



DEKA
Research & Development

evolved thinking.

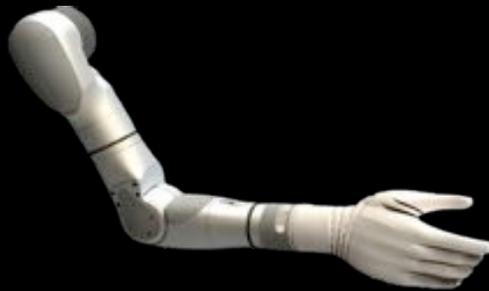
www.dekaresearch.com

DEKA

- For more than 30 years DEKA has developed breakthrough medical technologies with premier global healthcare and consumer product partners
- More than 500 engineers and scientists
- DEKA ideas have a track record of disrupting the status quo



Peritoneal Dialysis



Prosthetic Arm



Freestyle Fountain

Disruptive Infrastructure Transformations...

COMPUTING

COMPUTING



COMPUTING



COMMUNICATIONS

COMMUNICATIONS





COMMUNICATIONS







PHOTOGRAPHY

PHOTOGRAPHY

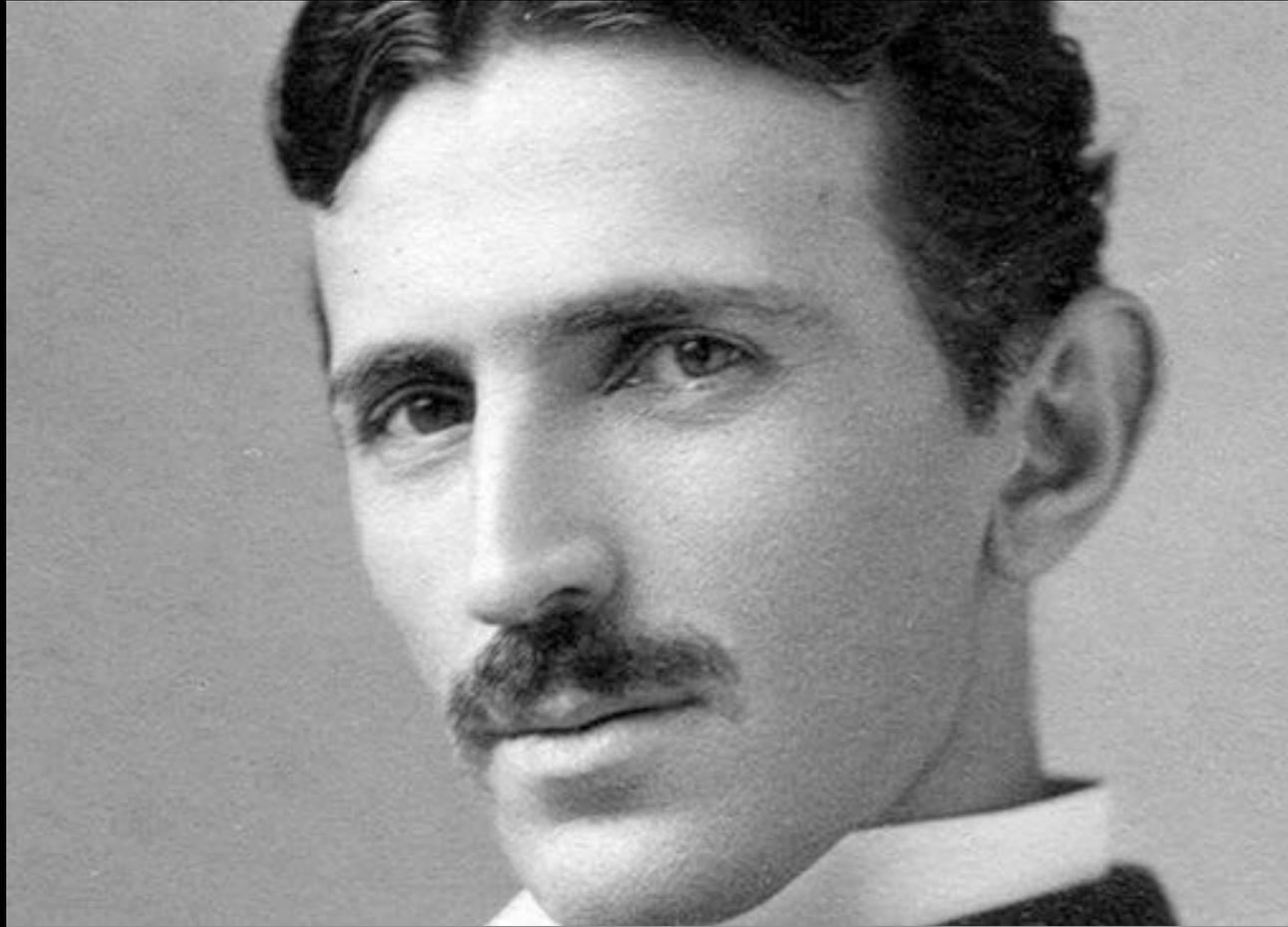


PHOTOGRAPHY



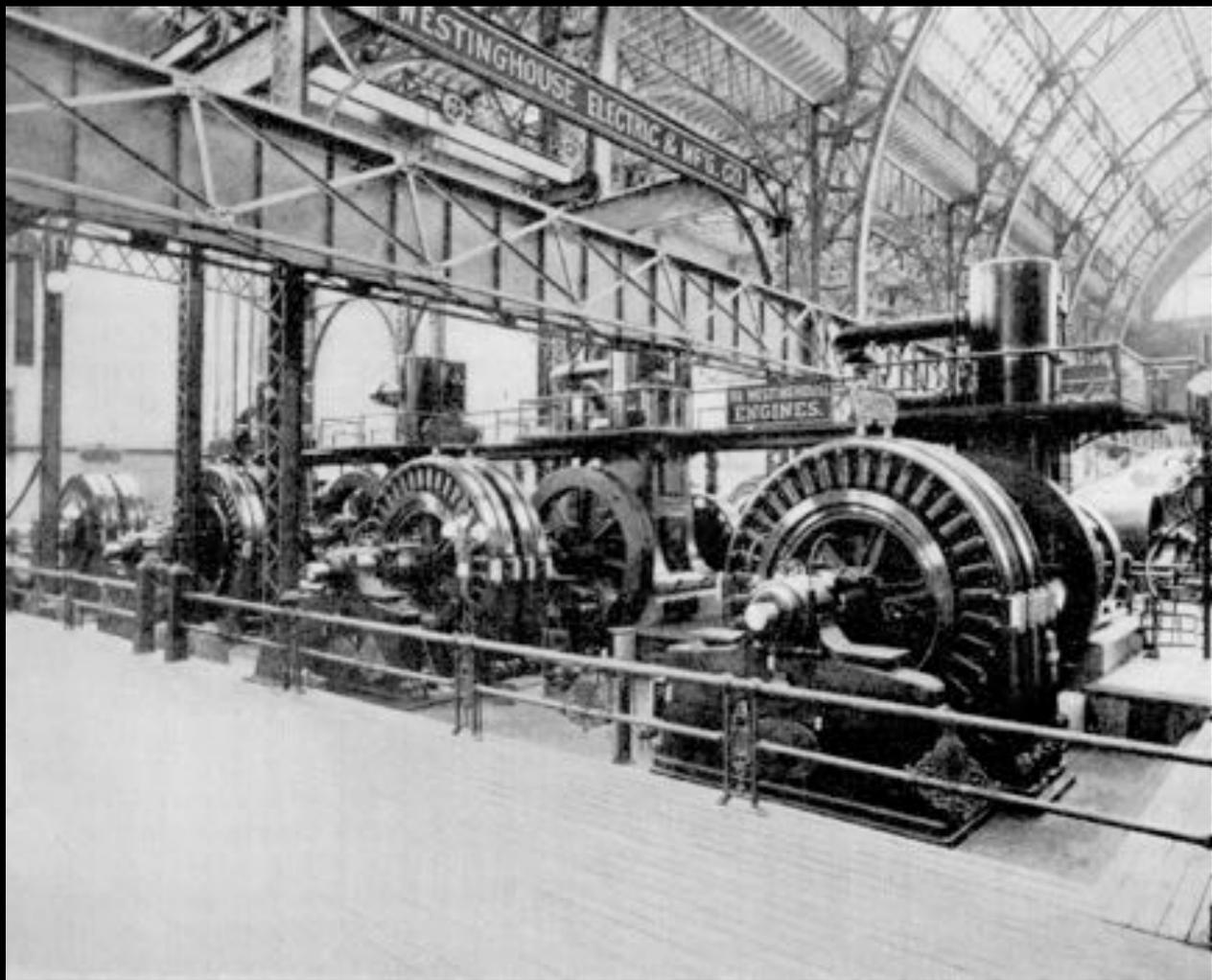
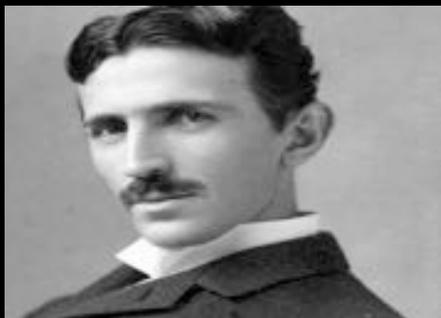
ELECTRICITY

ELECTRICITY



Nicola Tesla, 1888

ELECTRICITY



Is the Grid ready for
disruption?

ELECTRICITY

old
inefficient
unreliable
expensive
dirty

ELECTRICITY

**Generating capacity costs
\$1 per watt**

(Current US capacity = one trillion watts)



ELECTRICITY

More than 50% of the
generating capacity in
the US is more than 30
years old

$1T \times 50\% \times \$1 \text{ per watt}$
 $= \$500B$

ELECTRICITY

**Transmission lines cost
\$1 million per mile**



ELECTRICITY

More than 70% of the
280,000 miles of
transmission lines are
more than 25 years old

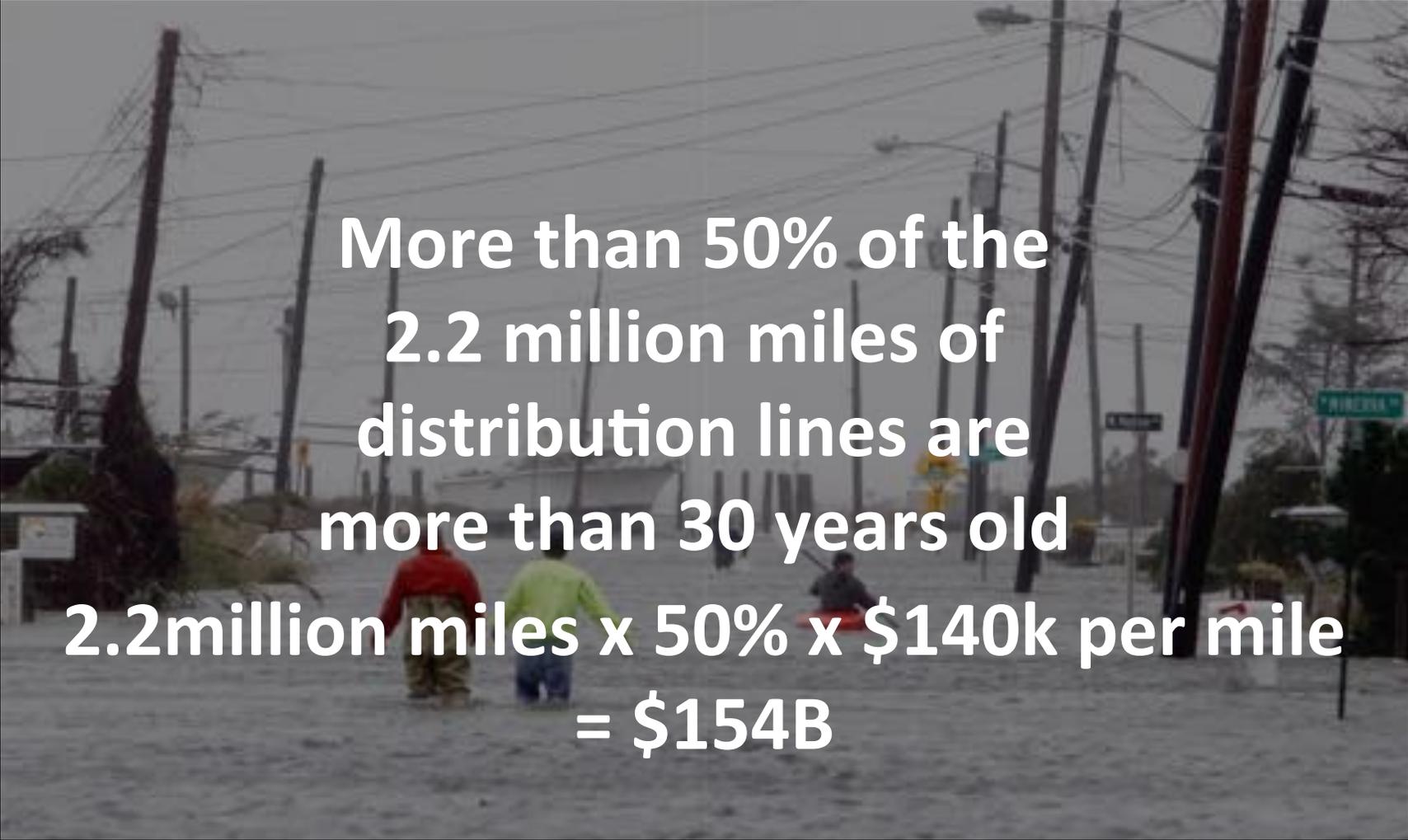
280k miles x 70% x \$1m per mile
= \$196B

ELECTRICITY

**Distribution lines cost
\$140,000 per mile**



ELECTRICITY

A photograph of a flooded street with utility poles and workers in the background. The scene is overcast and the water is murky. Several utility poles with power lines are visible. In the foreground, two workers in high-visibility clothing (one in red, one in green) are wading through the water. A street sign for 'WINDY' is visible on the right.

More than 50% of the
2.2 million miles of
distribution lines are
more than 30 years old
2.2million miles x 50% x \$140k per mile
= \$154B

Annual capital costs

*(does not include fuel or
other operating costs)*

Power plants: \$60 billion

Transmission: \$20 billion

Distribution: \$10 billion

\$90 billion

What's Next?

ELECTRICITY



ELECTRICITY



**100 million 10 kW appliances
could replace the entire
United States
power grid**

Is 100 million appliances a lot?

No

HOME APPLIANCES



140 million refrigerators

HOME APPLIANCES



117 million hot water heaters

HOME APPLIANCES



82 million furnaces and boilers

Where Else Could
Distributed
Power be Installed?

A photograph of a residential neighborhood with houses and trees, overlaid with the text "40 million transformers". The image shows a two-story brick house with white siding and dark shutters, surrounded by green lawns and trees. A black metal fence runs across the foreground. The text is centered in a large, white, sans-serif font.

40 million transformers



Simplified Installation
Lower Installation Cost
Simplified Service
Higher Efficiency
Higher Reliability
Requires Energy Company

Now every Neighborhood Could
Have Distributed Power With no
Change Behind the Meter!

A Natural Evolution of the Grid...

