Cooling as a Service (CaaS)

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What is Cooling as a Service (CaaS)?

- 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

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