

The Human Dimension

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The Future is Coming

(Use scary Game of Thrones voice)

Centuries Slide By

1870 grid

1970 grid

2070 grid

- **1 battery driven electric light. Monk-made. Awesome, but drastically limited in scale.**

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- **Generation and storage located where power is used...**
- **...and matched to the scale and power quality of that usage.**

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- Consumption wildly optimized.
- Person-to-Person energy trading as the norm.
- PLUS: the Internet of Things,
- PLUS (probably) low voltage DC systems
- PLUS: dispatchable conservation
- PLUS: the mass integration of renewables
- PLUS....???

Centuries Slide By

1870 grid

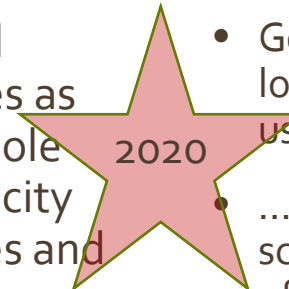
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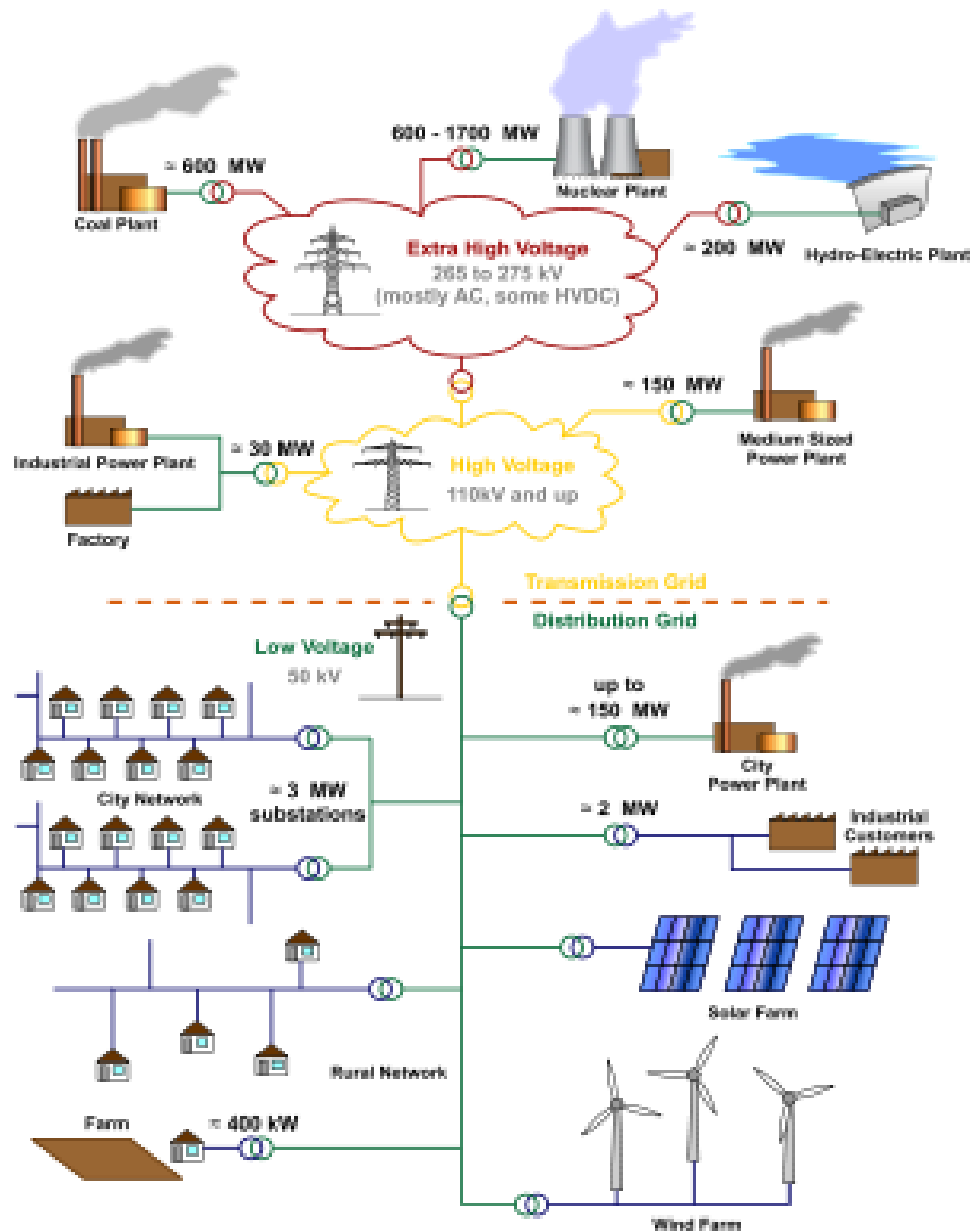
1970 grid

- Vertically integrated “natural” monopolies as sole purveyors and sole purchasers of electricity (i.e. both monopolies and monopsonies)
- Power made in quantiles that match demand (however capricious).
- Electricity made in bulk far from where it is used
- Heavy reliance on heat engines & fossil fuels
- Point-to-point long distance transmission
- Dendritic lower voltage distribution system

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By MBizon - Own work Originally derived from de:Datei:Stromversorgung.png, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=9676556>

A microscopic view of a foam structure, showing a complex network of interconnected cells. The cells are primarily hexagonal and pentagonal in shape, with some larger, more irregular ones. The color palette is a gradient of blues and greens, with the largest cells appearing in lighter shades and the smaller cells in darker, more saturated tones. The overall effect is a dense, textured pattern that resembles a honeycomb or a cellular lattice.

Foam?

Dendrites?

