

# Building Energy Simulation Software Market See Huge Growth, Development Assessment, Competitive Strategies by 2030

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[/EINPresswire.com/](https://EINPresswire.com/) -- Building energy simulation software is used to simulate the energy performance of buildings and provides performance insights by calculating heating, ventilation, cooling and lighting energy needs. It helps architects and engineers make better informed decisions regarding building envelope designs and mechanical and electrical systems.



The global [Building energy simulation software market](#) size was valued at US\$ 4.90 billion in 2023 and is expected to reach US\$ 10.36 billion by 2030, grow at a compound annual growth rate (CAGR) of 11.3% from 2023 to 2030

## Market Dynamics:

The building energy simulation software market is driven by the increasing demand for energy efficient buildings globally. Various government initiatives and policies to promote green buildings are also fueling the adoption of building energy simulation software. For instance, European Union Energy Performance of Buildings Directive mandates the use of building energy simulation tools for assessing the energy performance of new and existing buildings. Another major driver is the rising need to reduce carbon emissions from the building sector. Building energy simulation software helps analyze various design options and identify most sustainable solutions to lower carbon footprint of buildings.

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## Demand for Compliance with Energy Efficiency Mandates

The demand for building energy simulation software is driven by the strict regulations and

mandates imposed by governments worldwide regarding energy efficiency in the construction industry. Various countries have implemented building energy codes and standards that outline the minimum energy performance requirements for new and existing buildings. This has increased the need for designers, architects and engineers to accurately model and analyze the energy usage of buildings during the design stage to ensure compliance. Building energy simulation software allows stakeholders to test design modifications, HVAC systems and evaluate different efficiency scenarios to achieve the mandated efficiency targets. Non-compliance can result in delays, rejection of building permits or monetary penalties, compelling the industry to increasingly rely on such software.

## Rising Focus on Reducing Carbon Emissions from the Built Environment

With the growing climate change concerns, there is significant emphasis on lowering carbon emissions from buildings which are responsible for nearly 40% of energy consumption globally. This has boosted the demand for building energy simulation tools that can help design net zero energy buildings and plan retrofits of the existing building stock. Architects and builders utilize these software to lower energy bills, decrease carbon footprint and improve indoor environment quality of structures. Government incentives and subsidies for green buildings also motivate the industry to adopt energy modeling early in the project lifecycle to qualify for such benefits.

### Top Key Players:

Autodesk Inc., IES (Integrated Environmental Solutions), Bentley Systems, Dassault Systèmes, EnergyPlus, CYPE Software, DesignBuilder Software, IESVE (IES Virtual Environment), Carrier, eQUEST, Trane Technologies, IES TaP, IES SCAN, Trimble, EnergySoft

### Detailed Segmentation:

#### By Component:

- Software
- Services
- Others

#### By Application:

- Commercial Buildings
- Residential Buildings
- Government Buildings
- Others

#### By End-use Industry:

- Architecture & Construction
- Government & Defense
- Automotive & Transportation

Manufacturing & Engineering

Others

By Deployment Model:

On-premise

Cloud-based

By Organization Size:

SMEs

Large Enterprises

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Dependency on Basic Internal Skills and Expertise

While building energy simulation software has become common in design practices, their effective use still relies on the availability of internal skills and manpower with expertise in building energy modeling. These specialized resources required extensive technical training which increases costs and resource requirements for end-users. The complexity of the software and intricate nature of modeling building energy performance poses a restraint as many smaller architectural or engineering firms lack dedicated internal staff with the necessary competencies. This dependency on external consultants increases timelines and budget overruns for projects.

Opportunity for Software as a Service (SaaS) Offerings

The building energy simulation industry has an opportunity to move from traditional capital-intensive perpetual licensing models to subscription-based software as a service offerings. A SaaS delivery approach provides an affordable and flexible way for firms of all sizes to gain access to these simulation tools on an as-needed basis without large upfront costs. It eliminates the need for on-premise installations, software upgrades and associated IT support requirements. SaaS-based building performance modeling could help expand the accessible market and encourage broader adoption of such software. Vendors stand to improve revenue visibility through recurring subscriptions as opposed to one-time license fees.

Adoption of Cloud Computing and Web-based Technologies

There is a growing trend in the building energy simulation market towards the development of cloud-enabled and web-based software solutions. Traditional desktop applications are shifting to the cloud for improved collaboration, sharing of project data in real-time and accessibility from any internet-connected device. Cloud deployment offers scalability, remote access, automatic software updates and data storage. Vendors are leveraging technologies such as web-based user interfaces, BIM/CIM integration, parametric modeling, database linkage and APIs to streaming

building data. The move to the cloud is expected to make these simulation tools more affordable, flexible and user-friendly to drive wider industry acceptance.

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Key Questions Addressed in the Market Report:

What is the expected size, share, and CAGR of the Building Energy Simulation Software Market over the forecast period?

What are the key trends expected to influence the Building Energy Simulation Software Market between 2023 and 2030?

What is the expected demand for various types of products/services in the Building Energy Simulation Software Market?

What long-term impact will strategic advancements have on the Building Energy Simulation Software Market?

Who are the key players and stakeholders in the Building Energy Simulation Software Market?

What are the different segments and sub-segments considered in the Building Energy Simulation Software Market research study?

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Mr. Shah

Coherent Market Insights Pvt. Ltd.

+ +1 206-701-6702

[sales@coherentmarketinsights.com](mailto:sales@coherentmarketinsights.com)

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