

# TERRATEC SECURES AMT-II HARD ROCK TBM ORDER



*Patel Engineering will utilise a TERRATEC open hard rock TBM for the Municipal Corporation of Greater Mumbai's (MCGM) AMT-II water transfer project, in India.*

**T**ERRATEC is pleased to announce yet another TBM order in India, this time for the Municipal Corporation of Greater Mumbai's (MCGM) Amar Mahal II Tunnel Project (AMT-II), in Maharashtra. Patel Engineering Limited has selected TERRATEC to provide a 3.2m diameter hard rock open gripper TBM to complete two drives for its 5,531m long water transfer tunnel contract. It will be the 25th machine TERRATEC has delivered to

India in the last six years (more than all other TBM manufacturers combined in the same period).

The AMT-II tunnel is one of a number of projects currently being undertaken by MCGM to augment and improve its water distribution system in order to meet increased demand and ensure reliable supply. The 5.5km tunnel will run from the Trombay High Level Reservoir to Hedgewar Udyan

(Ghatkopar), via the Trombay Low Level Reservoir, at an average depth of 80 to 90m.

In order to work effectively in the mixed Basalt expected along the project alignment, the tough yet versatile TERRATEC open gripper TBM will be equipped with 22 heavy-duty 15" back-loading disc cutters, as well as anti-wear plates and lubrication systems to assist with wear prevention and dust

suppression.

In addition, the machine will be fitted with a custom made probe drilling system for probing and grouting of the ground ahead of the TBM; as well as rock bolters, a steel arch erector and shotcrete pump to assist in ground support activities as the TBM progresses along the alignment.

The order comes following the very strong performance of numerous TERRATEC TBMs that have been used in India in recent years.

"I think it is common

knowledge that TERRATEC is now a market leader in India, for all types of TBMs, and whilst a lot of our business is from returning customers – this is true from a global as well as a national perspective – we enjoy working with new clients, such as in this case," says Bruce Matheson, TERRATEC's Sales and Marketing Director. "New clients come to us because they hear about our flexibility and efficiency and they are not disappointed. We work with customers throughout the entire boring life cycle, no matter the size of the project, from pre-bid conception through to the completion

of tunnelling and machine demobilisation, every step of the way. It's obviously appreciated by the fact that our new clients then return to us again and again."

TERRATEC's continuing successes on projects such as Phase III of the Delhi Metro, Lucknow Metro, Ahmadabad Metro, Mumbai Metro and Pune Metro have been the result of excellent tailor-made robust TBM design, prompt onsite assistance, a readily available stock of TBM spares and specialised support throughout the tunnelling operation.

## TERRATEC EPBMS GEAR UP FOR TUNNELLING ON PUNE METRO

**T**ERRATEC is pleased to announce the delivery of the first two of three 6.61m diameter Earth Pressure Balance Tunnel Boring Machines (EPBMs) that will be used by Gulermak-Tata Projects Limited for its underground works contracts on Line 1 of the new Pune Metro Rail Project, in Maharashtra, India, following successful factory testing of the S78 and S79 machines this month.

Earlier this year, Maharashtra Metro Rail Corporation Limited (MahaMetro) announced that the joint venture had won both of the twin-tube tunnel packages on the new 16.56km-long north-south metro corridor. The 5km underground section – which runs from the College of Agriculture in Shivajinagar to Swargate and has five stations – is considered the most challenging portion of the line, as it passes under the densely

populated areas of Kasba Peth, Budhwar Peth and Mandai market.

"We are now ready to launch TERRATEC TBMs S78 and S79 – which will be known as 'Mutha' and 'Mula' – as both these machines were successfully tested at TERRATEC's factory by our engineers and found fit to be despatched to our Pune Metro site," said Ashish Dwivedi, Geotechnical Manager for the

*TERRATEC delivers the first two of three TBMs that will be used by Gulermak-Tata Projects JV for the underground works on Line 1 of the Pune Metro, in India.*





Gulermak-TPL JV. "TERRATEC TBMs have a very successful track record in India, with seven of the company's machines currently completing tunnels for Mumbai Metro, and we expect to complete excavation on Pune Metro within the project schedule for our 5km of Line 1 TBM tunnels."

Major challenges on the project will include tunnelling beneath century-old surface structures, crossing under the river Mutha and TBM lowering and dismantling in the very built up areas of Budhwarpath and Mandai stations with limited access available.

The versatile TERRATEC EPBMs have robust mixed-

face dome-style cutterheads designed to work effectively in the compact Basalt that is expected on these contracts at pressures of up to 4 bar. As the TBMs progress, they will install 1,400mm wide by 275mm thick pre-cast concrete lining rings, which consist of five segments plus a key.

The TBMs have already been despatched from TERRATEC's factory in China and are currently being shipped to the port of Mumbai. Both machines are expected to arrive in November and will be transported to Pune where they will be assembled and then tested on site in mid-December.

Pune is an industrial city that

has witnessed much growth in the areas of corporate and industrial infrastructure over the last decade. Existing roads in the city currently carry an average of 8,000 commuters an hour in each direction. The city experiences high traffic during peak hours that leads to long hours of traffic jams along with increased pollution.

The Pune Metro aims to provide a solution to the above issues by offering a safe and eco-friendly journey with a 50% reduction in travel time. When complete, in 2022, Pune's Metro network will comprise three rail corridors with a total length of 54.5km.

In recent years, TERRATEC has emerged as the leading TBM

supplier in the Indian market, having supplied 24 TBMs in the last six years alone (more than all other TBM manufacturers combined over the same period). TERRATEC's continuing success on projects such as Phase III of the Delhi Metro, Lucknow Metro, the Ahmadabad Metro and Mumbai Metro is a result of tailor-made robust TBM design, prompt onsite assistance, a readily available stock of TBM spares and highly-skilled specialised TBM support throughout tunnelling operations.

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