The background is a close-up, high-angle view of a complex printed circuit board (PCB) with intricate green and blue traces. In the center, a square, dark-colored optical component, possibly a waveguide or a lens, is mounted on the board. The lighting is dramatic, with a strong blue and green color palette, creating a futuristic and technological atmosphere.

In the right
hands, our optical
systems will reshape
communications.

Where Light Meets Digital

EFFECT
PHOTONICS

THE POWER OF LIGHT: PHOTONICS AS A CATALYST FOR GREEN IT




Joost Verberk

Product Management | Business Development | Venture Capital |
Kellogg-WHU Executive MBA | TEDx Speaker Coach

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500+ connections

 EFFECT Photonics

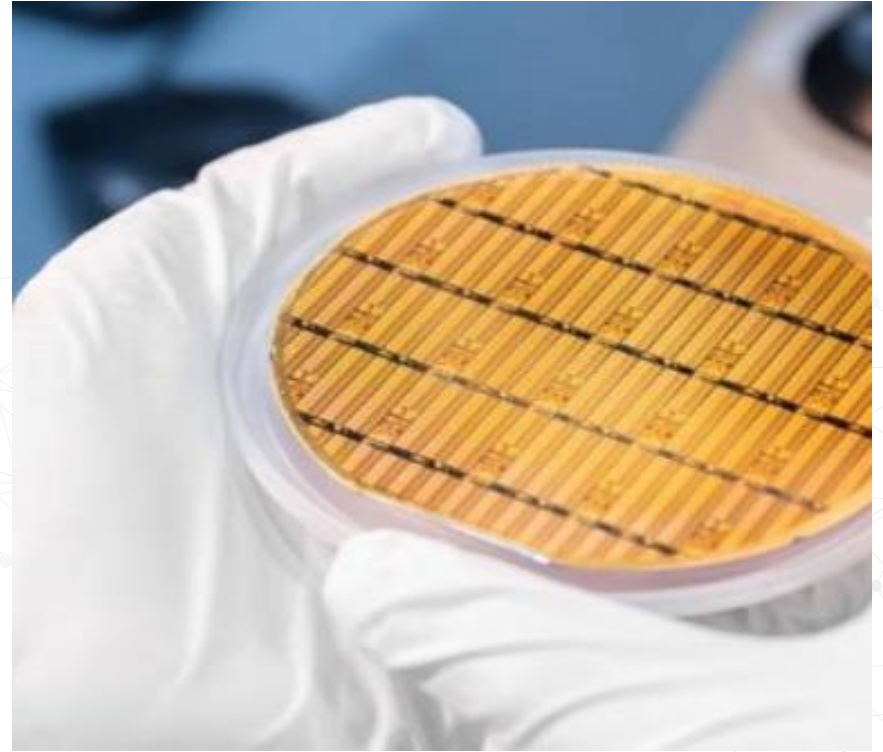
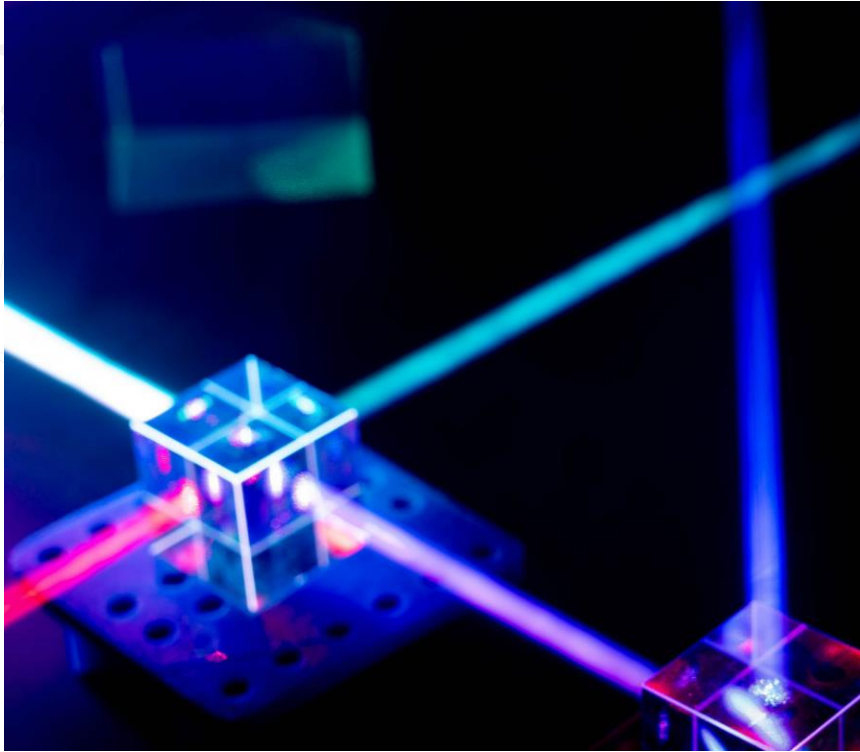
 Kellogg-WHU Executive
MBA

Happy to
connect!



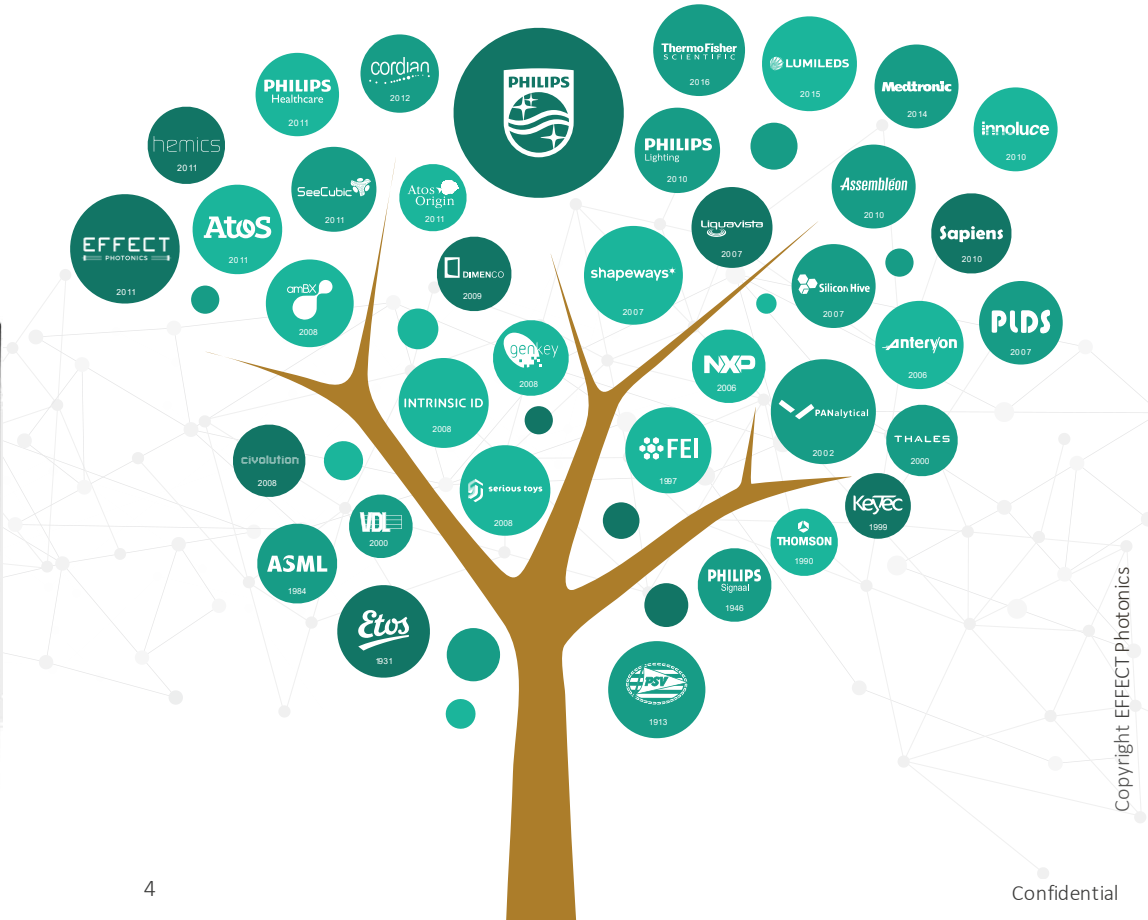
WAT IS (GEINTEGREERDE) FOTONICA?

Technologie op basis licht



NEDERLAND HEEFT EEN LANGE HISTORIE IN HALFGELEIDERS

En veel komt voort uit het Philips Natlab



CHIPS ZIJN EEN HOT TOPIC: GEOPOLITIEK TOUWTREKKEN BEGINT

Zowel EU als US vechten voor technologie onafhankelijkheid

REUTERS World Business Markets Sustainability Legal Breakingviews Technology Investigations

Exclusive: Targeting Chinese chips, US to push Dutch on ASML service contracts

By Karen Freifeld, Alexandra Alper and Toby Sterling
April 4, 2024 6:42 PM GMT+2 · Updated a month ago



[1/2] Assembly engineers work on a TSMC/NV500 lithography system at ASML in Veldhoven, Netherlands June 16, 2023. REUTERS/Presheela van de Wouwe/FILE PHOTO: Pantheon Pictures/Getty

WASHINGTON, April 4 (Reuters) – President Joe Biden’s administration plans to press the Netherlands next week to stop its top chipmaking equipment maker ASML from servicing some tools in China, two people familiar with the matter said, as the U.S. leans on allies in its bid to hobble Beijing’s tech sector.

The New York Times

Business Arts Lifestyle Opinion Audio Games Cooking Wire

TSMC Will Receive \$6.6 Billion to Bolster U.S. Chip Manufacturing

Taiwan Semiconductor Manufacturing Company plans to build an additional factory and upgrade another planned facility in Phoenix with the federal grants.

EFFECT PHOTONICS

SOURCE / ECONOMY

EU's answer to US CHIPS Act takes effect, escalating global protectionism over semiconductors

By Global Times

Published: Sep 22, 2023 02:06 AM

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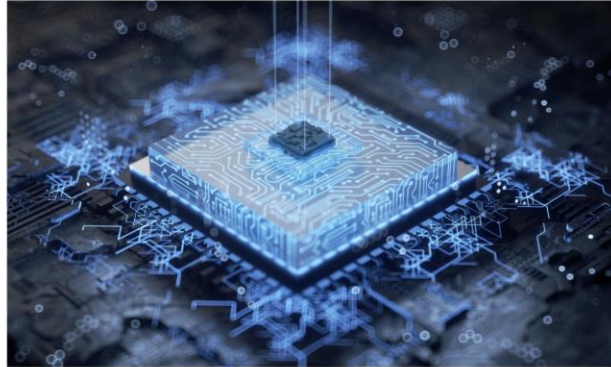


Photo:VCG

The EU on Thursday announced that its European Chips Act officially enters into force, in a move that has been widely described as the bloc's answer to the US' protectionist CHIPS Act - both aiming to bolster their own chip industries, in another serious escalation in the global protectionist trend in the semiconductors initiated by the US.

Forbes

FORBES > INNOVATION > AI

The Geopolitics Of AI Chips Will Define The Future Of AI

Rob Toews Contributor

I write about the big picture of artificial intelligence.

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May 7, 2023, 07:00pm EDT

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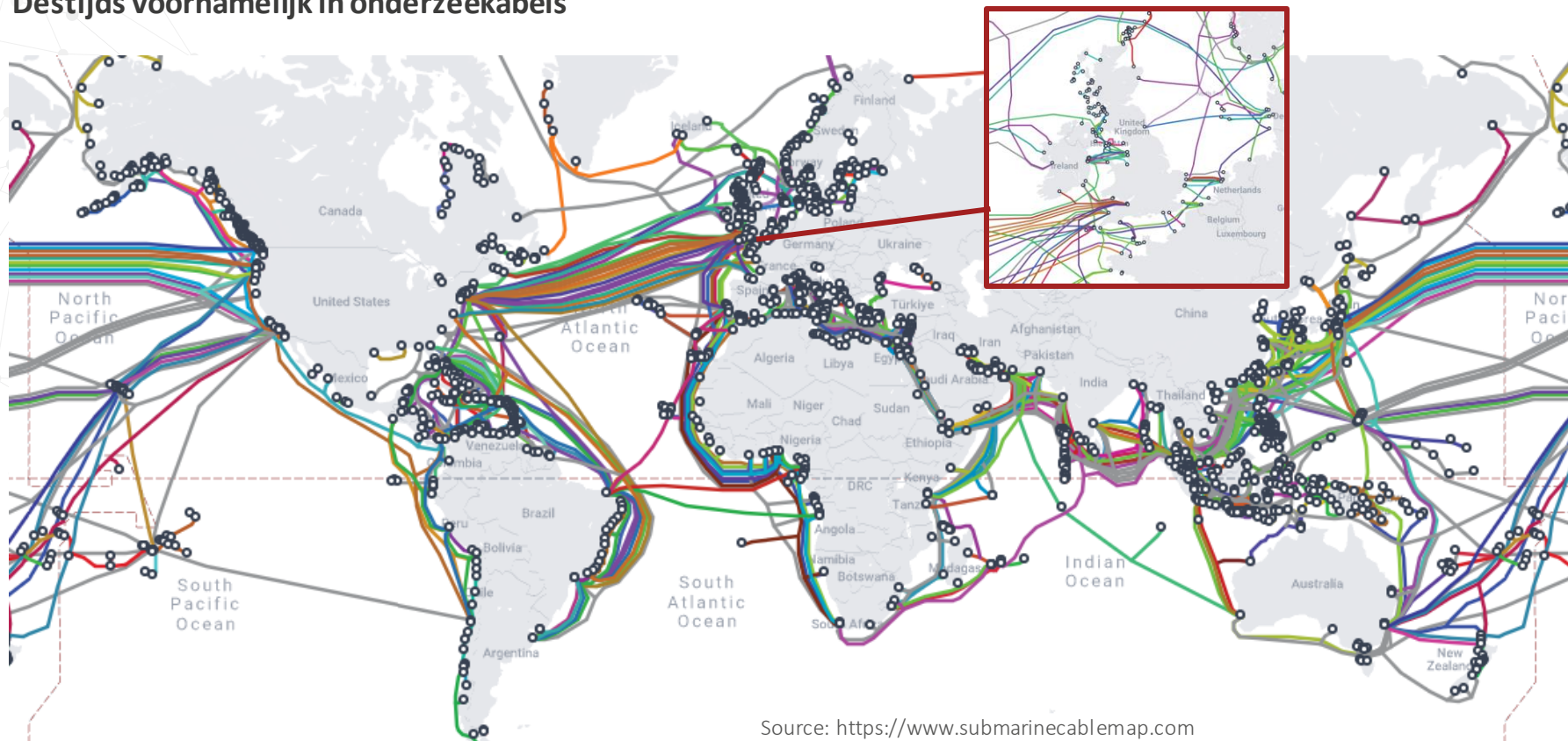


The island of Taiwan - where the world's AI chips are made - lies 100 miles off the coast of ... [+] GETTY

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FOTONICA IS NIET NIEUW: SINDS DE JAREN '80 AL IN GEBRUIK

Destijds voornamelijk in onderzeeskabels

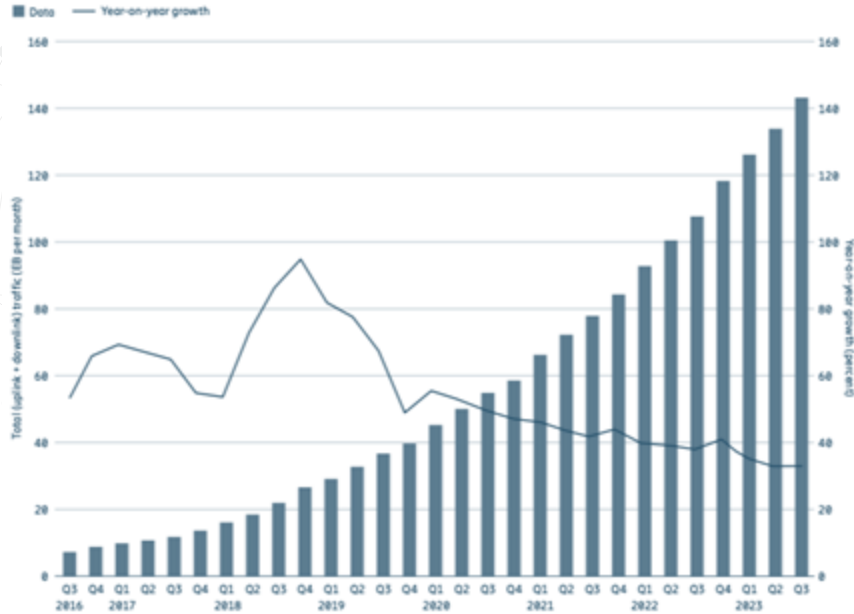


Source: <https://www.submarinecablemap.com>

TRENDS IN TELECOM EN DATACOM...

Exponentiële groei en de bijbehorende uitdagingen

Figure 6: Global mobile network data traffic and year-on-year growth (EB per month)



Source: Ericsson traffic measurements (Q3 2023).

Note: Mobile network data traffic also includes traffic generated by Fixed Wireless Access services.

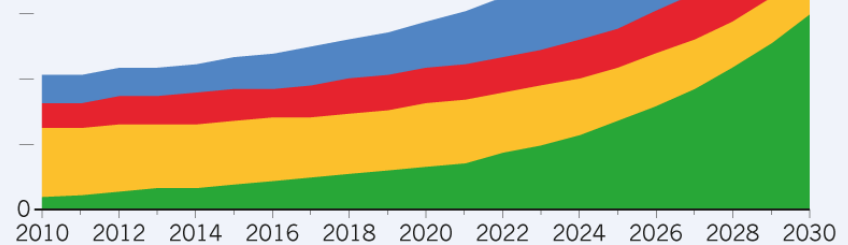
9,000 terawatt hours (TWh)

ENERGY FORECAST

Widely cited forecasts suggest that the total electricity demand of information and communications technology (ICT) will accelerate in the 2020s, and that data centres will take a larger slice.

20.9% of projected electricity demand

- Networks (wireless and wired)
- Production of ICT
- Consumer devices (televisions, computers, mobile phones)
- Data centres



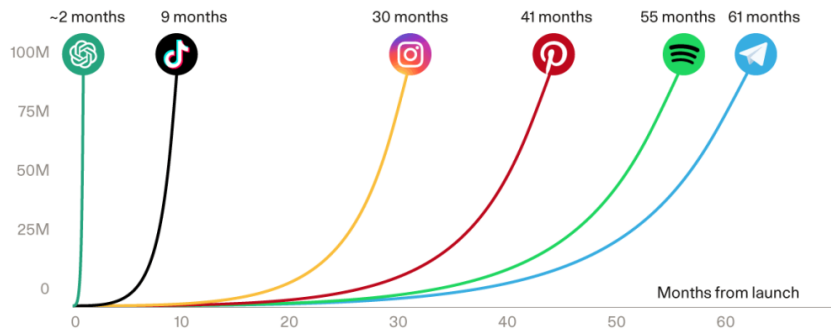
Source: [Nature](#) (2018)

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EN DAT WAS VOORDAT AI EN LLMS BESTONDEN...

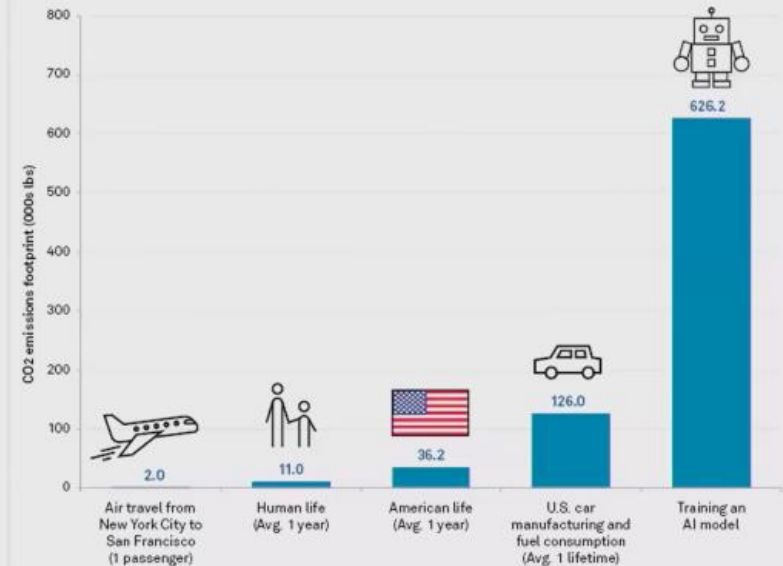
Impact op werken, samenleving, maar ook duurzaamheid

Path to 100 Million Users (stylized)



AI is power hungry

CO2 emission benchmarks



Data compiled Oct. 9, 2019.

An "American life" has a larger carbon footprint than a "Human life" because the U.S. is widely regarded as one of the top carbon dioxide emitters in the world.

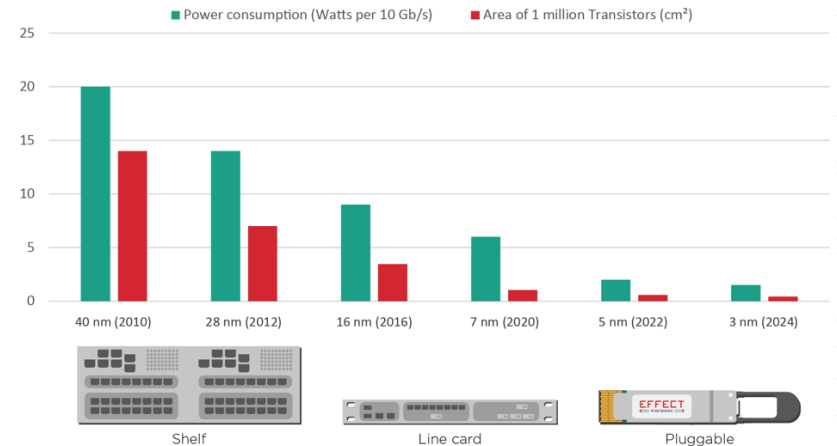
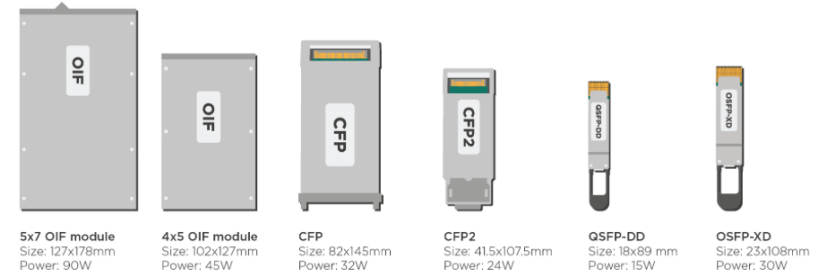
Source: College of Information and Computer Sciences at University of Massachusetts Amherst

HOE LOSSEN WE DAT OP? FOTONEN IN PLAATS VAN ELEKTRONEN!

Voordelen van fotonica en microchips



	Koper	Glasvezel
Afstand (zonder versterking)	<100m	>100km
Gewicht (100m)	30kg	0.6kg
Verlies (100m)	94%	3%
Maximale snelheid	10 Gbps	> 25 Tbps
Ruisgevoeligheid	Medium	Nul
Levensduur	5 jaar	40 jaar
Montagekosten	Laag	Hoog
Aanleg (per km)	Hoog	Laag

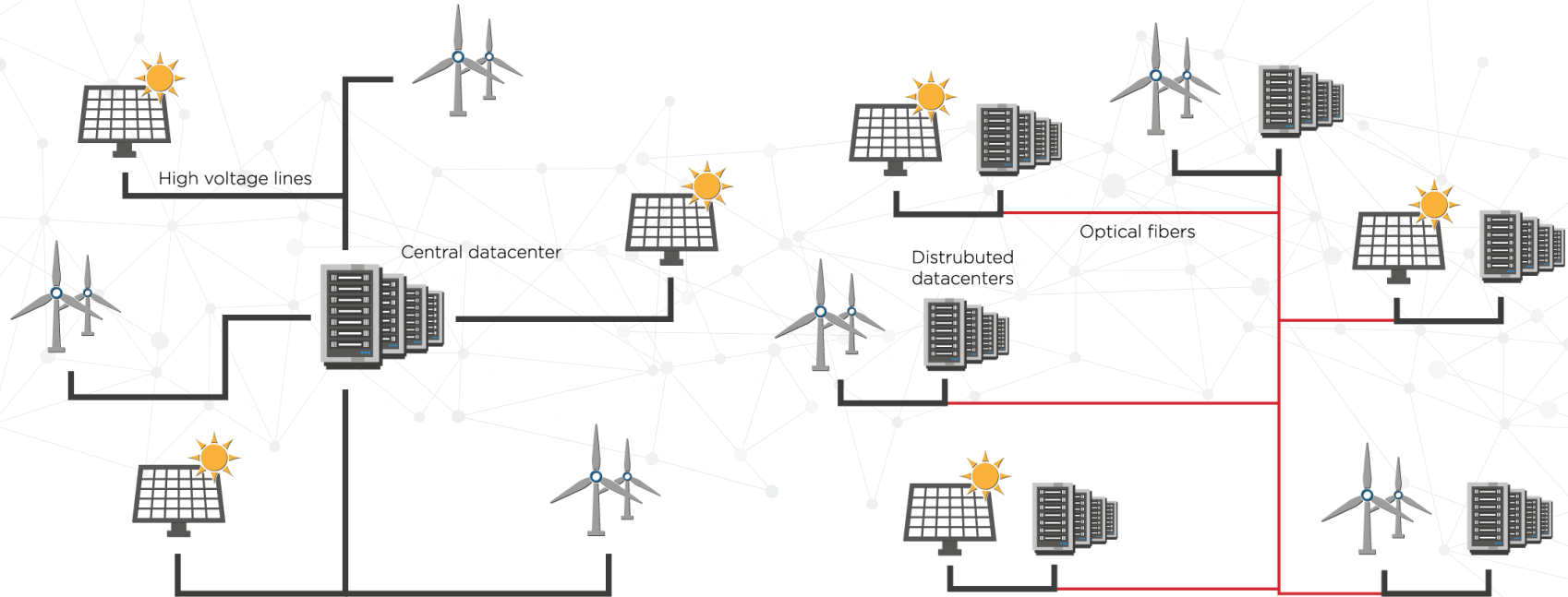


FOTONICA ALS KATALYSATOR VOOR GROENE IT

Verplaats bits in plaats van joules

Current datacenter networks transfer power, not data

Tomorrow's datacenter networks should transfer data, not power



THE POWER OF LIGHT: PHOTONICS AS A CATALYST FOR GREEN IT

Samenvatting en take-aways

- Fotonica
- Uitgangspositie Nederland
- Geopolitiek
- Trends in datacom (AI!)
- Fotonen vs Elektronen
- Katalysator van groene IT





The only thing more amazing
than our technology is what the world
can do with it.

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