Development Environergy Services Limited

Developing Partnerships for Progress Together
by Delivery of Tangible & Measurable Energy Performance

Contents

VEIC

Introduction

Development Environergy Services Ltd (DESL) is a wholly owned subsidiary of Veolia Environnement Ingenerie Conseil (VEIC), the consulting arm of the €45 billion (2023), Paris based Veolia. Veolia is a global leader in optimised resource management with water, waste and energy solutions that contribute to the sustainable development of communities and industries.

VEIC is a network of subsidiaries, with combined revenues of €39 million (2023), each specialising in their field. A holding company manages all the subsidiaries to ensure consistency in service quality, and, when relevant, to enable added-value synergy between the operating companies. This possibility enables each client to access the expertise that best suits their needs. VEIC is currently in 75 countries on five continents, and has more than 300 experienced engineers and a network of permanent international offices, available for short or long term projects.

DESL

Who we are

Since our inception in 1999, we have continuously re-invented ourselves as a differentiated service provider with introduction of new technologies and business processes for the development of a sustainable market for resource efficiency, renewable energy and solid waste management projects in India and across the globe.

25+ years

of expertise

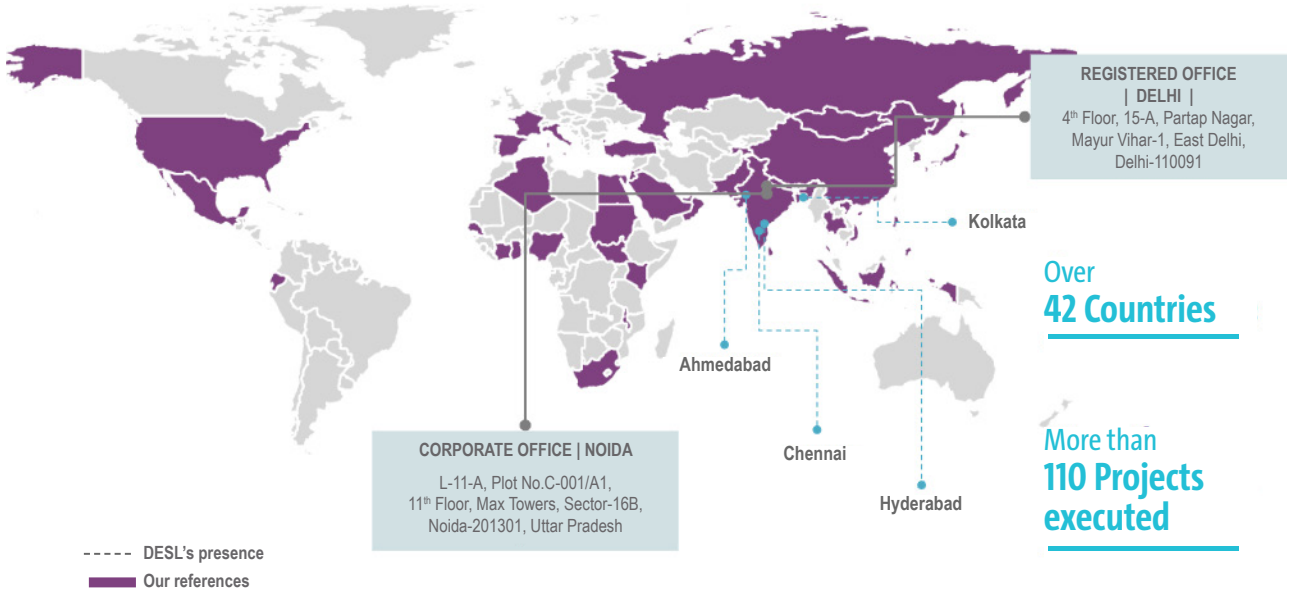
3 Domains

Energy Management | Renewable Energy
Solid Waste Management

Presence in India

Delhi - NCR, Ahmedabad, Chennai, Kolkata, Hyderabad

Global References



Over
42 Countries

More than
110 Projects executed

CORE VALUES

Customer Focus

Integrity

Innovation

People Development

Core Business

The focus of our service offerings has always been twofold:

- Reducing the energy cost by improved efficiency in operation of industrial and commercial facilities; and
- Contributing to the global goal of conservation of precious resources and reduction of carbon footprint of the business operations for our clients.

Service Portfolio

Demand Side
Energy, water, resource assessments
Since 1999

Demand & Supply Side
Renewable energy
Since 1999

End of Pipe Treatment
Solid waste management
Since 2008

Demand & Supply Side
Decarbonization technologies
Since 2018

Services Offered

We adopt a multi-project approach, where the individual customer defines the scope and structure of the services. Beginning with relatively simple projects, the scope and complexity of the services are expanded to multi-tier product packages considering the comfort level of the client.

A flexible business process designed on 'solution approach' provides modular options and choice to the customers. This approach helps the customers in appropriately matching in-house resources with our resources for optimal project development cost as well as for achieving desired performance and time targets.

Expanding on the theme of the service portfolio, our delivery process allows enough flexibility to its clients in choosing complete or modular services, as per their needs. The service modules and delivery processes are described below.

Resource (Energy, Water and Material) conservation; Decarbonisation

Macro Studies
- Energy baseline & benchmarking
- Retrofit savings assessment
- Design stage interventions
- Lean management
- Carbon footprint assessment
- Blue sky technology assessment

Detailed Studies
- Energy diagnostics (audit)
- Investment grade energy assessment
- Resource efficiency assessment
- Cleaner production assessment

Implementation
- 3rd Party Commissioning
- Procurement guidance
- Implementation action plan
- Performance Measurement and Verification

Strategic Assistance
- Modeling of decarbonization pathways and development of decarbonization roadmaps
- Hydraulic network modeling
- Customizing EnMS - Utility and Process Optimization

Renewable Energy; Power/CHP; Solid Waste Management

Macro Studies
- Resource availability assessment
- Cartography (GIS Mapping)
- Waste characterization studies
- Forecasting studies
- KPIs and scorecards

Detailed Studies
- Feasibility studies, Rate & Tariff studies
- Financial and economic analysis
- Investment grade/ detailed project report
- Business and Investment plans
- Environmental and social impact assessments

Implementation
- Basic Engineering
- Detailed Engineering
- Procurement guidance
- Project Management
- On site supervision

Strategic Assistance
- EPC Management (Owners)
- Lenders Independent Engineer
- Due diligence
- Transaction Advisory Services (PPP)

Sectoral- Strategic Consulting

- Market assessment studies
- Proposals for grant funding
- Roadmaps and Long term plans
- Review of policy frameworks and gap analysis
- Technical publications and training module development
- Design and conduct training programs

Energy Management Activities

Energy Efficiency

The methodology for carrying out and energy, water and cleaner production assessments have been continuously upgraded to support implementation of resulting recommendations. We have, in the past also pioneered in the development of the ESCO performance contract system in India.

We are well-positioned with experiences and expertise to service industries for meeting compliances to regulatory schemes under Energy Conservation Act viz. **Perform, Achieve and Trade (PAT)** and the **Indian Carbon market**.

We anchor to assist industries on establishing **decarbonization technologies** road map and support implementation.

The key sectors where services have been provided include:

Industrial	→ Upstream: Mines, Refinery, Iron and Steel, Aluminum → Utilities: Thermal Power Plants → Hard-to-abate industries: Fertilizers, Chemicals, Building Material, Metals Petrochemical → FMCG: Food, Pharma, Paper, Packaging, Textile → Automobile, Auto Components, Tyres
Commercial	→ Offices & Shops: Public, Private Commercial, Retal → 24x7 Buildings Airports, Hospitals & Health Care, Hotels → Telecom (MSC, BTS), Data Centres → Institutional: Schools, Colleges, Auditorium → Residential and Townships
Public	→ Water Supply- treatment, pumping, boosting → Sewage Treatment, sludge to power generation → Street Lighting → Electrical Distribution Systems → District Cooling and Trigeneration

Water Efficiency and Conservation

We provide integrated cleaner production consulting services including conservation and recycling of water through innovative solutions. We have designed and engineered projects for treatment of sewage water for utilisation in cooling processes.

Green Building

We are recognized for pioneering the concept of design stage intervention for energy efficient buildings. We provide building commissioning services; particularly for facilities seeking LEED certification. We provided commissioning services for the **first LEED Platinum rated** commercial green building in India, and enabled ONGC in earning Platinum Rating for its Deendayal Upadhyaya Urja Bhawan- Green Building in New Delhi - one of the largest buildings with Platinum rating outside the United States.

Resource Efficiency / Energy Efficiency Coverage

Fuels & Energy Inputs	Electrical Utilities	Thermal Utilities	Mechanical Utilities	Process Integration
→ Fuel switching → Fuel receipt, storage & handling → Alternative fuels - Biomass, Hydrogen, Methanol → Residue valorization- Biogas, Biochar	→ Transformers → Electrical distribution system → Motors → VSD/VFD → Illumination	→ Boilers → Gas turbine → Steam turbine → Co-generation/ Tri-generation → Furnaces → Thermic fluid heater	→ Pumps → Condensers → Heat exchangers → Cooling tower → Chillers → Fans & blowers → Air/Gas compressors	→ DCS/SCADA → Energy accounting → Building energy management → Energy monitoring system → AI based process control and automation

Renewable Energy Activities

Renewable Energy

We are actively involved in providing consulting engineering services for development of renewable energy systems, including biomass, waste-to-energy, solar and small hydro projects.

We have contributed to the development of over 875 MW of power projects based on different renewable energy resources globally. Development of biomass energy systems comprises a major share of we have renewable energy portfolio.

Biomass Energy

We offer end-to-end solutions for establishment of biomass based power generation and co-generation plants, for captive and grid synchronized operations.

The range of services offered include:

- Project Development and Feasibility Studies: We have successfully carried out viability assessment studies for a number of biomass energy projects that include biomass resource assessment studies, price projection, estimation of landed cost at factory site, optimal selection of plant generation capacity considering long-term sustainability, efficient and reliable plant configuration, integration and tie-in with existing process in case of captive and co-generation plants, realistic project costing, and preparing detailed project reports.
- Project Engineering: Our service offerings include basic engineering, procurement support services including preparation of (EPC) tender documents, technical evaluation; detailed engineering, installation & commissioning and project management.

Solar Energy

The services we provide include site specific feasibility studies for solar PV based power generation projects (for Commercial and Industrial Clients) and feasibility studies for solar thermal applications for process heating.

We have been involved in development of over 400,000 LPD of solar water heating projects for industrial application in electroplating, pharmaceutical, chemical and automotive component industries.

Wind Energy

We have carried out technical evaluation studies to assess feasibility of investment in wind energy based power generation as a supply side energy cost reduction option for industries in India.

Hydro Power

We have carried out feasibility studies for development of small hydro power plants in India and overseas.

Some of our significant achievements include:

- Development and deployment of innovative methodology for resource assessment of agro-residues for the Ministry of New & Renewable Energy, Government of India; Rajasthan Renewable Energy Corporation and DfID, UK High Commission, India
- Commissioning of 12 MW straw fired power plant at Patiala, Punjab, 1st of its kind in the world
- Re-commissioning of 10 MW paddy straw fired Jhalkheri power plant in Punjab
- Successful development of 8 MW mustard residue fired power plant (2nd such project in India)
- Development of the highest rated bagasse cogeneration plant (4x30 MW rated at 105 bar pressure, 540°C temperature) in India
- Development of world's largest single site co-generation plant (105 MW in Sudan)

Solid Waste Management

Waste to Energy

We offer project preparation and engineering consulting services for waste-to-energy projects. We have the distinctive qualification of consulting for three of the most successfully operating waste-to-energy project in India.

- 16 MW power plant of M/s Jindal Urban Infrastructure Ltd., Okhla, New Delhi. This is the first power project in India operating successfully on a specifically designed hybrid technology
- 12 MW RDF based power plant at Ghazipur, New Delhi, implemented by M/s IL&FS
- 500 TPD waste-to-energy plant at Sonepat, Haryana, implemented by M/s JBM

DESL was involved in following waste to energy projects:

- Preparation of feasibility study for establishment of a waste to energy power plant in Kampala, Uganda
- Preparation of feasibility study for establishment of a waste to energy power plant in Kigali, Rwanda
- Preparation of feasibility study for establishment of a waste to energy power plant in Nairobi City County, Kenya
- Preparation of detailed project reports of more than 20 WtE projects in India

Compressed Biogas

Our services in compressed biogas segment include project development, feedstock assessment study, feasibility study and project engineering services. We offer services for various kinds of solid and liquid wastes including biomass, municipal solid waste and sewage sludge.

- Feedstock assessment at more than 50 locations
- Feasibility study for CBG projects
- Preparation of a Detailed Feasibility Report (DFR) for Indian Oil Corporation Ltd (IOCL) for setting up a 200 TPD integrated waste-to-fuel plant at Varanasi, UP
- Engineering & consulting services for preliminary design of biogas-based power generation plant from Al Aweer STP for Dubai Municipality.
- Assessment of solid waste and CBG potential for DCM Sugar mill and distillery at Hariawan.
- Due diligence of 500 TPD Organic Municipal Solid Waste to CBG project for Indore Clean Energy Pvt. Ltd.

Solid Waste Managment

Broadening our range of services to encompass the entirety of the waste value chain, we have recently provided consulting services tailored to the efficient handling, disposal, and sustainable management of solid waste. This includes consulting services on integrated solid waste management strategies and privatization of waste management.

DESL is involved in following solid waste management projects:

- Transaction advisor for the structuring and execution for an Integrated Solid Waste Management PPP Project in Jamaica
- Strengthening of Solid Waste Management Services under Chennai City Partnership

We received the 'Distinguished Innovation & Research in Solid Waste' award at the 5th National Conference and Awards on Waste to Wealth - 2017, and the award for 'Distinguished Innovation & Research in Waste Management' at the 4th National Conference and Awards on Waste to Wealth -2016.

Strategic Activities

Trigeneration

We have provided consulting services for natural gas based tri-generation projects, deemed as the most efficient integrated supply and demand management solution to meet electricity, heating and cooling requirements of buildings/industrial facilities.

A 330-kW project, conceptualized and engineered by DESL, is already operational. Feasibility studies have been carried out for a large building complex in Gujarat and for a commercial business district in New Delhi.

Rural Energy

We have worked on both consulting and implementation of small scale rural distributed generation projects for power as well as cooking energy needs in India and Asia. Under a technical assistance project, we implemented a 200 kW integrated gasification and grid interfaced power generation plant as a rural energy project in China.

Regulatory and Policy Studies

A number of policy and regulatory studies have been carried out for various Government and Electricity Regulatory Commissions to facilitate development of renewable energy systems in India, Pakistan, China, South Africa, Malawi, and Nepal.

Climate Change and Sustainability Services

We help clients to decarbonize their operations and shift towards a low carbon pathway. We undertake company specific studies and suggest high impact decarbonization projects. We also undertake carbon footprint studies and suggest pathways for net zero targets.

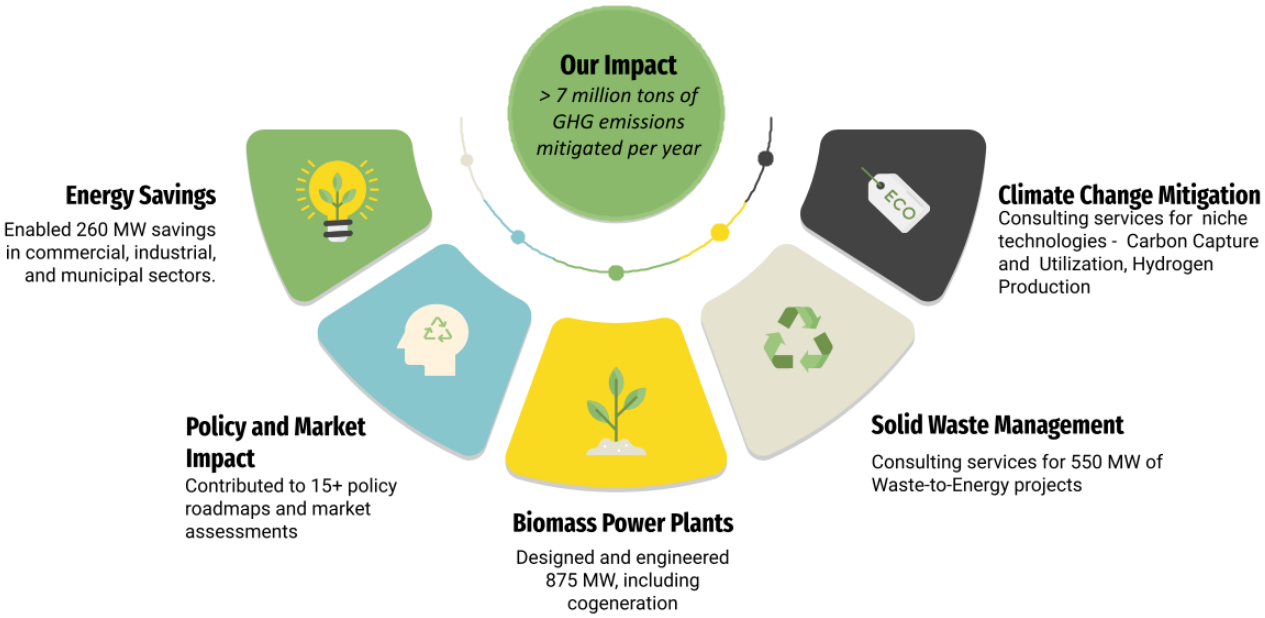
Training

We have been involved in designing training courses, developing training content and delivering training programs on resource efficiency and renewable energy in India and overseas. The distinctive feature of our training related services is the emphasis placed on on-the job training and learning-by-doing and deployment of technology enabled tools for self paced learning.

Market and Technology Studies

With a view to develop and implement innovative concepts, we invest in knowledge building in the domains of technology, service delivery models and business processes. A number of significant results in the areas of energy efficiency and renewable energy have been achieved as a result of our in-house knowledge and technical expertise development activities

We have demonstrated our project management skills and led teams in these international projects in a variety of domains including policy and regulatory, project development and project implementation.



Who we work with

- Bureau of Energy Efficiency
- Energy Efficiency Services Limited
- Ministry of New and Renewable Energy
- Petroleum Conservation Research Association
- Indian Renewable Energy Development Agency
- Small Industries Development Bank of India
- PTC India Limited
- Indian Railways
- New Delhi Municipal Council
- Municipal Corporation of Delhi
- Surat Municipal Corporation
- Central Public Works Department
- Indian Oil
- Hindustan Petroleum Coporation Limited
- Haldia Petrochemicals Limited
- Steel Authority of India Limited
- National Aluminium Company Limited

- Kuantum Papers Limited
- Dhampur Sugar Mills Limited
- Asian Paints Limited
- Gujarat Fluorochemicals Limited
- Atul Limited
- Averda Waste Management India Limited
- HPCL-Mittal Energy Limited (HMEL)
- Tata Steel Limited
- Batra Hospital
- Century Pulp and Paper
- DCM Sugar Mill and Distillery
- Apar Industries Limited
- EverEnviro Resource Management Pvt. Limited
- PRAN Group
- Gammon Infrstructure Projects Limited
- J K Papers Limited
- Graphite India Limited
- Arvind Limited
- Hilti India Pvt. Limited

- Asian Development Bank (ADB)
- World Bank, IFC
- United Nations Developmnet Organisation (UNIDO)
- United Nations Office for Project Services (UNOPS)
- United Nations Development Programme (UNDP)
- Millennium Development Authority (MIDA)
- Gesellschaft fur Internationale Zusammenarbeit (GIZ)
- KfW Development Bank
- United States Agency For International Development (USAID India)
- Department for International Development (DFID)
- Agence Francaise de Developpement (AFD)
- Climate Works Foundation
- Sustainable Energy Foundation
- NewVenture Fund
- Renewable Energy and Energy Efficiency Partnership (REEEP)
- Global Green Growth Institute (GGGI)

Awards and Recognition

■ *"IEI Industry Excellence Award"* under engineering services & consultancy for demonstrating highest order of business excellence conferred by the Institution of Engineers of India (IEI) for the years: 2016, 2017, 2018, 2021, 2022 and 2023

■ *"Distinguished Innovation & Research in Solid Waste"* at the 'Waste Management Excellence Awards-2017, organized by ASSOCHAM India.

■ *"Skoch Order of Merit"* at the Skoch Smart Technology Award 2016 for qualifying amongst top 100 projects in India for 'Providing project development support for enhancement of energy efficiency

■ *"Distinguished Innovation & Research"* in waste management, at the 4th National conference and awards on 'waste to wealth', organized by ASSOCHAM India

■ *"PCRA, Ministry of Petroleum and Natural Gas, Government of India"* declared DESL as the best energy services company for four years (2001-02 & 2002-03, 2003-04 & 2005-06)

Milestones

> 1999... the first performance contract
Transforming EE Market, Dhampur Sugar Mills, India

> 2000... innovated a financing mechanism for ESCO
Cascading Financial Model for Kuantum Paper Ltd, India

> 2001... India's first shared savings PC
Lighting retrofit project at Palika Kendra

> 2007... High efficiency bagasse cogeneration in a Sugar Mill
Owner's engineer for deploying high pressure bagasse based boiler at Dhampur Sugar Mills, India

> 2008... Project Roshni in the President's Estat
Piloting Energy Efficiency for sustainable habitats

> 2009... World's first commercial paddy straw based power plant
Owners Engineer for Punjab Biomass Power Ltd.; India

> 2010... World's largest bagasse based cogeneration project
EPC management for White Nile Sugar, Sudan

> 2011... India's first trigeneration project
Feasibility Study, Design, Procurement guidance, Commissioning, JPNATC – 330 kW Trigeneration Plant

> 2012... Mainstreaming Energy Efficiency in MSMEs in India
World Bank's Financing Energy Efficiency in SMEs implemented by SIDBI, India

> 2011.... First Waste-to-Energy Plant in India
EPC management for India's first MSW to Energy Plant (Mass Burn Incineration)

> 2015.... First Waste to Energy Plant in India based on RDF
EPC management for India's first RDF based Waste to Energy Plant. Jindal, India

> 2019.... Setting up Sustainable Energy Service Centres in Ghana
Course design for certifying energy efficiency practitioners, MiDA, Ghana

> 2020... Cloud based analytics tool for energy performance monitoring
A robust benchmarking and self - diagnosis tool for MSMEs, UNIDO, India

> 2022.... Climate resilience for MSMEs in India
Inputs for GCF proposal for SIDBI, New Venture Fund


DESL

DESL

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