Paris Session 2022

New cross-linking technologies for power cable insulation

SC B1 Insulated Cables - PS3 - Q2

What trend can be foreseen in cable insulation material development, including optimization of XLPE, shift to thermoplastic solutions, or others?

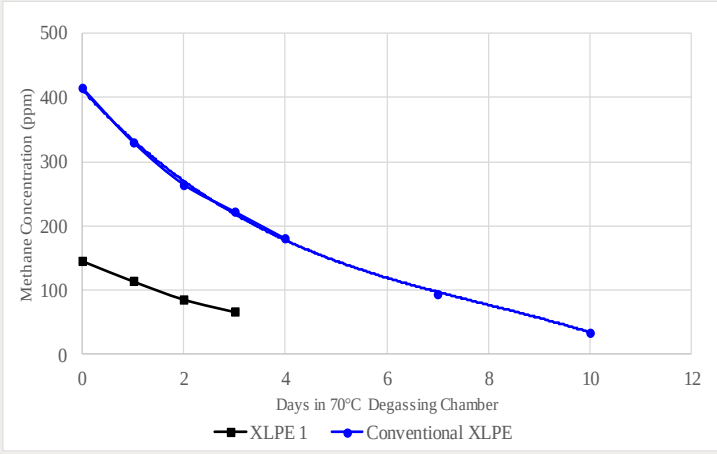
Roshan Aarons, Germany

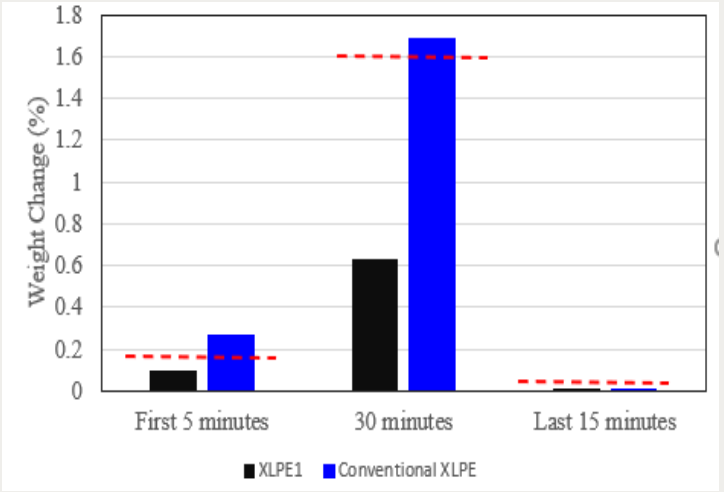
New cross-linking technologies for power cable insulation

- Rapid urbanization, the growth of renewable energy and upgrade of the existing grid are intensifying demand for reliable high voltage cable systems. Cable manufacturers need solutions that enable faster cable production times, lower emissions, and higher transmission rates.

- Current cross-linked polyethylene insulation systems require degassing periods of up to a few weeks to reduce the methane content that is typically generated as a by-product. This extends production cycles and increases business costs.

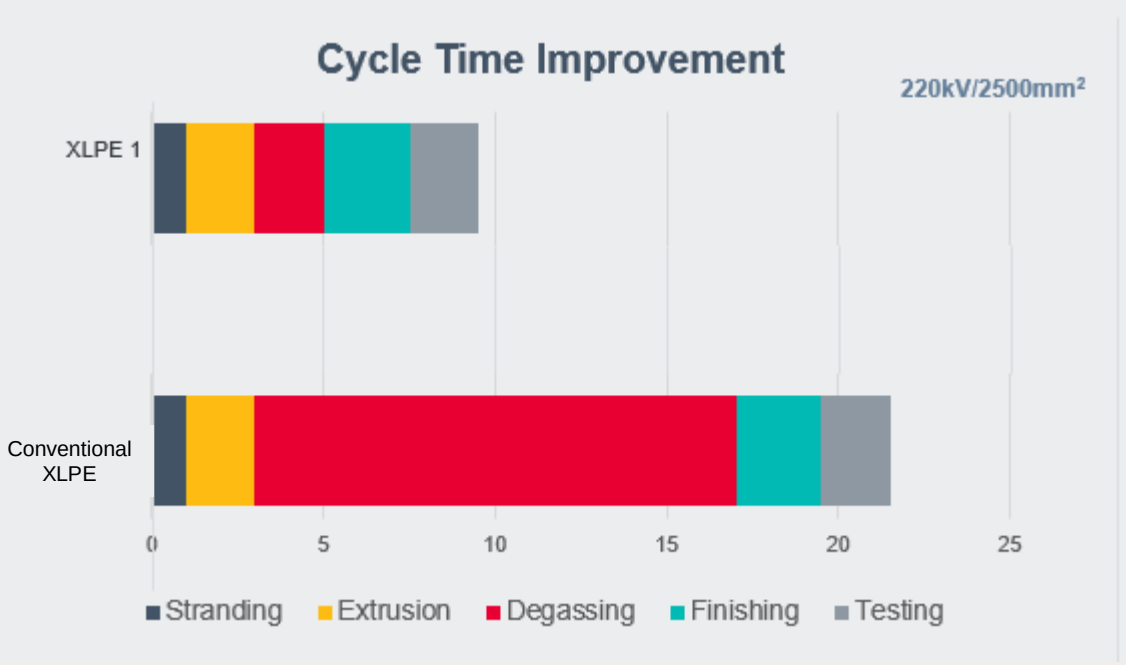
- **Next Gen XLPE solutions offering Quasi "Zero" degassing** reduces cable delivery time, inventory cost, energy consumption and releases the degassing chamber bottleneck issue





New cross-linking technologies for power cable insulation

- Lower energy consumption from operating degassing chambers
- Reduced inventory cost
- Improved cycle time and potential capacity increase by de-bottlenecking of the degassing process



Sustainability impact

- Cable production phase: Reduced degassing energy consumption and reduced methane emissions lead to lower manufacturing CO_2 footprint vs conventional XLPE
- Cable use phase: Lower transmission losses during the Use phase vs thermoplastic insulation, due to lower thermal resistivity of XLPE (3.5mK/W vs. 4.5mK/W)