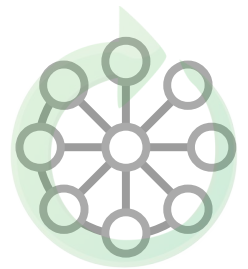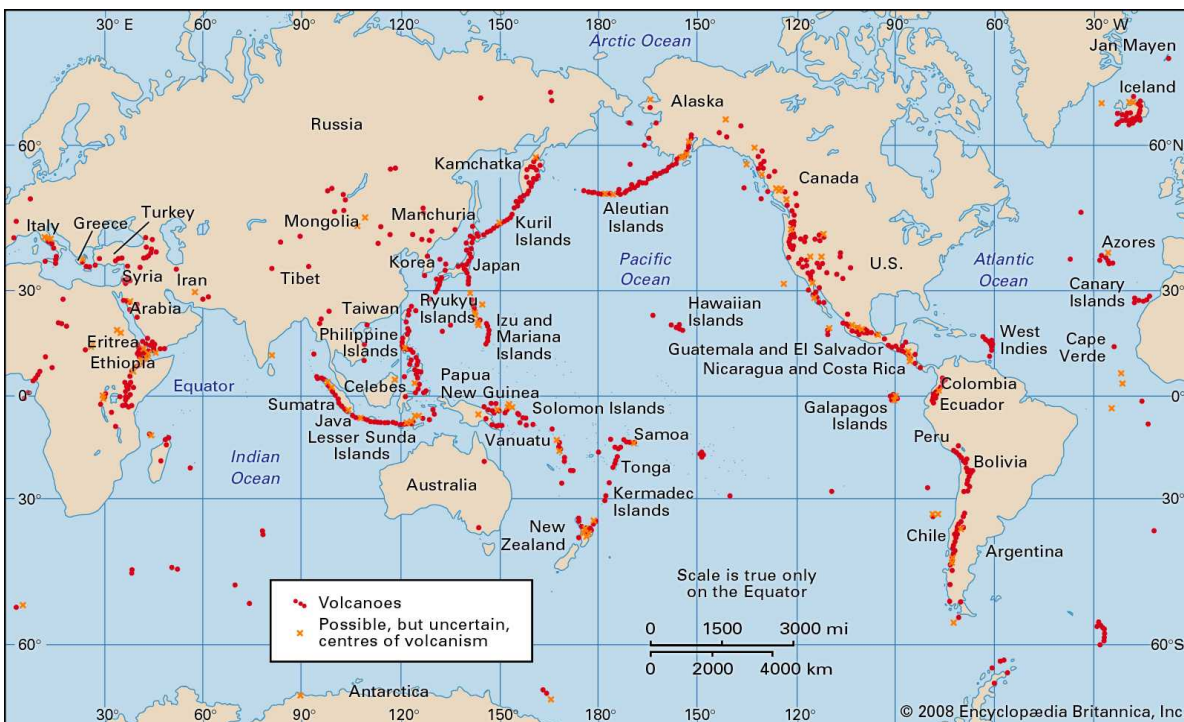# Global Wireless Energy & Telecoms (WET)

What if, instead of heating water with nuclear/fossil-fuels/solar/wind energy, **magma** was used?

- Geographically ubiquitous (no more wars)
- Here for millions of years, probably long after us
- Day/night, summer/winter constant energy

} sustainability, zero man-made pollution.

Lossless Wireless Energy Transfers make it possible to get affordable energy worldwide. To transfer data, we just have to modulate the wireless energy signal (like LTE or Wi-Fi, but without any side effect).

Redundant, Constant, Safe ...and available everywhere:

Volcanoes
Possible, but uncertain, centres of volcanism

Scale is true only on the Equator

0   1500   3000 mi
0   2000   4000 km

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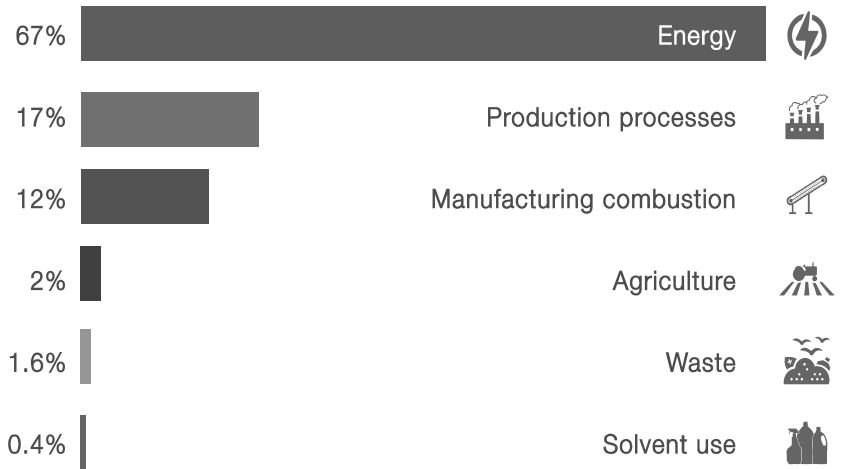
Transmit Energy & Data Anywhere

Energy-Grids are Fragile, costly, and polluting

Pollution is expensive, it kills people, animals, and plants

Air Pollution (Europe)

Total cost: **€329 billion** (and up to €1053 billion)

67%	Energy
17%	Production processes
12%	Manufacturing combustion
2%	Agriculture
1.6%	Waste
0.4%	Solvent use

Transmission Losses are a recurring cost

Waste is a net loss for taxpayers & consumers

	Energy Losses (TWh)	$ Losses (billions)
Switzerland	4.56	0.2 – 0.8
France	38.60	1.9 – 6.7
Germany	27.02	1.3 – 4.7
U. K.	26.14	1.3 – 4.5
U.S.A	244.11	11.9 – 42.5
China	319.58	15.6 – 55.6

(TWh price range: USD 49m-174m)

Deployment Costs

The U.S. grid's cost is $7.5 trillion ($1-3 million a mile)

Color Key:
Red: Generation
Blue: Transmission
Green: Distribution
Black: Customer

Transmission lines
765, 500, 345, 230, and 138 kV

Substation Step Down Transformer

Subtransmission Customer 26kV and 69kV

Generating Station

Generating Step Up Transformer

Transmission Customer 138kV or 230kV

Primary Customer 13kV and 4kV

$7.5Tn

Secondary Customer 120V and 240V
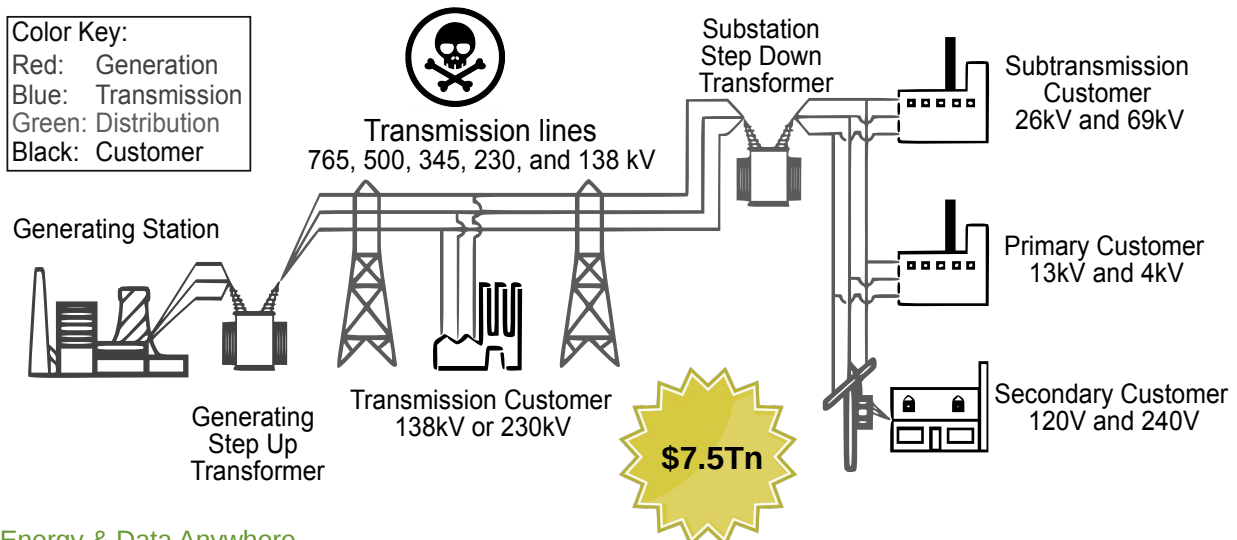
Telecoms without infrastructure nor any dark zones

Better Service, and a much higher Resilience

Radio-waves and microwaves are absorbed and refracted by physical obstacles (buildings, mountains, clouds, fog, rain), creating "dark zones".

This is why signal repeaters (terrestrial and spacial "relays") are required everywhere to cover several continents.

No such requirements exist with Lossless Wireless Energy Transfers because metal and water are traversed seamlessly.

The WET technology allows for deployments without a critical infrastructure – hereby waving gargantuan deployment and operating costs (and ubiquitous vulnerabilities).

Affordable Telecoms without pollution and waste

Immensely Reduced Energy Consumption

Only endpoints (transmitter, receiver) need Energy – and they fetch it from the remote Energy source

For a century, studies and even public policy reports confirm that radio-waves are detrimental to life (humans, animals, and plants) – but we keep deploying them in ever-growing toxic forms (more relays, higher frequencies, focused beams tracking users) to compensate for their inherent defects.

WET completely avoids the radio-waves/microwaves toxicity by preventing alive creatures from becoming antennas.

The energy signal is entirely used by the receiver and as a result no stray energy is accidentally received by the nearby living creatures.
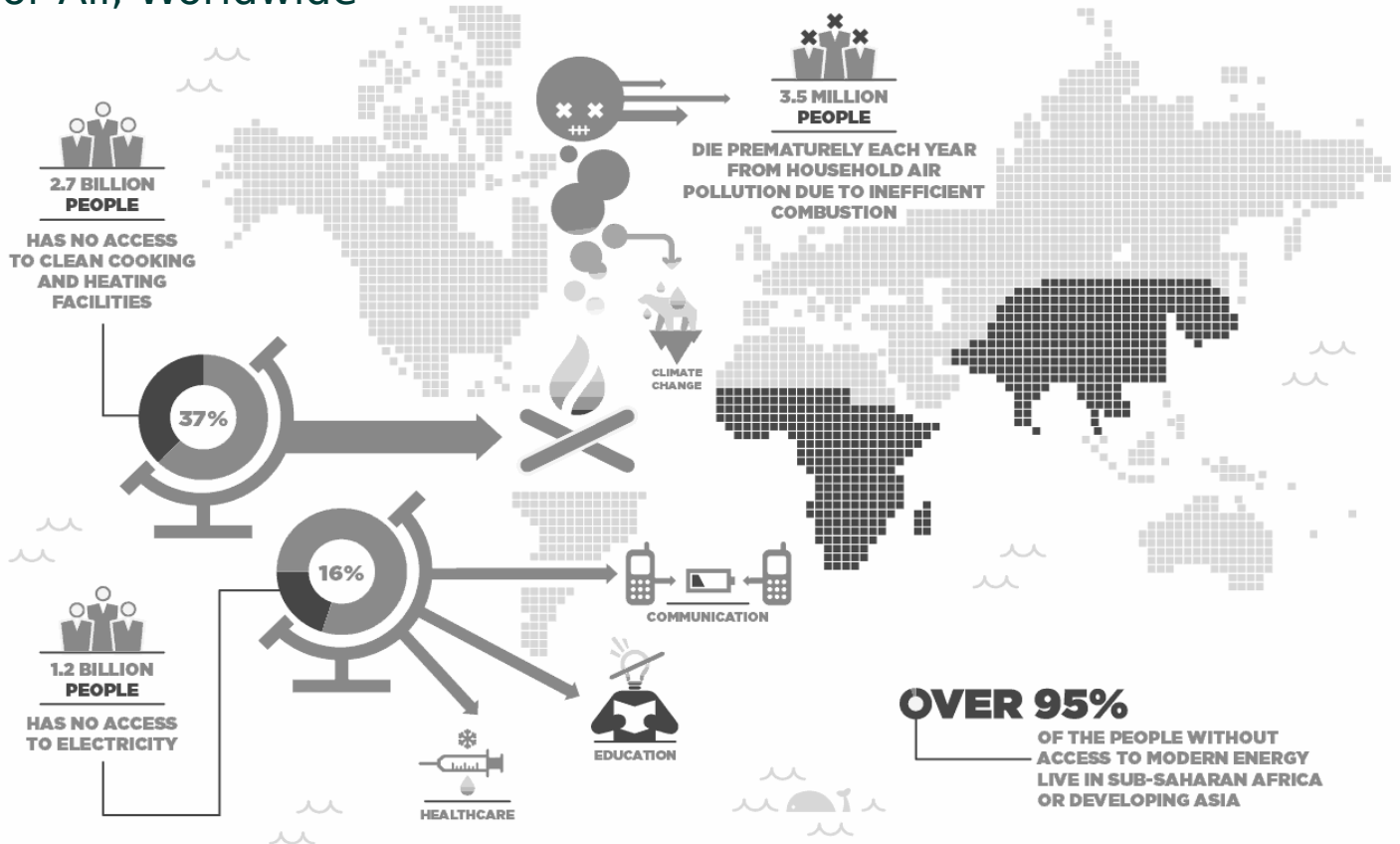
Why keep doing wrong when we have a way to do better (more speed, lower latency, less energy, no damage)?

Radio-Waves
Micro-Waves
Toxic Emissions, Environmental Disaster & Energy Waste
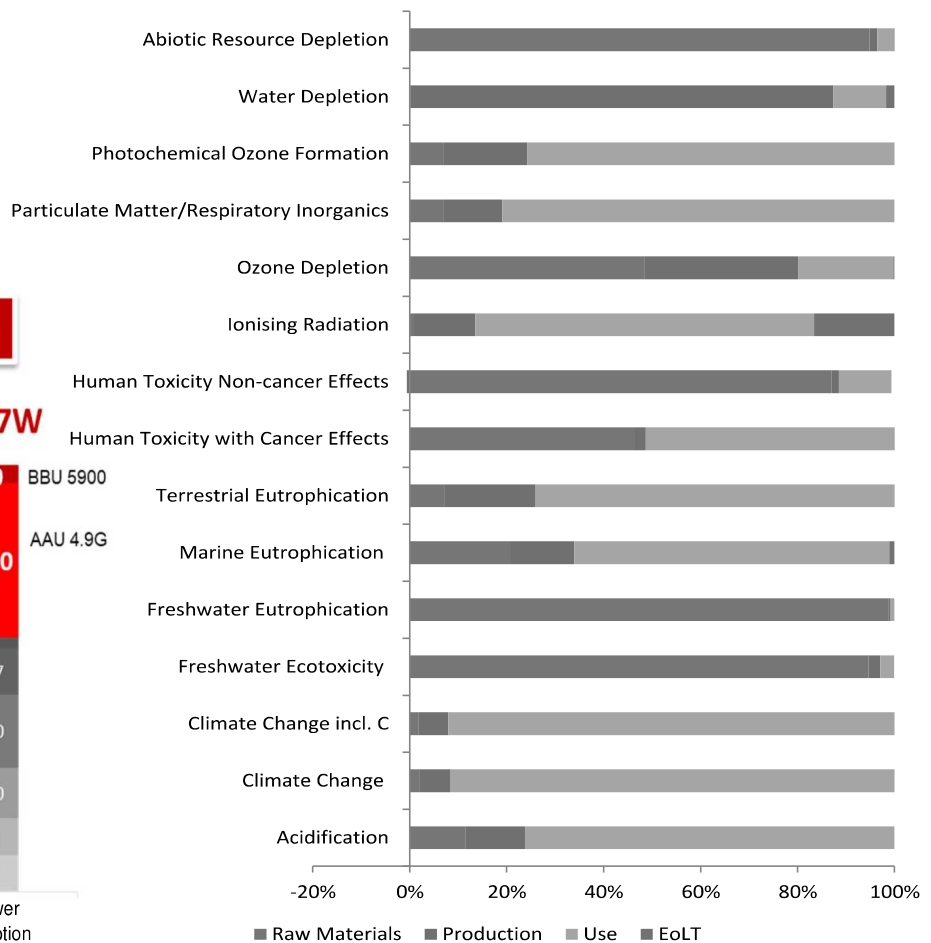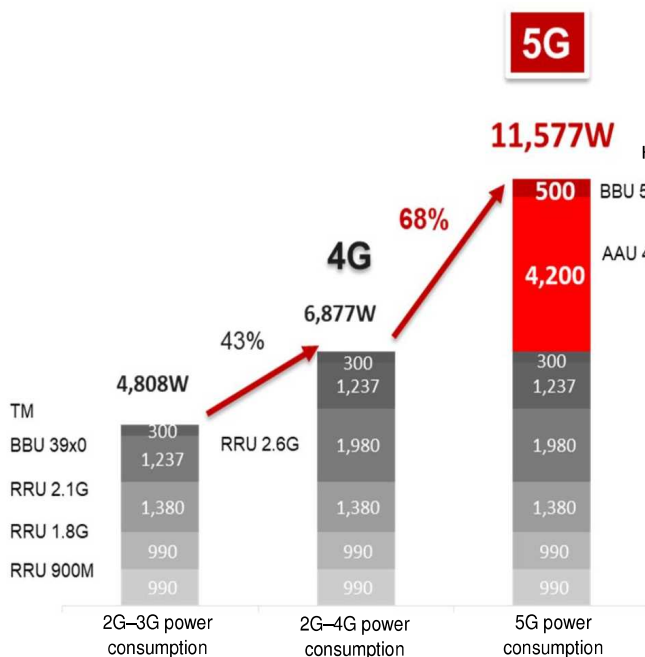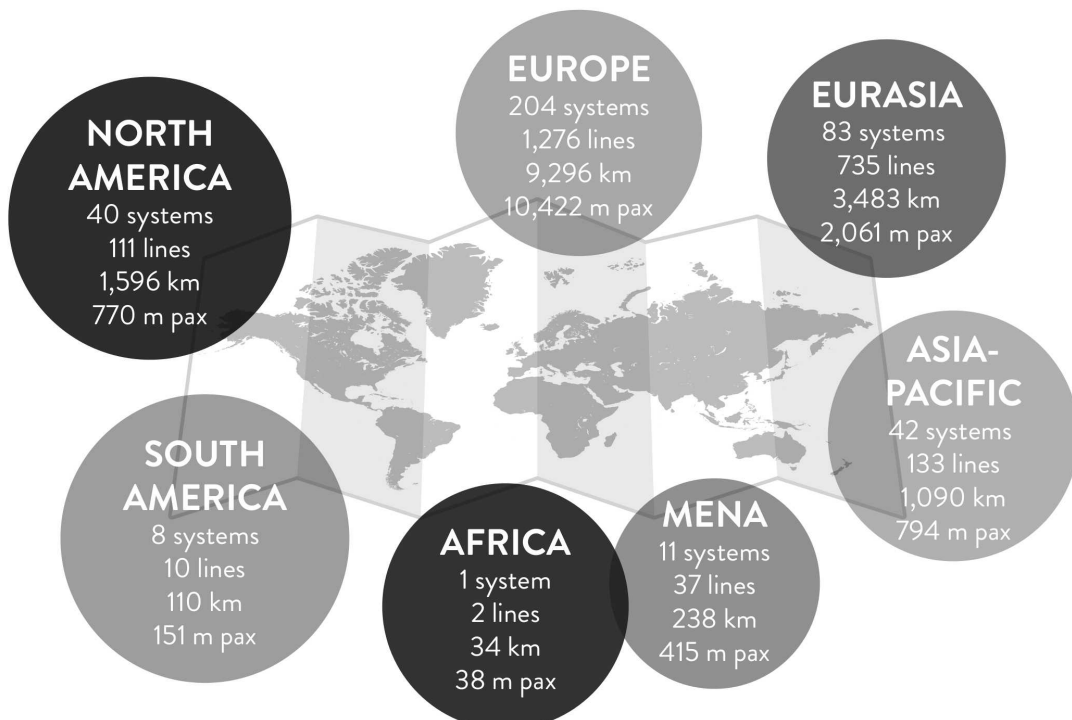
Electrification Made Possible for All, Worldwide

So far, costs are the only obstacles to a global access to energy and telecoms.

2.7 BILLION PEOPLE HAS NO ACCESS TO CLEAN COOKING AND HEATING FACILITIES

3.5 MILLION PEOPLE DIE PREMATURELY EACH YEAR FROM HOUSEHOLD AIR POLLUTION DUE TO INEFFICIENT COMBUSTION

CLIMATE CHANGE

37%

16%

COMMUNICATION

EDUCATION

HEALTHCARE

1.2 BILLION PEOPLE HAS NO ACCESS TO ELECTRICITY

OVER 95% OF THE PEOPLE WITHOUT ACCESS TO MODERN ENERGY LIVE IN SUB-SAHARAN AFRICA OR DEVELOPING ASIA

Until recently, rich countries did not care much about energy costs – and energy supply safety. But the current geopolitical energy crisis has shown that better solutions are much needed – both for consumers and for all economic activities.

Mobility Redefined – both for private and public usages

From electric cars, buses, tramways and trains to boats and planes – no more pollution, and drastically reduced costs allow for global deployments:

EUROPE
204 systems
1,276 lines
9,296 km
10,422 m pax

EURASIA
83 systems
735 lines
3,483 km
2,061 m pax

NORTH AMERICA
40 systems
111 lines
1,596 km
770 m pax

ASIA-PACIFIC
42 systems
133 lines
1,090 km
794 m pax

SOUTH AMERICA
8 systems
10 lines
110 km
151 m pax

AFRICA
1 system
2 lines
34 km
38 m pax

MENA
11 systems
37 lines
238 km
415 m pax

TWD Industries AG

What the IEA says...

> *"Annual emissions due to energy loss from the transmission of electricity on the power grid is more than emissions from other industries."*
> International Energy Agency (2019)

What the industry says...

Microsoft

"Attackers are hacking energy grids by exploiting software."

U.S. Department of Energy

"DoE is working toward a 100% carbon-free power sector by 2035 in support of President Biden's climate goals."

TWD products since 1998

After the dot.com crisis, and 20+ million RA licenses deployed, TWD declined $20m from Summit Partners, the largest and oldest venture capitalist. In 2009, using organic growth, more than 280 million RA licenses have been deployed in 136 countries. Long-term projects often demand long term investments.

SLIMalloc (2020+)

As a memory allocator (either used by one application or system-wide) SLIMalloc first offered a faster and flawless design – safe against memory allocation errors and against system errors (both were handled without corrupting memory so programs could keep going instead of crashing). In 2023, SLIMalloc increased its memory-safety coverage to the system, third-party libraries, and C programs to deliver "memory safety" to the C programming language - the root cause of 70-90% of all vulnerabilities for decades, according to the NSA.

Global-WAN (2010+)

Global-WAN was (and still is) the only Level-2 distributed VPN relying on "post-quantum" (a decade before NIST PQE standards) and "unconditional" security (safe forever by preserving the whole key-space and therefore the algebraic plausibility of any potential key and plaintext).

G-WAN Application Server (2009+)

G-WAN was 4x faster than Microsoft IIS 7.5 and offered servlets (in 18 scripted languages: C, C++, Java, C#, etc). Like RA (1998), it was immediately deleted as a "virus" by Microsoft partners called in 2004 the VIA (Virus Information Alliance). Porting G-WAN to Linux made it faster and more scalable. Despite its many features, G-WAN uses less CPU/RAM than NGINX - and had no vulnerabilities.

Directory Server (2003-2009)

The patented DS (Directory Server) allowed small businesses and large accounts deploy RA without configuring routers and firewalls, manage access rights, deploy and inventory assets - without any setup. It also allowed people to "recycle" RA licenses so that any newly deployed slot would replace the oldest slot (among the slots marked as available for recycling – others being "fixed" slots).

Remote-Anything (1998-2009)

As a Desktop-Sharing and file-transfer application (competing with HP Carbon-Copy, Symantec PCAnywhere, and Traveling Software Laplink), RA was much smaller (one single 50 KB executable file), much faster (even on slow links), and much safer (no vulnerability in its lifetime).

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