

Brochure

Transforming Cooling Solutions: Business Models for Cooling as a Service (CaaS) in India

Asia Low Carbon Buildings Transition (ALCBT) Project

Background

With rising demand for cooling and increasing electricity consumption, there is an urgent need for sustainable alternatives to conventional, energy-intensive systems. To address this, the Asia Low Carbon Buildings Transition (ALCBT) Project is introducing the Cooling as a Service (CaaS) model – a market-based solution that delivers energy-efficient, climate-friendly cooling without any upfront investment from customers, through its implementing partner, the Energy Efficiency Services Limited (EESL). Under this model, users pay only for the cooling they consume, making advanced, low-carbon technologies more affordable and accessible.

Through the ALCBT project, CaaS supports India's national goals on energy efficiency and carbon reduction, while promoting sustainable cooling solutions across residential and commercial buildings. The initiative aims to reduce carbon footprints and scale climate-smart impact across India and Southeast Asia.

Why CaaS?

Cooling as a Service (CaaS) offers a pay-per-use model where customers pay only for the cooling they receive, combining a fixed monthly fee and a variable charge based on actual usage (TRh). Under CaaS, technology providers cover electricity and maintenance costs, encouraging them to install and operate highly efficient systems. Unlike the traditional ESCO model, which relies on shared savings, CaaS directly charges for delivered services, offering transparency and simplicity.

CaaS eliminates upfront investment barriers, promotes energy-efficient technologies, and delivers multiple benefits:

- ✓ Reduced energy and operational costs
- ✓ Improved reliability through regular maintenance
- ✓ Lower carbon footprint

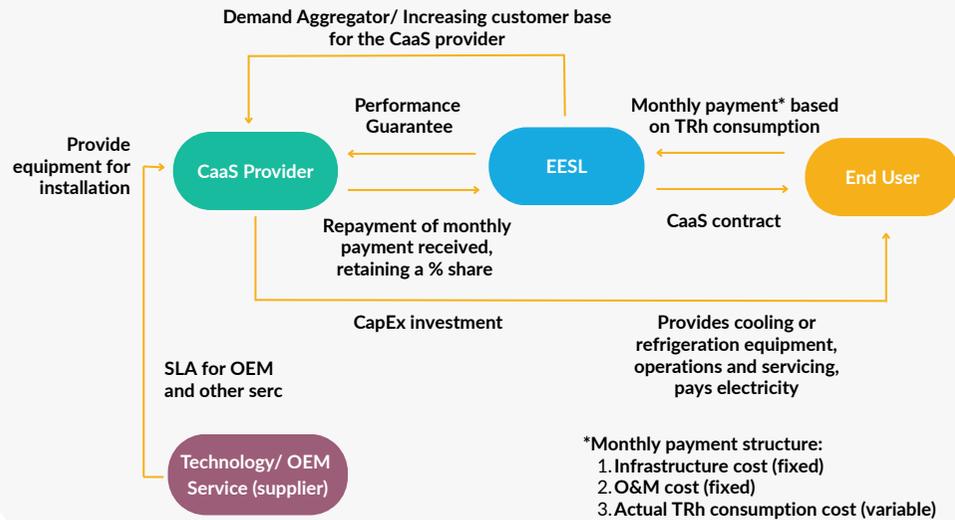
With technologies such as chiller optimization, inverter and VRF systems, heat recovery, and AI-driven building management, CaaS has the potential to transform India's cooling landscape. Together with EESL's Energy Service Company (ESCO) model, it supports performance-based, sustainable, and inclusive cooling solutions for the future.

Business Model Overview

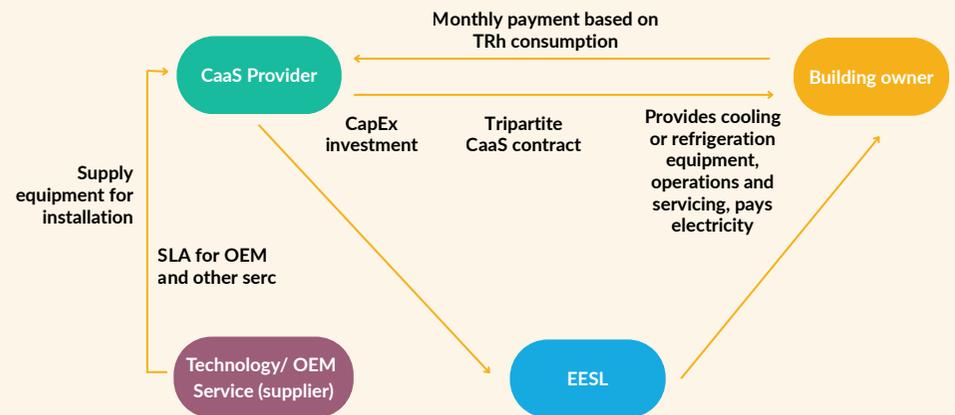
Traditionally, CaaS models involve only the CaaS provider and the end users. However, in this scenario, EESL emerges as a crucial stakeholder alongside the CaaS provider and the end user. It has developed two potential versions of business models.

Potential Business Model

Model 1. Capex Investment by CaaS Provide - Back-to-back Contracts



Model 2. Tripartite Agreement - Capex Investment by CaaS Player



Structure

Roles and Responsibilities

Financial Flow

- The CaaS player assumes the capex investment. This approach allows the CaaS player to directly invest in the necessary infrastructure.
- The model operates through two back-to-back contracts: (1) contract between the end user and EESL and (2) contract between EESL and the CaaS provider.
- EESL acts as the intermediary, coordinating directly with the end user and providing an operational efficiency guarantee to the end consumer, as promised by the CaaS provider through the CaaS contract.

CaaS Provider: Supplies equipment, manages O&M (corrective/preventive), optimizes HVAC, and may cover electricity costs.

EESL: Oversees project management, monitoring, and verification.

End User: Accesses cooling without capital investment, focusing on core business.

End users pay EESL, which retains a pre-agreed share before transferring the remainder to the CaaS provider.

- This preferred model by EESL** also involves Capital Expenditure (CapEx) investment by the CaaS provider, but with enhanced collaboration between stakeholders.
- It emphasizes a tripartite agreement among the CaaS provider, the building owner, and EESL.

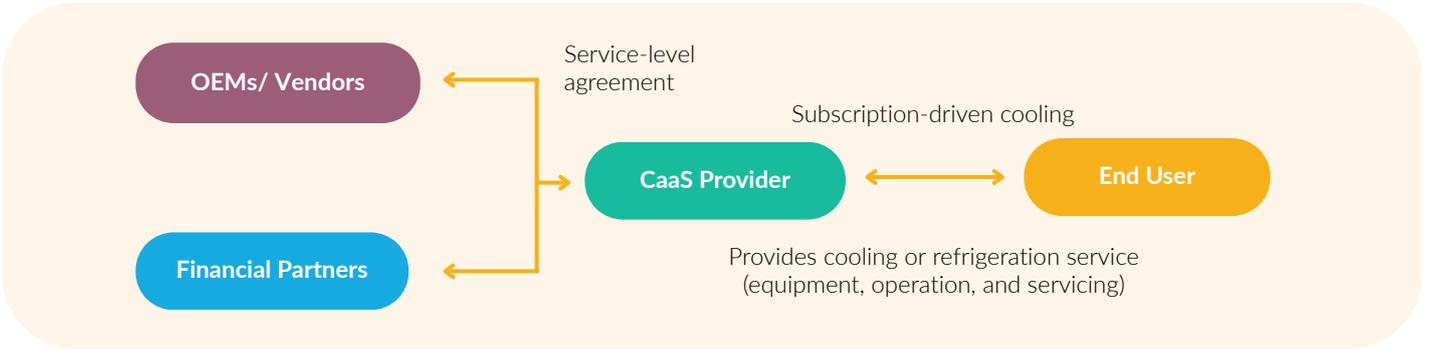
Building Owner: Signs tripartite contract with EESL and provider.

CaaS Provider: Installs equipment, ensures efficient operations, pays electricity, and maintains guaranteed efficiency.

EESL: Handles monitoring, verification, and project management

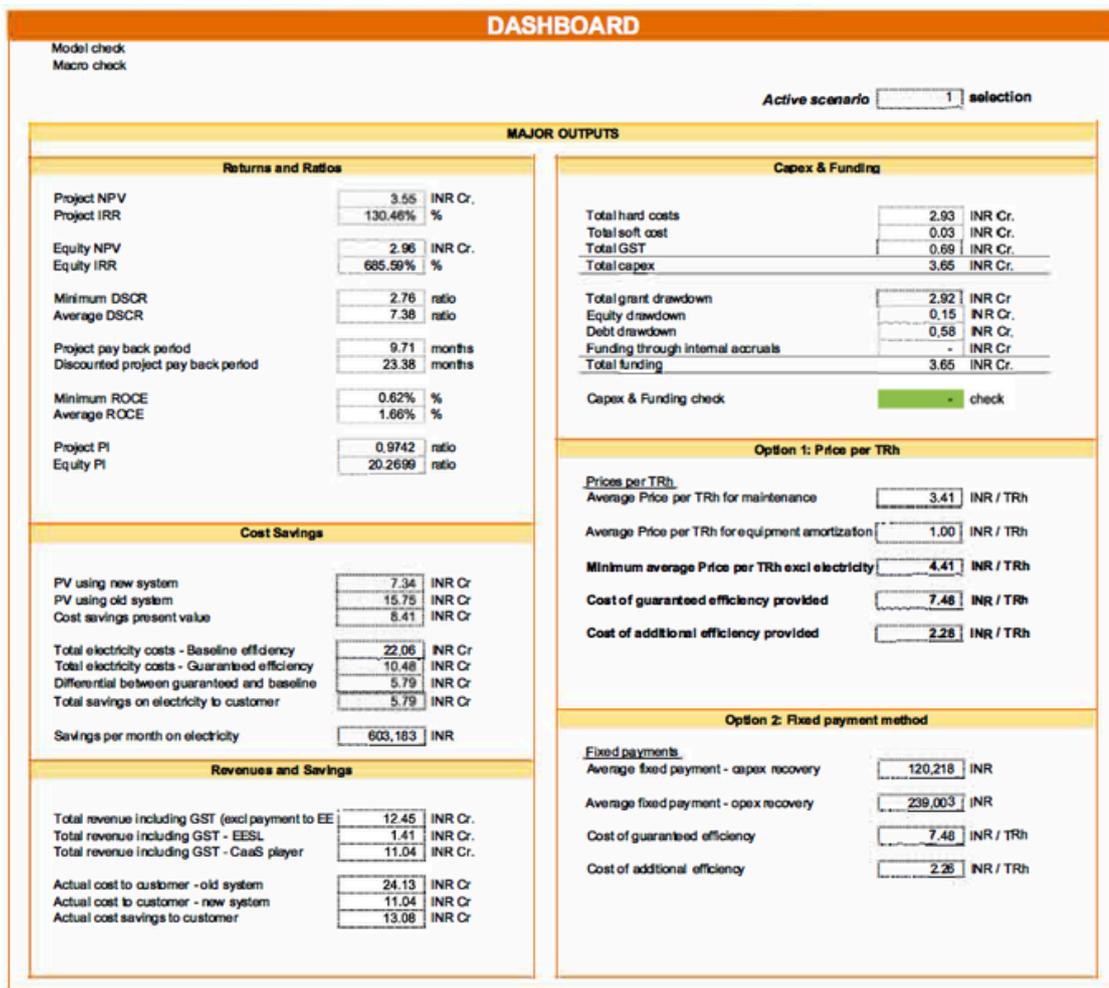
Monthly payments are based on TRh consumption, with a pre-agreed percentage (10-15%) allocated for monitoring and verification. In this case, the CaaS provider directly receives the monthly payment from the end user, and it further transfers the monthly pre-agreed share with EESL.

Cooling as a Service Model



Financial Model

EESL has also designed the financial model for the CaaS Project. This financial model evaluates the viability and profitability of a CaaS business from a CaaS providers perspective. The model projects revenue costs, cash flows, and key financial metrics for providing cooling solutions to clients on a subscription basis. (See figure below)



- Case Study:
AI-Powered Chiller Plant
- Location: I Elpro Business Park, Pune, India
 - Energy: Fully solar-powered, generating surplus
 - Model: Centralized chilled water, pay-per-use
 - Technology: AI algorithms optimize energy efficiency and air quality
 - Expansion: Kaer expanded from Singapore to India in 2019
 - Benefits: Customer-centric, scalable, sustainable, tech-driven
 - End-User: Clean air, renewable energy, simplified billing
 - Future plans: Further deployments in India, Malaysia, and Southeast Asia with \$100M investment

For more information:

Energy Efficiency Services Limited
I to 4th Floor, IKON Tower, FC-24C,
Sector- I 6A, Film City, Noida-20130 I, U.P.
Phone : 0120-654160 I
Email: gshankar@eesl.co.in
Mobile: +91-9868880656, 9654082896



About ALCBT

The Asia Low Carbon Buildings (ALCBT) Project is a five-year initiative that seeks to reduce GHG emissions by catalyzing nationwide transitions towards low-carbon buildings in Cambodia, India, Indonesia, Thailand, and Vietnam.

The project is funded by the Government of Germany's Federal Ministry for Economic Affairs and Climate Action (BMWK) through the International Climate Initiative (IKI), and is implemented by a consortium led by the Global Green Growth Institute (GGGI), in partnership with the ASEAN Centre for Energy (ACE), Energy Efficiency Services Limited (EESL), and HEAT GmbH.



Learn more at
alcbt.gggi.org.