Heading toward the polysius® green cement plant

May 23, 2019 | Dr. Luc Rudowski, Head of Product Management, Technology, Innovation & Sustainability thyssenkrupp Industrial Solutions AG, Business Unit Cement Technologies
Sustainability has three dimensions
To save our future we need to act on three dimensions
The UN Sustainable Development Goals
Almost all countries of the world are committed
7%

Cement’s share of total CO$_2$ emissions
Action required! For more sustainability in cement production
Cement sector’s share of total CO\textsubscript{2} emissions rises

Sources: OneStone Research, Global Carbon Atlas
Action required!

Pain points in the cement production process

- Air pollutants
- Limestone calcination
- No recycling of concrete
- Energy intensive
- Resource intensive
Our vision

Five areas to improve the sustainability of cement production process

- emissions
- resources
- smart
- energy
- binder
Grey2Green – the polysius® green cement plant
We start our journey with four solutions

- polysius® carbon neutrality
- polysius® NOx reduction
- polysius® fuel substitution
- polysius® activated clay
Solution 1: polysius® carbon neutrality
Capturing, storing and using your plants’ CO₂ emissions
Solution 2: polysius® NOx reduction
Protecting the environment from hyperacidity

- Proven technology: 11 high dust SCR solutions sold – 3 in China
- Reduced NOx emission down to 100 mg/Nm³
- Cost-efficient technology
- Future-proof technology
Solution 3: polysius® fuel substitution
Substituting the use of fossil fuels in your cement plant by 100 %

- Simple and low requirement for AF preparation
- Reduced fossil fuels
- Saved costs by up to 100 % AF
- Secured cement quality and emission limits
Solution 4: polysius® activated clay
Reducing the clinker factor of your plants down to 50 %

- Biggest potential for clinker factor reduction
- 70 % CO₂ reduction compared to clinker
- Significantly decreased production costs
- Maximum leverage of local resources
Let’s discuss on the carbon neutrality costs and the business impact
Cost impact of sustainable development in cement business

If the cement price doubles...

☑️  ... the price for a residential house would increase by 0.5 %

Residential house  17.4 t cement, ~ 58 m³ concrete
1,350 € additional costs  i.e. 0.5 % price increase for a residential house (250 k€)

☑️  ... the price for a bridge would increase by ~1 %

Viaduc de Millau (France)  2,460 m long, 343 m high, 127,000 m³ concrete
3 Mio. € additional costs  i.e. 0.8 % price increase for the bridge (400 Mio. €)

Is it worth the CO₂ reduction?
Our vision.

Your decision.

Learn more on www.greencementplant.com
#grey2green