Media Release

Voith GmbH & Co. KGaA
Center of Competence Corporate
and Market Communication EMEA
St. Poeltener Strasse 43
89522 Heidenheim, Germany
Tel. +49 7321 37-6157
Fax +49 7321 37-7107
www.voith.com

Increase of electricity in Pakistan: The first unit of the Tarbela IV hydropower plant connects to the grid

2018-03-13

- **Voith delivers complete electromechanical equipment for hydropower plant extension project**
- **Voith's asset management solution OnCare AM in use for the first time at a hydropower plant**
- **Expansion of hydropower potential to increase Pakistan's independence from fuel imports**

Islamabad. In the presence of numerous guests from the areas of politics, industry, and society, Shahid Khaqan Abbasi, the Prime Minister of Pakistan, inaugurated the first of three new machine units at the Tarbela hydropower plant on March 10, 2018. Voith is a key partner for this project and is supplying, installing and commissioning the entire electromechanical equipment, valued at around 200 million Euro. The customer for the project, financed by the World Bank, is the Water and Power Development Authority (WAPDA) of Pakistan. The project represents another important milestone for Voith in the Asian hydropower market.

Around 40 percent more power through Voith technology

The fourth expansion of the Tarbela hydropower plant raises the output of this plant, located in northern Pakistan, to a total of 4,888 megawatts. This represents a capacity increase of around 40 percent. For the expansion of the power plant – first inaugurated in 1974 – Voith has supplied three generators, three Francis turbines with an output of 470 megawatts each, automation systems, overhead 500-kilovolt transmission lines and the entire electromechanical power plant equipment. It is planned to have all three machine units providing power into the Pakistan energy grid by the end of May 2018.

Voith GmbH & Co. KGaA
Center of Competence Corporate
and Market Communication EMEA
St. Poeltener Strasse 43
89522 Heidenheim, Germany
Tel. +49 7321 37-6157
Fax +49 7321 37-7107
www.voith.com

Largest main inlet valve in the world

Part of the Voith order also included the design, production, delivery, and installation of three main inlet valves, which are installed between the pressure pipeline and the turbines in order to stop the flow of water in case of emergency and for maintenance work on the units. With a diameter of 7.5 meters and a total weight of around 750 tons each, they are regarded as the world's largest main inlet butterfly valves of their kind with double seals. The experts at the research and development center of Voith Hydro in Germany and China jointly developed the valve based on their global references. The valves were completely produced at Voith Hydro Shanghai, China.

Voith's global foot-print pays off

The Voith locations in Heidenheim, Germany and Shanghai, China have worked in close collaboration during the period of this complex and large-scale project. Voith Hydro Shanghai produced the Francis turbines, generators, main inlet valves, overhead 500-kilovolt transmission line and mechanical plant equipment, whilst Voith Hydro in Germany supplied the electrical equipment and the automation systems.

"Due to the size and complexity of this important project for Pakistan, there was a need for close cooperation and constant communication with all involved parties. This included the end customer WAPDA, the customer engineering consultant as well as other Chinese subcontractors at the site," explains Uwe Wehnhardt, CEO of Voith Hydro and Member of the Corporate Board of Management. "Our global development and production foot-print and deep experience of working closely with Chinese EPC contractors definitely paid off for this."

Hydropower plant premiere for the OnCare AM asset management solution

The integration of Voith's OnCare AM in the Tarbela IV power plant is the world's first. The system, which was originally developed for paper machines, is used for planning all maintenance processes in the power plant. The system compares the key output figures, reads the stored data and reacts to any discrepancies. In this way, the customer is able to identify potential optimizations and plan preventive maintenance measures, thereby allowing the operator to greatly reduce unplanned downtimes and increase the availability of its plant. Thanks to the use of OnCare AM, Tarbela IV is regarded as an example of intelligent hydropower plants and a pioneer for other plants around the world.

Voith GmbH & Co. KGaA
Center of Competence Corporate
and Market Communication EMEA
St. Poeltener Strasse 43
89522 Heidenheim, Germany
Tel. +49 7321 37-6157
Fax +49 7321 37-7107
www.voith.com

About the Tarbela hydropower plant

The Tarbela retaining dam is one of the biggest earth fill dams. Around 100 kilometers to the northwest of Islamabad, it dams the Indus to form a lake that is about 250 square kilometers in size. The dam plays an important role for Pakistan's economy in three different ways: It stores water for irrigation, reduces flooding and generates energy. Around 16 percent of Pakistan's electricity demand is produced here. Expanding the output helps to make the country less dependent on fuel imports and cover its constantly growing need for energy. This growth leads to frequent power failures and blackouts, illustrating how urgent the need is to build up the power supply.

Pakistan's hydropower potential is estimated at around 40,000 megawatts. To date, the country is only using around 7,300 MW. By 2025, Pakistan's government is planning to add some 20,000 MW more output from hydropower and increase the percentage of hydropower in the national energy mix from 34 to 70 percent.

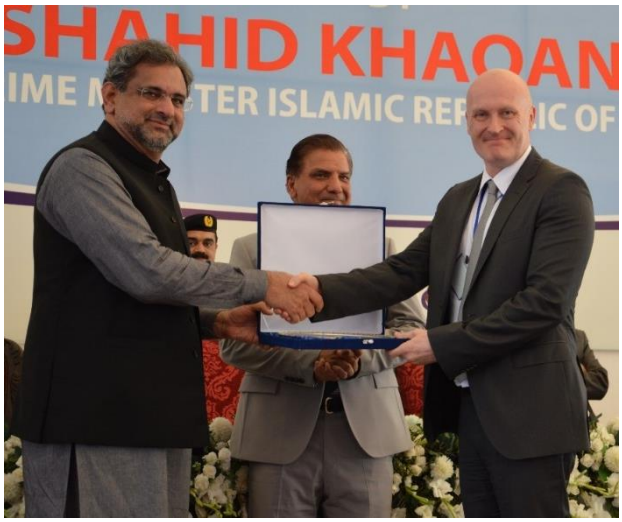
The importance of hydropower

Renewable energies are without doubt the most sustainable response to growing global energy requirements. Hydropower plays a crucial role in sustainable and environmentally compatible electricity generation from renewable energies and is the largest renewable energy source for electricity generation worldwide.
All over the world it makes an indispensable contribution to a stable power supply and thus to economic and social development – in industrialized countries and also in regions seeing strong growth. Since the early days of hydropower exploitation, Voith has been a leading supplier of this technology and is constantly refining and improving it.

About the company

Voith is a global technology group. With its wide range of plants, products, services and digital applications, Voith sets standards in the markets for energy, oil and gas, paper, raw materials and transport & automotive. Founded in 1867, Voith today has more than 19,000 employees and earns 4.2 billion euros in sales. It has locations in over 60 countries and is one of the largest family-owned companies in Europe.

Voith GmbH & Co. KGaA
Center of Competence Corporate
and Market Communication EMEA
St. Poeltener Strasse 43
89522 Heidenheim, Germany
Tel. +49 7321 37-6157
Fax +49 7321 37-7107
www.voith.com



Caption 1: Pakistani Prime Minister Shahid Khaqan Abbasi (left) thanked Stephen Lewis (right), President of Voith Hydro China for the successful project execution. In the middle of the picture: Lt. General (Rd) Muzzammil Hussain, Chairman of the Water and Power Development Authority (WAPDA) of Pakistan.

Caption 2: The hydropower plant Tarbela in Pakistan.

Contact:
Marian Möbius
Manager Product & Corporate Communication EMEA
Key Account Voith Hydro
Tel. +49 7321 37 - 6157
Marian.Moebius@Voith.com
www.voith.com

Voith GmbH & Co. KGaA
Center of Competence Corporate
and Market Communication EMEA
St. Poeltener Strasse 43
89522 Heidenheim, Germany
Tel. +49 7321 37-6157
Fax +49 7321 37-7107
www.voith.com

Twitter
https://twitter.com/voithgroup
https://twitter.com/voith_hydro
https://twitter.com/voith_paper
https://twitter.com/voith_turbo
https://twitter.com/Voith_DS
https://twitter.com/Voith_Career

LinkedIn
https://www.linkedin.com/company/voithgroup
https://www.linkedin.com/company/voith-hydro
https://www.linkedin.com/company/voith-turbo
https://www.linkedin.com/company/voith-paper
https://www.linkedin.com/company/voith-digital-solutions

YouTube
https://www.youtube.com/user/VoithTurboOfficial
https://www.youtube.com/user/VoithPaperEN
https://www.youtube.com/c/Voith_Hydro

Instagram
https://www.instagram.com/voithgroup/

Facebook
https://www.facebook.com/VoithGlobal/