
- Pro-E Modeling, AutoCAD
- Complete Mechanical System Design
- Complete Electrical System Design
- Complete Instrumentation, PLC, SCADA
- Pro-E Modeling, AutoCAD
- Highly Efficient System Design
- Project Commissioning Support

## SITE INSTALLATION CAPABILITY

KBL has team of highly dedicated engineers who are specially trained to take care of field services viz. installation, testing and commissioning of hydro power plants in a time bound manner. KBL site team ensures that all site activities are meticulously planned and performed so as to meet the completion & commissioning schedule, committed to the customer. While working on various challenging projects in different geographies in India & abroad, KBL engineers keep themselves updated with modern practices in construction management. Compliance to safety & quality standards, local and global government regulations, environmental regulations etc. are stringently followed by the team while demonstrating expertise in water to wire hydro plant installation, logistics and other peripheral site activities. Site team possesses all necessary tools, tackles, material handling equipment, precision instruments, electrical instruments apart from necessary infrastructure, to carry out field services meeting the contractual requirement. Apart from this, KBL field service team also undertakes long term & short term operation and maintenance assignments of hydro power plants, post warranty inspection and repair services, based on customer's needs.



ERECTION OF CASING & PIT LINER



ERECTION OF VERTICAL KAPLAN RUNNER



ERECTION OF SPIRAL CASING



ERECTION OF STAY RING



ERECTION OF VERTICAL GENERATOR



GUIDE VANE ASSEMBLY AT SITE

## KAPLAN TURBINE

Kaplan turbines are generally designed for projects having low head and high discharge. These give a good performance over a wide range of varying heads. KBL offers full range of Kaplan turbines for

- Low head and high flow
- Horizontal or Vertical orientation
- Upto 20MW Single unit Capacity
- Head upto 60 m
- Supplied in following configurations
- Full Kaplan
- Semi Kaplan
- Propeller
- S Type tubular Kaplan (horizontal shaft)



ZHO SUWEI HYDRO POWER PLANT, TAIWAN,  
1 X 3607 KW, VERTICAL KAPLAN TURBINE



KONAL HEP, 2 X 5.5 MW  
VERTICAL KAPLAN TURBINES



ANKHE KANAK HEP, VIETNAM 2 X 6.5 MW,  
VERTICAL KAPLAN TURBINE



DARNA HEP, 2 X 2.45 MW,  
HORIZONTAL 'S' TYPE TUBULAR KAPLAN TURBINE



RANNI PERUNAD HEP, 2 X 2 MW,  
HORIZONTAL 'S' TYPE TUBULAR KAPLAN TURBINE

## FRANCIS TURBINE

Francis turbines have widest range of applications and are generally designed for projects having medium head and medium discharge.

- KBL offers full range of Francis turbines for
- Optimized selection and sizing for high efficiency
- Delivered with high-quality self-lubricating bearings as standard and are environment-friendly
- Horizontal & Vertical orientation
- Upto 20MW Single unit Capacity
- Head upto 300 m

- Supplied in two configurations
- Turbine runner and flywheel are directly mounted on generator shaft
- Turbine and Generator have their own separate shafts and bearings



FRANCIS TURBINE AT WORKS



SECHI HEP 2 X 2.25 MW



ADYANPARA HEP 3.5 MW (2x1.5MW+1x0.5MW)



BARAPOLE HEP 3 x 5MW



CHIKOTRA HEP 1x1.8MW

## PELTON TURBINE

Pelton turbines are impulse turbines. These are designed for projects having high head and relatively low discharge.

### KBL offers full range of Pelton turbines for

- High head and low discharge
- Horizontal & Vertical orientation
- Upto 10MW Single unit Capacity
- Head upto 350 m

Supplied in following configurations

- Single jet horizontal
- Double jet horizontal
- Four jet vertical



PELTON RUNNER AT WORKS



PANWI HEP 2 X 2 MW, TWIN JET PELTON TURBINE

## ENERGY & ECONOMIC GROWTH... THE WAY AHEAD

Electricity plays vital role in the socio-economic development of the nation. Providing access to clean sustainable energy services in rural areas is a daunting challenge.

As energy is an engine to economic development and poverty reduction, access to energy supports localized economic development, enabling local income generation through non-farm employment, catalyze the creation of micro enterprises and livelihood activities beyond daylight hours, in addition to better health and education. Thus rural development should have an overall priority in meeting the access challenge through decentralized energy systems in isolated situation using conventional and renewable sources.

### Solution to Decentralized Power Generation - Pico Hydro Unit (Upto 10kW)

Pico hydro is a type of hydro electric power that typically produces up to 10 kW using the natural flow of water. These installations can provide power to an isolated home or small community, or are sometimes connected to electric power networks.

### APPLICATION OF PICO HYDRO UNIT

- Village scheme, mainly for household lighting
- Electricity for remote farms
- Use in high rise building
- Battery charging and other intermittent load application
- Small grid connected power plant

### KEY ADVANTAGES OF PICO HYDRO UNIT

The main advantages include:

- Availability for a wide range of heads and flows
- Availability in large number of standard sizes
- Low cost
- Easy availability of spare parts
- Easy installation. Plug and play type unit
- Short Delivery Time





## Pump as Turbine (PAT) upto 100kW per unit An Innovative Solution

KBL is offering a unique solution in form of Pump As Turbine (PAT) for micro hydro power (upto 100 kW/Unit). Pump as turbine offers a distinct advantage of economy combined with balance of ecology and protection of environment.

A centrifugal pump that operates in reverse mode as a turbine, works on the same principle as a Francis turbine. The energy is recovered from pressure differences (head); while flow is fed back into the existing system. Both, direct drives of machinery (e.g. a Pump) and electricity generation (grid connected or isolated) or combinations of both of these are possible using PAT just as with a conventional turbine.

To improve the accuracy of prediction, Kirloskar Brothers Limited have invested in testing and verifying results, using computational techniques of large number of pumps of various capacities and specific speeds in turbine modes and have acquired the capabilities to offer PAT specific to needs of customers.

### Applications of Pump as Turbine (PAT)

The relative low cost PAT scheme allows hydro potential in small streams/creaks etc. to be recovered in distant mountainous areas effectively for

- Small hamlet electrification.
- Electrification of isolated tourist cottages, trekking camps etc.
- Driving agro processing systems like rice husker, oil extraction units, grain pounding machine, Floor mills etc.
- In urban setting application is manifold which include

#### Domestic water supply systems

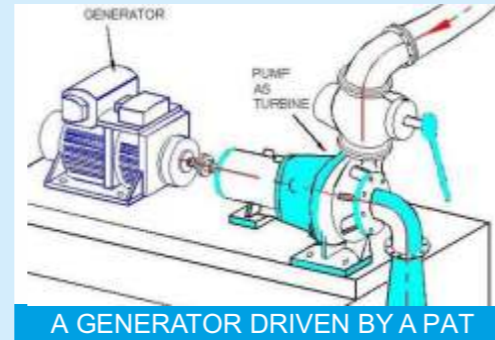
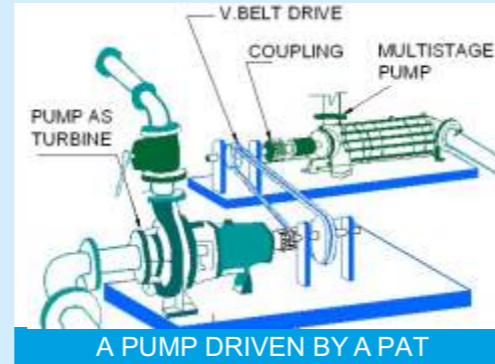
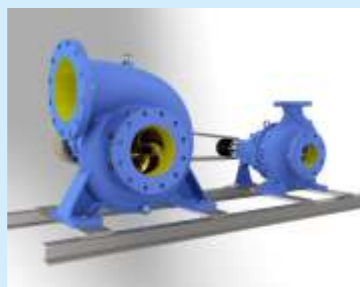
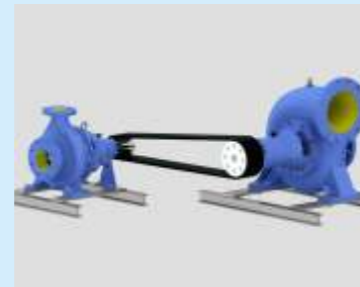
- Damping excess pressure in system.
- Balancing of pressure in supply lines/ tanks at different elevation.
- Pressure control /Throttling in closed-loop systems
- Extraction of excess pressure at the outlet of a water supply line.

#### Extraction of hydro energy from natural resources:

- Micro hydropower plants in natural streams in hilly areas.
- Irrigation barrages/dams.
- Drinking water supply schemes in hilly remote areas

#### Industrial Application:

- Pressure damping in cooling water circulation systems
- Reduction of process water pressure



### Key benefits – PAT

- Lower initial cost as it is a standard pump (almost half the cost of conventional hydro-turbine of equivalent size).
- Direct drive of machinery, electricity generation (in parallel to a large grid or isolated) or combinations of these is possible just as with a conventional turbine
- Off the Shell product-hence economic
- Simple and sturdy construction
- Easy maintenance as pumps has fewer parts than turbines.
- No special equipment or skill is required for maintenance
- Spares are easily available

## KBL - VALVES

KBL is one of the pioneers in manufacturing various types of valves in India for fluid handling. The KBL Valve design is rigid & sturdy with lowest life cycle cost and low maintenance. Over the last six decades, the valve performance is well known and established. KBL valves are suitable for various applications like water, waste water, raw water, steam, oil & gas, processed liquids and slurries. Our valve size range is from 25mm to 5000mm in various design standards and material constructions as per customer need/specifications.

KBL offers a wide range of valves



Butterfly Valves	Globe Valves
Sluice Valves	Check Valves
Reflux Valves (Non Return Valves)	Dual Plate Check Valves
Kinetic Air Valves	Ball Valves
Foot Valves	Steam Trap Device

### Typical Turbine Inlet Butterfly Valve

DOUBLE FLANGED SHORT & LONG BODY TYPE widely accepted by hydro power plants, municipal corporations, water supply authorities, thermal power corporation, nuclear power corporation and other government and industrial users. Valves are designed as per latest editions of IS / BSEN / AWWA specifications.

#### Applications:

Suitable for variety of liquids and gaseous media in water works, power plants, sewage plants, process industries, chemical and petrochemical plants for tight shut-off and control  
Ideally suited for isolating as well as throttling services

#### Special Features:

Rigid and sturdy design with minimum loss of head across the valve  
Low operating torques  
Eccentric seat geometry results in less wear and tear and longer life  
Self-cleaning and non-jamming seat design  
Lattice (flow through) Disc Design in Large size Valves for Low Head Loss



3800 MM BUTTERFLY VALVE,  
CUSTOMER: JP NIGREE



2100 MM TURBINE INLET VALVE,  
CUSTOMER: DLI POWER INDIA LTD.



3000 MM TURBINE INLET VALVE,  
CUSTOMER: TNEB. INDIA



200 MM CENTRIC BUTTERFLY VALVE,  
CUSTOMER: MAZAGAON DOCK, INDIA

# KBL - SUSTAINABILITY AND GROWTH INITIATIVE

Kirloskar Brothers Limited established a sustainability management framework which focuses on key aspects of economic, environmental and social sustainability.

A sustainable organisation creates sustainable value for the six forms of capital (Financial, Human, Manufactured, Intellectual, Natural and Social). KBL is a part of integral reporting movement at global level. Our company released its first integrated report in 2014 based in integrated reporting frame work.

KBL acknowledges the global concern on climate change and recognizes energy as one of the most important resource used in manufacturing and distribution. We monitor our environmental impact through measurement of important parameters related to use of resources such as energy, water and materials. KBL manufacturing plants utilize renewable energy and 30% of total electrical energy requirement are met through wind power. Our business sustainability is managed on the principles of triple bottom line.

## Profit

Views of our stakeholders are gathered to identify and develop our business opportunities. Customer perception survey is being conducted at defined frequency to understand the needs and expectations of customers. As a responsible organization, KBL adhere to highest compliance and anti-corruption policies and promote integrity via training to all employees.

## Planet

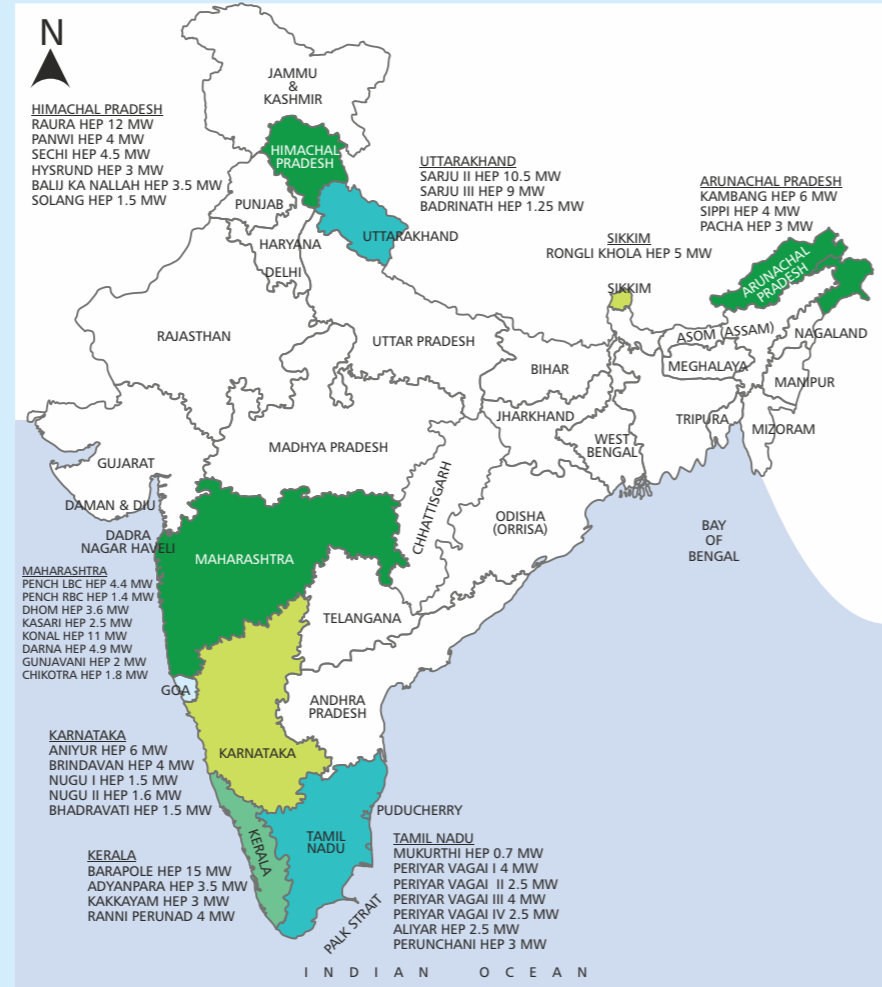
Initiatives were taken to minimize the environmental impacts of our own operations by applying environmental management programs. The Energy Conservation Cell consisting team of a Certified Energy Managers and Auditors carries out Performance Measurement of Pumps & Motors. This helps customers to reduce electricity consumption and improve over all energy performance.

## People

The sustainable development of societies is encouraged and supported by conducting awareness programmes and creating employment opportunities. Corporate Social responsibility initiatives foster long-term relationships with local societies.

Safety is of prime importance to KBL, in addition to certifications like Occupational Health and Safety Assessment Series (OHSAS 18001), training programs are organized regularly for employees at manufacturing plants, project sites and offices.

Kirloskar Brothers adopted practices according to the SA 8000 guidelines and abides by international standard and applicable labour laws as a part of commitment to provide a fair and humane environment to stakeholders. Corporate Office and Kirloskarvadi, Dewas, Sanand and Kaniyur manufacturing plants have implemented these practices and certified for SA8000.



## MAJOR PROJECTS



ANKHE KANAK HEP, 2 X 6.5 MW, VIETNAM



KONAL HEP 2X5.5 MW, MAHARASHTRA



ZHO-SUWEI , 1 X 3.607 MW, TAIWAN



PERIYAR VAGAI-II HEP, 2 X 1.25 MW, TAMIL NADU



RANNI-PERUNAD HEP, 2 X 2 MW, KERALA



PENCH RBC HEP, 2 X 0.7MW, MAHARASHTRA



BARAPOLE HEP, 3 X 5 MW, KERALA



ADYANPARA HEP, 2 X 1.5MW + 1 X 0.5 MW, KERALA



CHIKOTRA HEP, 1 X 1.8 MW, MAHARASHTRA



KASARI HEP, 1 X 2.5 MW, MAHARASHTRA



DHOM-BALKEWADI HEP, 1 X 3.5MW, MAHARASHTRA



PERIYAR VAGAI -II HEP, 2 X 2 MW, TAMIL NADU



DARNA HEP, 2 X 2 .45 MW, MAHARASHTRA



PANWI HEP, 2 X 2 MW, HIMACHAL PRADESH