



TATA CONSULTING ENGINEERS
ENGINEERING A BETTER TOMORROW™

Engineering **Solar Ingot** **and Wafer** Facilities

Integrated engineering for efficient, production ready facilities built for future expansion.

Tata Consulting Engineers (TCE), a wholly owned subsidiary of Tata Sons, delivers integrated engineering services for solar ingot and wafer manufacturing facilities, covering process, utilities, infrastructure, digital systems and full lifecycle delivery.



The Ingot-to-Wafer Process



What TCE Offers

-  **Process & Facility Engineering**
Facility and utility design across the full ingot-to-wafer process, from crystal growth to cell handoff.
-  **Utility & Infrastructure Systems**
Power, gases, water and exhaust systems engineered and controlled as one integrated network.
-  **Digital Engineering**
Federated multidisciplinary models, clash detection and structured asset data from concept to handover.
-  **Full Lifecycle Delivery**
Owner's Engineer, OEPC™ and EPCM services from feasibility through construction supervision.

Core Capabilities

-  **Process Utilities**
Argon, cooling water, vacuum, process exhaust, dust collection, compressed dry air and controlled environments.
-  **Power & Controls**
HV receiving and distribution, HT and LT systems, emergency power, earthing, power quality, automation and BMS.
-  **Water & Environment**
Deionised and process water, recovery, effluent treatment, ZLD, emissions control and resource efficiency.
-  **Facility & Logistics**
Production and utility buildings, stable foundations, vibration isolation, sub-fab infrastructure and material flow.

Proven On GW-Scale Projects

TCE is currently engineering a GW-scale solar ingot and wafer manufacturing facility, covering master planning, technology-input integration, detailed engineering, high-capacity electrical infrastructure, vibration-sensitive structures, argon systems, process exhaust and dust management, water systems, automation and construction support. Wider experience includes solar PV cell and module manufacturing, solar glass, semiconductor facilities and battery cell manufacturing.



Scan to explore TCE's
Advanced Manufacturing
capabilities

Planning an ingot or wafer manufacturing facility? Talk to our Advanced Manufacturing team