Cooling as a Service (CaaS)

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What is Cooling as a Service (CaaS)?

Global share of electricity use from cooling is projected to increase from 10% to 30% by 2050

- Cooling as a Service (CaaS) is an innovative new business model where cooling equipment is supplied and installed to customers with **no upfront payment** (pay-per-use)
- Customers pay a **fixed cost per unit** for the cooling that they receive – this cost includes encompasses all equipment, O&M, profit margin for the supplier
- CaaS transforms a traditional product-focused business model into a service-focused one – **standardised contract** with payments agreed in advance & tailored solution for each customer
- The fee per unit of consumption is higher than a customer would pay with a conventional cooling ownership model, an **incentive for the customer to minimise cooling consumption**
- Equally, there is a strong incentive for the service provider to take a circular economy **whole lifecycle approach** to asset management, maximising the value of equipment
- The CaaS model is **similar to ESCO models**, where a technology provider installs (and maintains) the equipment, recovering costs through periodic payments from the customer

Note: the cooling market to 2050 is worth $230bn per year, with 90% of costs linked to O&M

CaaS Stakeholders

Technology provider

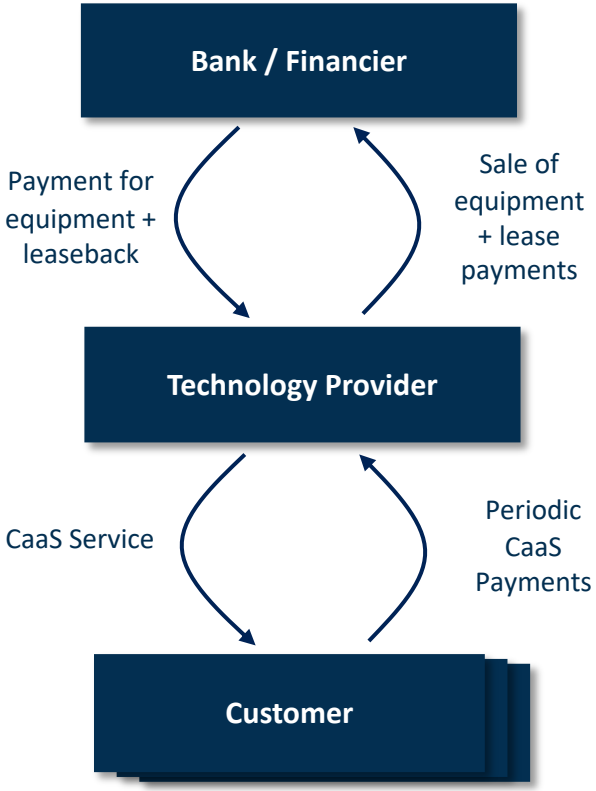
- Provides CaaS service
- Installs and maintains the cooling equipment (typically off balance sheet)
- Pays for the electricity consumed by the equipment – incentive to install the most energy efficient equipment and to perform high quality maintenance

Customer

- No upfront cost and no performance risk
- Makes periodic payments, which are fixed cost-per-unit for the cooling service delivered and are based on actual usage

Bank

- Sales / leaseback: Purchases the equipment from the technology provider (asset-based transaction)
- Leases equipment back to technology provider for a steady lease payment cashflow



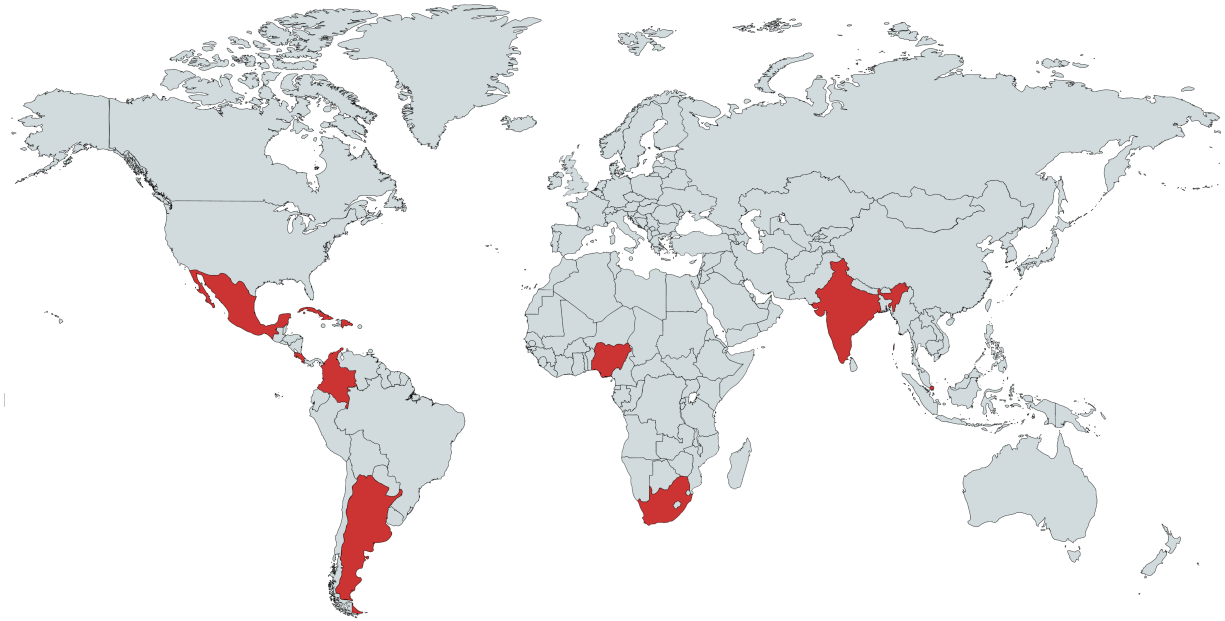
Barriers to Clean Cooling and Benefits of CaaS

Barriers to Clean Cooling	Benefits of CaaS
Not the core business of the customer	Fully outsourced service, providing high quality EE equipment
Upfront CAPEX costs (may source cheap and inefficient technology)	No upfront CAPEX required, frees up CAPEX for other investment priorities, helps to increase EE demand
Uncertain energy cost savings	Cost savings not part of the agreement, predictable cost/revenue stream based on cooling consumption
New appliances / cleaner refrigerants perceived as risky, lack of trust in performance	Not exposed to performance risk of new appliances, or new refrigerants
O&M often does not occur	Provider have direct incentive to do O&M, electricity savings of up to 20% as a result
Difficult to make compelling business case without incentives	Can be driven by the market – real incentives, not artificial

There are relatively few examples of CaaS in action, compared to MaaS and LaaS – the CaaS model has high potential and looks set to take off in the coming years

Implementation of CaaS

- Resources and TA are being provided through the BASE / K-CEP CaaS Initiative
- Awareness raising, financial modelling and pricing, contract standardisation
- Pilot projects in countries around the world



Actions for Scaling CaaS

- **Governments:** raise awareness, provide technical assistance where private sector is as yet unwilling, lead by example through procurement, act as a coordinating entity
- **NGOs / donors**: create alliances and support stakeholder collaboration, provide knowledge, act as a coordinating entity, support demonstration projects (including TA for audits, bankable proposals, and M&V)
- **Industry:** collaborate with financiers to standardise / simplify replicable CaaS contracts, pilot / demonstrate CaaS projects, set up appropriate monitoring, documentation and billing procedures
- **Financiers:** collaborate with industry to standardise / simplify replicable CaaS contracts, increase investment into CaaS businesses, consider finance mechanisms that support CaaS (e.g. sale-leaseback, guarantees)

The UK-ASEAN Low Carbon Energy Programme (LCEP) welcomes innovative cooling project proposals with upcoming EOIs/RFPs in Thailand and Malaysia

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