

Clenergize

CONSULTANCY SERVICES

COMPANY PROFILE

SOLAR ENERGY
ESG & SUSTAINABILITY
ENERGY EFFICIENCY



www.clenergize.com

info@clenergize.com

A leading Sustainability & Solar Energy consultancy firm in the **Middle East** with operations extending in **Africa, India** and **Europe**

Expertise in **Solar Energy, Sustainability & ESG Process, Energy Efficiency.**

Consulted on some of the **Most high-profile and prominent projects** running in the region



About Us

Our Services

Area of Operations

References

Awards & Recommendations

What is Sustainability & ESG

Why You Need a Consultant - Solar

SOLAR ENERGY

Process

Scope of Work

SUSTAINABILITY & ESG

Process

Scope of Work

ENERGY EFFICIENCY

Process

Scope of Work



- We are a team of consultants, engineers, lawyers and designers with a competency in Solar Energy, Sustainability and Energy Efficiency Projects.
- The team has worked on several projects consulted, designed and delivered in Middle East, Europe, India and Africa.
- Our team has worked in government utilities, EPCs, manufacturers and with developers and financiers.
- We have handled a range of projects from commercial and industrial solutions to large government projects.
- We have a good understanding of the local regulations and ESG specifications and international standards for sustainability projects.



*Shyam Yadav
Managing Director*



*Paolo
Mastrogiacomo
Director Technical*



*Srivatsa Bhargava
Associate Director*



*Hasan Abdulla
Director Business
Development*



*Luca Sacchetto
Director Development EU*



*Sara Hattar
Associate Director*



*Purab Bhatia
Managing Consultant*



*Kaleem Saleem
Business Development*



*Jay Bhutani
Associate Consultant*



*Ralph Gracias
Associate Consultant*



*Loujain A
Associate Consultant*



*Abdallah Bakir
Consultant*



Our core business and scope of work is split in 3 categories:

Solar Energy Consultancy, Sustainability and ESG Advisory and Energy Efficiency Consultancy.

With subject matter experts in all of the above, we arrive as perfect SUSTAINABILITY & ENERGY ADVISORS for organizations in the region.

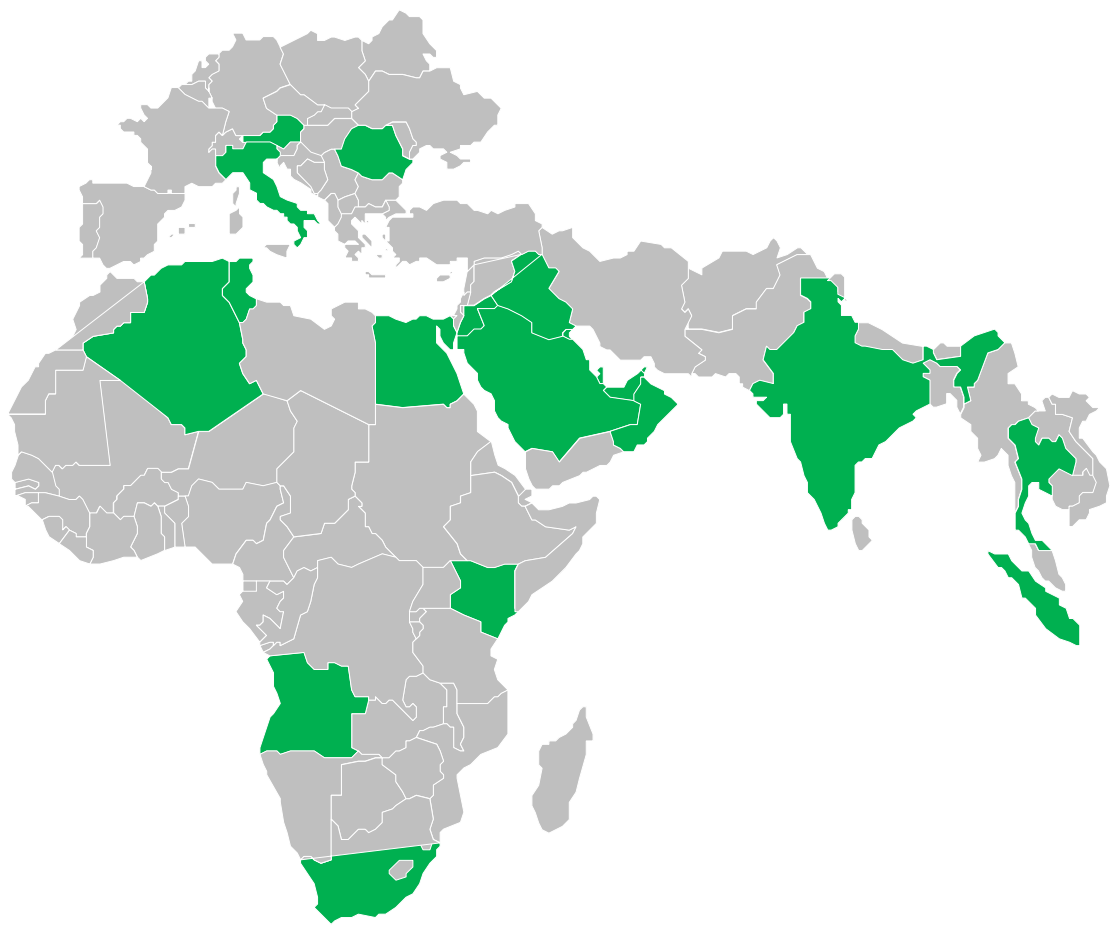
Be it ESG Reporting, Solar Energy Projects, Net Zero Action Plans, Energy Efficiency – we help the clients through a practical, low cost and measurable process.

SOLAR ENERGY

ESG / SUSTAINABILITY

ENERGY EFFICIENCY





Countries with our projects and offices

MIDDLE EAST	AFRICA	EUROPE	SE ASIA
UAE	EGYPT	ITALY	INDIA
KSA	ALGERIA	AUSTRIA	THAILAND
BAHRAIN	TUNISIA	ROMANIA	INDONESIA
OMAN	KENYA		
JORDAN	ANGOLA		
IRAQ	SOUTH AFRICA		
KUWAIT	MAURITIUS		

 OFFICE LOCATIONS



REFERENCES – SOME KEY ACCOUNTS





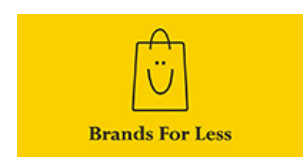
ARCAPITA



يوسف بن أحمد كانو
YUSUF BIN AHMED KANOO



REFERENCES – SOME KEY ACCOUNTS





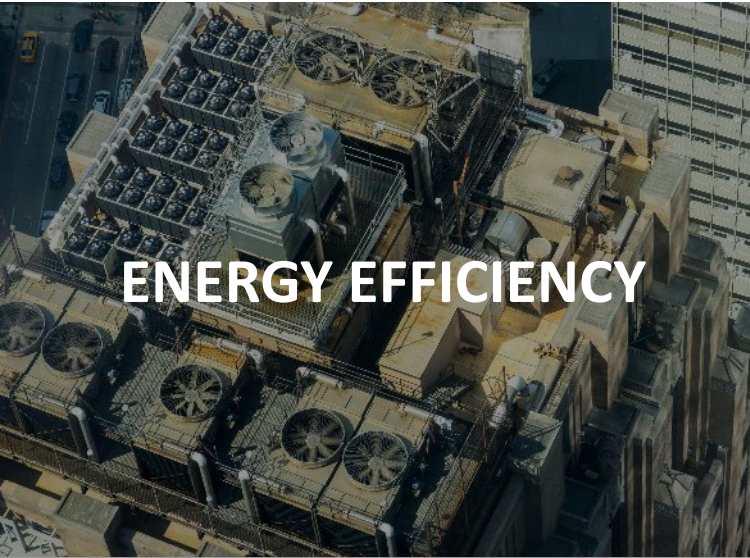
SOLAR ENERGY

1,000+ MW
of solar projects across 200 projects

70 ORGANIZATIONS
are working with us
for their ESG Process & Reporting



ESG / SUSTAINABILITY



ENERGY EFFICIENCY

45 FACILITIES
In GCC are benefitting
from Shared Savings Models





**BEST PROJECT
2019**



**BEST CONSULTANT
2020**



**BEST CONSULTANT
2021**



- Awarded best consultant of the year 2021
- Awarded best consultant of the year 2020
- Awarded best industrial project of the year 2019
- Nominated for best consultant 2019
- Nominated for best financial advisor / consultant 2018, 2019
- Nominated for solar entrepreneur of the year 2018, 2019, 2020
- Published in regional newspapers, editorials and magazines





Clenergize



aramex
delivery unlimited

“ We are pleased with our partnership with Clenergize. This project comes shortly after the launch of our Solar Farm project in Amman, Jordan. We are determined to continue building and developing a greener business, in line with our long-term sustainability strategy, as well as Dubai plans to establish itself as a smart and sustainable city.”

- Raji Hattar, Chief Sustainability Office, Aramex

Aramex 3200KW Solar Project in Dubai


As part of its commitment to cut its operational carbon emissions by 20%, Aramex has recently commenced building a 3200 KW rooftop solar PV plant in Dubai, which will be installed on one of its warehouses located at Dubai Logistics City. The plant is aimed to generate over 40% of the electricity needs of the warehouse. It is one of the largest rooftop PV projects of its kind in the private sector in the region.

To that end, Clenergize Solar Consultants has been appointed to this project. The appointment comes following a competitive selection process. Clenergize took on this role and launched a professional tender and specifications package. Within a short span, the EPC contractors underwent techno-commercial due diligence with an apple-to-apple comparison. Clenergize also drafted the solar contract and mediated the negotiations between Aramex and the nominated EPC.

Project Stats



15 %
Reduction in Project Cost via tendering



Performance Guarantee on production for 5 Years



High Quality Tier 1 Components and Design

Services Provided by Clenergize

- Prepare the project specifications and tender to invite bidders
- Review the offers of the bidders – techno-commercial negotiations
- Draft the solar EPC contract between Aramex and the Contractor
- Setup minimum acceptance criteria, performance guarantees, bond etc.
- Review the design package to be sent to Utility for approvals
- Supervise the project up to commissioning and setup O&M criteria



مركز التجهيزات (ش.م.ع.)
DUBAI REFRESHMENT (P.J.S.C)*

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www.pepsidubai.com

04th July 2019
Ref: PJ_LTR_L840_19_SOLAR

Project: Rooftop Solar PV at Dubai Refreshment (P.J.S.C.), DIP 2
Subject: Recommendation Letter for Clenergize Solar Consultants

To whom it may concern,

Clenergize Solar Consultants have been working with Dubai Refreshment (P.J.S.C.) in order to develop a 3.68MW solar PV plant on the premises. At the time of commencement, it was one of the largest roof top solar projects in UAE.

Clenergize were appointed following tender organized by Dubai Refreshment (P.J.S.C.) for the main consultancy scope and were best in their technical and commercial offering.

We recommend the work of Clenergize, as they have successfully demonstrated their technical and project management know-how regarding the solar industry.

They aided in achieving significant savings in the selection of the solar contractor, supported in timely approvals from the utilities – going beyond their mandate to support the project.

Their knowledge on solar projects and experience of the team considering several other running sites helped with the execution of the Dubai Refreshment Solar Project as well.


We wish them all the best with their work.

Sincerely,

For and on behalf of
Dubai Refreshment (PJSC)



Waleed Nehme
VP - Supply Chain & Projects













مجد الفطيم
MAJID AL FUTTAIM

Date 5th October 5, 2017

To whom it may concern

In the short period that we have been working with them, Clenergize have consistently demonstrated diligence and dedication towards exceeding the allotted timeframes despite the challenges of the projects that they are involved in.

Their familiarity with solar efficient installations & sophistication in adopting the local and regional regulations has been exemplary.

Their continuous proactive guidance is highly appreciated & indispensable and the transparency of providing data and updates is comforting and it assures us that we have appointed the right associates.

Regards,



Chris Dixon
Director, Technical Operations
Shopping Malls

PROPERTIES
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رقم التسجيل التجاري: 410291 - 30454



Emirates
Flight Catering

Date: Monday, 17th August 2020

To whomsoever it may concern

Project: ERFC Rooftop PV Solar System Installation - 2.78 MWp

Subject: Recommendation Letter for Clenergize Solar Consultants

This letter is issued in behalf of Emirates Flight Catering Co. LLC to appreciate the efforts of Clenergize in implementing the rooftop solar PV system in eight different ERFC facilities.

Emirates Flight Catering appointed Clenergize Solar Consultants via a rigorous tendering process - to lead & manage the first solar PV project of Emirates group in Dubai, U.A.E. They took on this task with professionalism and provided the correct advisory and guidance to us through the course of the project including preparation of operation and maintenance contract.

Through their knowledge and subject matter expertise, we were able to develop and successfully install a state-of-the-art solar PV system for our facilities in the appropriate timelines. The engineering was challenging - especially considering 24x7 operational industrial facilities, shading issues, multiple rooftops, etc... The usage of high efficiency panels, centralized monitoring system have shown their results.

We are happy with their efforts and will be considering them for our future projects as well. In addition, we recommend their Consultancy service for solar projects.

Thank you and Best regards,



Muhammad Tariq
Assistant Vice President - Engineering
Emirates Flight Catering
Phone: +971 4 208 6444
Email: tariqm@ekfc.ae

Emirates Flight Catering
Muhammad Tariq
AVP - Engineering

WHAT IS SUSTAINABILITY AND ESG?

Sustainability is the incorporation of environmental, social equity and maintaining governance standards in order to create thriving, healthy, diverse and resilient communities for our present generations and generations to come.

Sustainability integration within corporates involves monitoring and measuring corporate impacts on global, national, and local community aspects including; Environmental, Social and Governance (ESG) impacts.

ENVIRONMENTAL



Impact on the Planet

- Greenhouse gas emissions
- Renewable Energy
- Air and water pollution
- Biodiversity
- Deforestation
- Recycling and waste management
- Natural resource use
- Water scarcity
- Energy efficiency
- Sustainability initiatives
- Relationships with regulators















SOCIAL



Relationships with Surrounding Community

- Diversity and inclusion
- Company culture
- Data protection and privacy
- Customer satisfaction
- Relations with local communities
- Human rights
- Labor standards
- Product safety
- Employee training
- Ethical supply chain sourcing























GOVERNANCE



Corporate Leadership Standards

- Board composition
- Management diversity
- Shareholder rights
- Lobbying
- Executive compensation
- Accounting transparency
- Tax Policy
- Relationships with regulators







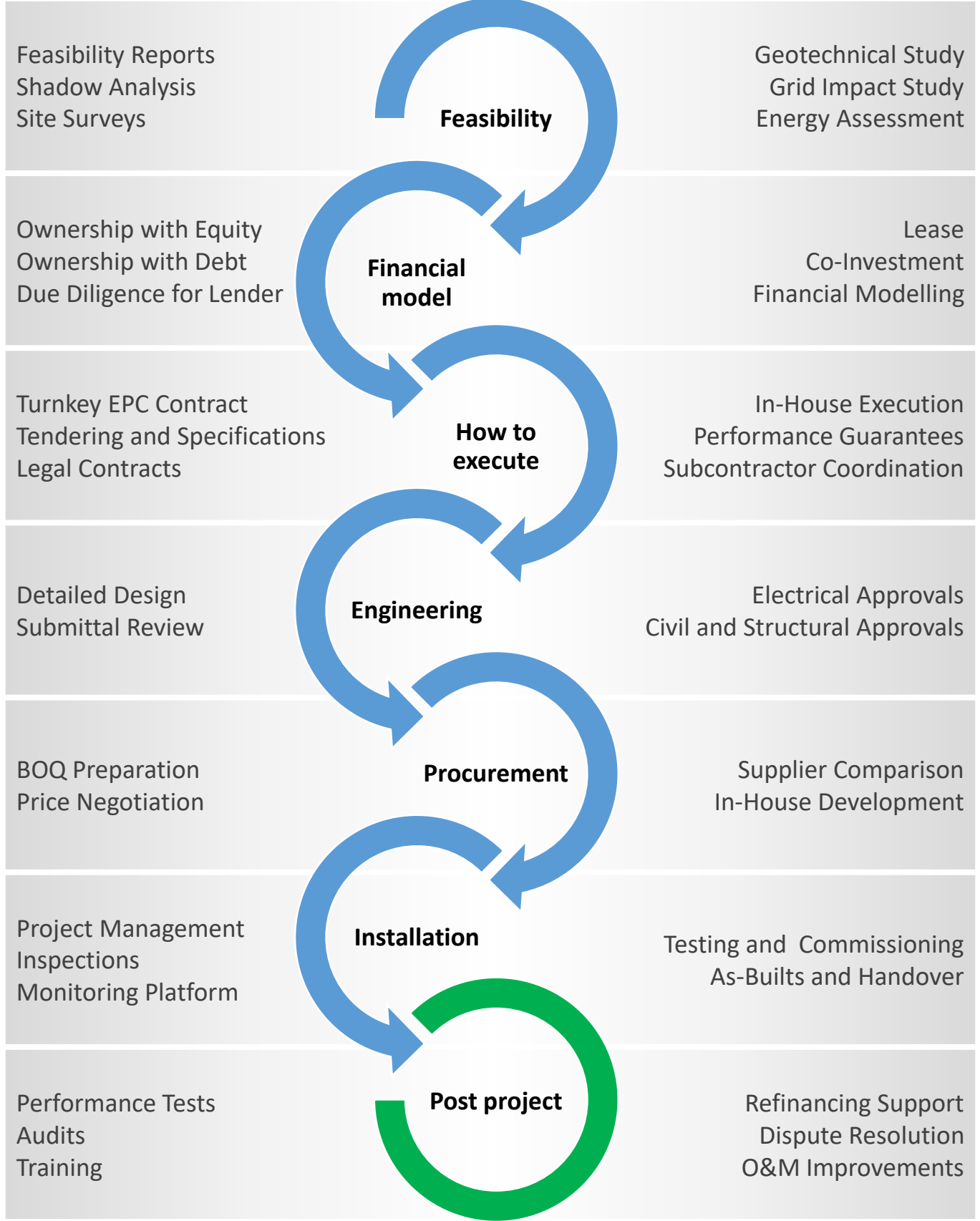








SOLAR ENERGY

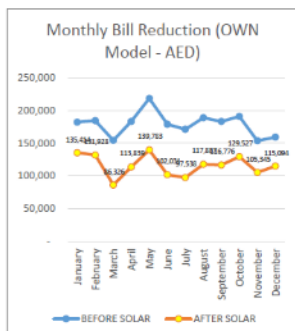
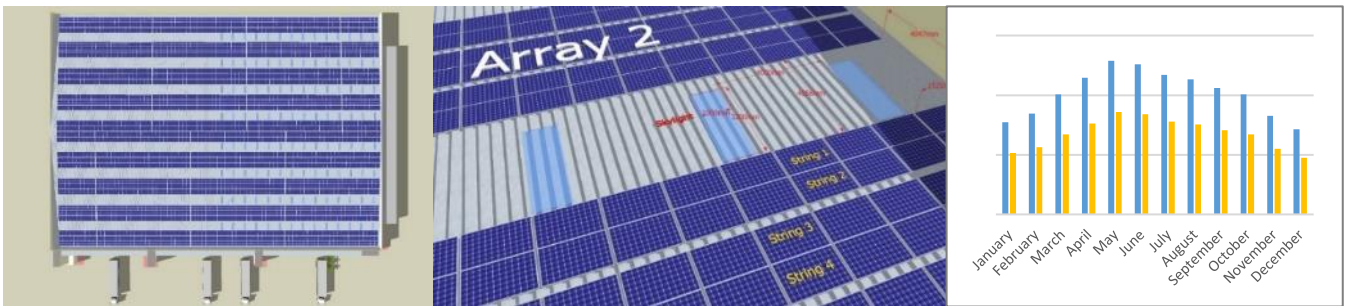


Feasibility	1	Feasibility Reports – Plant Size, Energy, Lease vs Own, Payback, IRR, NPV, LCOE, Carbon Savings, Shadow Analysis, Export Compensation, Financial Modelling
Owners & Lenders Engineer	2	Financial Modelling, PPA / Lease Setup, Bankability Assessment, Turnkey EPC Contract Management, Tendering, Specifications, Bidder Review, Solar Contracts, Design Review, Construction Supervision, Commissioning Review
Custom Reports	3	Grid Impact Study, Power Evacuation, Short Circuit, Load Flow, Power Quality, Geotechnical, LPS etc.
Detailed Engineering	4	Electrical, Mechanical, Civil, Structural, SLDs, CAD Drawings, 3D Models, Simulations, Shadow Analysis, Design Optimization, Surveys, On Site Surveys
Project Management	5	Construction Supervision, Inspections, PAC, FAC issue, Daily, Weekly Visits, Commissioning, Procurement Schedules, BOQ Negotiation, Vendor Selection
Training	6	Product Training, Software Training, Monitoring Platform Training, Installation Training, Financial Model Training, Solar Project Management Training
Operations & Maintenance, Audits	7	PV Plant audits, Performance Guarantee Reports, Snag Lists, Commissioning Reports, O&M Reports, Dispute Resolution



The feasibility report of Clenergize is a very concise and information packed document. It covers the following points:

- 3D Model of the site with elevations and panel layout
- Shadow analysis with losses and optimization recommendations
- Size of the solar plant in KWP that can be installed on the available area
- Energy Yield from the PV plant – per month, per year
- Performance Ratio, Losses, Degradation and other factors impacting the plant
- Energy Consumption vs Solar Production – Monthly Comparison
- Bill Savings in Lease and Own Scenario
- Financial Dashboard
 - Ownership with Equity
 - Ownership with Debt
 - Leasing for 5,10,20 Years as applicable
- Comparison of Financial KPIs of above models – Payback, IRR, LCOE, NPV
- Graphs of Cash Flow, Net Energy Expense, NPV
- Sensitivity Analysis – to show impact on IRR by varying key parameters
- Carbon Savings
- PVSyst Report – Rooftop, Carpark, Ground Mount, Custom Structure
- Electricity tariff escalators, O&M Costing and escalators, degradation, carbon credits, insurance, other costs, replacement costs, interest rate, other fee etc.
- Recommended Next Steps



Yield	IRR%	Cost/kWh				
		585	618	650	683	715
1,335	10%	34.6%	32.4%	30.4%	28.7%	27.1%
1,473	-5%	37.2%	34.8%	32.7%	30.8%	29.1%
1,550	0%	38.9%	37.3%	35.0%	33.0%	31.2%
1,628	5%	42.6%	39.8%	37.4%	35.2%	33.3%
1,705	10%	45.4%	42.4%	39.8%	37.6%	35.4%

CLENERGIZE SOLAR DASHBOARD OWN LOAN									
Sample Payback	4	Years							
ROI 25 Years	5,570,561	USD							
LCOE Solar	0.08	USD/kWh							
NPV	2,007,013	USD							

Having worked on several key projects in the region that are running well for years, we have **developed a collection of certain best practices** that can be applied to mid-large-scale projects.

Ownership based projects require a significant capex investment and lease projects require financiers and lenders to deploy capital at the onset of the project.

Both owners and lenders look to have a bankable asset in the long run and try to have a well documented, risk free and auditable project. The technical, commercial and legal due diligence is best managed via specifications and tenders.



10-15 %
Reduction in
Project Cost



Get
**Guaranteed Energy
Production**



Protection of your
Investment through Solar
Tenders & Contracts

Our tenders are short, efficient and have a lean assessment process – taking into account all the relevant decision making points – **cost, quality, timelines, guarantees, financial stability, technical compliance, manpower and capability, operations and maintenance** and the general responsiveness of contractors and developers – as we have worked with most of the solar players in the region.



Once the contractor is awarded, the legal contract mediation is done, bonds, insurances, guarantees are setup.

The engineering design is reviewed for further detailed optimization and construction commences thereafter.

Regular on-site supervision ensures a timely delivery, snag rectification, preventing variations and a smooth permitting process with governmental agencies.



1. Feasibility

- Detailed Feasibility Report with the following:
 - Multiple Panel Simulation Outputs – Poly, Mono, Perc, CIGS, CdTe etc.
 - Project Size, Energy Yield Assessment
 - Financial KPIs such as IRR, Payback, ROI, LCOE, NPV for owning, leasing
 - Assumptions of Tariff, O&M, Escalators, Discount Rate, Degradation etc.
 - Carbon Savings
- PVSyst Report
- 3-D Model with Panel Layout
- Shadow Analysis
- Bankable Financial Modelling and Risk Assessment, Technical Due Diligence

2. Tendering and Specifications

- Drafting Project Specifications and Tender/RFP
- Establishing Technical Benchmarks, Vendor Lists, Geo-Technical Parameters
- Bidder Prequalification and Issuing the tender to bidders

3. Offer Review

- Review of submitted offers and recommendations to client
- Meeting with Bidder to discuss submitted proposals, site visits
- Techno-Commercial Negotiations to get best price per KW/ Lease rate
- Design Optimization, benchmarking to existing projects in region.
- Factory Level Procurement Rates from our network
- Preparation of EPC/Lease Comparison Report & Recommendations

4. Solar Contract / Lease Agreement

- Creation of Solar Contract/ PPA to be signed between Client & Solar EPC
- Establishing Performance Criteria for Acceptance, Energy Guarantees etc.
- Establishing Performance Guarantee, Liabilities, Bonds, insurances etc.

5. Design Review

- Support with Utility Approvals
- Review of the Technical Submittal and Design Drawings
- Coordination with structural consultants of EPC, Client

6. Construction Supervision

- Review of Safety, Quality, Mobilization, Construction, Mock Up Plan
- Periodic Supervision of construction
- Review of completed works for invoicing, Review of Daily and Monthly Reports
- Issue Non-Conformance Reports and review of closing of the report
- Review of Handing over Package

7. Commissioning Review

- Ensure that the Commissioning is according to IEC, Local standards
- Review of the performance of the system
- Snag List Closure and Conditions for Plant Takeover
- Setup Monitoring Platform
- Setup Operations and Maintenance Schedule and Manual
- Issue the acceptance certificates (PAC, FAC)



Clenergize is first and foremost a technical firm with engineers who specialize in electrical, mechanical, civil and structural engineering. Most often in large projects or ground mount projects there is requirement of performing certain additional studies to check the viability of the grid and the proposed project.

We have in-house software and have created customized plug-ins and tools to generate low-cost studies and assessments as per the needs of the project.

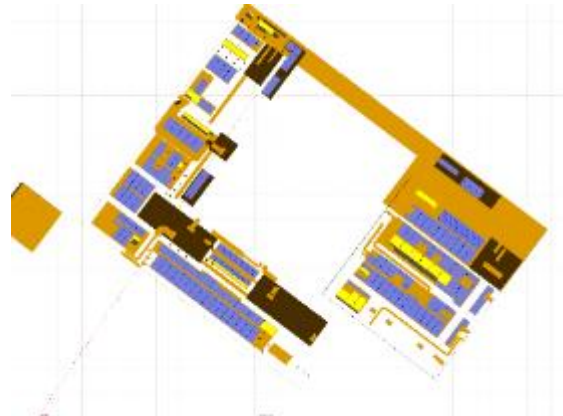
The studies we provide are as follows – but not limited to:

- Geotechnical Study
- Environmental Impact Study
- Grid Impact Study
- Power Evacuation Study
- Short Circuit Contribution Study
- Discrimination Study
- Lightning Protection System Study
- PVSyst Reports



SHADOW ANALYSIS

In solar PV projects, the shading on the system can have very negative impact on the productivity and the general life of the plant. A good plant design ensures that the effects of shading are minimized, considering the long term of operation. Our design has one of the most accurate calculations of the losses attributed to shading – as we prepare an accurate 3D model of the plant at the beginning of our design.



Our software is able to identify the loss due to shading for each panel. This is highly detailed considering the number of panels that are used in an average solar PV system. This helps in correctly sizing the strings and making accurate combinations of the panels.

A shadow sweep of the designated solar area is performed. This takes into account the shading effect from all nearby objects for the full year.



The Full Engineering Design can be used by EPCs, End Users, Developers for permitting and construction of their PV plant. These are mainly drawings, single line diagrams, schemes, BOQs and studies that will be used as the basis for installation and commissioning.

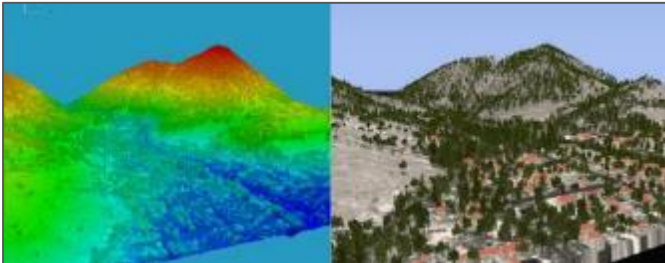
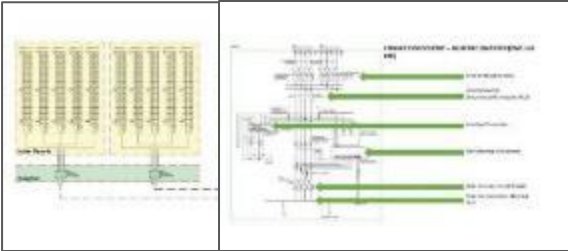
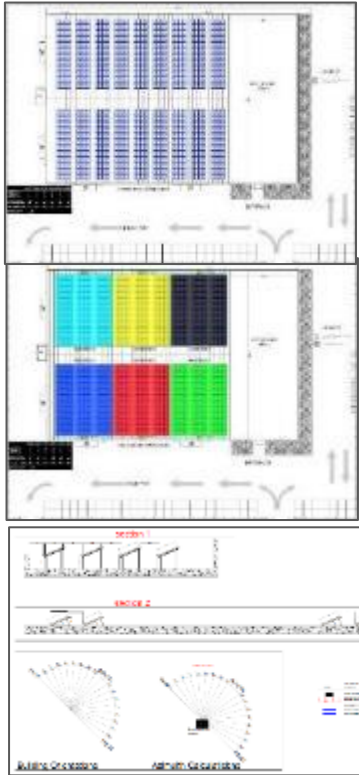
End users or Clients who have in-house execution capability or electromechanical manpower – can use our design packages and install PV projects. This results in some of the lowest cost EPC projects as the margins on procurement and execution by third party installers are removed. As solar projects become more mainstream – this concept is picking up – especially as the paybacks are very low.

Contents of a Design Package:

- PVSyst with Near Shading Assessment
- Panel Layout – Rooftop, Carpark, Ground Mount
- Single Line Diagrams
- Inverter Zones, Layout
- String Layout
- Mounting System
- Switchgear Sizing and Design
- Transformer Sizing
- Earthing Layout
- Cable tray Layout
- AC and DC Cable Sizing
- Grid Connection and Metering Scheme
- Container, Porta Cabin Layout
- Trenching and Containment Layout
- Civil Work
- BOQ with supplier names and benchmark prices

Other Drawings

- LPS Layout
- Monitoring and SCADA Scheme
- Walkways and Staircase
- Robotic Cleaning
- HSE Items – Harness, Skylight Protection
- Fencing and Roadworks
- CCTV, PAVA, Lighting
- Coordination for BMS
- Datasheets
- Simulation Reports



We offer training packages for contractors, developers and even end users depending on the nature of the skill you want to develop for solar projects.

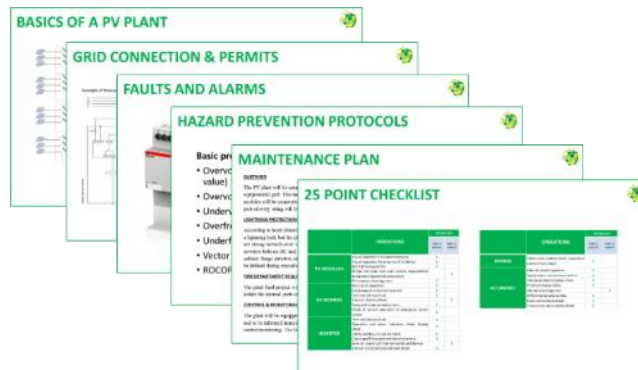
Training for Contractors and Developers

- Solar Plant Basics
- Solar Plant Detailed Engineering
- Solar Project Management
- PVSystem with Near Shading Assessment
- System Design – Electrical
- System Design – Structural and Mechanical
- Component Selection
- BOQ Preparation and Costing
- Financial Modelling
- Shadow Analysis
- 3D Model Development
- On-Site Installation
- Commissioning
- Operations and Maintenance
- PV Plant Troubleshooting

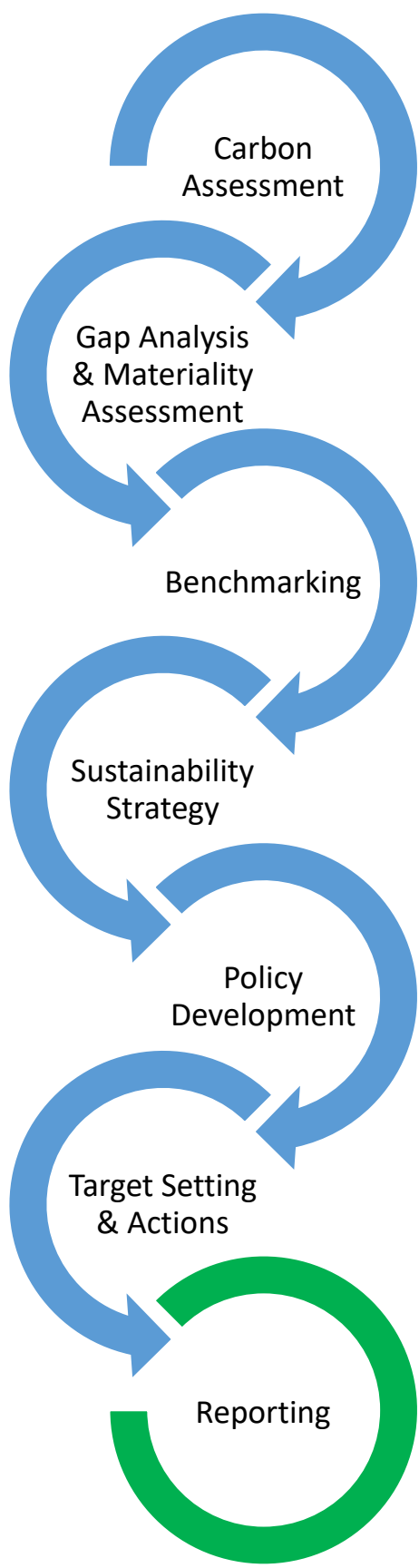


Training for End Users

- Solar Plant Basics
- Monitoring System Review
- Operations and Maintenance
- Emergency Response and Hazard Prevention



ESG & SUSTAINABILITY



Calculate Carbon Footprint GHG and IPCC Protocols
Stakeholder Engagement Questionnaires & Data Collection Gap Matrix
International, Regional Comparison Industry & Competitors Visibility on present Status
Draft Strategy on Focus Topics Define Short- & Long-Term Plan Set Goals
Develop Policies Incorporate in Company Manuals
Targets for each Plan and Goal Action Plans for each Department Measurement KPIs for Actions
Company Sustainability Report Reporting to GRI Ecovadis, UNGC, ESG Rating



NATIONAL AGENDAS AND REGULATIONS

Governments publishing different Policies and Regulations calling for robust involvement and actions from the private and public sectors



RISE IN CONSUMER AWARENESS

Consumers are recognizing the positive potency of their buying power – whether by purchasing from sustainable brands, or considering their impact, based on environmental and social consciousness

15%

Adults have boycotted companies that have not adopted sustainable values after the pandemic

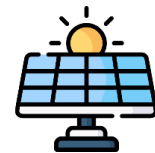
GREEN FINANCING & SUSTAINABLE LOANS

Banks and other financial institutes are now offering Green Financing for ESG ventures and also Sustainability Linked Loans.



COST REDUCTION

Sustainability projects such as SOLAR ENERGY, ENERGY EFFICIENCY, WATER CONSERVATION and at times even WASTE MANAGEMENT – end up reducing significant costs for an organization.



MAJOR SUPPLIER REQUIREMENTS

Global supply chains and public organizations rely on EcoVadis and other rating platforms to monitor their sustainability impact through their trading partners.



COMPETITIVE ADVANTAGE

Sustainably run businesses have a clear competitive advantage in the current landscape of Environmentally and Socially conscious consumers, investors and businesses.



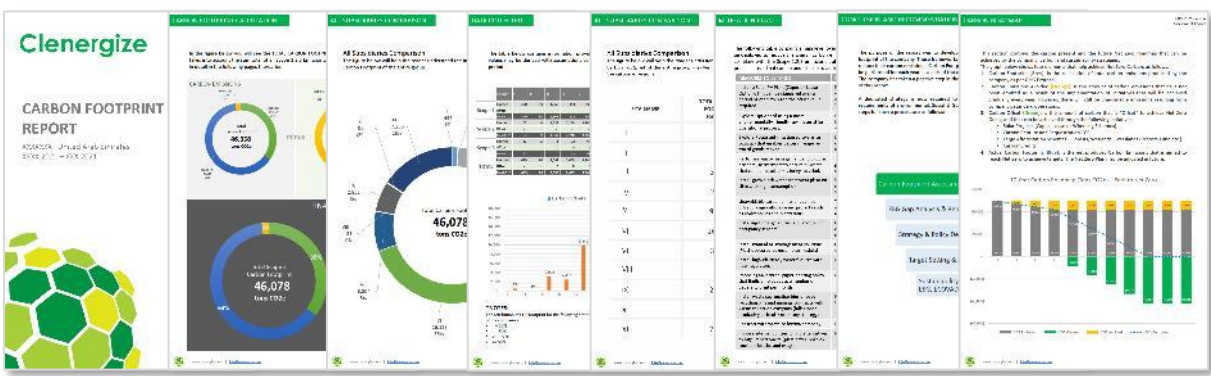
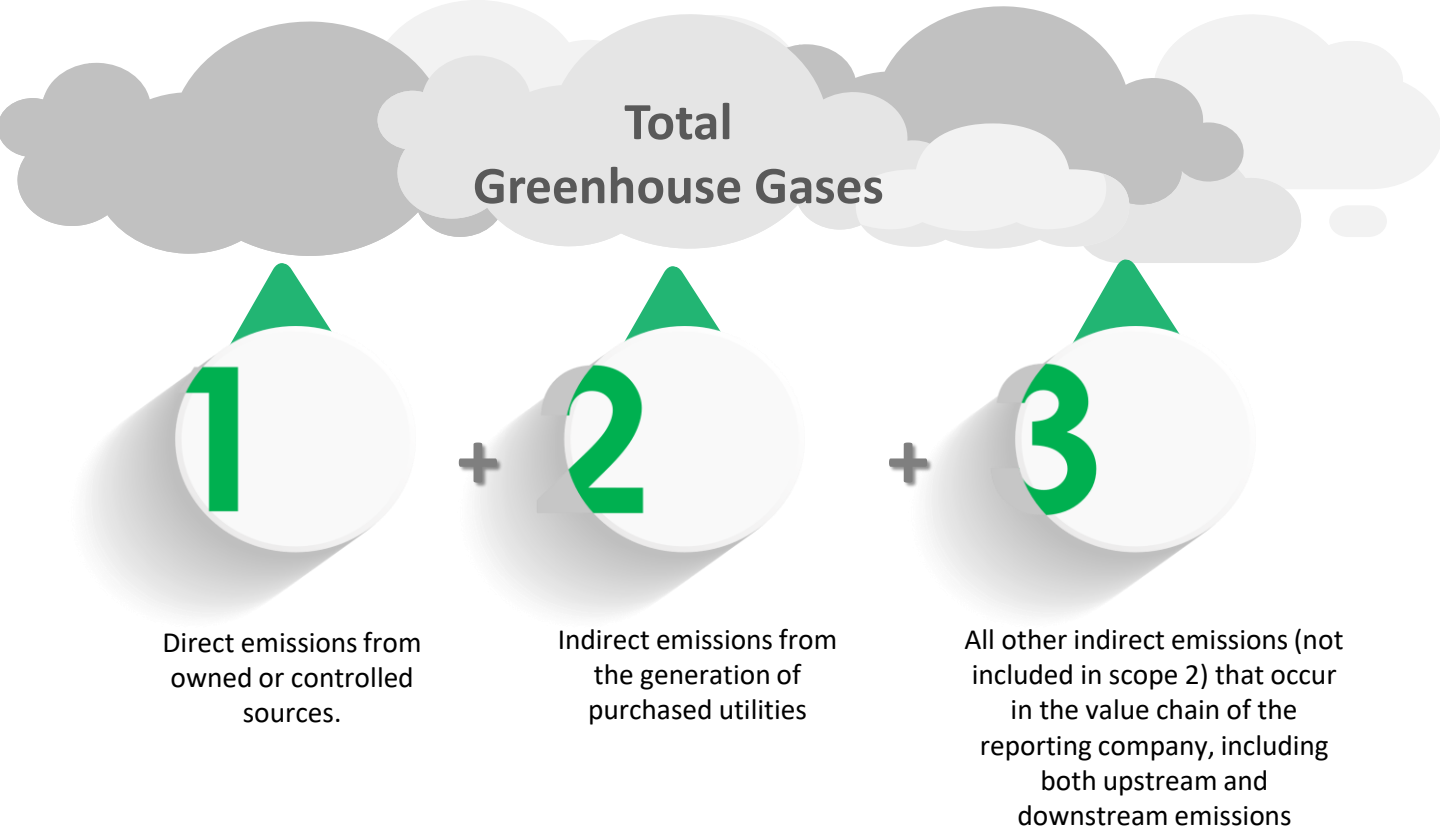
<p>CARBON FOOTPRINT ASSESSMENT</p>	<p>1</p>	<p>Data Collection Scope 1,2,3 Carbon Emissions GHG & IPCC assessment, Mitigation Plan, Net Zero Roadmap</p>
<p>GAP ANALYSIS & MATERIALITY</p>	<p>2</p>	<p>Check ESG Gaps as per GRI Disclosures. Department Wise Assessment. Perform Materiality Assessments Stakeholder Engagements.</p>
<p>BENCHMARKING</p>	<p>3</p>	<p>Compare the ESG performance vs Peers and Competitors. Regional and International Best Practices. ESG Rating and Scoring.</p>
<p>ESG STRATEGY AND POLICIES</p>	<p>4</p>	<p>Preparation of ESG Strategy & goals. Net Zero, Circular Economy Prepare ESG Policies & in existing Policies Department Wise Integration</p>
<p>KPIS, TARGETS, ACTIONS</p>	<p>5</p>	<p>KPIs to measure ESG performance Prepare Actions Plans with Targets Department Wise Allocation Tools for Tracking and Reporting</p>
<p>ESG REPORT, ECOVADIS</p>	<p>6</p>	<p>Preparation of Annual Sustainability Reports Integrating ESG within Annual Reports Ecovadis Preparation and Submissions</p>



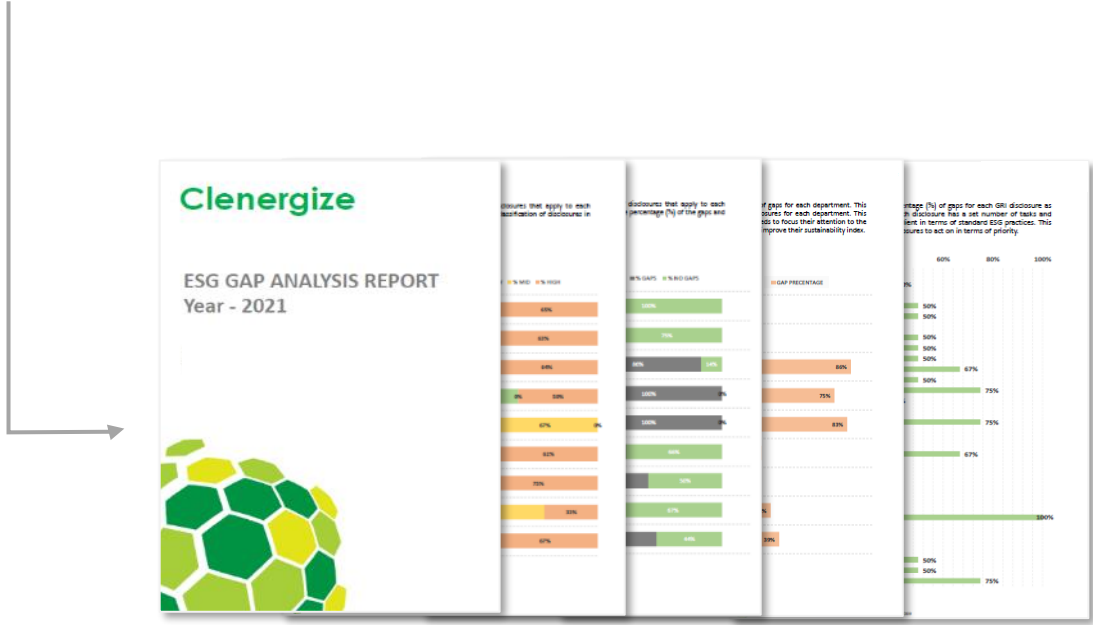
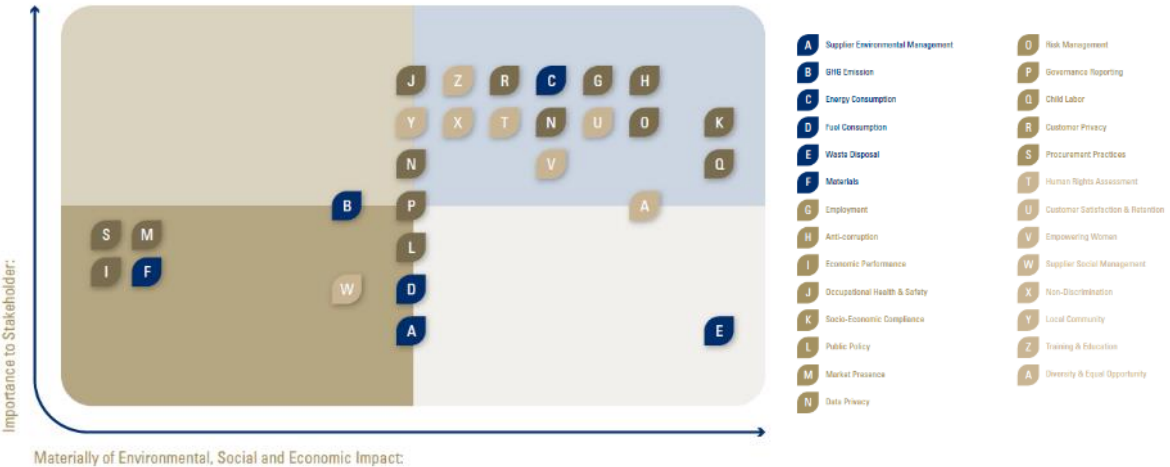
1

Carbon Footprint is the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization, or community. It includes direct emissions, such as those that result from fossil-fuel combustion in manufacturing, heating, and transportation, as well as emissions required to produce the electricity associated with goods and services consumed.

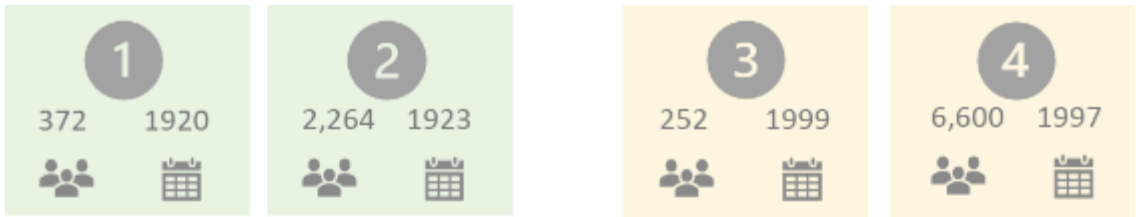
The Greenhouse Gas Protocol (GHG) is an organization that helps companies to reduce their greenhouse gas emissions by setting standards to help them manage their emissions. In other words, they provide “standards, guidance, tools and training for business and government to measure and manage climate-warming emissions.” The GHG Protocol is most well known for its classification of Scope 1, 2, and 3 emissions.



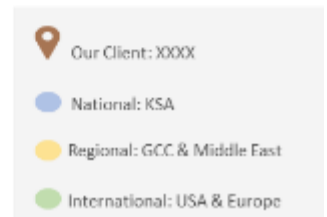
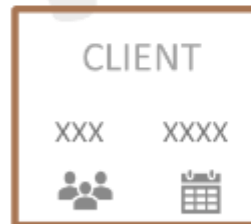
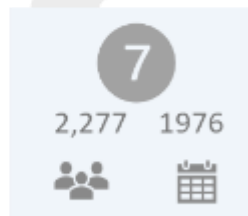
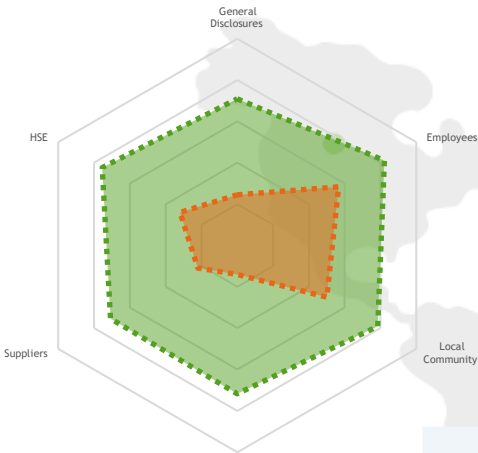
- We help the client identify the personnel needed per department for data collection
- Perform the Materiality Assessment with the clients team via interactive sessions
- Stakeholder engagement with top management.
- Data collection by both primary and secondary methods (previous studies, reports, audits done, data collection forms and questionnaires filled by client)
- Assess the current state of the client to ensure that all ESG aspects are covered within the operations, documentations, and departments of the client
- Identify all possible gaps against GRI standards and develop the desired state for the client
- Identify all corrective actions to cover the gaps identified.
- Classify all quick wins to be achieved from the corrective actions developed for the client
- Develop the Gap Analysis Report and matrix and share with all departments.



- Identify Competitors and Peers in the region and internationally to use for Benchmarking
- Collect the required data of all material topics for each competitor.
- Check the status of material topics of and highlighting Industry Best Practices.
- Compare the results of the final assessment of all competitors against the client’s current state in relevant disclosures and aspects.
- Rate all competitors against the client from both an average performance point of view and specific material topics.
- Develop the Benchmarking Report to interpret all results of the assessments and comparisons.

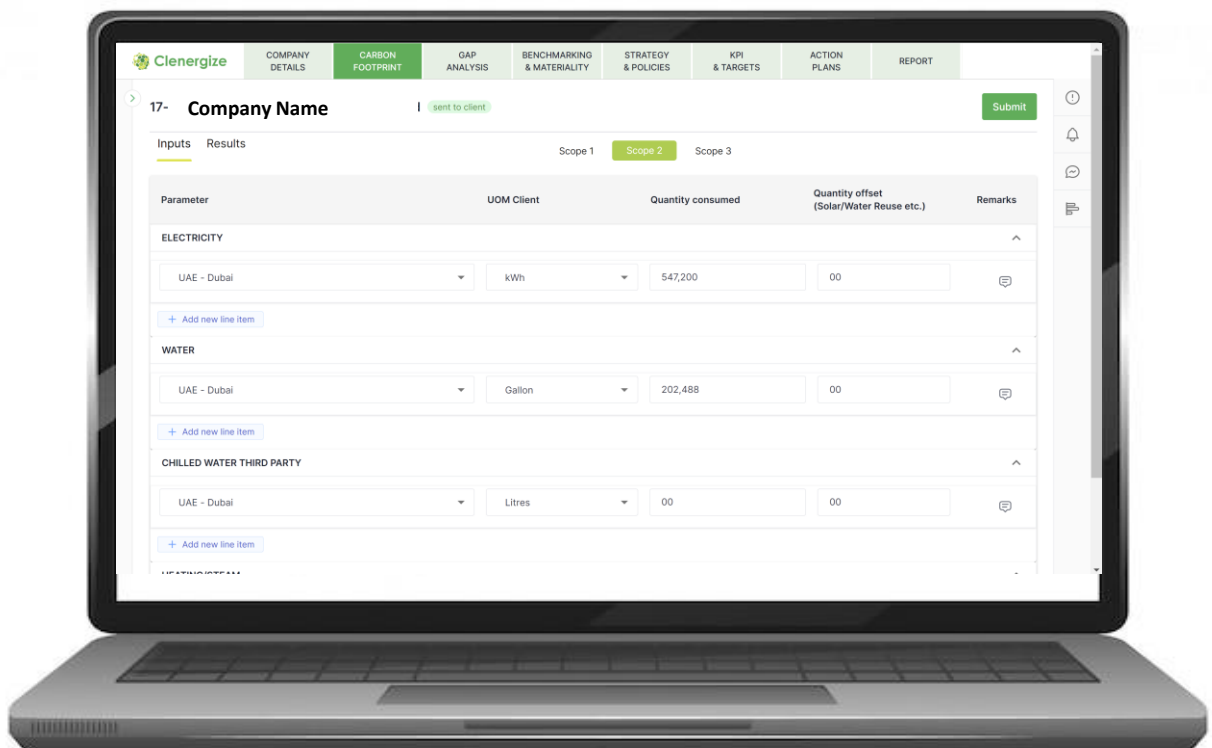


CLIENT VS INDUSTRY PEERS



- Identify **All Relevant Targets and KPIs in accordance to material topics.**
- Collect data for each KPI to measure the impact and generate the Baseline
- Set **Science-Based Targets (SBTs)** for each KPI according to thorough evaluations of the client's priorities, budgets and capabilities.
- This exercise is done per department
- Prepare a set of Action Plans to address each Target and KPI as derived in the previous process and highlighting the **Quick Wins and 2-Year Action Plan Initiatives.**
- Conduct a **Analysis** to evaluate different actions and implementations that will help achieve the sustainability goals.
- Identify and elaborate **Priority Actions** to maximize benefits and minimize risks in the **short, medium and long terms.**

CLENERGIZE SUSTAINABILITY PLATFORM (Web Based Tool)



Organizations improve their sustainability performance by measuring, monitoring and reporting on their sustainability efforts, helping them have a positive impact on society, the economy, and a sustainable future. The key drivers for the quality of sustainability reports are the different standards, guidelines, award schemes and rankings. We support with the following ratings and standards after generating the reports.



ECOVADIS RATING



GLOBAL REPORTING INITIATIVE (GRI)



INTEGRATED REPORTING



UN GLOBAL COMPACT



UN GLOBAL COMPACT



ESG REPORTING



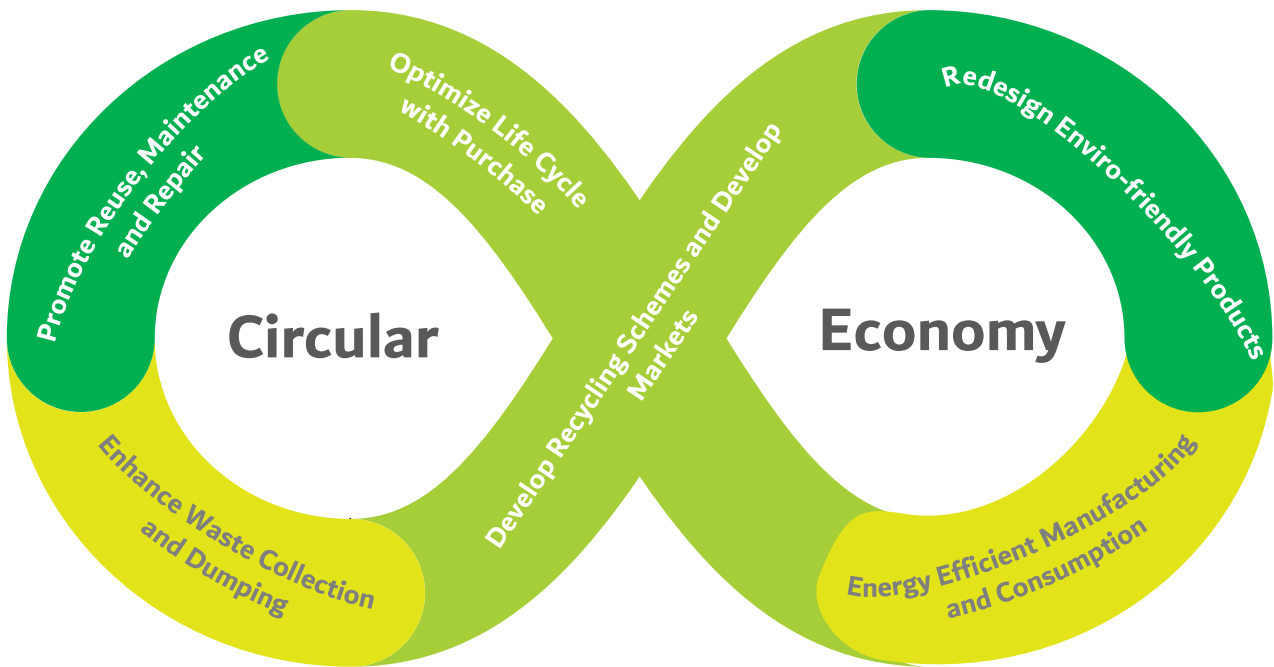
Sustainable impact assessment (SIA) evaluates economic, social and environmental impacts of any project/proposal and also keeps the perspective on sustainable development during evaluation. SIA offers many advantages like long-term benefits, better governance, improved decision-making processes and stakeholder involvement. The methodology to conduct SIA and indicators of sustainability may vary from project to project.

Impact Assessment Advisory	Help organizations measure their initiatives and activities' social, environmental and economical impact
Impact Assessment AI Solution	Help organizations aggregate and analyse data enabling strategic planning and reporting for evidence-based decision making through an AI-software
Impact Assessment Reporting	Partnering up with organizations to help report and present their measures of effectiveness of organisational activities and judging the significance of changes brought about by those activities



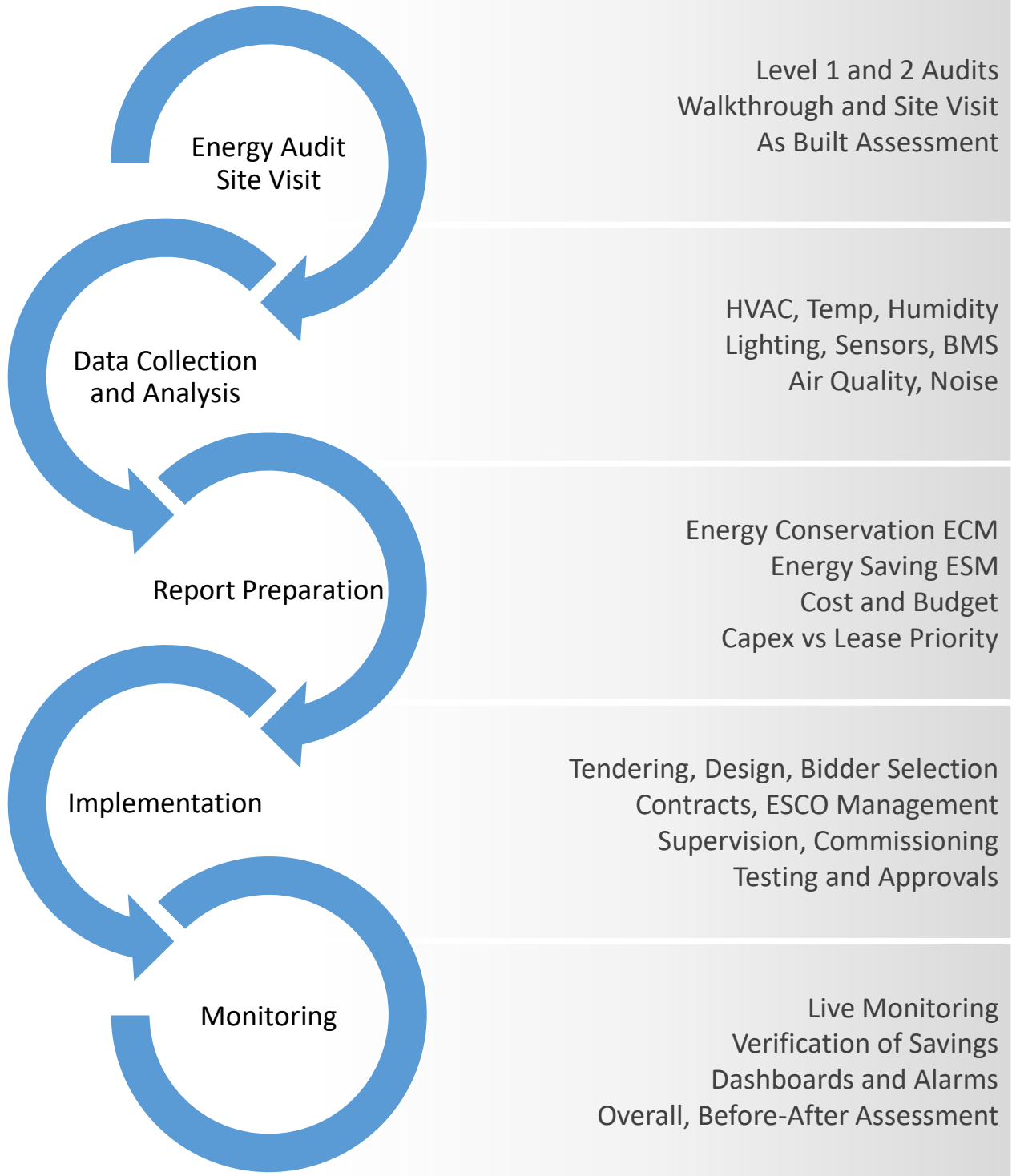
A circular economy, refers to an economy that uses a systems-focused approach and involves industrial processes and economic activities that are restorative or regenerative by design, enable resources used in such processes and activities to maintain their highest value for as long as possible, and aim for the elimination of waste through the superior design of materials, products, and systems (including business models). It is a change to the model in which resources are mined, made into products, and then become waste. A circular economy reduces material use, redesigns materials to be less resource intensive, and recaptures “waste” as a resource to manufacture new materials and products.

Circular Economy Strategy and Framework	Evaluating all the relevant interactions in the supply chain associated with a good, service, activity or entity to include environmental, social and economic impacts of a product over its entire life cycle
Waste Management Strategy Formation	Support teams to develop a strategy to manage the resources and potential economic and environmental benefits derived from household, commercial and industrial waste from private sector sources and in municipalities
Waste Minimization, Recycle and Reuse	Planning and implementing initiatives that help the organization reduce raw material consumption and focuses on using and reusing existing materials



ENERGY EFFICIENCY





LEVEL 1 AUDIT	1	Site Walkthrough, HVAC, Electrical, Water, Sample Data Collection, As Built Check, Cable Management, BMS, O&M Review, Reporting
LEVEL 2 AUDIT	2	All activities in Level 1 Audit, Detailed Review of Data, Deployment of Measurement Devices on Client Site, Recommendation and Mitigation Plan, Upgrades, Replacements, Improvements, Financial Implications, dashboards and reporting.
IMPLEMENTATION	3	Tendering, Design Review, Financial Comparison, Negotiations, Supervision, Commissioning – of all aspects noted in the L1/L2 audits as per priority List
MONITORING	4	Live Monitoring Platforms to track and report the Energy Efficiency Activities. Before-After assessment, Savings estimation, Linking with Carbon Assessment



Energy Efficiency is a very important part of the ESG process as it directly helps in reducing the consumption of utilities and usually has a very short payback period. Most common improvements and optimizations can be seen in HVAC, Electrical, Lighting and Water technologies - as over time degradation in systems does develop. While starting an Energy Efficiency project the first step is a site audit.

The audits can be various types – but in general can be classified as level 1 and 2 audits – depending on the depth of the parameters verified and assessed.

A Level 1 audit consists of the following steps:

- Site walk through to record and verify all the equipment
- Collecting the data of the installations like
 - HVAC Equipment: Chillers, Pumps, VFD's, FAHU, AHU, FCU, Extract Fans, Ventilation Fans, Fresh Air Fans etc
 - Elevators, Travellators, Lifts and other machinery
 - Building conditions, Accessibility (entries and exit doors).
 - Electrical distribution network
 - Main Incomers & Main Distribution boards
 - Sub-mains and DB's etc
 - Capacitor Banks & their conditions
 - Control Panels, MCC panels, CPM (Chiller Plant Manager) etc
 - Busbar Risers (heating, deformations etc)
 - Cable Management systems
 - Building Management Systems
 - Lighting Control Panels etc
 - Sample CO2 Levels
 - Sample Lux Levels
 - Random Water flow rate of bathroom fixtures
 - As-built drawings & List of Equipment
 - O&M manuals
 - Maintenance Reports
 - Energy Bills
- Data analysis and report preparation
- The Report will identify the areas where the ECM / ESM (Energy Conservations / Saving Measures) needs to be applied
- Measurements that will be carried out are:
 - Building Power Measurement at MDB Incomer Level
 - Temperature and Power Consumption of HVAC Equipment
 - Air Flow, temperature, relative humidity, Power of AHUs



The Level 2 Energy Audit is a step above the first phase – where detailed calculations are performed on all the equipment – after attaching measuring devices which record the parameters over a specified duration. This on-site data helps to identify finer issues with the present status of the building – enabling decision making.

The financial assessments derived from a Level 2 audit help the client make an Implementation plan – so as to put the results of the audit in terms of Sub-Projects to execute.

A Level 2 audit consists of the following steps:

- All aspects of Level 1 Audit as stated above
- The focus will be on the ECM / ESM areas identified in Level-1 above
- The audit comprises of detailed measurements using various measurement instruments at building level and main end users of electricity and water
- Measurements shall be done on HVAC Building cooling demand and HVAC equipment
- Power consumption of HVAC equipment
- Temperatures & Relative Humidity
- Air flow
- Noisy equipment
- Building power measurements at MDBs / incomer
- Harmonic levels in the power quality etc
- Duration of measurements shall range from one to two months depending on the LEVEL-1 report.
- Upon completion of study of the measurements a report shall be furnished as below:
 - Condition of existing equipment etc.
 - Repairs of equipment needed with relevant cost.
 - Upgrade of equipment needed with relevant cost.
 - Replacement of equipment needed with relevant cost.
 - Improvement needed in maintenance & scheduling etc.
 - Recommending fixing of continuous monitoring of the equipment with relevant cost.
 - A Dashboard for a continuous monitoring of all the running equipment shall be developed.
 - Parameters shall be set for the monitoring of the same which can give alarms for operators to attend.
 - Total duration for implementation, financial implications, Forecasted energy savings and their recovery period upon the above improvements.



The implementation plan for Energy Efficiency tasks are performed as subprojects – as each of them require sourcing of good contractors, price reviews, design reviews, contracts and supervision. Subject matter experts from our team prepare and run this process for each subproject.

1. Prioritization

- Preparing List of Priority for Energy Efficiency tasks based on results of the L2 Audit

2. Tendering and Specifications

- Drafting Project Specifications and Tender/RFP
- Establishing Technical Benchmarks, Vendor Lists, Geo-Technical Parameters
- Bidder Prequalification and Issuing the tender to bidders

3. Offer Review

- Review of submitted offers and recommendations to client
- Meeting with Bidder to discuss submitted proposals, site visits
- Techno-Commercial Negotiations to get best price
- Design Optimization, benchmarking to existing projects in region.
- Factory Level Procurement Rates from our network
- Preparation of EPC/Lease Comparison Report & Recommendations

4. Contract / Lease Agreement

- Creation of Contract to be signed between Client & Contractor/ESCO
- Establishing Performance Criteria for Acceptance, Savings Guarantees etc.
- Establishing Performance Guarantee, Liabilities, Bonds, insurances etc.

5. Design Review

- Support with Utility Approvals if any
- Review of the Technical Submittal and Design Drawings

6. Construction Supervision

- Review of Safety, Quality, Mobilization, Construction, Mock Up Plan
- Periodic Supervision of construction
- Review of completed works for invoicing, Review of Daily and Monthly Reports
- Issue Non-Conformance Reports and review of closing of the report
- Review of Handing over Package

7. Commissioning Review

- Ensure that the Commissioning is according to IEC, Local standards
- Review of the performance of the system
- Snag List Closure
- Setup Monitoring Platform
- Setup Operations and Maintenance Schedule and Manual
- Issue the acceptance certificates (PAC, FAC)

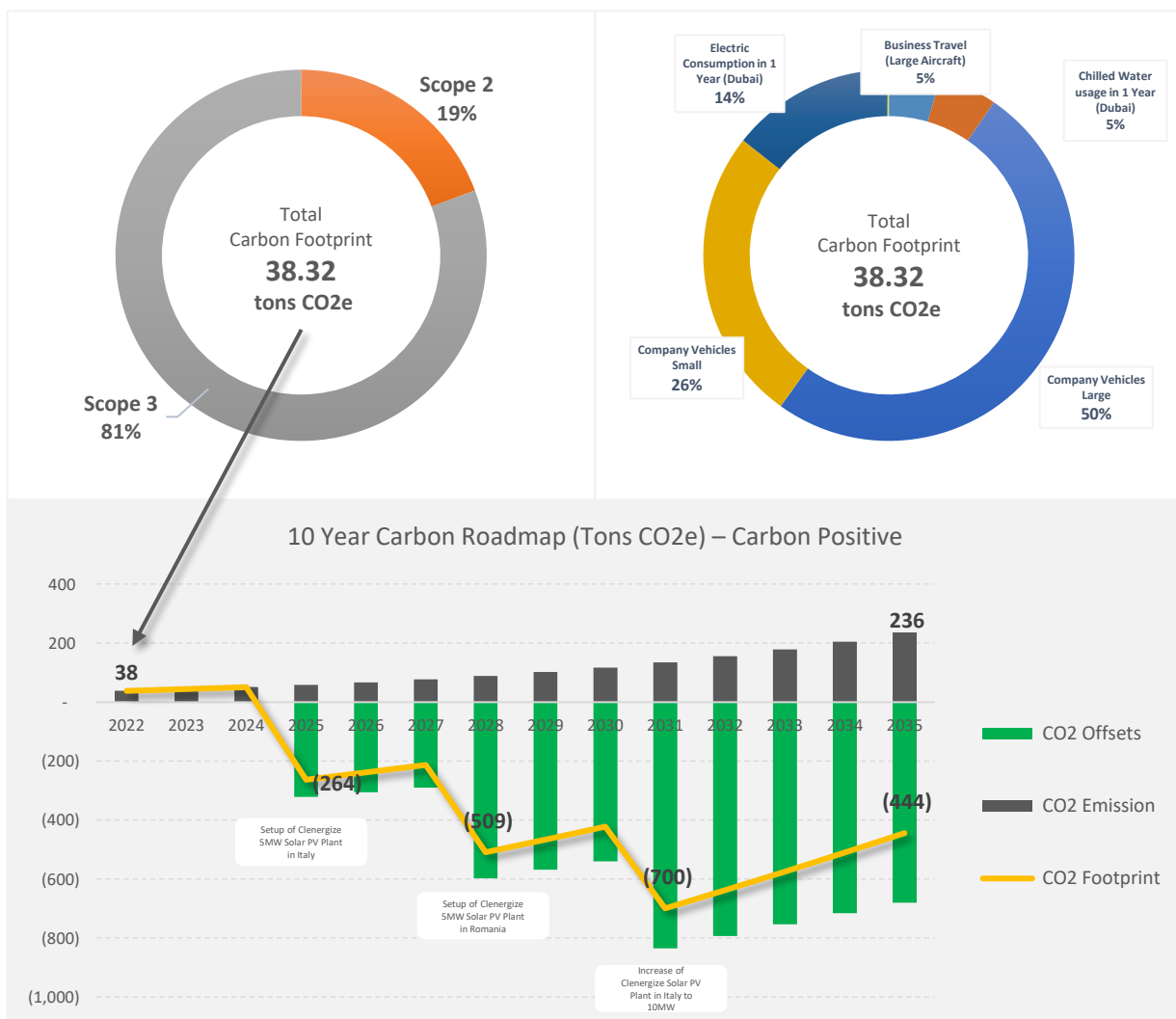


At Clenergize, we are conscious of our own Carbon Footprint and do our best to track and report our emissions. We regularly assess our Scope 1,2,3 Emissions and have set clear standards to be Carbon Positive by 2025.

The proceeds from our profits are allocated to Solar PV Plants owned by Clenergize, with long term (25 Year) contracts to offset our own emissions. The Carbon offsets generated from these plants are authentic and verifiable. We even calculate our Carbon Intensity, per headcount, per project.

OUR ATTEMPT

Client Engagement With Clenergize = Carbon Positive





Clenergize



Email: info@clenergize.com
Website: www.clenergize.com

