Energia

A Performance Analysis Solution to Achieve **Decarbonization of Buildings**

What's Energia ?

Energia is a simulation-based assessment tool designed to calculate building projects' energy performance. By calculating energy consumption and the associated carbon footprint of new and existing developments, the tool helps building owners identify ways to reduce their climate impact through implementing energy conservation measures. By effortlessly processing buildings' energy data into useful insights, Energia empowers businesses to take informed decisions aimed at optimizing their energy systems.

Translating energy insights into informed decisions

Four Core Functions of Energia

1
Setting minimum requirements for the energy performance of new and existing buildings.

2
Defining the energy demand of a building based on its passive design strategies and active system efficiencies.

3
Generating Energy Performance Labels that compare building's energy consumption against your chosen reference benchmarks.
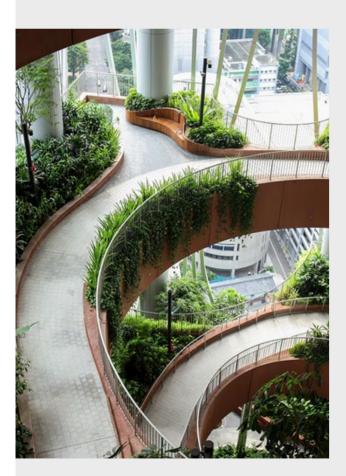
4
Identifying ways to reduce buildings' climate impact through energy conservation measures.

Applications

Energia helps businesses evaluate energy performance for any building or infrastructure project. With a rich database defining the benchmark for buildings of any type, Energia can forecast and compare the energy efficiency of small-, medium- and large-scale projects.

From data to decarbonization: Smarter energy choices

⊕ Building Energy Modeling for Green Building Rating System

Energia helps building and infrastructure projects meet strict energy efficiency standards required for green building certification. By generating accurate and reliable energy simulation reports, it ensures compliance with key criteria, supporting the successful certification of buildings.

⊕ Energy Performance Labeling (EPL) for Buildings

As regulatory bodies are increasingly mandating energy performance labels to promote sustainability and efficiency, Energia enables building owners to meet these requirements. By providing precise simulations, it ensures compliance, helps secure energy labels, and enhances overall energy performance.

⊕ GSAS Certifications

GSAS certification requires precise energy simulations to assess energy criteria. Energia ensures compliance with GSAS standards, offering advanced simulations to identify improvements, optimize performance, reduce environmental impact, and achieve higher sustainability ratings through informed decision-making and enhanced energy evaluation processes.

Features

High Customizability

Energia offers seamless global adaptability, with access to comprehensive climate data and a custom built-in database for setting benchmarks. The platform supports users by suggesting suitable input values through our expert R&D database, ensuring reliable simulations even in the absence of specific input data.

Reduced Modeling Complexity

Energia offers a user-friendly platform with no need for 3D modeling, thanks to its built-in mathematical algorithms. Users can easily adjust design parameters with just a click. The platform also features a smaller learning curve, ensuring a quick and easy transition for users to operate effectively.

Decreased Timelines

The platform delivers rapid results with minimal input requirements, significantly shortening project timelines and enhancing efficiency in simulations.

User Friendly Interface

Energia features an intuitive interface, making it easy to navigate and allowing users to complete tasks efficiently without requiring extensive training.

Guiding Principles

Energia has been developed by the Gulf Organisation for Research & Development (GORD) in collaboration with renowned international research institutes. Benefiting from leading international standards, Energia's comprehensive framework consolidates best practices from CEN and ISO Building Energy Performance Standards, ASHRAE and CIBSE among others.

Why use Energia ?

Offering a zero-risk alternative to real-time energy analysis, Energia's superfast processing time allows comparative analyses of varying scenarios for systems' efficacy and efficiency within minutes.

⊕ Simple

Move away from time-consuming 3D modeling Energia's user-friendly interface can calculate energy flows, derived from macro-heat balance equations integrated over time.
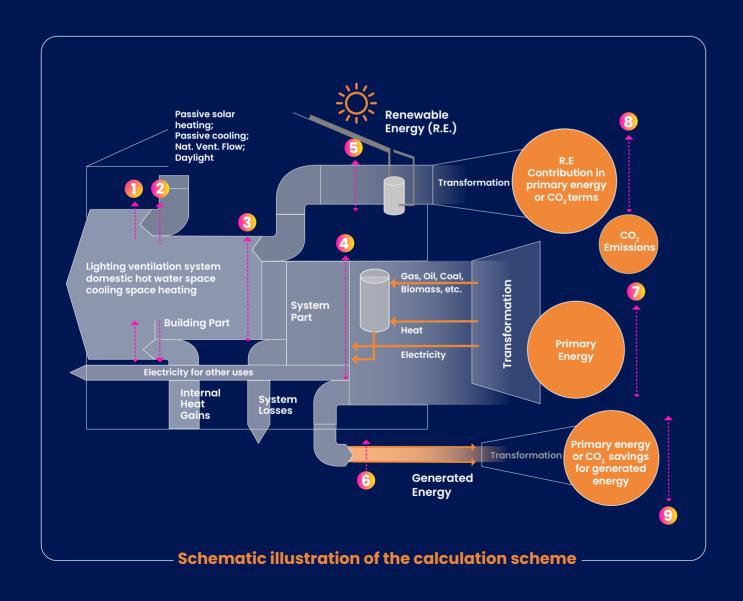
⊕ Performance Focused

Energia sets outcome targets, focusing on how features enhance energy ratings against industry benchmarks, rather than rewarding specific building features.

⊕ Flexibility

Powered by advanced machine learning, Energia can be utilized for projects across various sectors, ensuring tailored and optimized energy solutions.

⊕ City-Scale Deployment

Energia can simulate city-wide energy performance for various buildings, promoting low-carbon initiatives by enforcing minimum energy standards compared to industry benchmarks, in line with local building codes.

Calculations Methodologies

The CEN-ISO framework has been adopted where energy is assessed from four perspectives namely, energy demand, energy delivery, primary energy and emissions. The energy assessment methodology is composed of performance-based normative calculation that follows the framework of the CEN-ISO standards. The figure below illustrates the overall calculation concept.

Schematic illustration of the calculation scheme

Who Can Benefit?

Designers and Consultants

Use the platform as your energy efficiency checkpoint at the early stages of a project. Understand where your designs stand against key standards and identify improvement areas for better outcomes with minimal effort.

Facility Owners and Managers

Benchmark your building's energy performance and validate retrofit opportunities to ensure your buildings operate at their best.

Energy Auditors

Simplify your workflow by using the module to complete ASHRAE Level-1 audit tasks and generate insights that align with industry standards.

Compliance Professionals

Streamline your regulatory protocols on energy efficiency validation and verification for buildings of different archytypes.
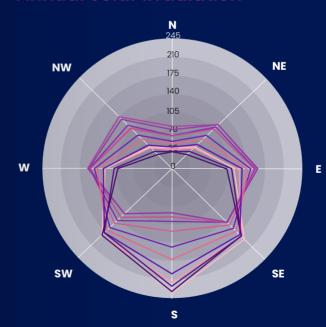
Project Test Report

Energia

Service Type	Energy Performance Labelling
Building Typology	Commercial
Project Name	Commercial - Museum, 3 Zones
Project Owner	ABC
Country	Saudi Arabia
Date	2024-09-11
Project Stage	Operations
GSAS Project ID	EN-SUB--0003
Project Number	EN-SUB-0003
Project Address	Riyadh
Location	Riyadh King Khaled Intl
Building Typology Function	Retail
Project Representative	GA
Total Gross Floor Area [m2]	31,047
Average Electricity Tariff [$/kWh]	0.09
Reference Baseline	ASHRAE 90.1 - 2019

This report was generated as part of a test project and is for demonstration purposes only.

Project Image

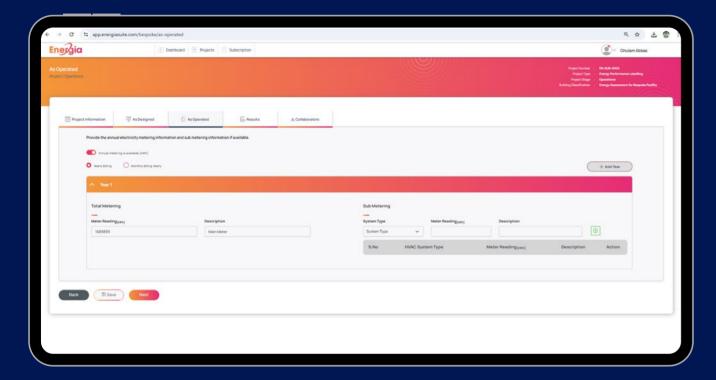## Project Location

Annual Solar Irradiation
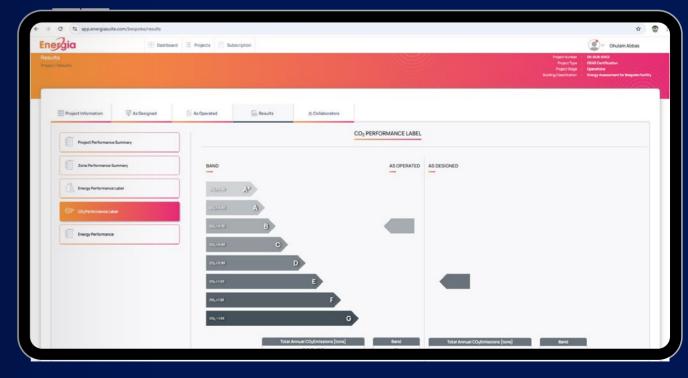
Screenshots

Screenshots

Projects

OFFICE

RETAIL

HOSPITALITY

RESIDENTIAL

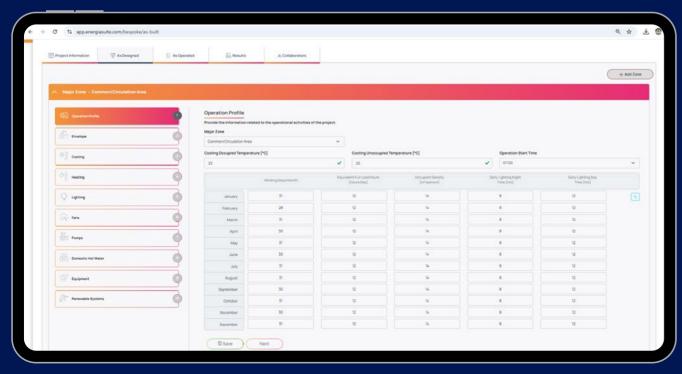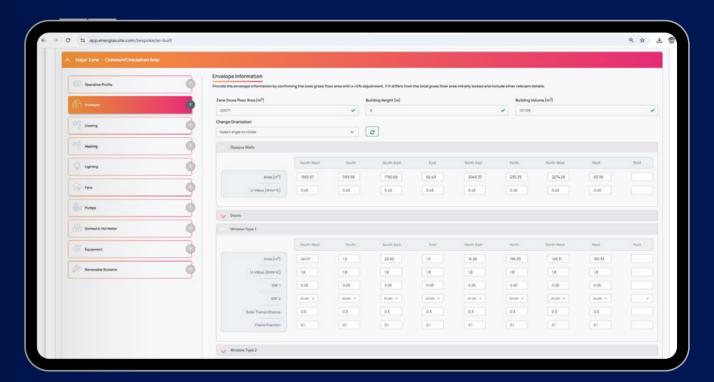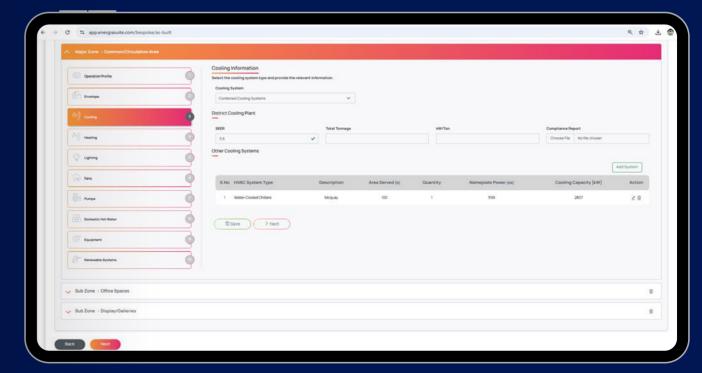MOSQUES

HEALTHCARE

EDUCATIONAL
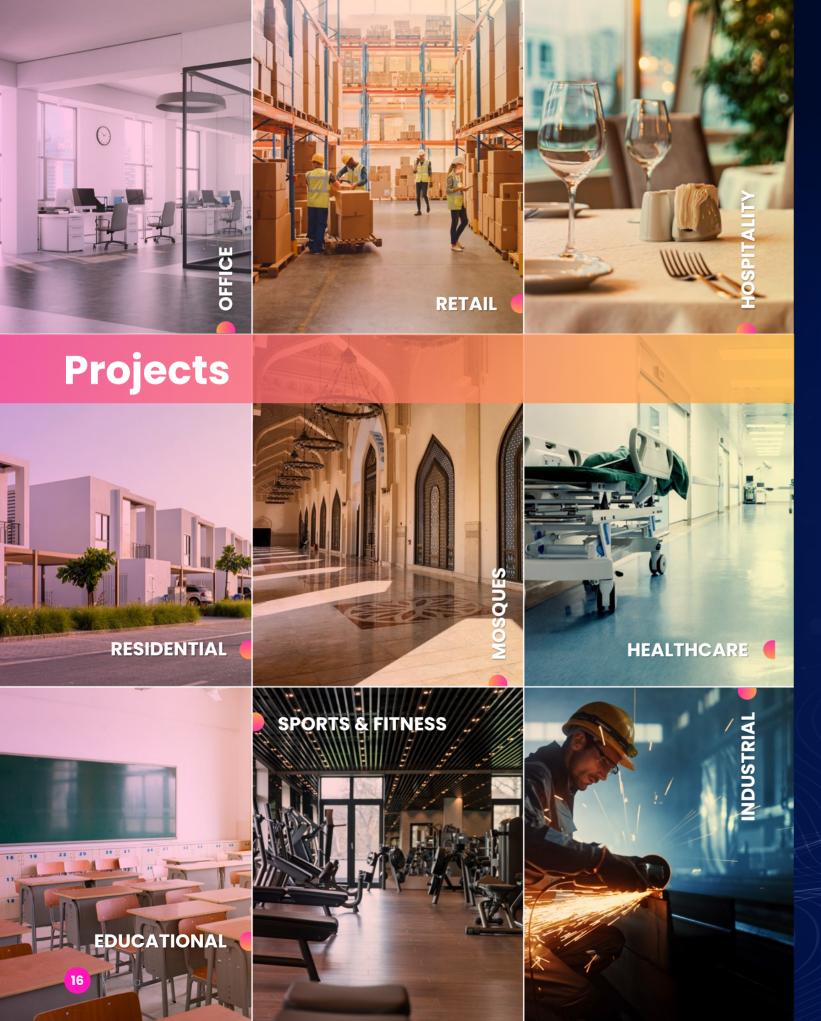
SPORTS & FITNESS

INDUSTRIAL

Energia: Your Trusted Partner in Advancing Energy Efficiency

ABOUT GORD
Energia is a product of the Gulf Organisation for Research & Development (GORD) – a non-profit organization headquartered in Qatar Science & Technology Park (QSTP). GORD provides a holistic energy ecosystem for organizations to enhance their energy performance through climate-adaptive solutions that support continuous improvement principle towards environmental sustainability.

GORD

To learn more about **Energia**

Energia