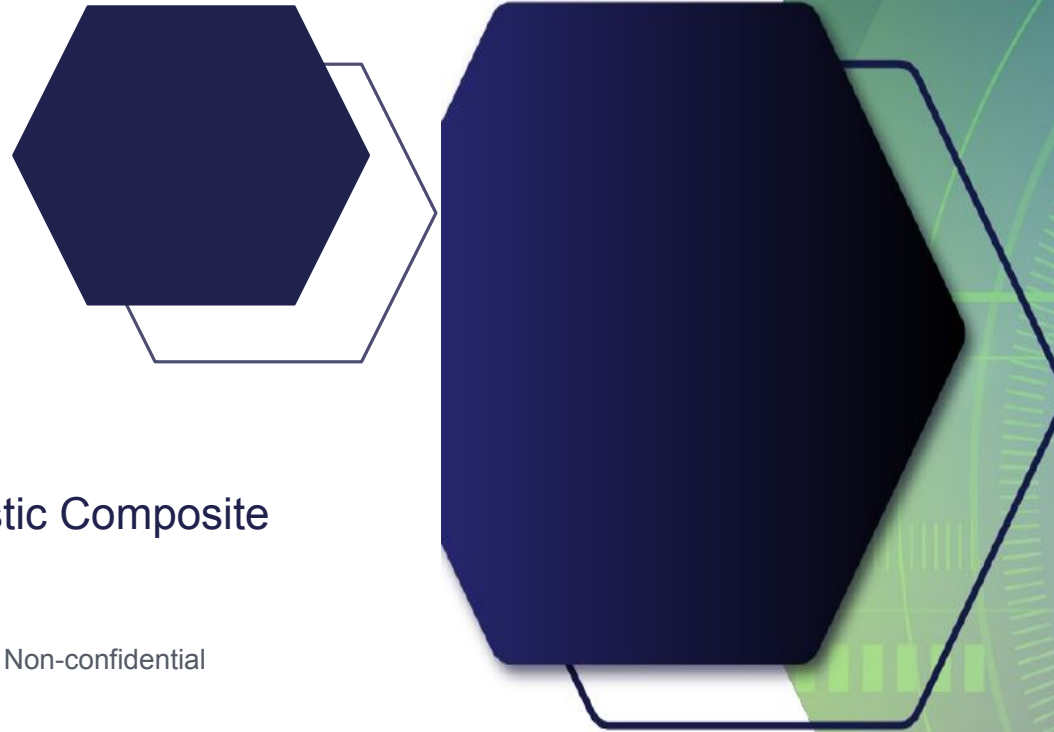


MULTI-THERM

Continuous Manufacturing of Thermoplastic Composite
Thermal-Fluid Plates

SMART Call 10 Project Idea | Hycomplate Ltd | 8 October 2026 | Non-confidential





One manufacturing platform. Two validation environments. One integration gap.

MULTI-THERM will develop a scalable route from high-temperature thermoplastic composite tape to structured plates and field-ready thermal-fluid modules.

Refinery heat recovery

Türkiye

Spacecraft thermal management

Singapore

**Module integration partner
sought**

SMART network

ORGANISATION PROFILE

Hycomplate Ltd

UK micro company developing advanced thermoplastic composite plates and scalable manufacturing routes for thermal-fluid and electrochemical systems. The platform combines composite formulation, fibre impregnation and consolidation, and precision channel forming to create lightweight, corrosion-resistant components.

Relevant R&D expertise: conductive and structural composites, thermoplastic processing, flow-field and micro-channel design, plate manufacture, independent characterisation and grant-funded collaborative R&D delivery.

Evidence base

Independent baseline characterisation completed by the National Physical Laboratory; concept-stage continuous tape-line development completed with AMRC.

Leadership

Dr Hasan Caglar, CEO & Co-Founder, composites engineer with 10+ years in thermoplastic composites, joining, process optimisation and collaborative R&D.

Project fit

SMART advanced manufacturing: production process, component platform, module integration and validation in demanding industrial environments.



PROPOSAL INTRODUCTION (I)

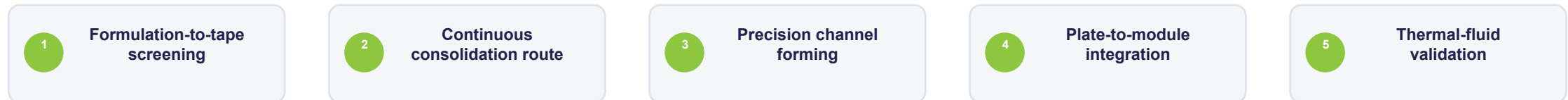
Vision: main project goal

Develop a continuous advanced-manufacturing route for lightweight thermoplastic composite thermal-fluid plates and integrate them into leak-tight modules for relevant-environment validation.

Motivation: why the project is necessary

Metallic heat-transfer components are well established but can impose mass, corrosion, cost and manufacturing-rate penalties in aggressive industrial and aerospace environments. A composite route can only be credible if it is manufacturing-led and validated beyond coupon or individual-plate level.

Content: developments to be made in the project



The project is designed as a single manufacturing platform, not two separate application projects. Refinery heat recovery and spacecraft thermal management act as demanding validation domains for the same scalable technology.



PROPOSAL INTRODUCTION (II)

Expected outcomes

- Lab-scale formulation and tape screening dataset
- Continuously consolidated plate stock
- Structured micro-channel plate demonstrators
- Integrated module concept with sealing, manifold and assembly strategy
- Validation evidence for refinery and spacecraft requirements

Market impact

- Lower-mass alternative to metallic thermal-fluid plates
- Improved route to corrosion-resistant components
- New UK-led advanced-manufacturing capability
- Entry route into industrial heat recovery, space thermal management and adjacent energy systems
- Clear exploitation path through module and OEM partners

Schedule: start and end dates / duration

Jan 2027

Project Outline

Apr 2027

Full Proposal

Jun 2027

SMART label decision

Late 2027

National setup

30-36 months

Project delivery



PARTNERS

Current consortium: partners already involved / under development

Partner	Country	Role
Hycomplate Ltd	UK	Coordinator; materials, plate architecture, continuous manufacturing and exploitation
Major Turkish refiner	Türkiye	Industrial specification, refinery heat-recovery requirements and validation route
Galamad Aerospace	Singapore	Spacecraft thermal-management validation and integration requirements
UK universities	UK	Formulation-to-tape development and thermal-fluid modelling under discussion

Partner search: type of partner sought and preferred origin

Primary gap: module integration

Industrial or RTO partner with capability in plate-to-module integration: joining, sealing, manifold design, assembly, leak-tightness and system-level validation.

Additional useful capabilities

High-temperature thermoplastic processing, continuous forming, tooling, heat-transfer module engineering and industrial scale-up. Countries of interest include Sweden, Denmark, Germany, Portugal, Austria, Finland and other SMART-supporting countries.



CONTACT INFO

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CEO & Co-Founder | Hycomplate Ltd

Email	hasan.caglar@hycomplate.co.uk
Website	www.hycomplate.com
Location	Cambridge, United Kingdom
Event objective	Find SMART partner for module integration and industrialisation

Non-confidential discussion only. Detailed formulations, processing windows, tooling concepts and unpublished manufacturing data will not be shared without appropriate agreements.

Partner sought

Module integration: joining, sealing, manifold design, assembly and leak-tight validation for thermoplastic composite thermal-fluid plates.

