Decarbonizing Cement





IFC Cement Decarbonization Tool

Step One in Your Decarbonization Journey

Building on its \$7.1 billion cumulative cement industry investment portfolio, IFC has developed a tool to help cement companies in emerging markets to start planning the transition. The tool helps firms make an initial high-level assessment of major decarbonization options.

Rooted in IFC's global industry knowledge of over 50 years, the tool helps firms explore five decarbonization measures at the plant level:



Alternative

fuels



Electric power supply mix

wer Blended ix cement

Waste-heat recovery



configuration changes

The resulting analysis drives key strategic choices. It identifies anticipated greenhouse gas (GHG) reductions, high-level CAPEX needs, and estimated payback periods. This information then helps create an approximate Marginal Abatement Cost Curve. With these results, IFC's tool can become the basis for decarbonization strategies and new climate-friendly investment projects.

The Industry Context

Moving to Net Zero

The cement industry is the source of over seven percent of GHG emissions. To reach net zero by 2050, it must decarbonize at a rate of 3 percent per year by 2030, the International Energy Agency estimates.

The first step of becoming a net zero cement producer requires taking a strategic stock of major commercially-proven decarbonization measures, drawing on advisory and investment support from a trusted global partner sharing a client's vision for sustainability, impact, and longterm success.

Example of the tool's outputs for a 5,500 tpd clinker integrated cement plant:

The charts below show the carbon footprint before and after the decarbonization measures were considered. The CAPEX is estimated at \$70m+ with the simple payback time. Ranging between less than eight years.







Clinker Production Specific CO_2 Emission Rate (kg CO_2/t)

Cement Production Specific CO₂ Emission Rate (kg CO₂/t)

Decarbonizing Cement





FOUR STEPS

We will support your company in defining needs, developing strategy, guiding implementation, and providing financing. Our tool has four components:



CONTACT US

Zor

Femi Akinrebiyo Manager, Global Manufacturing Fakinribeyo@ifc.org CementDecarbTool@ifc.org

Alexander Sharabaroff Senior Energy Specialist Asharaboff@ifc.org Marek Stec Senior Industry Specialist Mstec@ifc.org Margarita Talavera Senior Investment Officer Mtalavera@ifc.org

European Cement Research Academy (ECRA) has reviewed IFC's Cement Decarbonization Tool (Tool). Based on that review, ECRA believes that the Tool's approach and methodology are sound. Designed to produce approximate analyses of select decarbonization levers at a cement plant, the Tool produces initial estimates of acceptable quality for fuel and electricity consumption, greenhouse gas (GHG) emissions and indicative CAPEX, which are within acceptable ranges for these parameters as shown in the ECRA Technology Papers of 2022. ECRA further found that the Tool provides a satisfactory level of detail, enabling cement companies to effectively explore various decarbonization levels that may help reduce energy demand and thus may ultimately facilitate decarbonization efforts.