

SUCCESS STORY

Sludge drying at Jebel Ali
Sewage Treatment Plant
Dubai, United Arab Emirates



SEPARATION PRODUCE BIO-SOLIDS FOR USE AS FERTILIZER AND SOIL IMPROVER

ANDRITZ GOUDA PADDLE DRYERS
FOR ANY TYPE OF MUNICIPAL SLUDGE

ANDRITZ

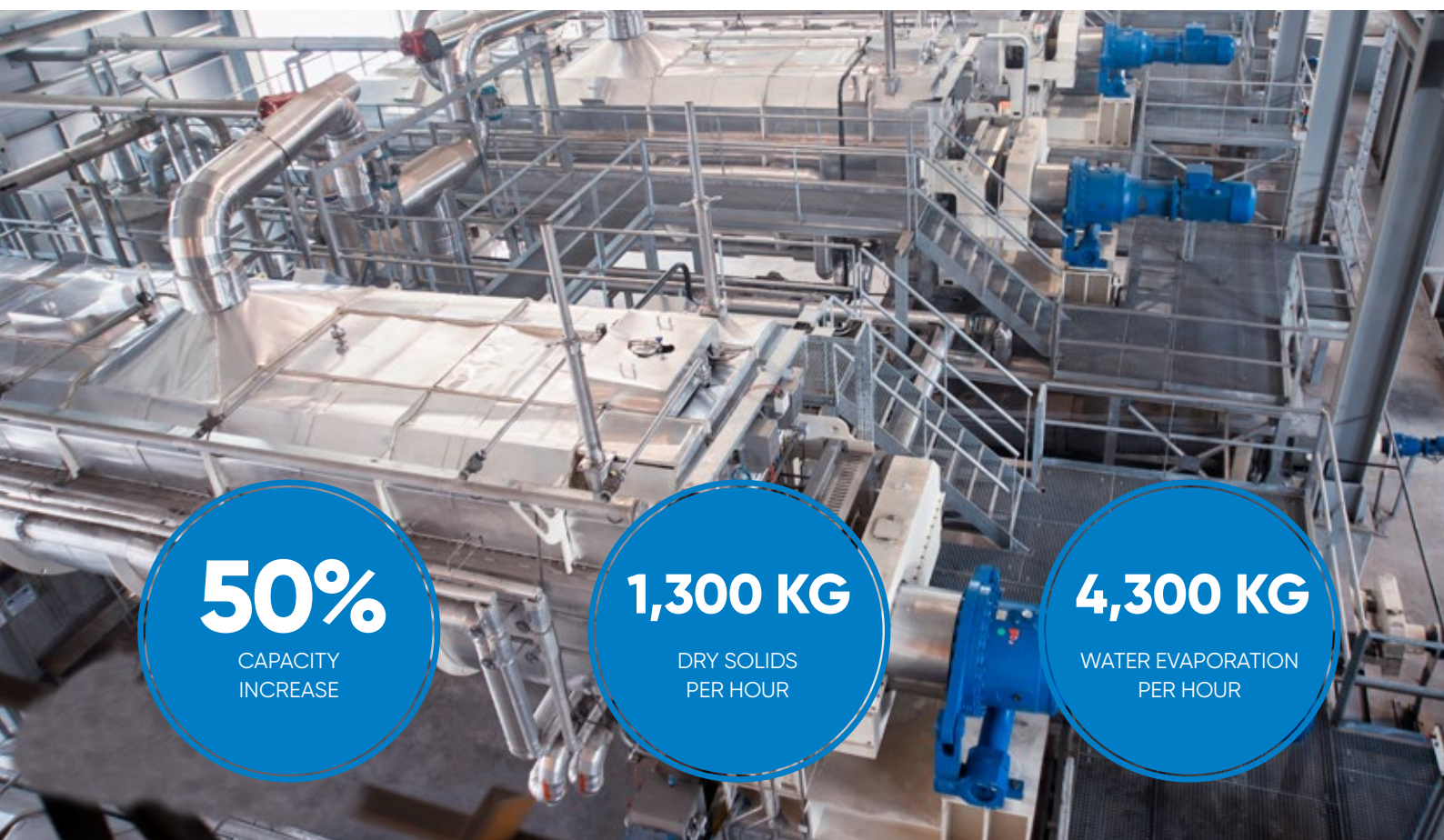
ENGINEERED SUCCESS

The challenge

Treat all of Dubai's sewage according to international standards

As of October 2020, millions of visitors are expected in Dubai for the World Expo. Besides that, the fast increasing population growth in Dubai is a fact that cannot be ignored. With these key drivers in mind, the Municipality of Dubai has decided to expand the existing wastewater treatment capacity of the city. The new plant is an extension to the fully operational Phase 1 Jebel Ali sewage treatment plant located on a 670 ha open desert site in the Emirate of Dubai. Jebel Ali Phase 2 will increase the existing average

daily capacity from 300,000 m³ of wastewater treated to around 670,000 m³ on a daily basis by adding a new module for 370,000 m³/day. When combined,, the new facilities will treat the equivalent amount of sewage water originating from a city of 3.35 million inhabitants, according to international standards, and without environmental nuisance. Both plants together will allow the city to cut back the use of costly desalinated seawater by 700,000,000 liters per day through re-use applications such as irrigation.



Paddle dryers, type 14W190

Our solution

State-of-the-art paddle dryers to valorize the sludge

ANDRITZ has been contracted in Dubai to design and supply a sludge drying plant. The purpose of drying the sludge is to reduce its volume, make it safer to handle, and suitable for re-use on the land. At the Jebel Ali plant, ANDRITZ will initially install three paddle dryer lines, with space and facilities for a fourth unit. The paddle dryer is a contact dryer with indirect heat transfer designed to accept different types of sludge, which makes it suitable

for centralized drying plants such as Jebel Ali. Each line will consist of a paddle dryer model GPD 17W300, the largest-size ANDRITZ paddle dryer, and will be supplied with all ancillary equipment, including a heating system. Each of the three paddle dryers will be able to dry 5.6 tons per hour of dewatered sludge, from 22% DS to 92% DS. The entire drying plant is designed to handle 453 tons of sludge per day.

Results

An environmentally friendly solution that also helps reduce costs

One of the two main benefits for the Dubai customer is the reduced consumption of costly energy. In order to evaporate the water, the ANDRITZ Gouda paddle dryers are heated by thermal-oil boilers using renewable biogas – the by-product of the sludge digestion process – as their fuel source. Each dryer will be able to evaporate 4300 kg of water per hour. Moreover, the waste heat in the exhaust gas discharged by the dryer condensers

will be recovered and used heating the sludge in the digestion process. The second key feature of the Jebel Ali sludge drying plant is its nature-friendly end product. Instead of the usual landfill disposal, which is expensive and not environmentally friendly, the process generates bio-solids, 1300 kg per line per hour, that Dubai can use as fertilizer and soil conditioner in their numerous landscaped areas.

"The ANDRITZ team and their ANDRITZ Gouda paddle dryer technology have enabled us to design and build a compact, energy-efficient plant that produces dry bio-solids, a sustainable, environmentally friendly material for use as fertilizer and soil improver in the numerous green areas feature that differentiates Dubai from other desert cities."

YVES DE RUE

Project Director BESIX-LARSEN & TOUBRO Joint Venture



WHAT'S YOUR SEPARATION CHALLENGE?

ANDRITZ Separation is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years, we have been a driving force in the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining & minerals. As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge. **Ask your separation specialist!**

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