UNDER
Industries

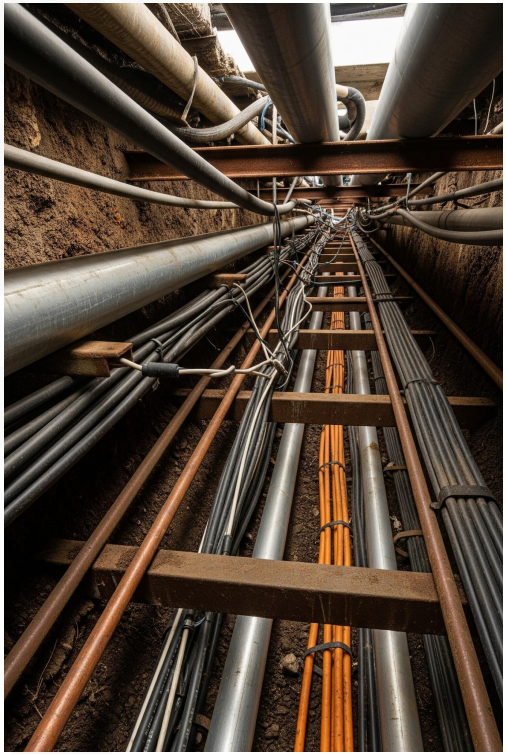
Underground Automation

Redefining Infrastructure with Micro Tunnel Boring Robots - MTBRs

Innovate Mobility Infrastructure - September 16th, 2025
Under Industries - Innovationspark Zürich | Wangenstrasse 68, CH-8600

The Problem

Sustainable development of underground infrastructure



Existing Solutions

Three methods to lay underground pipes

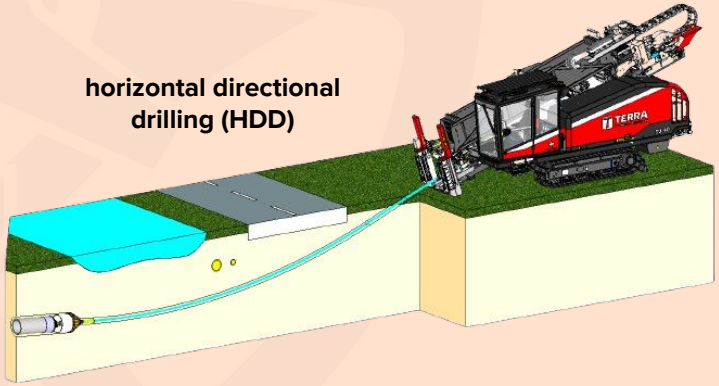
cut-and-cover

trench-based methods

trenchless methods

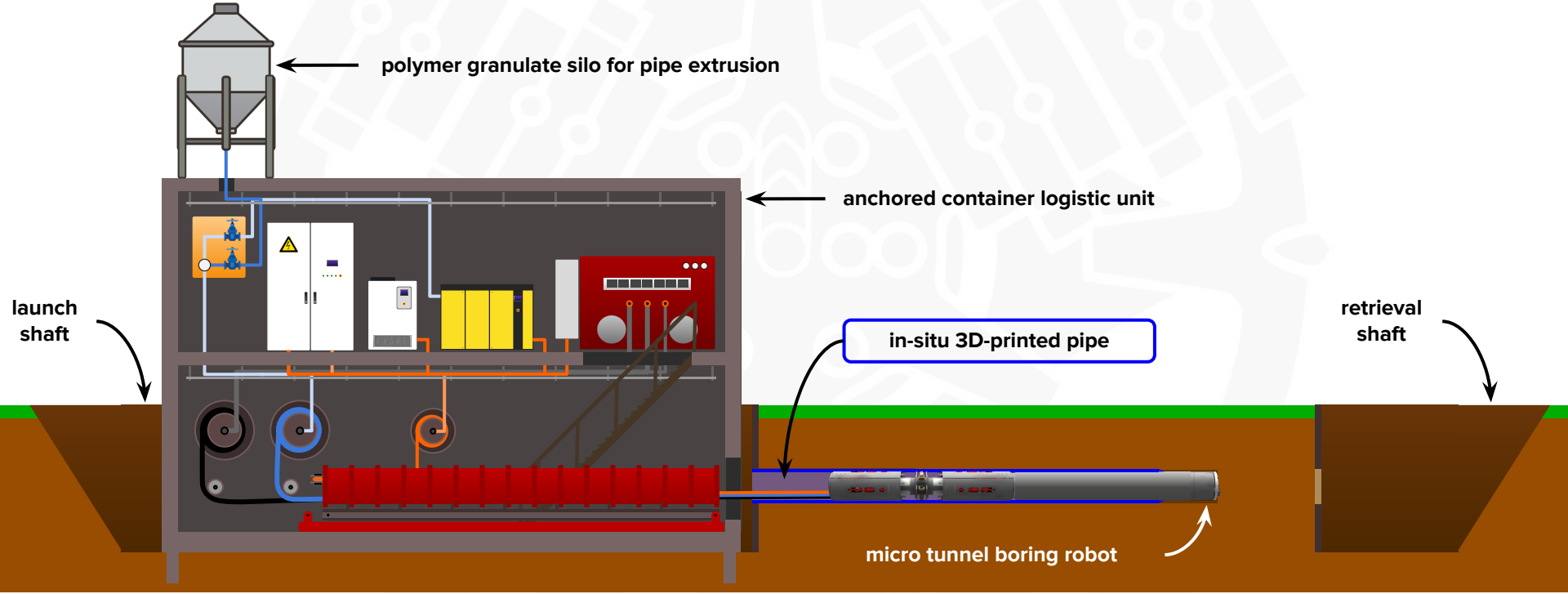
microtunneling

horizontal directional drilling (HDD)



Our Solution

A Micro Tunnel Boring Robot (MTBR) to autonomously lay underground pipes



Methods Comparison

	Cut-and-Cover	Conventional Microtunneling	Horizontal Directional Drilling (HDD)	Under Industries
max. length	∞	2,000 m	300 - 1,500 m	∞
min. curve radius	-	500 m	34 m	< 30 m
borehole strokes	-	2	3	1
speed	1.0 m/h	2.0 m/h	0.7 m/h	3.0 m/h
pre-fabricated lining	yes, product pipe	yes, support segments + product pipe	yes, product pipe	no, continuous in-situ product pipe extrusion
impact on operations	Trenches, road and rail closures	Aligning segments, welding	Installation of segments and expansion, segment welding	none
Estimated end-customer price per meter	500 - 1'000 CHF/m	2'500 - 3'000 CHF/m	2'000 - 2'500 CHF/m	1'500 CHF/m
sound emissions	high	medium		low

Not Just a Concept

Three generations of MTBR development for technology validation

3x MTBR Prototypes

15m 3D-printed polymer pipe

2x innovation awards, 1x NABC champion

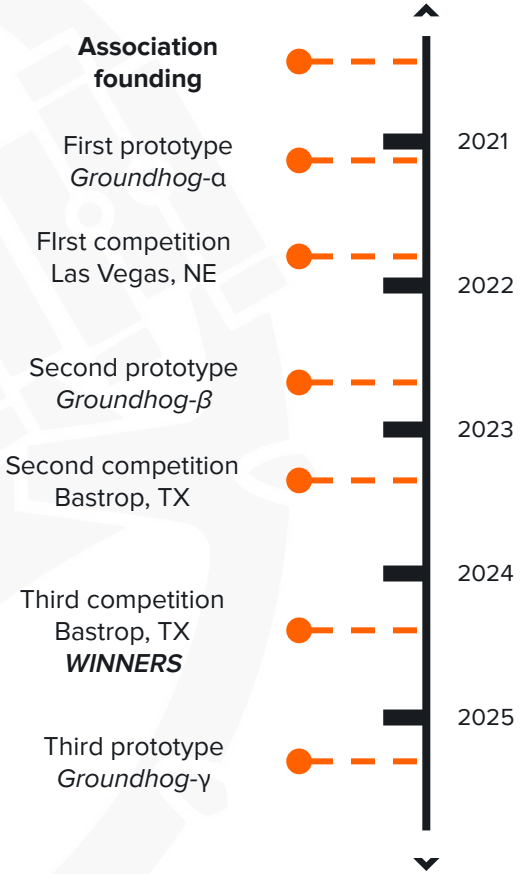
15 meters of 3D-printed pipe at Innovationspark Zürich

Groundhog γ: The third MTBR prototype

Background

A team of brilliant students stretching the boundaries of innovation

Swissloop Tunneling Competition Team, Bastrop, TX, April 2024.



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The Team

Bringing together expertise from various fields

Eugenio Valli

Co-founder, CEO

Philippe Kientsch

Co-founder, CTO

Doré de Morsier

Co-founder, clients & deals

Stefan Kaspar

Founding advisor

Agnes Petit Markowski

Dipl Dr.sc ETH Zürich

MOBBOT founder, BoD TeraSol & Groupe JPF, SNSF Foundation Council

Industry advisor

Next Steps

Market traction and validation, feasibility study, and commercial pilot

Late 2025 — Which project profiles are suitable for an initial commercial pilot with MTBR?

- Understand applications for -150 kV power grid
- Learn market and industry requirements

Cooperation with planning and construction companies

Q4 2025 - Q2 2026 — Bringing together project partners for an innovation initiative involving field trials

Feasibility study & milestones in field trials

Selection & letter of intent for commercial pilot

H2 2026 — Start of technical planning for commercial pilot

The Future of Mobility

Can what we do in *micro* be scaled to *macro* in the future?

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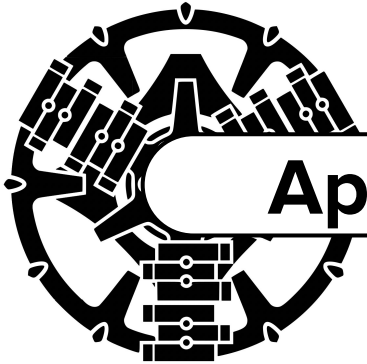
Thank you!



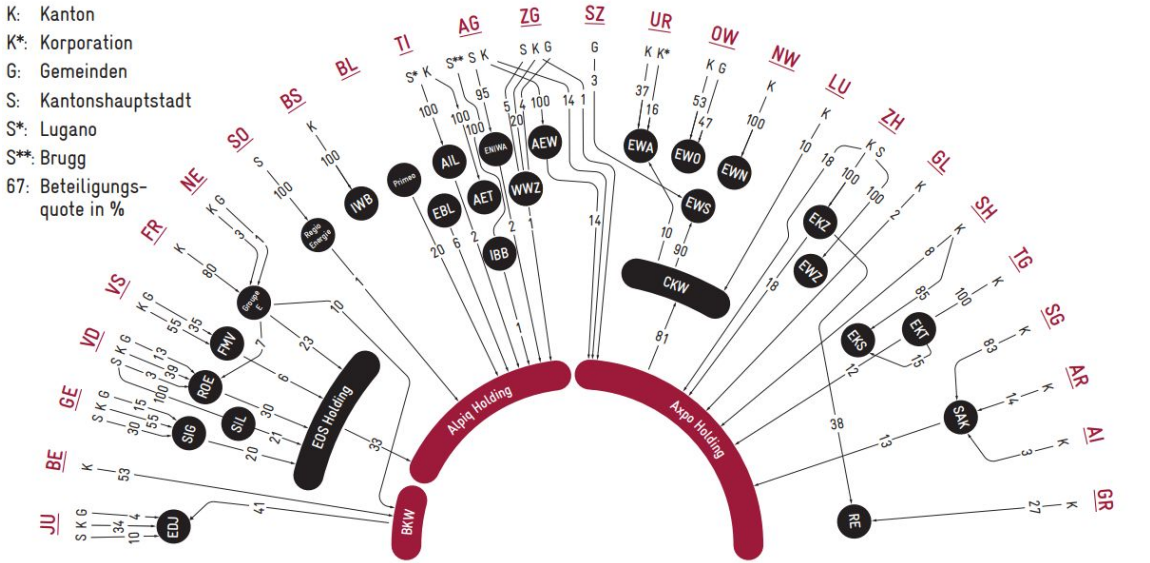
Appendix

Swiss Landscape

The Swiss electricity grid and its players

Staatlich dominierte Stromerzeugung und -verteilung

Die Schweizer Stromversorgungsunternehmen sind über die Beteiligungen der Kantone und vieler Gemeinden zu fast 90 % im Besitz der öffentlichen Hand.



Quelle: Eigene Darstellung auf Grundlage von Geschäftsberichten

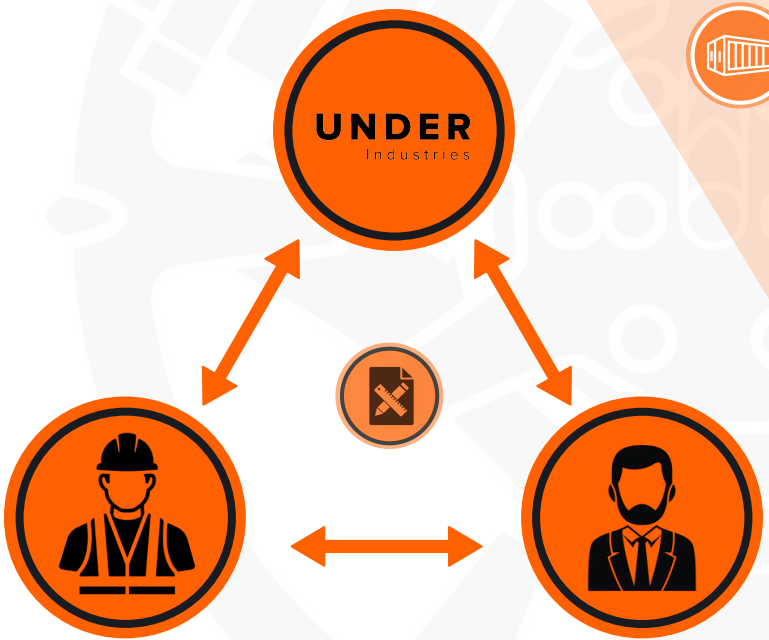
Grafik: Avenir Suisse

Business Model

Hybrid roadmap to MTBR Sales

Partnerships for innovative commercial pilots to validate technology and market, and build trust across the value chain.

2026 - 2030

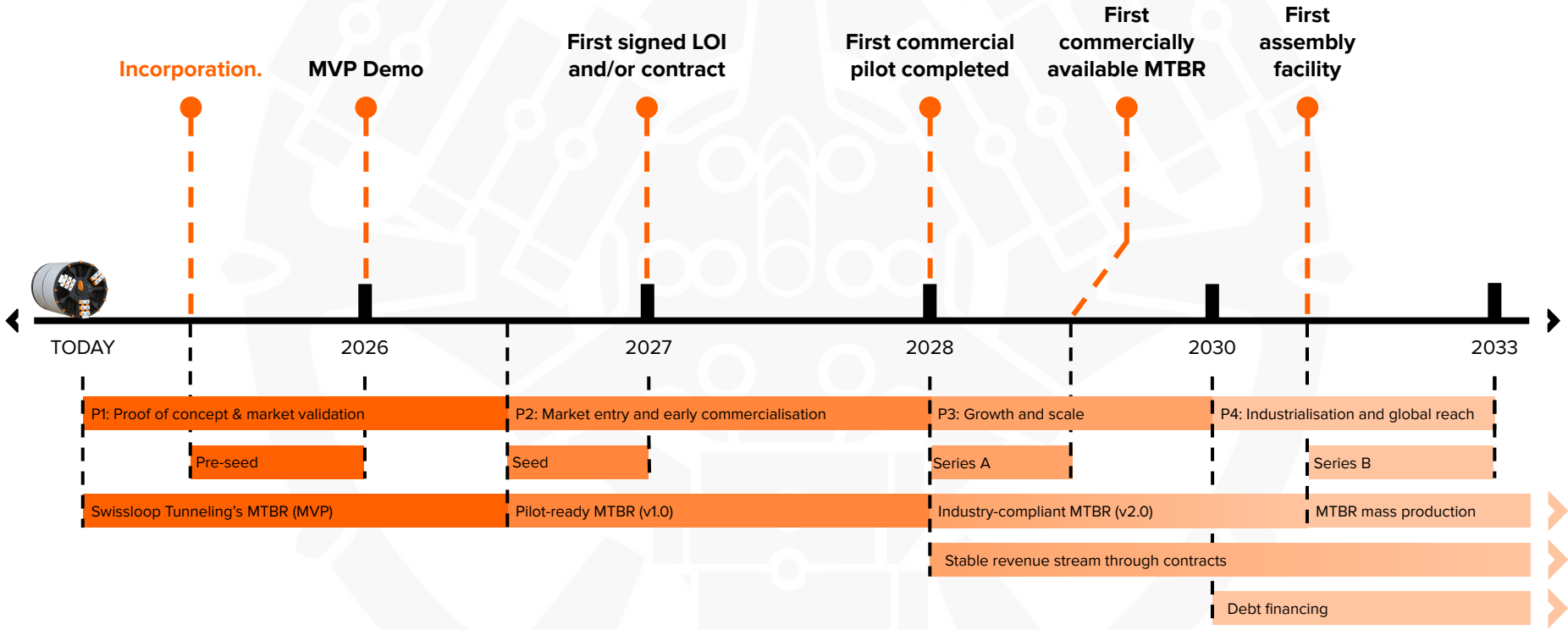


Fully industrialised production of MTBR Sales and customer service.

2030 +

Milestones

From proof-of-concept to market entry and commercialisation



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