

Data Centers and Submarine Cables, a symbiotic relationship

Η μετεξέλιξη της Ελλάδας σε Κόμβο Δεδομένων

Data gravity αναμένεται να αποκτήσει η Ελλάδα τα επόμενα έτη με τις επενδύσεις που δρομολογούνται στον πολλά υποσχόμενο κλάδο των Data Centers

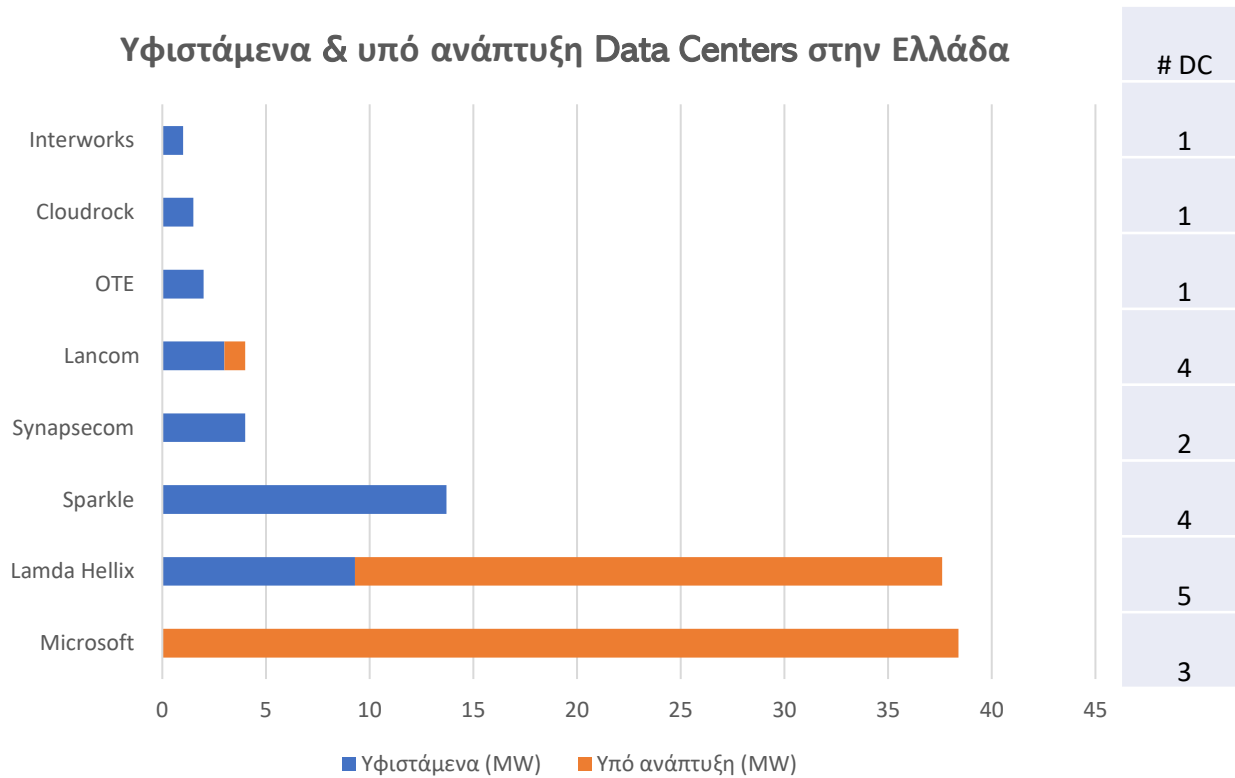
Οι επενδύσεις αναμένεται να ξεπεράσουν το 2 δισ. ευρώ και συνδυαστικά με τα υποθαλάσσια καλώδια που ποντίζονται να μετατρέψουν τη χώρα σε κόμβο δεδομένων της ευρύτερης περιοχής.

Με τις μεταρρυθμίσεις που προωθούνται το τελευταίο διάστημα στο επενδυτικό περιβάλλον της χώρας, η αγορά των Data Center εκτιμάται ότι θα αναπτυχθεί με ρυθμό της τάξης του 9% ετησίως.

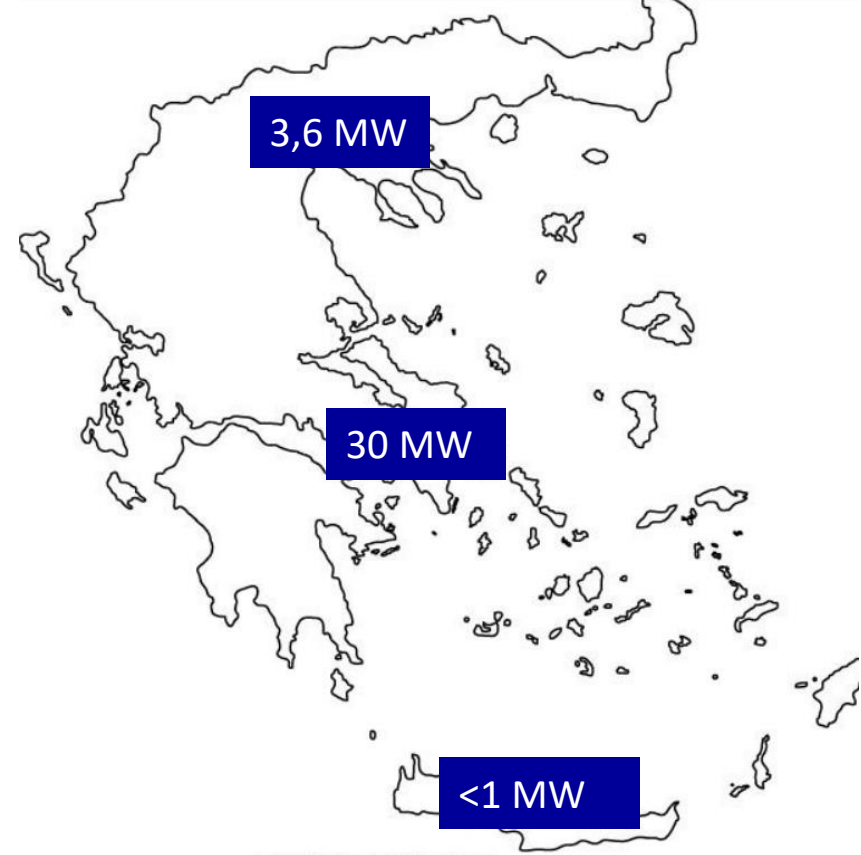


Data Centers landscape in Greece

Υφιστάμενα & υπό ανάπτυξη Data Centers στην Ελλάδα



Υφιστάμενη ισχύς σε Data Centers (MW)



34 → 139 MW
13 → 24 Facilities

Types of data centers

Colocation

A colocation center — also known as a “carrier hotel” — is a type of data center where you can rent space

Enterprise

An enterprise data center is a fully company-owned data center used to process internal data.

Cloud

By using third-party cloud services, you can set up a virtual data center in the cloud.

Edge/Micro Data Center

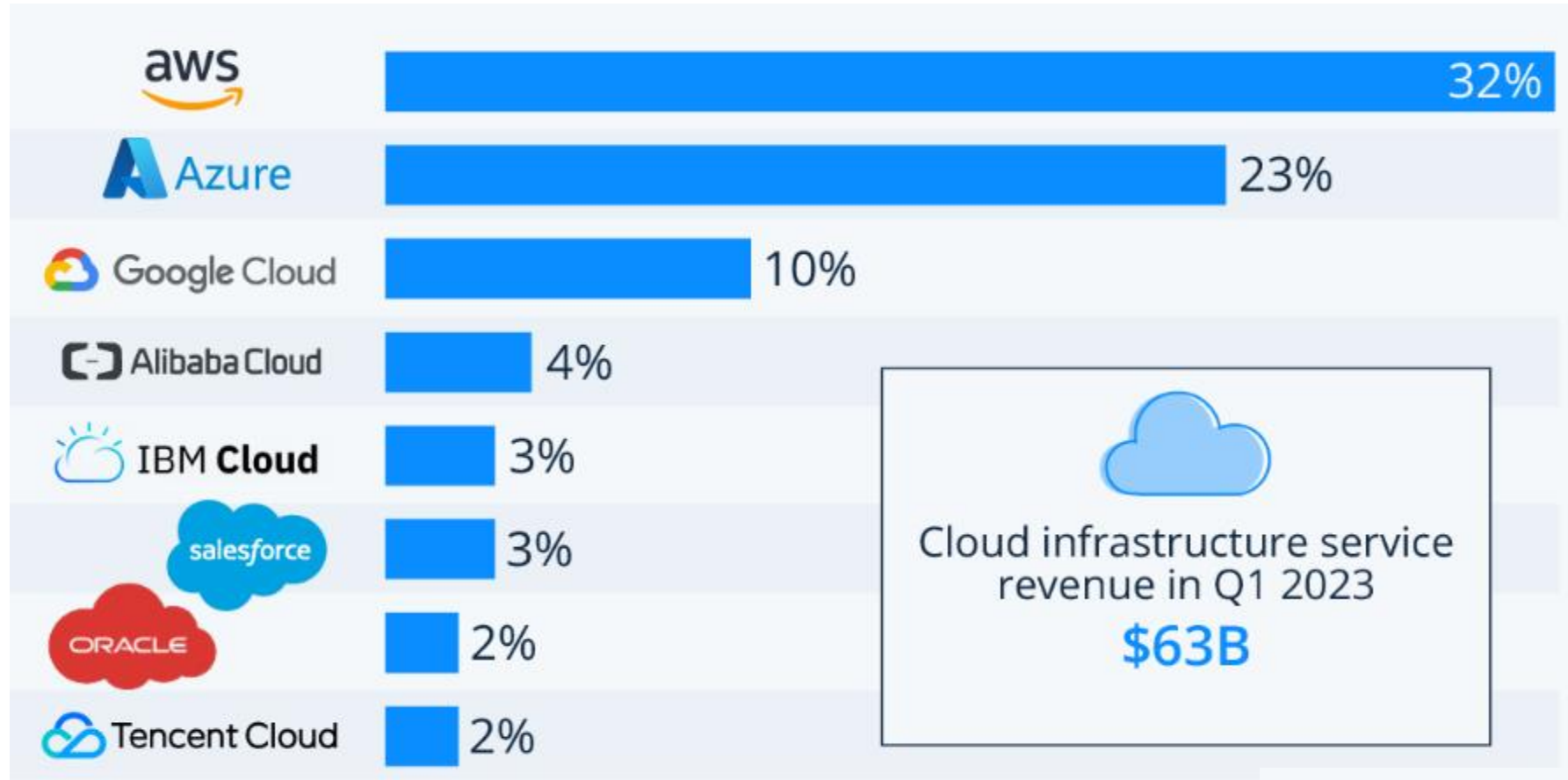
An edge data center is a smaller data center that is as close to the end user as possible to minimize latency.

Hyperscalers Data Center

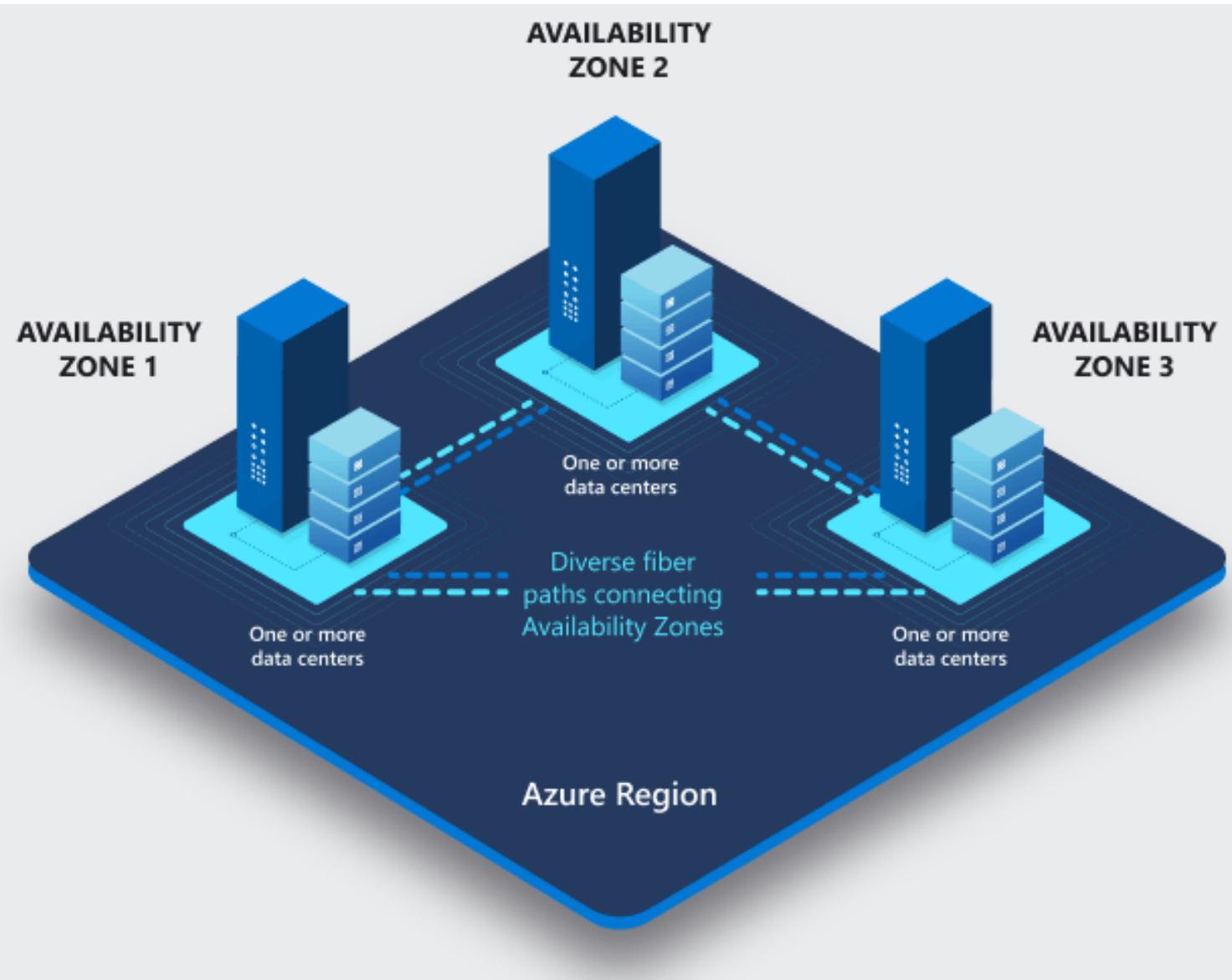
An enormous mission-critical facility that supports robust and scalable workloads and are often associated with big data-producing companies such as Google, AWS, FB, IBM, and MS.



Hyperscalers Market Shares Data Centers landscape in Greece



Hyperscaler Data Center



Regions and Availability Zones
Microsoft Azure Example

A world map with blue dots indicating Google Cloud regions. The dots are labeled with region names and city names. The map shows a global distribution of regions, with a higher density in North America and Europe. The text 'Google Cloud today has 34 regions and 103 availability zones in operation.' is overlaid on the map in white. An orange bar is at the bottom of the slide.

Google Cloud today has 34 regions and 103 availability zones in operation.

*Exception: region has 4 zones.

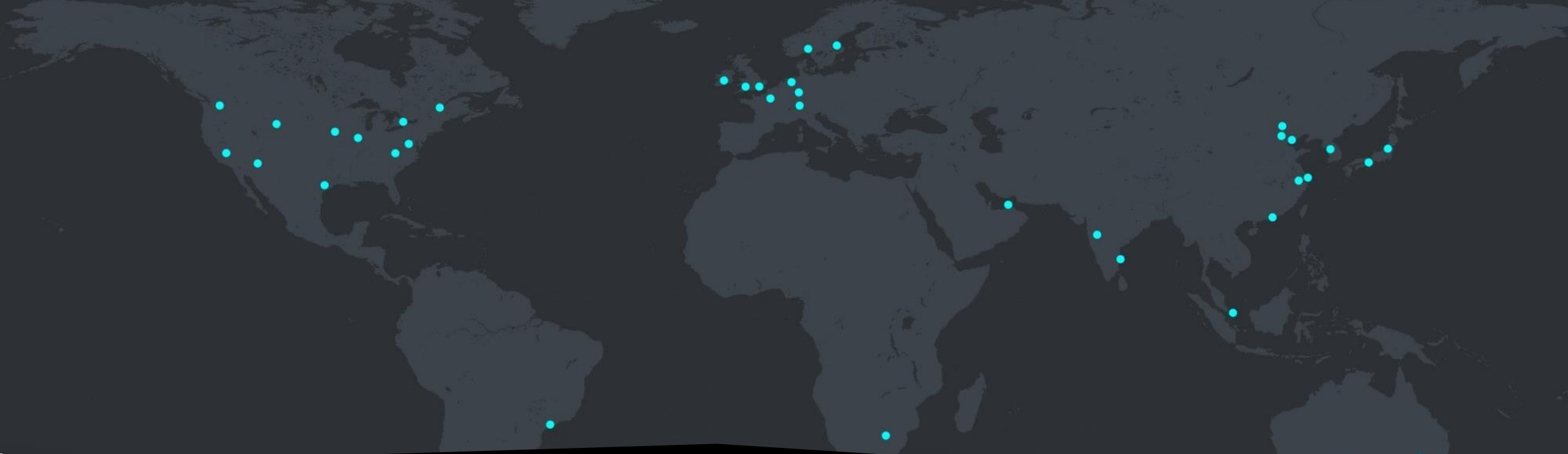


- AWS currently has 26 regions and 84 availability zones in operation.





- Alibaba Cloud currently has 27 regions and 84 availability zones in operation.



- Microsoft Azure presently has 60 regions and 116 availability zones in operation. These regions and availability zones are distributed throughout the United States, Azure Government (U.S.), Americas, Europe, Asia Pacific, as well as in the Middle East & Africa.

Hyperscalers' criteria for selecting a data center location



Social, economic and political stability



Energy Infrastructure: multi-megawatt data center deployments require abundant and low-cost power,



Proximity to End Users: close proximity to large population clusters



Workforce: available IT and engineering workforce, and personnel for operation, maintenance, and security



Land: available land parcels, comprising tens of acres



Natural Disasters: avoid areas that are prone to earthquakes, extreme weather events



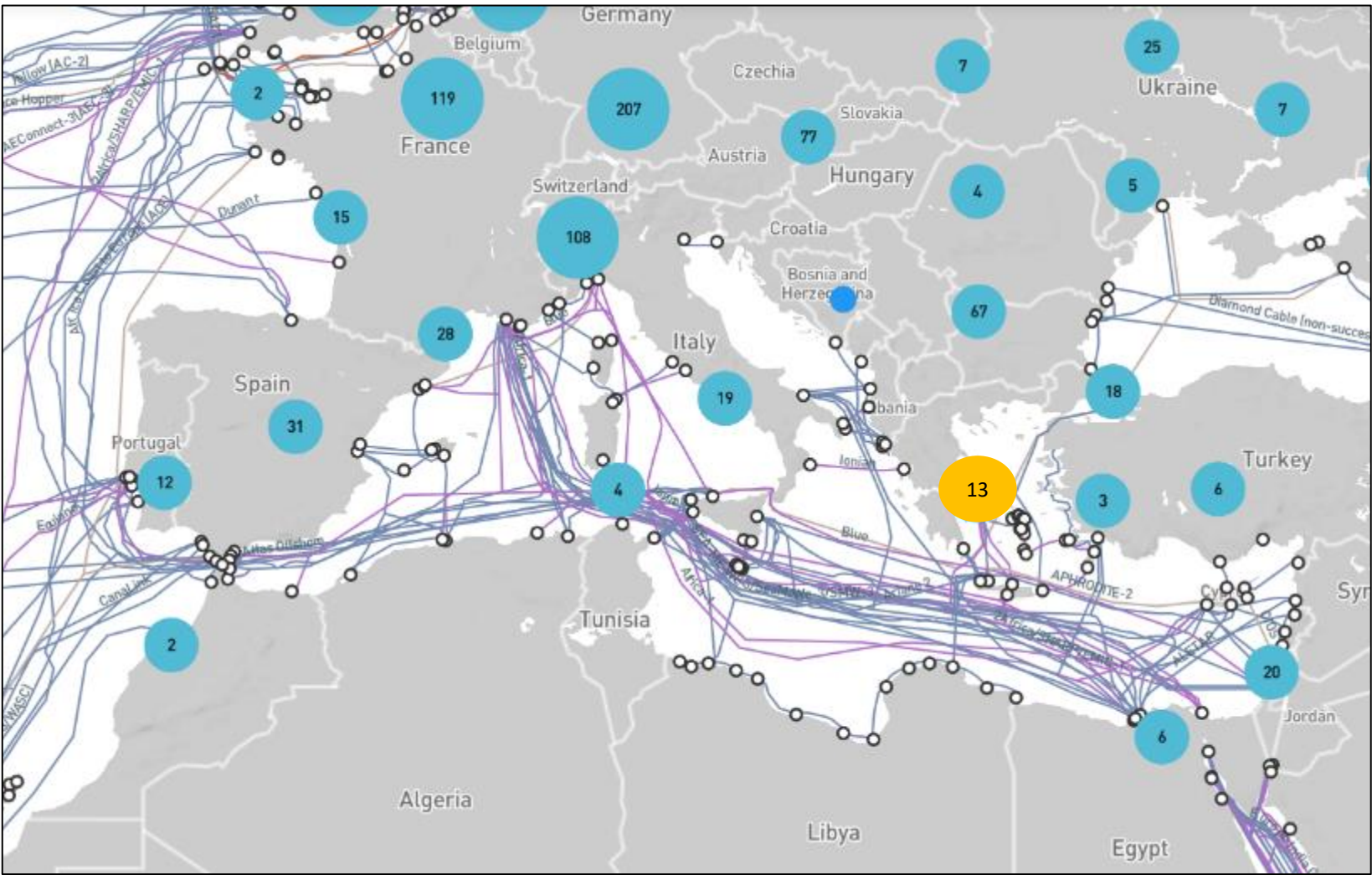
Fiber Connectivity: latency limits and distance to nearby points-of-presence (PoPs)



Sustainable Energy: reliable and efficient carbon-free energy options to enable sustainable operations



Subsea Cables in the Med and Data Centers per Region



- ☐ Active subsea fiber cables are depicted in blue colour.
- ☐ Planned subsea fiber cables are depicted in purple colour.
- ☐ Circles depict number of Data Centers

Upcoming Subsea Cables approaching Greece

1. 2Africa → Facebook, Telecom Egypt, Vodafone, STC, Grid Telecom
2. Bleu → Google, Sparkle, Omantel
3. EMC → STC, Cyta, PPC, TTSA
4. MEDUSA → MEDUSA SCS
5. TEAS → Cinturion
6. Andromeda → Tamares, Grid Telecom
7. India Express → JIO
8. SMW6 → Consortium



Map of Fiber Optic Infrastructure

- ✓ IPTO's vehicle for providing telecom services to national and international operators
- ✓ Lean team of experts with significant experience in the Telecom market
- ✓ Fiber optic network (terrestrial and submarine) exceeds **4.000km** throughout Greece
- ✓ Reaching already all neighborhood countries
- ✓ The expansion of the fiber optic network will exceed 6.000Km throughout Greece in the next years
- ✓ Grid Telecom's own network is planned to expand in the Balkans





Grid Telecom establishes Crete as a strategic hub in the Med

Minoas East and West

Minoas East and West are fiber optic cables attached to power cables.

Minoas East was RFS in December, 2021.
Minoas West was RFS in May, 2021.

Each leg is 135 km in length, for a total of 270 km of fiber optic cable.

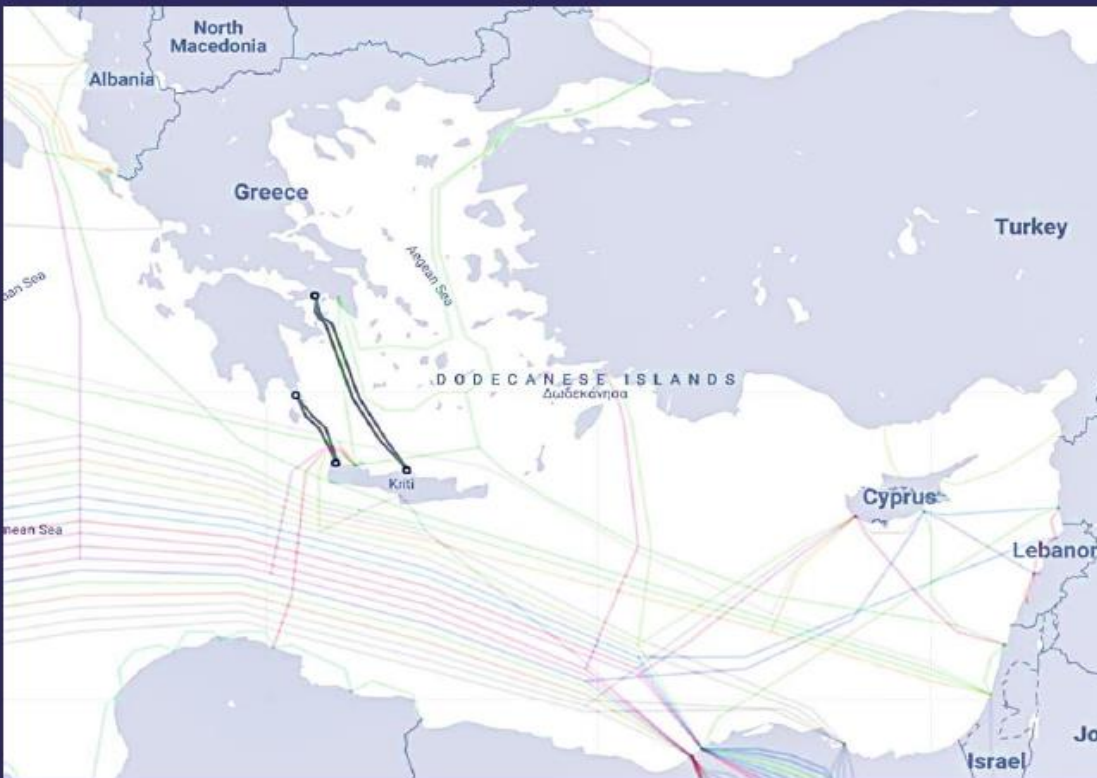
Landing Points:
Neapoli, Greece
Nopigeia, Greece

Apollo East and West

Apollo East and West are fiber optic cables in parallel (but not attached) to power cables.

Each leg is 335 km in length, for a total of 670 km of fiber optic cable.

Landing Points:
Korakia, Greece
Pachi, Greece



Telegeography Submarine Cable Map



Expansion of Connectivity

The Ionian System



Grid Telecom and Islalink have signed a 25-year agreement on the expansion of the terrestrial backbone network of the **IOANIAN** subsea cable that connects Italy and Greece.

Greece – Egypt Connectivity



Grid Telecom and Telecom Egypt have signed “Heads-of-Agreement” to connect Greece and Egypt by extending a branch to the island of Crete from major subsea cable systems, laid across the Med Sea **(2Africa branch)**.

TEAS Trans Europe Asia System



Cinturion has signed a “Heads-of-Agreement” with Grid Telecom to be its **Landing Party** partner in Greece, providing **open-access** interconnection and international reach.

EuroAsia Interconnector



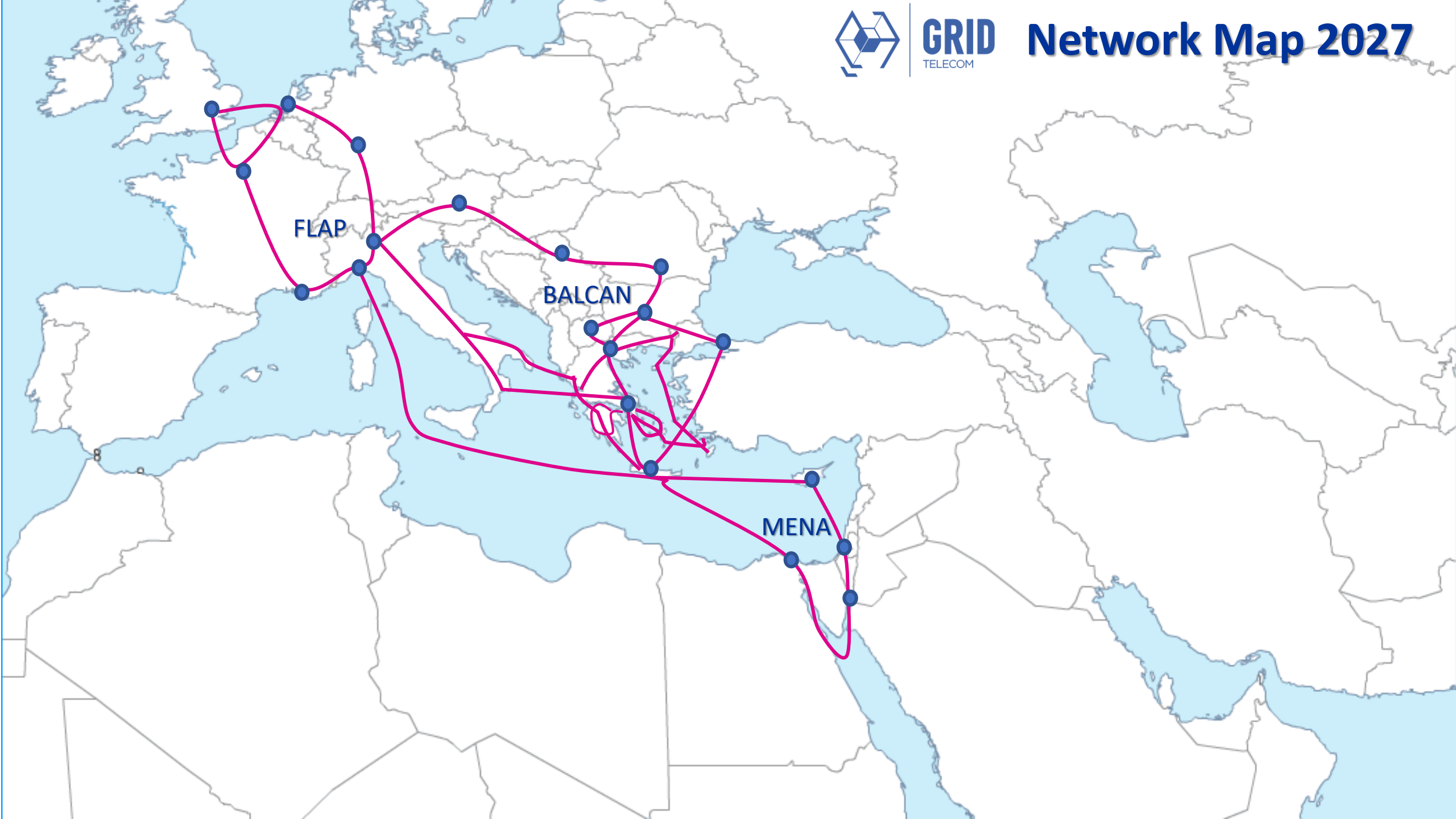
Andromeda optical fiber cable system will be added to interconnect the national grids of Israel, Cyprus, and Greece, and creating a reliable energy and data bridge between Europe and Asia

| Greece is taking the initiative to fast becoming a critical energy and telecommunication hub in the broader BalkanMed Region



GRID
TELECOM

Network Map 2027



FLAP

BALCAN

MENA