



Technology Shaping the Future

**Delivering Sustainable, Environment-friendly operations,
today!**






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Telco & Enterprise Software Marketing Director

KEY FACTS

-  **70%**
international
activities
-  **16**
countries with
local presence
-  **1,700**
employees
worldwide
-  **3**
R&D
centers

CORE OFFERINGS

-  Wireless Network
Systems
-  ICT Services -Smart City
& Surveillance Solutions
-  Telco & Enterprise
Software Solutions
-  Energy
Solutions

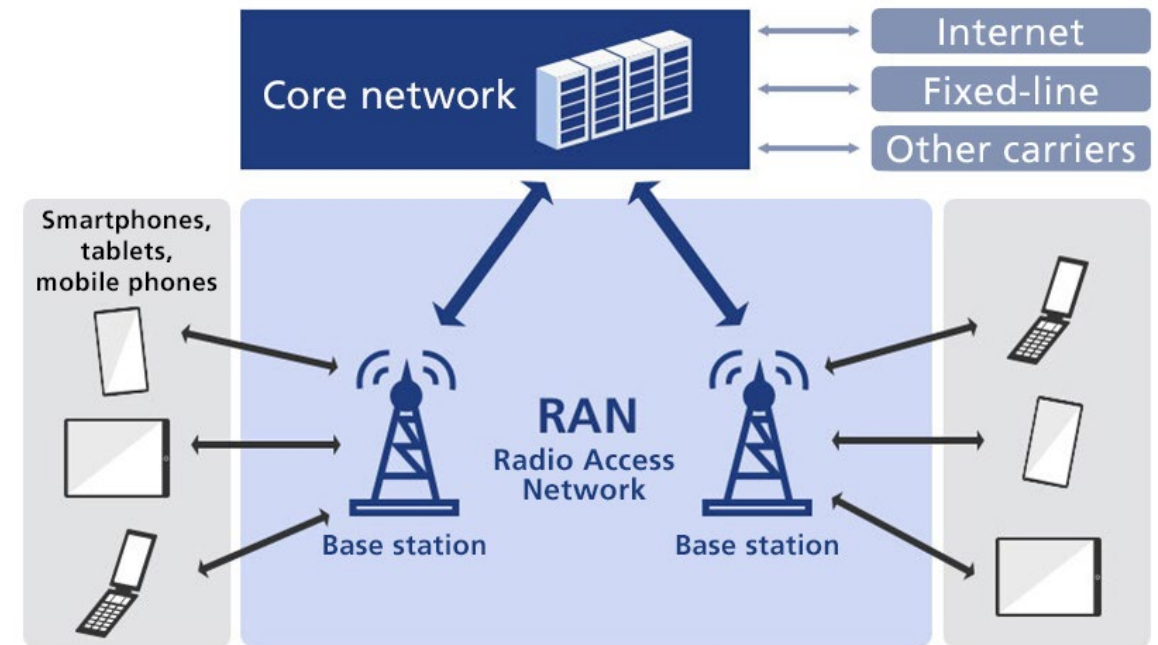
CORE MARKETS

- | | |
|--|---|
|  Telecom |  Public
Sector |
|  Healthcare |  Financial
Sector |
|  Transport
& Transit |  Smart
Cities |
|  Utility
Companies |  Surveillance
& Security |

Breaking down the energy bill...

- **Telecom: 2-3%** of Global energy consumption
- **RAN: 50-60%** of total CSP energy consumption
 - *Radio unit*
 - *Baseband unit*
 - *Control*

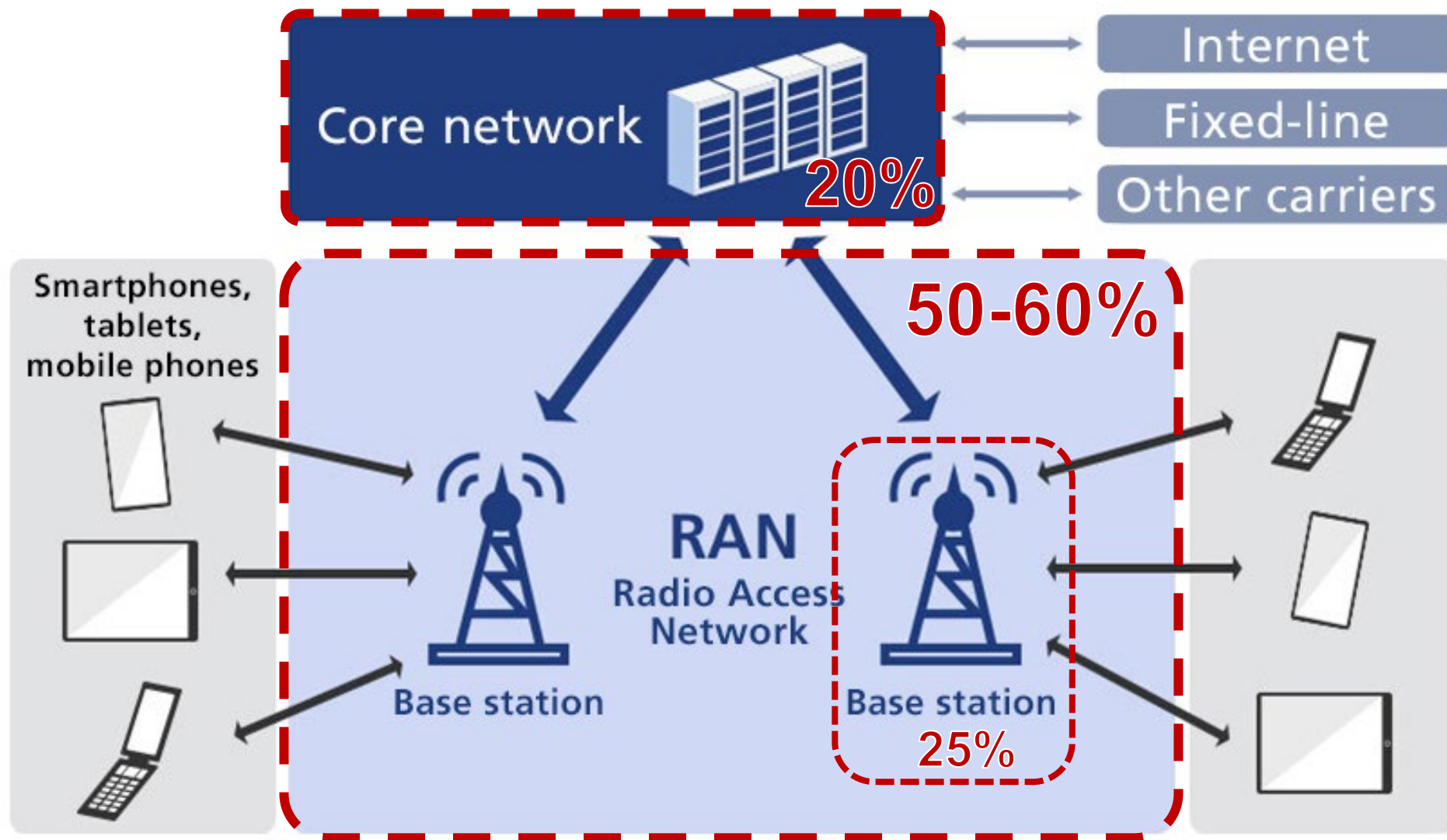
~50% of RAN
- **Core/Data Center: ~20%** of energy consumption
- Energy costs: **20-40%** of annual CSP OPEX
- **Unprecedented** energy cost inflation!

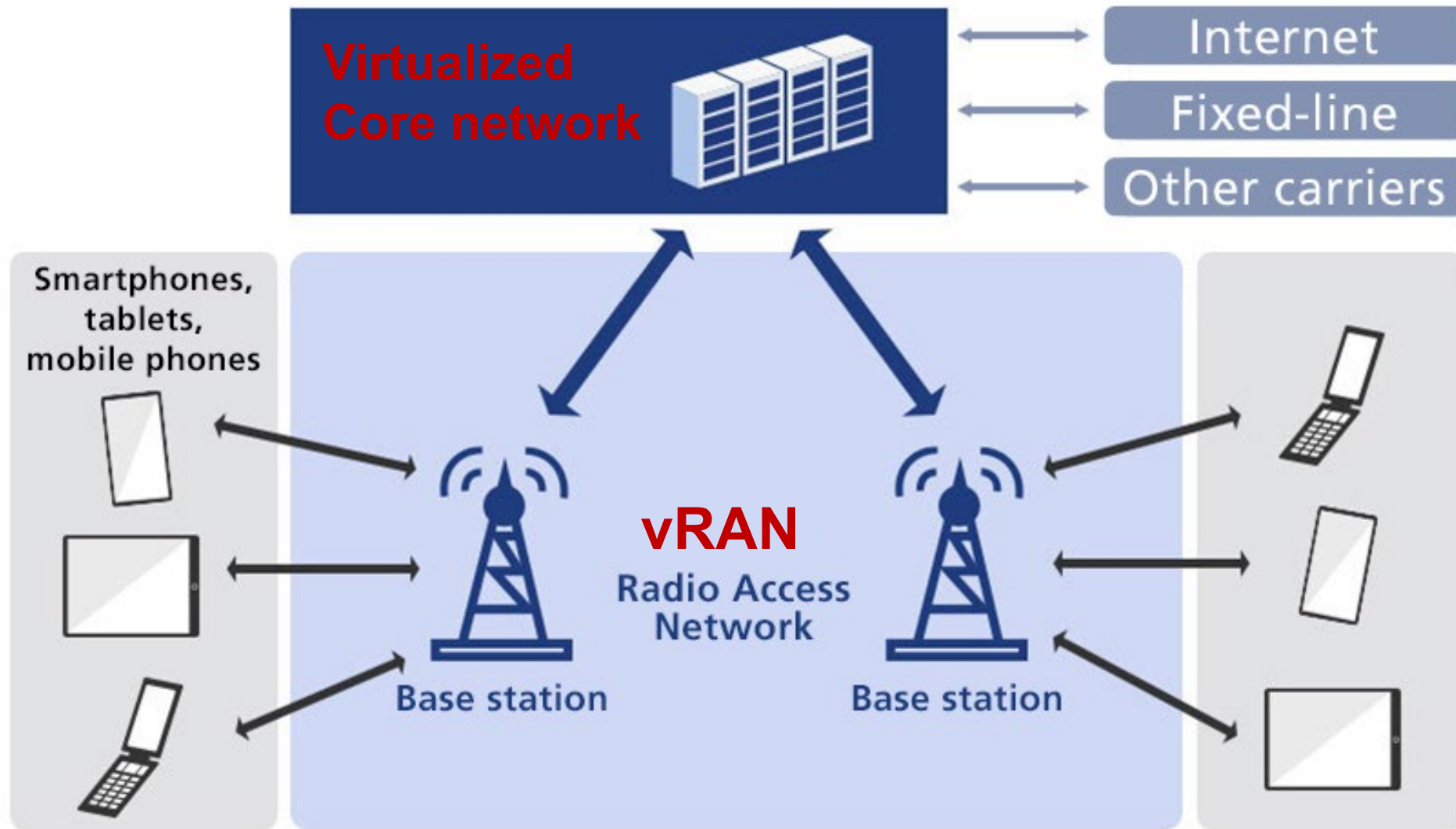


...along with the environmental mandate!

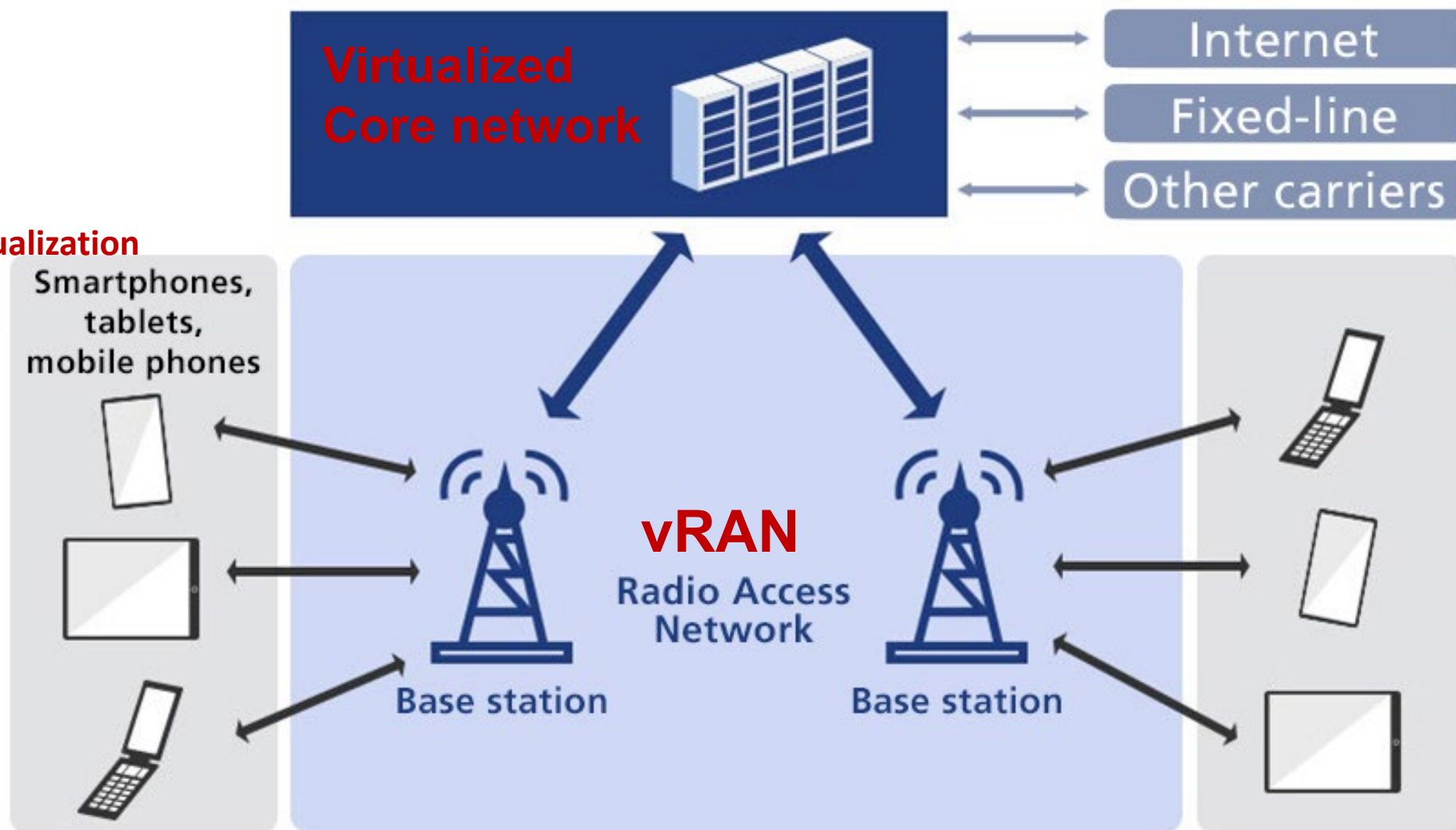
- The Paris Agreement & the EU **Green Deal**
 - *Net emissions of greenhouse gases by 2050*
 - *50% gas emission reduction by 2030*
 - *Economic growth decoupled from resource use*
 - *No person and no place left behind*
- Corporate **ESG** policies!





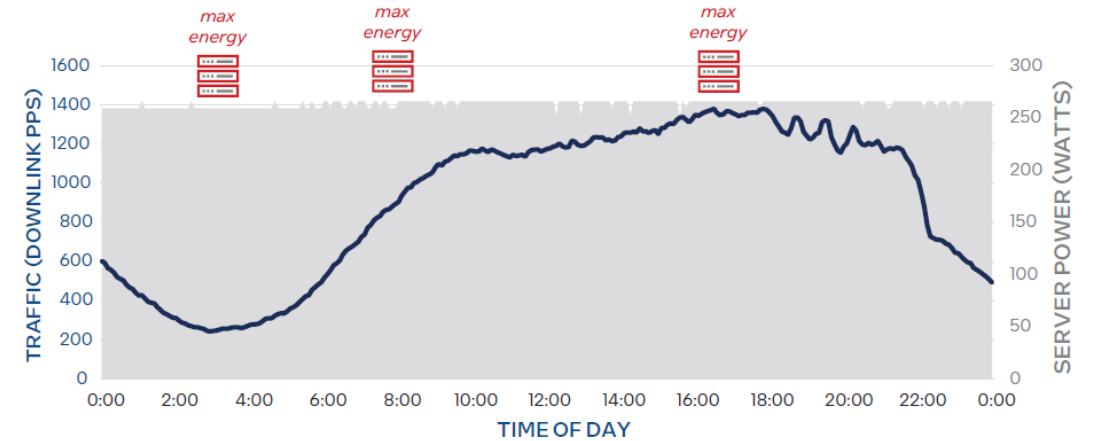


Exploit
Network Virtualization
benefits
to the **fullest!**



The REAL challenge

- Polling due to **stringent** Network Service KPIs
- **High** CPU utilization - even during off-peak periods!
- OS **unaware** of the actual VNF load



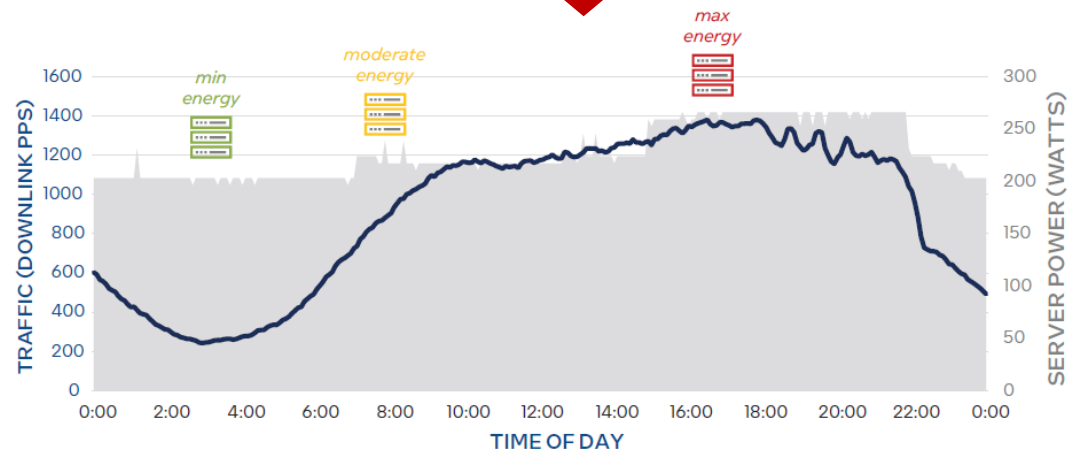
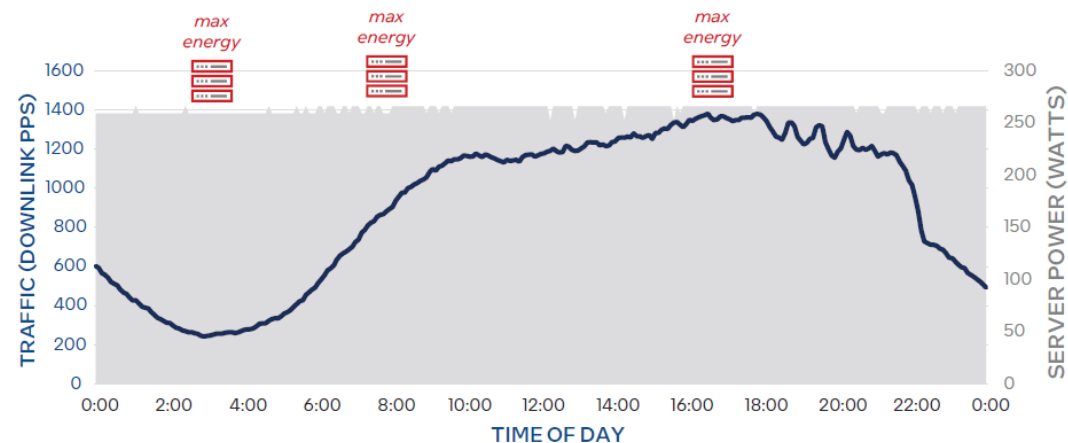
The REAL challenge & the UNIQUE solution

- Polling due to **stringent** Network Service KPIs
- **High** CPU utilization - even during off-peak periods!
- OS **unaware** of the actual VNF load

AI-driven, closed-loop optimization **dynamically** adapting CPU frequency to match **actual traffic** load, while guaranteeing **zero packet** drops



- Servers operated at **lower power** when under moderate/light traffic!
- **No modification** on deployed VNFs!

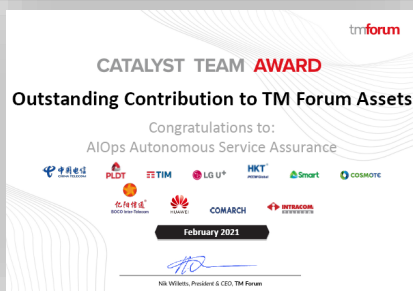


Let the facts speak for themselves...

2020

First-ever PoC in collaboration with major Greek CSP, member of intern. telco group, in the context of an award-winning TM Forum Catalyst project

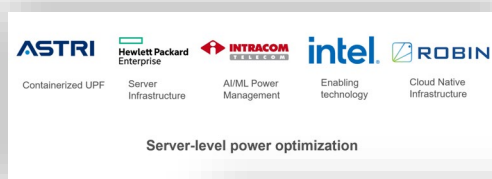
Showcased **14%** average energy savings (24h) for **SPGW-U** prototype



2022

MWC'22 demo with Intel and leading industry vendors

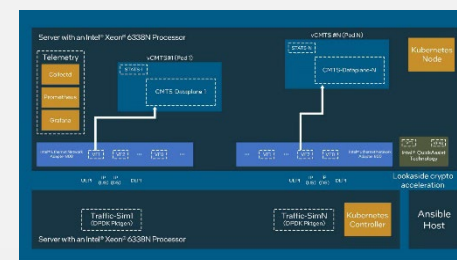
Showcased **29-31%** average energy savings (24h) for commercial **5G UPF** deployment



2022

ANGACOM'22 demo with Intel

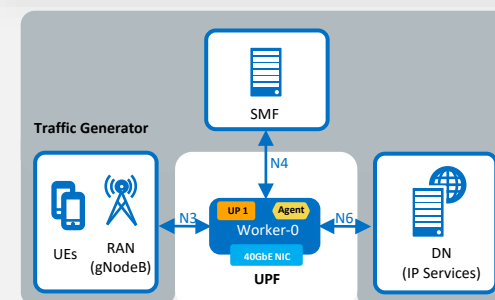
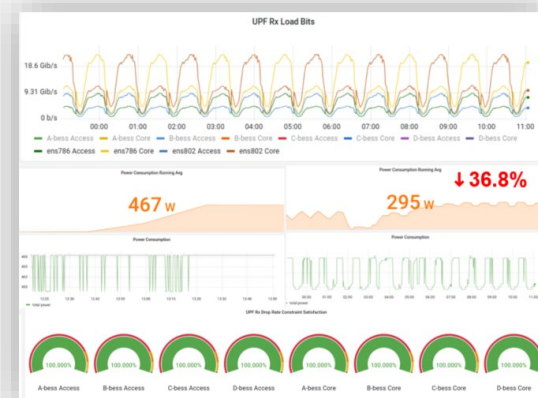
Showcased **30%** average energy savings (24h) in **vCMTS** server



2021-present

Multi-phase PoC with Tier-1 APAC CSP (ongoing)

Up to **37%** average energy savings (24h) on **5G UPFs**



Let the facts speak for themselves...

Net zero CO₂ emissions for
entire Group by **fiscal 2050**

Net zero CO₂ emissions
from **Telecom business**
activities by **fiscal 2030**

- Serving 60M+ subs
- ~1M tons of CO₂ emissions annually

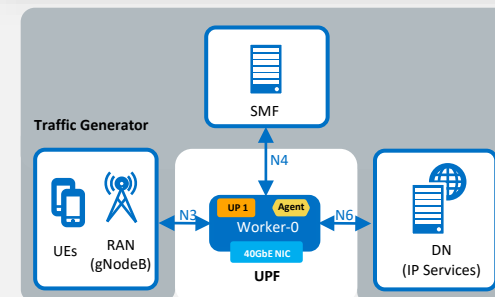
Net zero CO₂ emissions
at data centers around
the world by **fiscal 2026**



2021-present

Multi-phase PoC with Tier-1 APAC CSP
(ongoing)

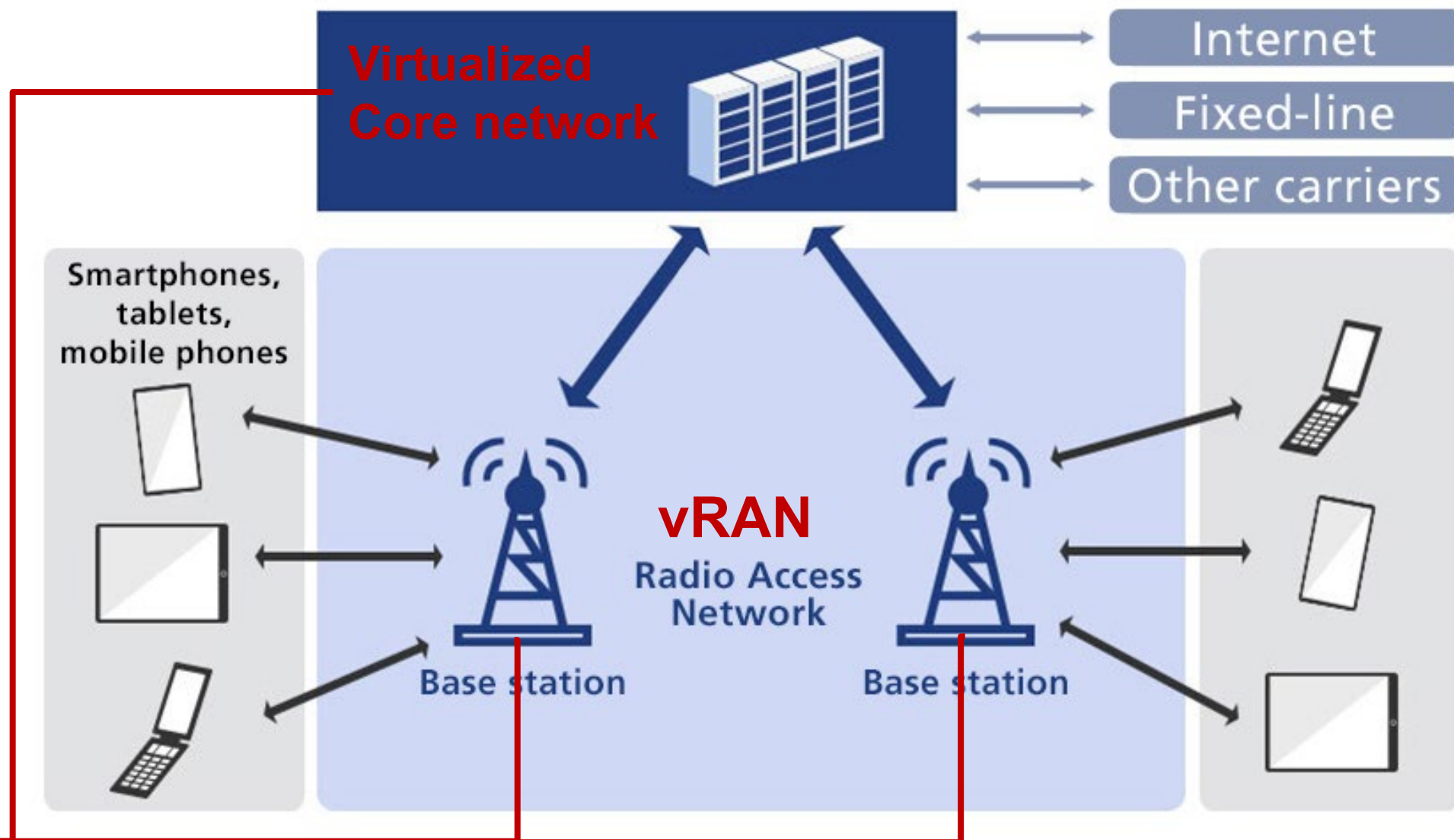
Up to **37%** average energy savings
(24h) on **5G UPFs**



Targeted energy efficiency – continued!

Exploit
Network Virtualization
benefits
to the **fullest!**

Leverage
Green Energy production
everywhere!





Unified Energy Management & Monitoring platform

- Permitting Process Services
- Design Services
- Procurement Services
- Construction Services
- Commissioning & Installation Services
- Telemetry & Surveillance System
- After Sales Support & Maintenance




Actions speak louder than words...

tmforum


Author in "GB1031 Digital Organizational Transformation Culture & Skills Guidebook": how to implement corporate digital transformation based on ESG principles

Contributor in "IG1301 Whitepaper – Measuring and Managing Autonomy v1.0.0": the business value of sustainable operations autonomy for corporations)

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Climate Action - Targets and Actions




Climate change is one of the most urgent global challenges, affecting companies' operations, their stakeholders and life on earth in general.

The major cause of climate change is believed to be global warming, resulting from the increasing concentrations of CO₂ and other greenhouse gases (GHGs) on earth.

In order to deal with climate change, Paris Agreement came into force in November 2016, setting the target of keeping the global temperature rise below 2°C, above pre-industrial levels and calling for efforts to limit warming to 1.5°C.

Understand the importance of addressing and contend with climate change and have taken steps to support the next we are aiming at reducing our Scope 1 and Scope 2 emissions by 50% by 2030, taking 2019 as the baseline



1.5°C

Providing Scope 1 and Scope 2 emission reduction targets and relevant actions for 2021, 2022, 2023 and 2024 has been carried out in accordance with "The Greenhouse Gas Protocol" (A corporate Accounting and Reporting Standard - Revised

	2019	2020	2021	2022 ⁽¹⁾	2023	2024	2030
	3745	3817	1988	1842			
	679	611	588	588			
	226	262	328	328			
	88	195	141	141			
	4738	4885	3045	2899			
			4027	4027	3790	3790	2369

Your trusted Technology Partner



Delivering Sustainable, Environment-friendly Operations, today!

thank you

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