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ClimaTech, a world-first climate-asset lens

Part 1

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ClimaTech was born from a realisation...

Climate change is already disrupting our infrastructure.

All infrastructure assets are exposed to:

Physical risks

Transition risks

Potential losses of physical risks of exposed assets **can amount to 54 %** in a "Hot House" scenario by 2050.

Yet, current tools are often **too generic** to help understand local vulnerabilities and design appropriate strategies.

Hence the idea of creating a **unique** platform gathering **granular** information. →

Source : EDHEC Climate Institute

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What is ClimaTech?

It is the largest global climate-asset platform of technologies and strategies to...

Mitigate climate change

↓

Identify the most effective solutions **to decarbonise** infrastructure.

Adapt to its consequences

↓

Understand the **physical risks** each type of infrastructure faces and assess the best **resilience measures.**

Which **infrastructure assets** are we talking about? →

Overview of the ClimaTech database available online

Search: Search a strategy or key technology | TICCS: TICCS 1 | Category: Category 3 | Effectiveness: All

TICCS Superclass	TICCS Class	TICCS Subclass	Category	Strategy	Description	Key Technologies	Effectiveness	Reference
Transport	Port Companies	Container Port	Decarbonisation S1	Increasing energy efficiency of operations	Making port operations more efficient by using advanced technologies, automation and process control strategies to reduce fuel usage across the site.	Smart lighting systems, AI-driven climate control for HVAC and cooling systems, efficient cargo handling equipment, advanced energy management systems, waste heat recovery systems.	Medium	Alamoush, A. S., Ballini, F., & Ölçer, A. I. (2020). Ports' technical and operational measures to reduce greenhouse gas emission and improve energy efficiency: A review. Marine Pollution Bulletin, 160, 111508.

Source : EDHEC Climate Institute

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Which infrastructure assets are covered?

Non-Renewable Power

Environmental Services

Social Infrastructure

Energy and Water Resources

ClimaTech examines 8 industrial "superclasses" ...

Network Utilities

Renewable Power

Transport

Data Infrastructure

Nuclear Power Generation

Potable Water Treatment

Hospitals

Crude Oil Refinery

... divided into 101 industry subclasses, for example

Electricity Distribution Network

Photovoltaic Power Generation

Airports

Data Centres

For each asset class, you'll find data on both decarbonisation and physical risks. →

Source : EDHEC Climate Institute

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For Decarbonisation

ClimaTech breaks down emissions by Scope 1, 2 and 3

Scope 1 → Direct emissions from on-site operations.

Scope 2 → Indirect emissions from purchased energy.

Scope 3 → Other indirect emissions across the value chain.

For each infrastructure asset type we assess the effectiveness of decarbonisation strategies

Presented on a scale informed by underlying quantitative analysis:

Very low | Low | Medium | High | Very high

Example: Container Port

- Category: Scope 3
- Strategy: Upgrading port infrastructure with facilities to power docked ships with an electrified link from the shore as opposed to burning fossil fuels in ship engines.
- Effectiveness: High

Source : EDHEC Climate Institute

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For Resilience

ClimaTech distinguishes potential damages by type of risk:

- Flood
- Heat
- Storm
- Wildfire

For each infrastructure asset type we assess the effectiveness of resilience strategies and level of protection.

– +

Very low | Low | Medium | High | Very high

Example: Container Port

- Risk: Storms
- Strategy: Large structures such as causeways, breakwaters and moles, either offshore or onshore, that protect assets from strong winds and associated wave action.
- Level of Protection: High
- Effectiveness: Medium

Source : EDHEC Climate Institute

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ClimaTech also provides a series of sectoral analyses

These analytical research papers offer sector-by-sector insights into how these strategies are being implemented.

- Non-Renewable Power
- Environmental Services
- Social Infra
- Energy and Water Resources
- Data Infra
- Transport
- Renewable Power
- Network Utilities

Source : EDHEC Climate Institute

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Who is ClimaTech for?

For all who need reliable and comparable data on the real effectiveness of actions.

Civil society:

- Journalists
- NGOs
- Researchers

Professionals:

- Investors
- Engineering firms
- Multilateral financial institutions

Ultimately, ClimaTech could also serve as a basis for assessing whether listed strategies and technologies comply with **sustainable finance standards such as the EU Taxonomy.**

Source : EDHEC Climate Institute

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What does ClimaTech rely on?

200+ academic papers, technical documents, and government reports.

A team of specialised researchers and engineers.

The ClimateTech Review Committee Members

It brings together experts from academia, private sector, consulting firms, private equity, investment banks, fund management, international organisations and NGOs.

Source : EDHEC Climate Institute

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Who is behind ClimaTech?

EDHEC Climate Institute

This independent research centre combines scientific expertise, economic analysis, and advanced climate risk modelling.

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For more information, visit

https://climateinstitute.edhec.edu/climatech-project