



CLEAN GREEN ENERGY MISSION

www.cgem.in

POWERING A SUSTAINABLE FUTURE

Clean Green Energy Mission (**cGEM**) platform is envisioned to help in the designing of feasible innovative sustainable energy transition solutions harnessing clean and green energy resources for powering the future world with "net zero" emission or accelerate carbon footprint reduction. The Clean Green Energy Mission is more than a program – it is an **ENGINEERING** movement for Energy Transition!

EXPERIENCE THE REAL ENGINEERING

We are ready to partner with energy industry experts, government & private utilities, project developers, Original Equipment Manufacturers (OEMs), Engineering Procurement Construction (EPC) Contractors, college/university, banks, financial and other institutions to join hands in reshaping the future energy use of our planet. Together, we can power progress while preserving the planet for generations to come.

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ReNew the World with Clean & Green Power



LIBRARY

Browse Green Energy reference project case studies with video walkthroughs, Slide Deck PDF documentation, and cGEM output summaries.



LIVE DEMO

Contact us for Live Demo to demonstrate the capabilities of cGEM platform in planning and implementing Green Energy Generation facility.



SUBSCRIBE

We invite you to schedule a consultation with us to explore your specific requirement, energy needs and preferred engagement model.



Aravinthraajan Energy Systems

A Legacy of Engineering Excellence

Aravinthraajan Energy Systems Private Limited (AESPL) has proudly launched this Clean Green Energy Mission (**CGEM**), a resourceful and visionary initiative committed to transforming our energy landscape towards a sustainable, low-carbon future.

This mission is designed to accelerate the adoption of renewable energy technologies, reduce our reliance on fossil fuels and promote environmental stewardship through innovative, inclusive and scalable solutions. It aligns with our national goals on climate action, energy security and green economic growth.

With over three decades of experience, we've helped clients worldwide reduce their carbon footprint and achieve energy independence.

Now under this ingenious transformative mission, we are pleased to provide our solution modules as enlisted here to world energy experts to integrate / develop / construct clean green energy generation facilities by optimizing investment with maximum energy output at lowest generation cost.



cGEM Solution Modules



GREEN HYDROGEN GENERATION

Integrates grid connected or captive standalone Green Power generation plant utilizing solar and wind energy with Battery Storage (BESS) for optimum sizing of Green Hydrogen generation plant with least Cost of Generation of Hydrogen fuel.



GREEN AMMONIA GENERATION

Amalgamates Green Ammonia generation plant from optimised Green Hydrogen plant utilizing Green Power from own generation along with BESS or grid supplied power and maximizes the plant load factor in achieving best financial results.



GREEN SOLAR POWER

Harness the power of the sun to generate clean, sustainable electricity. Integrated with BESS, enables electricity to be generated during daylight hours and stored for use when needed – ensuring a consistent and resilient power supply.



GREEN WIND POWER

Green Wind power generation harnesses the kinetic energy of wind to produce electricity. Integrating battery storage with wind power addresses the intermittent nature of wind, ensuring a stable and reliable energy supply.



GREEN SOLAR WIND HYBRID

Solar Wind Hybrid power generation combines solar PV panels and wind turbines to produce clean, renewable electricity. Integrated with BESS, this system ensures a stable energy supply by mitigating the intermittent nature of solar and wind resources.

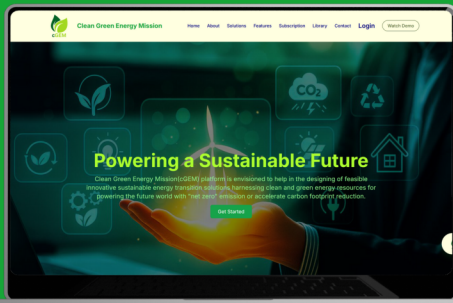


GREEN ROUND-THE-CLOCK BESS

A Grid-Connected Round-the-Clock (RTC) Battery Energy Storage System (BESS) is an advanced energy infrastructure solution designed to provide firm, dispatchable and reliable electrical power to the grid irrespective of renewable generation variability.



AI POWERED ENERGY ENGINE™ FOR ENGINEERING ENERGY TRANSITION



Salient features of cGEM Modules



01.

AI powered ENERGY ENGINE™

Our AI-powered Energy Engine delivers location-specific, hourly solar and wind modelling with integrated battery storage and load optimisation, enabling RTC green power, green hydrogen, and green ammonia applications. It seamlessly extends to land assessment, CAPEX estimation, carbon footprinting and end-to-end project financial analysis—one intelligent platform for clean green energy planning.



02.

finXXpert™ for Financial Feasibility

All solution modules integrate with finXXpert, our financial expert system, to deliver end-to-end project feasibility analysis. The platform models generation, power balance, financing and revenues, produces fully linked financial statements (P&L, cash flows, and balance sheet) and computes key metrics such as LCoG, DSCR, IRR, payback and NPV—enabling confident, data-driven investment decisions



03.

Carbon Footprint and ESG

Each solution module quantifies carbon-emission reductions against baseline conventional or grid emissions and incorporates full life-cycle assessments across renewables, storage, water, consumables and construction. Integrated with finXXpert, the platform evaluates carbon-credit opportunities and supports strategic decarbonization, stronger ESG performance and sustainability leadership.



04.

CAPEX & LAND Assessment

The platform estimates indicative CAPEX with cost breakdowns across equipment, balance of plant, electrical, civil works, QA/QC, commissioning, contingency and spares with flexibility for user-defined inputs. It also assesses preliminary land requirements using solar module footprints, wind turbine spacing criteria, and battery container configurations, combined with space for substations, roads and supporting infrastructure.



05.

Usability & Output : Data to Decision

The platform analyses key policy mechanisms including capital subsidies, generation-based incentives (GBI) and accelerated depreciation with multi-currency financial evaluation supported by live exchange rates. Built for speed and usability, it offers secure local data storage for rapid simulations, one-click hourly data and financial model export to EXCEL, an AI-guided chatbot and automated neat A3 PDF report generation.

