TI-SKIN®

Passive Energy Management Platform

Beyond insulation. A new infrastructure for intelligent thermal energy management.

CONTENTS

Contents

A complete overview of the TI-SKIN® platform and its energy impact.

01 The Energy Challenge

Building energy consumption and the inefficiency of traditional insulation

02 The TI-SKIN® Platform

PCM technology, Magma® fluid and the three thermal management mechanisms

03 The Building as Thermal Battery

Strategic benefits and applications in key industrial sectors

04 Energy Transition

TI-SKIN® as an enabling technology for Net Zero strategies and ESG programmes

01

The Energy Challenge

Buildings and infrastructure represent one of the main sources of energy consumption worldwide.

The energy challenge of modern buildings

Buildings and infrastructure represent one of the main sources of energy consumption worldwide.

Key inefficiencies

- Uncontrolled heat ingress
- Constant thermal dispersion
- Energy load peaks
- Oversized HVAC systems
- Growing demand for cooling

Traditional insulation

Slows thermal flow, but **does not manage energy**. It is a passive barrier that does not interact with thermal cycles.

The real challenge

It is no longer about insulating.
It is about managing energy.

02

The TI-SKIN® Platform

TI-SKIN® is not an insulation panel. It is a passive energy management platform.

Passive Energy Management Platform

TI-SKIN® controls, stores, modulates and optimises thermal flows through **PCM**, reflective surfaces and advanced thermodynamic configurations.

The envelope becomes a **distributed thermal battery** with zero electrical energy consumption.

Three complementary mechanisms

Thermal storage

PCMs absorb excess energy and gradually release it

Dynamic regulation

Interaction with daily thermal cycles, load shifting

Radiant control

Low-emissivity surfaces limit radiant heat transfer

TI-SKIN® installation on site

Magma® — The Biphasic Energy Fluid

CORE TECHNOLOGY

Magma®

Biphasic energy fluid based on **Phase Change Materials (PCM)**.

Absorbs, stores and releases thermal energy in a controlled manner through the solid-liquid transition.

Just as terrestrial magma accumulates and transfers energy, Magma® manages thermal flows, transforming passive surfaces into active components.

The TI-SKIN® / Magma® Relationship

PLATFORM

TI-SKIN®

Application architecture and energy management

ENERGY FLUID

Magma®

The thermodynamic medium that makes the platform possible

TI-SKIN® is the platform.

Magma® is the fluid that makes it possible.

The Three Mechanisms of the TI-SKIN® Approach

01

Energy Storage

The integrated PCMs absorb excess thermal energy during periods of maximum heat exposure.

Energy is temporarily stored and gradually released, reducing **thermal peaks**.

02

Dynamic regulation

Interaction with **daily thermal cycles** to delay heat transfer.

Reduction of temperature peaks and load shifting to **favourable time slots**.

03

Radiant control

Reflective surfaces with **low emissivity** that limit radiant heat transfer.

Reduction of solar thermal gain and increased envelope efficiency.

03

The Building as Thermal Battery

Traditional insulation does not store energy. TI-SKIN® transforms the envelope into a distributed energy storage system.

Strategic Benefits

Energy consumption reduction

Lower energy demand for heating and cooling

Peak load reduction

Less power required from HVAC systems

Load shifting

Optimised consumption during favourable time slots

Greater comfort

More stable and uniform indoor temperatures

Investment reduction

Reduced size and cost of plant and equipment

Emissions reduction

Contribution to ESG and decarbonisation objectives

Greater energy resilience

Improved ability to withstand extreme weather events or energy disruptions

Applications — Key Sectors

Data Center

Cooling load reduction, PUE improvement and operational resilience

Hospitals & Healthcare

Stable thermal control, cost reduction and patient comfort

Hotels & Hospitality

Energy consumption optimisation and enhanced guest experience

Industry

Thermal management of production processes and reduced energy costs

Logistics & Cold Chain

Temperature control and energy reduction for product preservation

Residential Construction

Increased energy performance and property value

Applications — Critical Infrastructure & Marine

CRITICAL INFRASTRUCTURE

Critical Sector

- Telecommunications
- Technology shelters
- Military installations
- Energy stations
- Strategic facilities

Thermal control for infrastructure where reliability is mission-critical.

NAVAL & YACHTING

Marine & Yachting

Temperature control for **comfort and efficiency** on vessels. Reduction of air-conditioning load and on-board consumption.

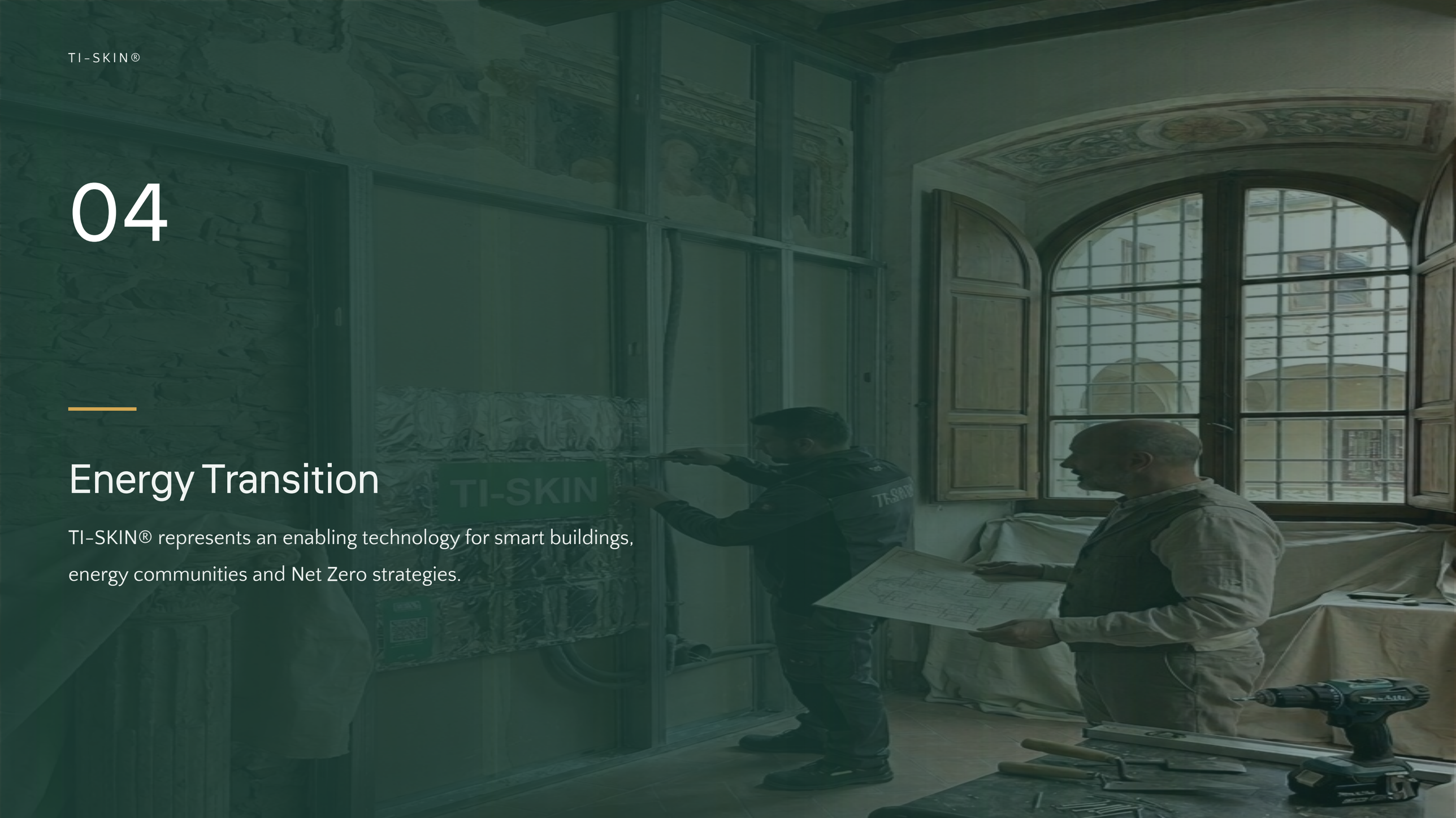
Increased **operational range** of hybrid and electric vessels.

- Luxury yachts and Superyachts
- Cruise ships
- Commercial vessels
- Catamarans and electric vessels
- Marine platforms and floating structures

04

Energy Transition

TI-SKIN® represents an enabling technology for smart buildings, energy communities and Net Zero strategies.



An Enabler of the Energy Transition

The energy transition requires **intelligent management** of energy, not just renewable energy production.

- **Smart buildings**
- **Energy communities**
- **Sustainable infrastructure**
- **ESG programmes**
- **Net Zero strategies**
- **Large-scale efficiency**

TI-SKIN® introduces a **new technology category**: passive thermal energy management.

It does not produce energy. **It manages, stores and returns it when needed.**

TI-SKIN® TECHNOLOGY

TI-SKIN®

Not designed to stop heat.

Designed to manage energy.

Passive Energy Management Platform

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