

LIQUID



CUBE

NEW GENERATION OF COMPUTING INFRASTRUCTURE  
INTEGRATED WITH IMMERSION LIQUID COOLING SYSTEM



PRODUCT PRESENTATION



## Innovative Cooling Solution

- Liquid Cube™ platform is the computing and communication complex, integrated with the direct liquid cooling system of the electronic modules and electrical components.
- Designed for the wide range of solutions in various application areas.
- The solution is very efficient for: any scale data centers, blockchain networks, supercomputing nodes, information security complexes, mobile and distributed computing systems.

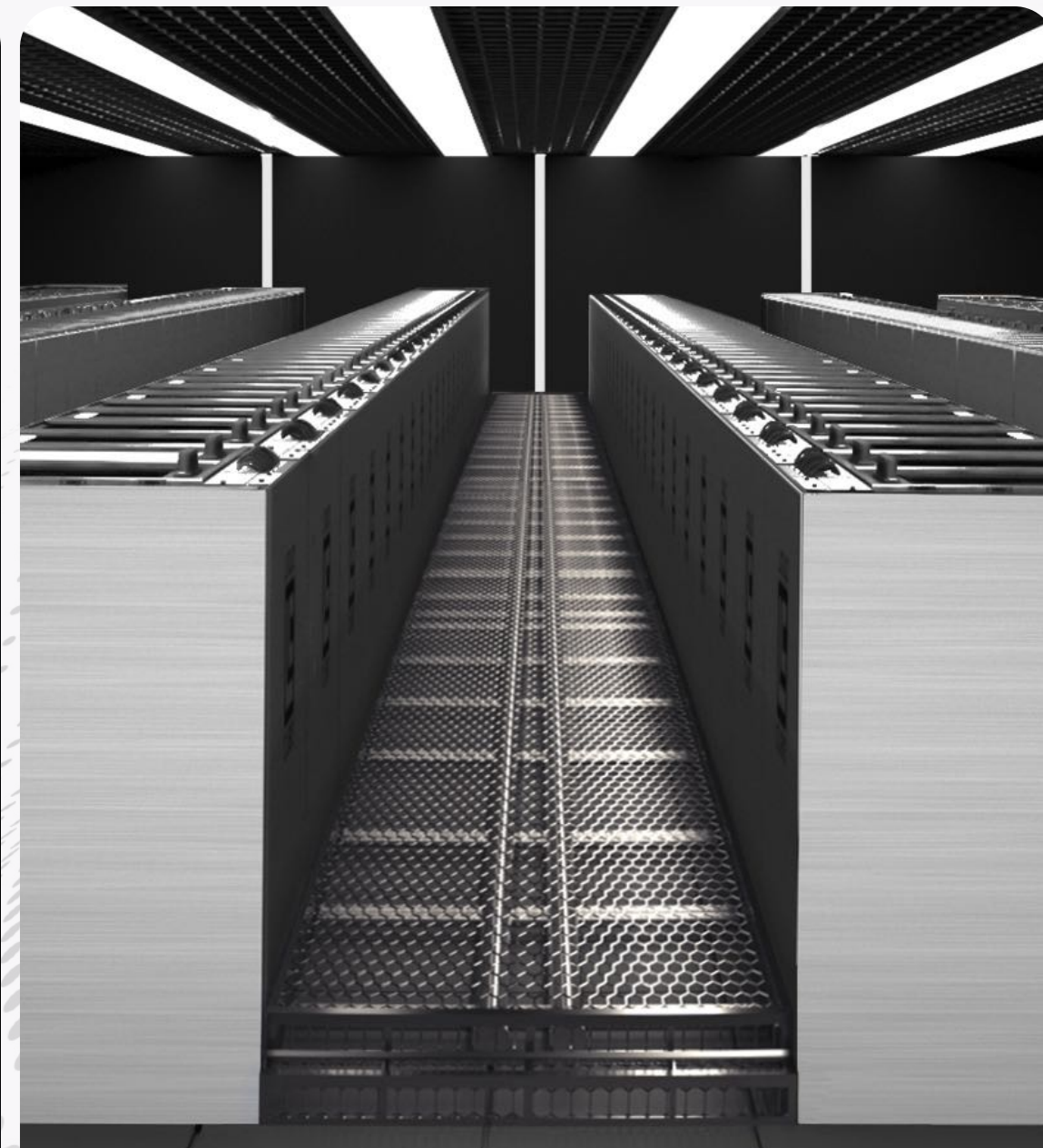




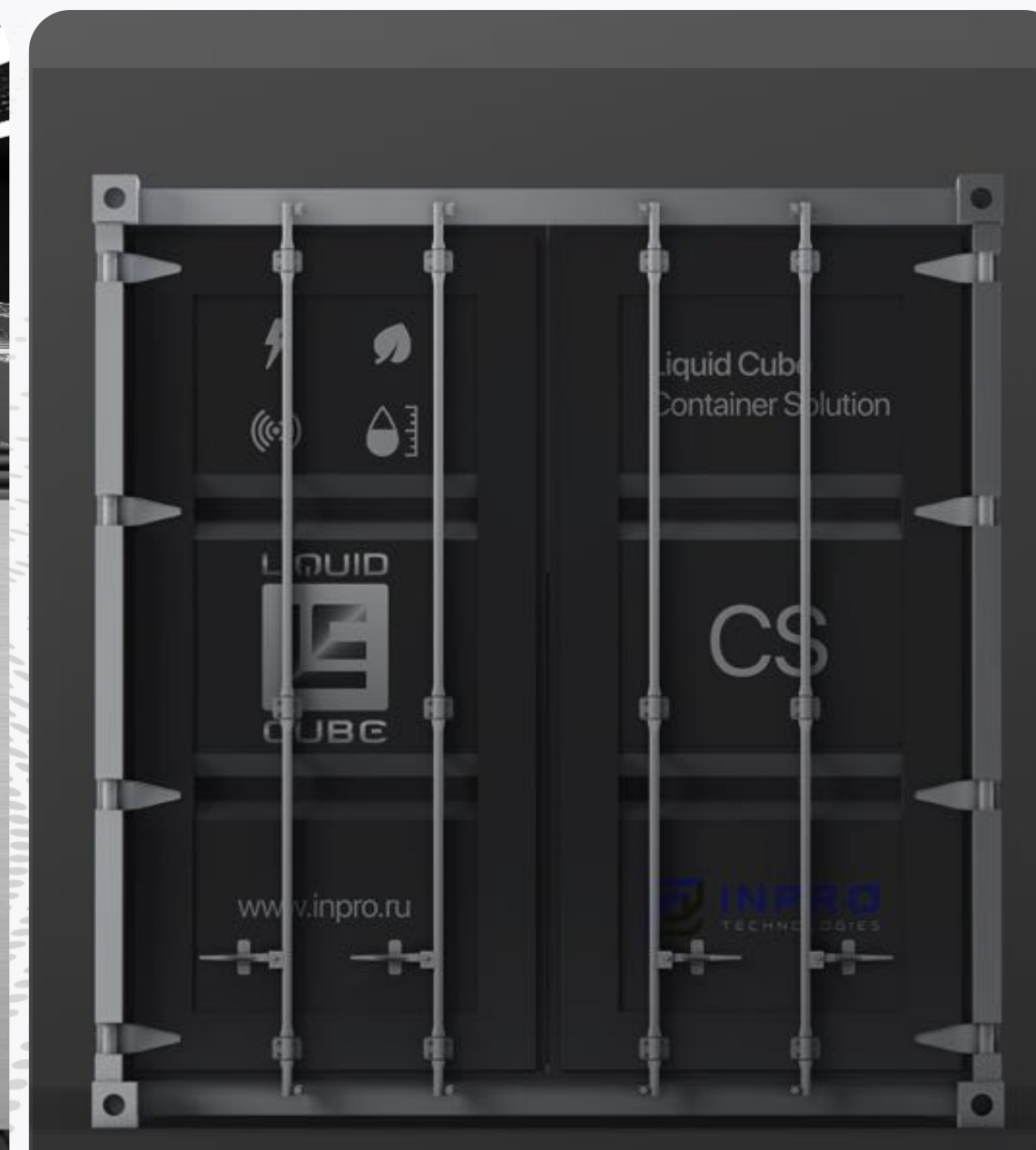
## Manufacturing versions:



**Liquid Cube OS**  
Office Solution



**Liquid Cube DS**  
Data Center Solution

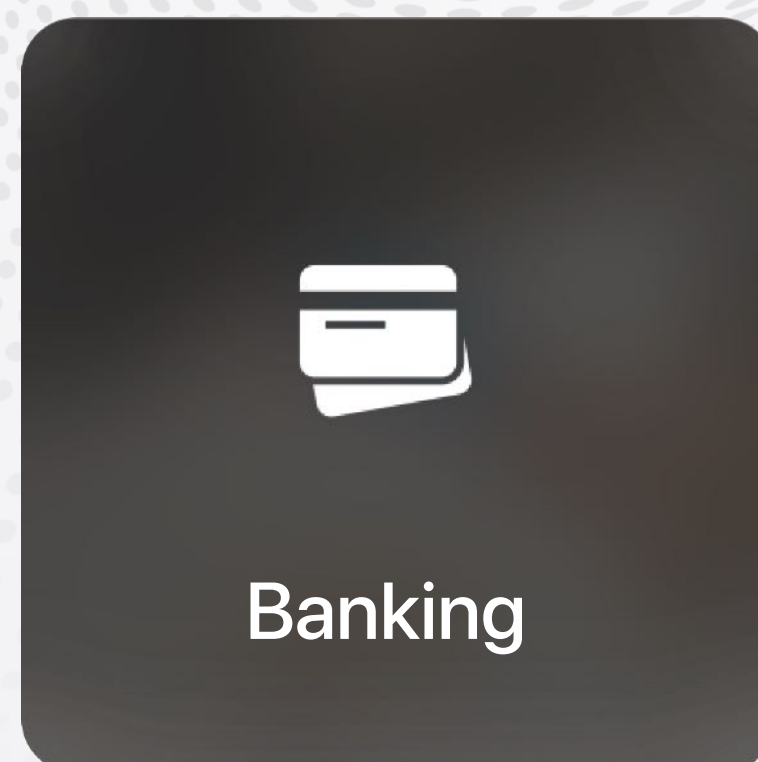


**Liquid Cube CS**  
Container Solution

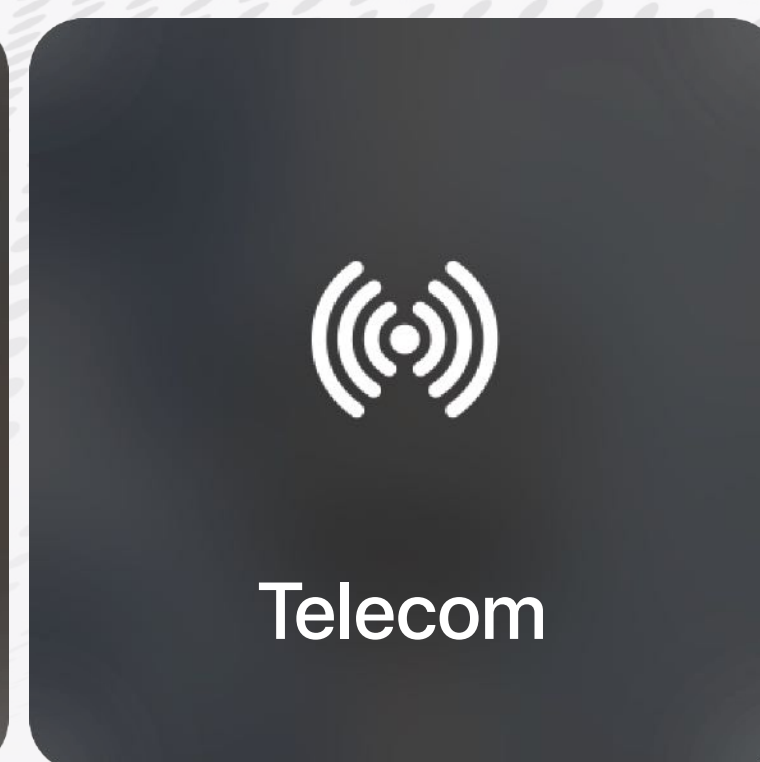


**Liquid Cube SE**  
Special Edition

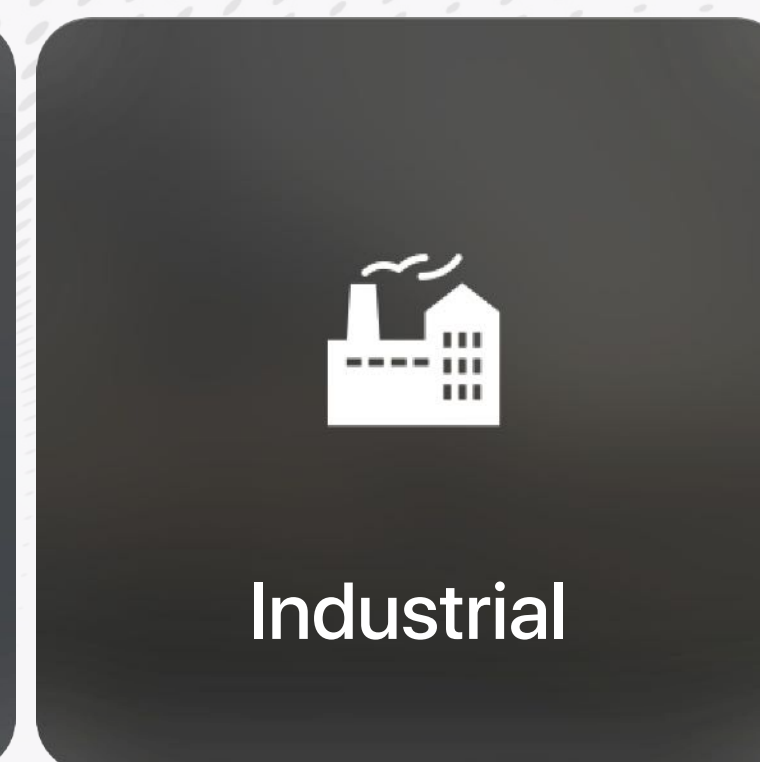
## Application cases:



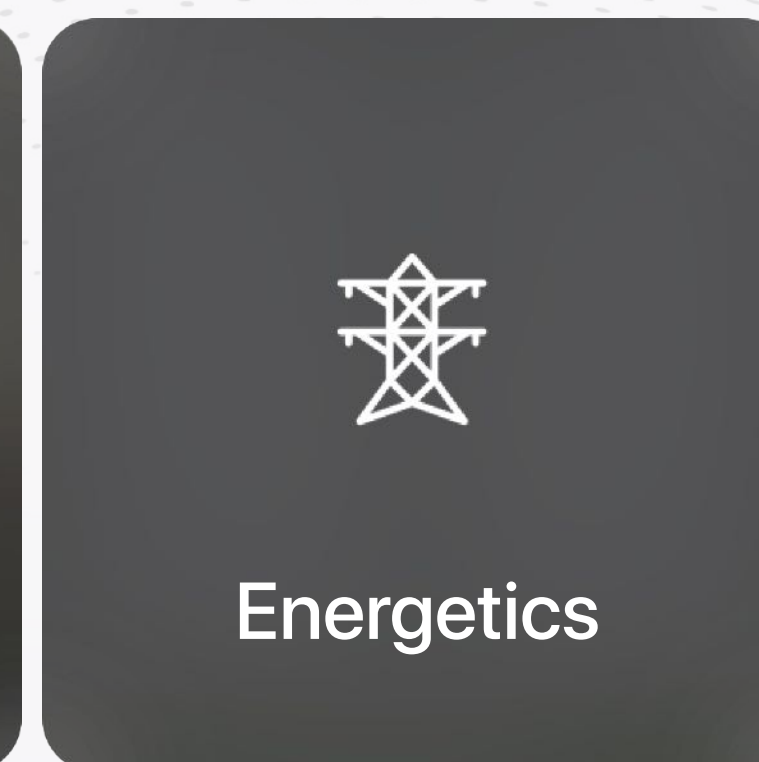
Banking



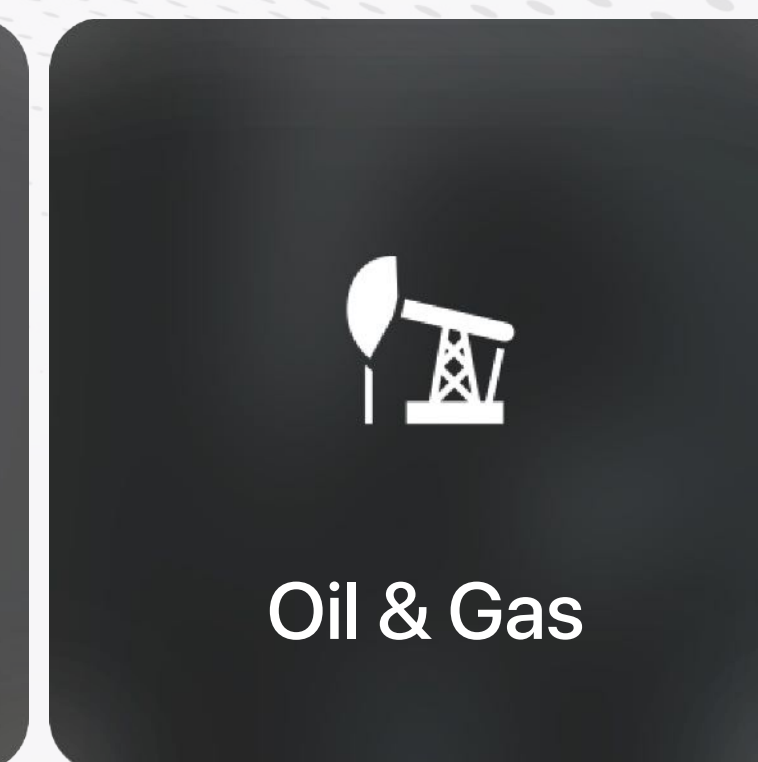
Telecom



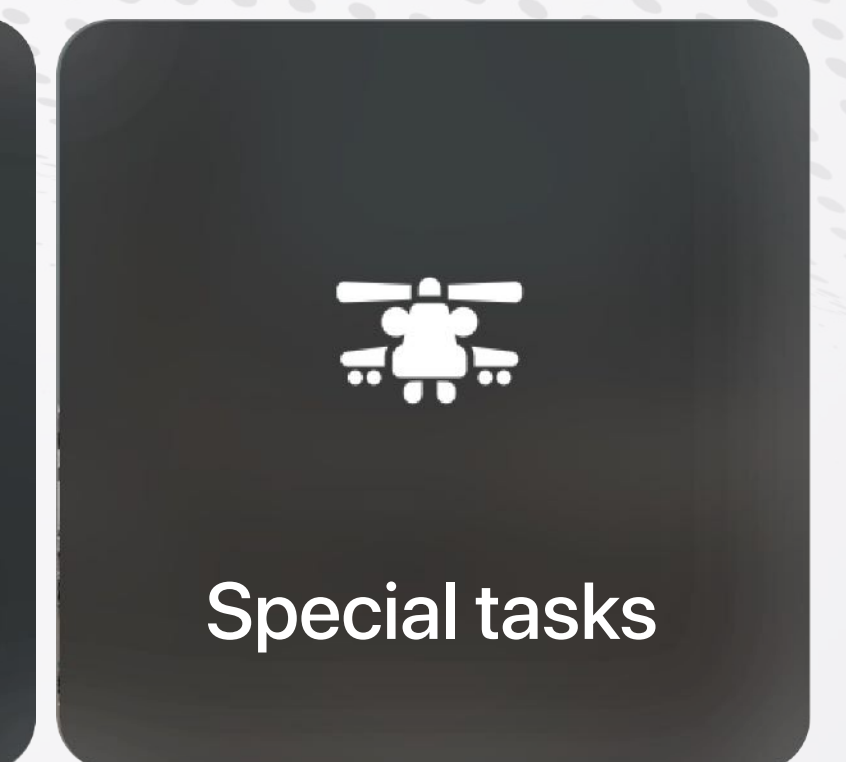
Industrial



Energetics



Oil & Gas



Special tasks



## Features:

 Reducing OPEX up to 50%

 Low maintenance

 Unique solutions for security tasks

 Range of outdoor operating temperatures from -50 to +50°C

 Up to 25 kW power per rack

 All the necessary infrastructure included

 PUE = 1,05

 Up to 4 times higher deployment speed

 Operates in non-adopted rooms

## Applied for:

 Local and distributed data centers

 Blockchain networks

 High Performance Computing

 Information security complexes

 Distributed computing networks

 Mobile data centers



# Immersion Cooling Technology

Liquid Cube Platform is the computing and communication complex, integrated with the direct liquid cooling system of the electronic modules and electrical components.

## Cost-efficiency

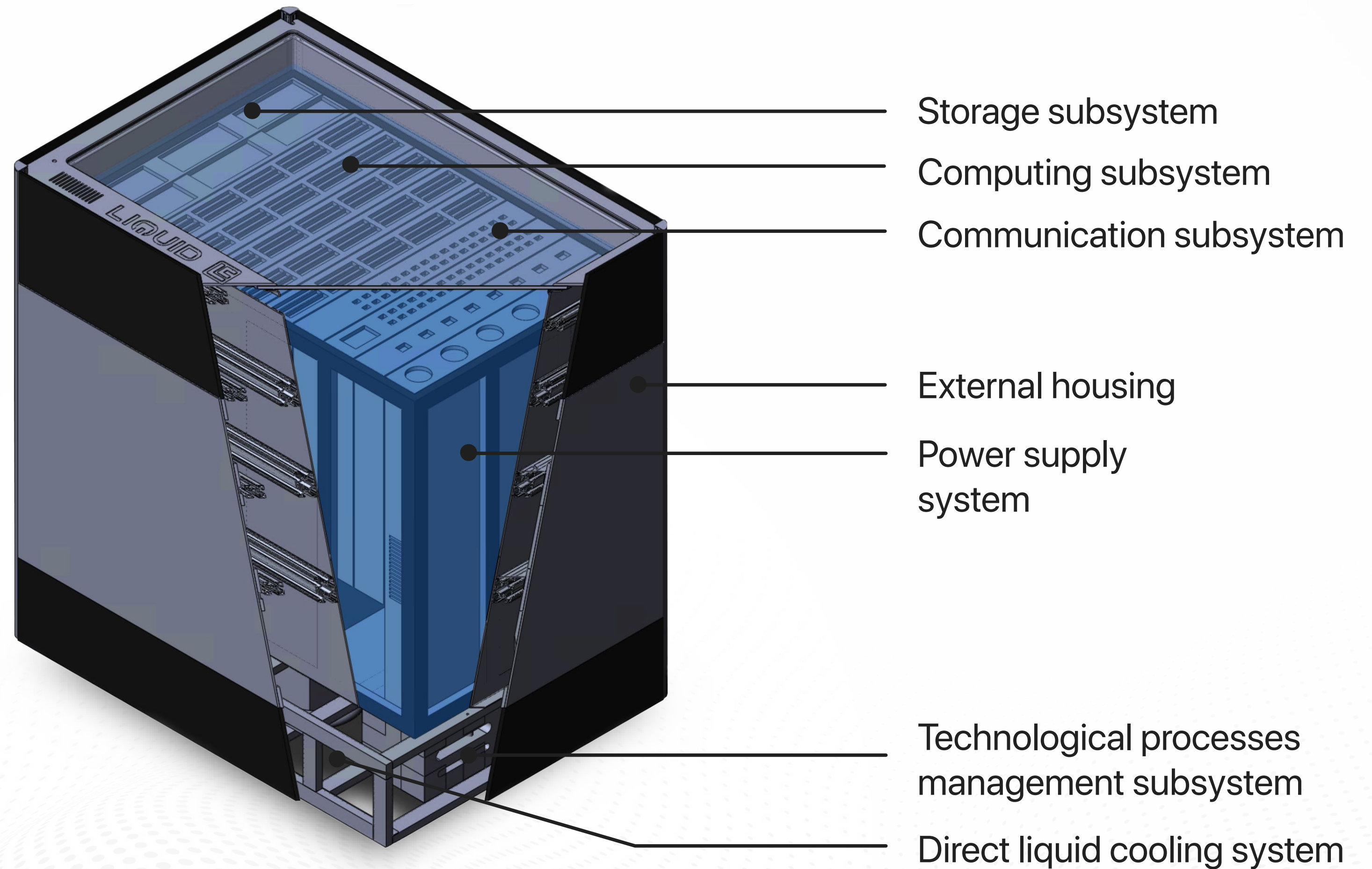
Reducing operating costs up to 50%

## High reliability


Common system reliability improved due to the elimination of the root hardware failure reasons: overheating, humidity, dust and vibration.

## Improved performance


Highest heat removal efficiency improves the usage of the high-performance equipment.





## Coolant

 **Temperature**  
High boiling point: above 240°C

 **Incombustibility**  
Flash point in the open crucible: above 150°C

 **Dielectric**  
Breakdown voltage: 20 kV

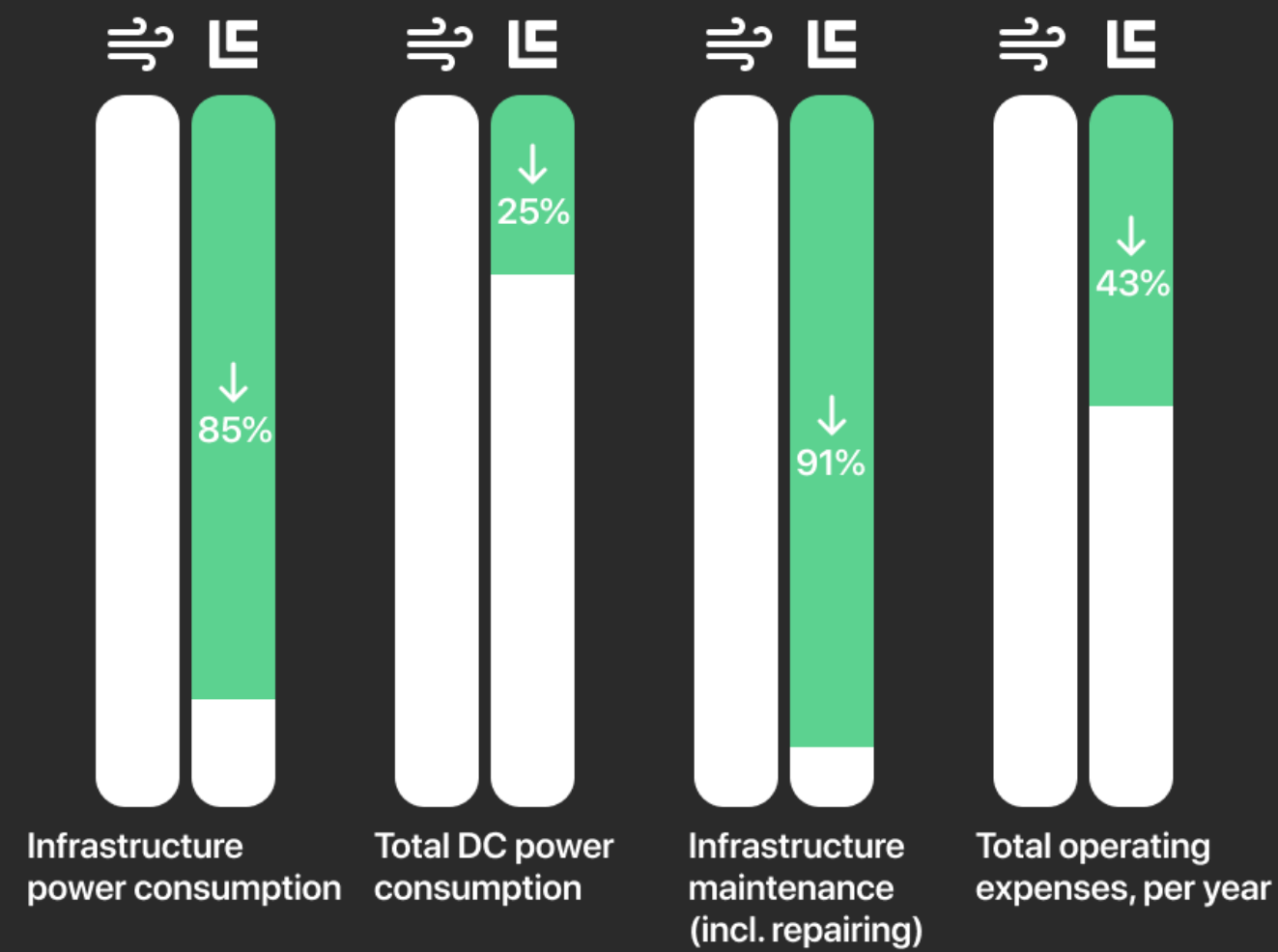
 **Safety**  
Safe for human and the environment

 **Heat recovery**  
Efficient for heat recovery systems

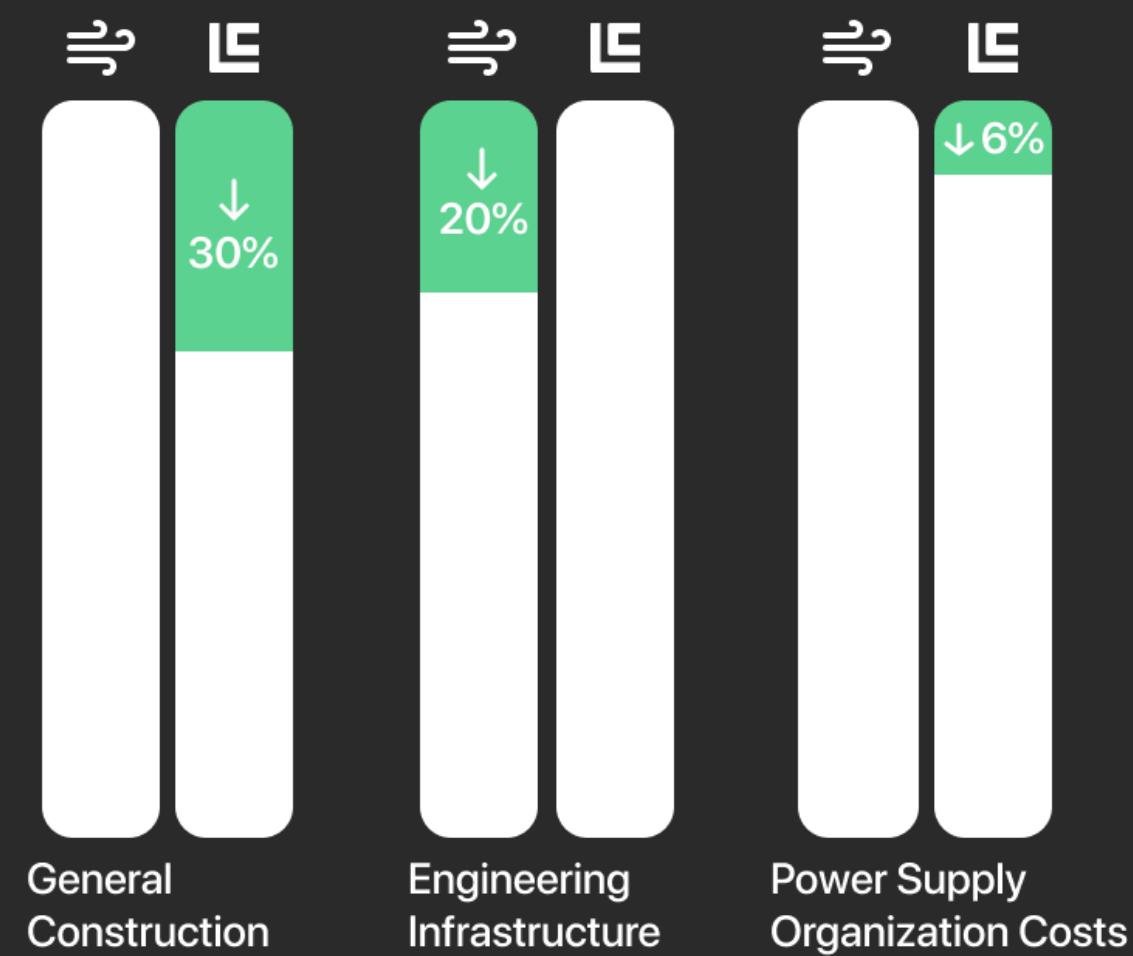


# Economic Benefits

Ratio of Operating Expenses of a Data Center Building

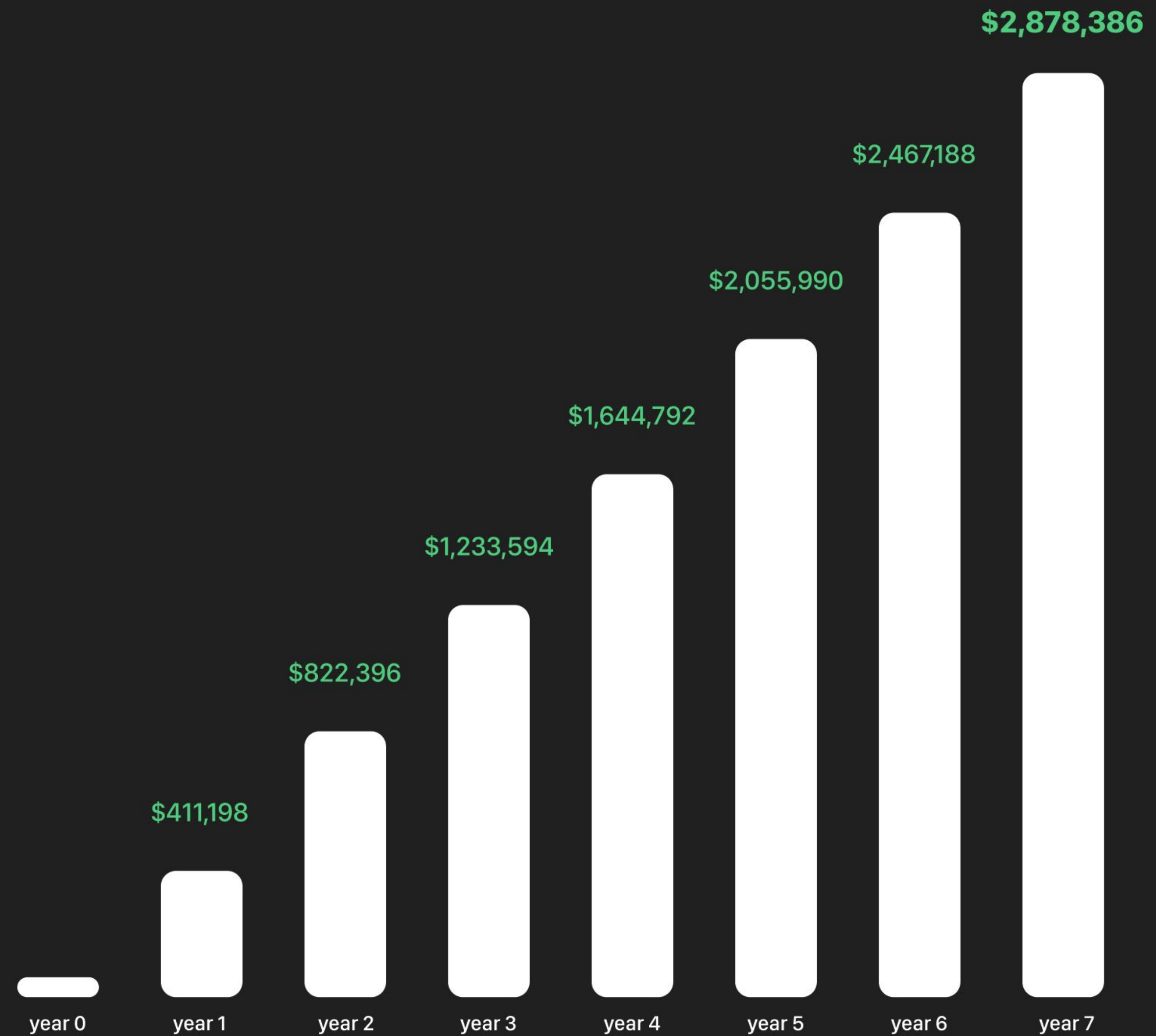


Ratio of Capital Expenses for Data Center Building



 Liquid Cube based Data Center  
 Traditional Air Cooling based Data Center

Immersion Liquid Cooling Compared to Traditional Air Cooling Cost-efficiency\*



\*CAPEX and OPEX numbers based on comparable model of DC 1 MWt



# Usage Scenarios

## Hyperconvergent systems

Use the software-defined IT infrastructure that virtualizes all of the elements of conventional hardware-defined systems for reduce fragmentation level between computing and storage resources.

## Distributed computing networks

Allow to consolidate and manage geographically distributed IT resources of an organization.

## Local and distributed data centers

Based on Liquid Cube platforms allow to design and use cloud computing resources significantly more cost-efficiently than traditional solutions.

## Special tasks

Wide and flexible range of configurations allows to perform computing tasks of any level of complexity and priority for the telecom, military, industrial, transport, as well as government institutions.







INPRO TECHNOLOGIES





LIQUID  
**LC**  
CUBE





«Inpro Technologies» unites the highly qualified scientific and engineering experts. Company's specialists have experience in liquid cooling during more than 10 years.

Liquid Cube platform has been developed and designed in Russia with the usage of the local parts and components.

The technology is patented and has all the necessary certifications.

The quality management is carried out in accordance with ISO 9001 standard certificates.

**Inpro Technologies LLC**

General Manufacturer