Heidelberg Materials

Technology as a value driver

Leading in efficiency and scaling of innovations

CMD 2025 | Axel Conrads, Chief Technical Officer

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Global talent pool

Standard operating models

R&D and knowledge multiplier

Economies of scale

Speed of implementation

Linking global advantages with technology to accele-rate and multiply efficiency gains

Leveraging global set-up to accelerate efficiencies through various initiatives

	Global talent pool	Standard operating models	R&D and knowledge multiplier	Speed of implementation	Economies of scale
 CCS	●	●	●	●	
 Carbon reduction levers		●	●	●	●
 Calcined clay		●	●	●	●
 HROC[1]	●	●	●	●	●
 Autonomous trucks		●	●	●	●
 Transformation Accelerator		●	●	●	●

1 Heidelberg Materials Remote Optimisation Centre

CCS – successful completion of first industrial-scale CCS plant in Norway

Talents

- Moving skilled engineers across projects and countries
- Ensuring talent pipeline

Multiplier

Leveraging experiences and derisking through pilots (e.g. Mergelstetten, Devnya)

Operating models

As first of its kind: develop new SOPs and digital solutions to enable future roll outs easily

Speed

Leveraging experiences for other projects (e.g. Padeswood)

Pioneering advanced technologies

Ability to multiply and scale to the next projects

First industrial-scale CCS plant with up to 400kt CO_2/p.a. capacity

Carbon reduction levers – unlocking further CO_2 savings utilising all levers

Scale

- 50 different levers to ensure optimum coverage
- Worldwide application in all our cement plants

Multiplier

Piloted in two plants first, local best practices to include in global rollout

Operating models

Tracking through common platform, embedded in plant operating model for future follow up

Speed

Common lever list for all our plants – within 3 months

Utilise best practices and scale in all applicable plants

Continuous improvement

1.5mt of annual CO_2 reduction with limited CAPEX providing €50m savings in OpEx

Calcined clay – cementitious material with global potential

Multiplier

Sophisticated R&D-proven superb applicability, and CO_2 advantage

Operating models

- Core competence developed for various scalable production methods
- Key knowledge on raw material characteristics

Scale

From own plants, to retrofits of rotary kilns to clay addition without modifications

Speed

Rapid roll out in all areas based on scalable technology

- SCM[1] with 80% lower CO_2
- Comparable strength characteristic
- Scale fast – with different technical realisation paths
- **Replacing clinker with calcined clay in 15 plants**

1 Supplementary cementitious materials

HROC – Heidelberg Materials Remote Optimisation Centre to be scaled globally

Talents
20 nationalities support HROC with expertise in Dallas

Operating models
Enhanced standardisation

Multiplier
One central pilot in North America

Speed
From idea to realisation in one year

Scale
Partial solutions already in remote grinding plants worldwide, new areas to follow in the next 2 years

- Command and control centre for all NAM cement operations
- Recruiting top staff
- Synergetic improvement of all plants across all relevant KPIs and costs
- **Monitoring and control platform for 12 cement plants in NAM with sizeable margin upside**

Autonomous trucks – global rollout with huge scalability potential

Operating models

Developed at pilot site, easing global rollout

Multiplier

Team leveraging experiences for global roll out

Speed

Parallel rollout in min. 3 sites at the same time, 30 sites in 3 years (100 trucks)

Scale

- One global contract with supplier
- Leverage experience on other user models (drills, Front End Loader) and different partners

- Autonomous driving for industrial purpose
- Solution for hard to recruit positions
- Brand agnostic and retrofittable
- **Payback < 2 years, implementation plan for >30 sites worldwide**

Transformation Accelerator – achieving efficient and sustainable cost structure

Operating models
Blueprints and technological advancement

Multiplier
Leveraging automation and digitalisation as well as cost-effective OpEx savings across all business lines

Speed
Analysis to global rollout in 2 months, worldwide execution in 2 years

Scale
Central approach, worldwide application in all countries and all business lines

- Global efficiency programme
- Benchmarking on productivity and cost across all business lines
- Leveraging technology and AI to automate and standardise processes
- **€500m of recurring savings through scalable technology by end of 2026**

Global advantages accelerating efficiency

Pulling all levers to make decarbonisation a success story – from conventional to CCUS

Implementing scalable innovation at fast pace

Becoming the most efficient operator in heavy building materials

Next step: “Plants of the future”

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