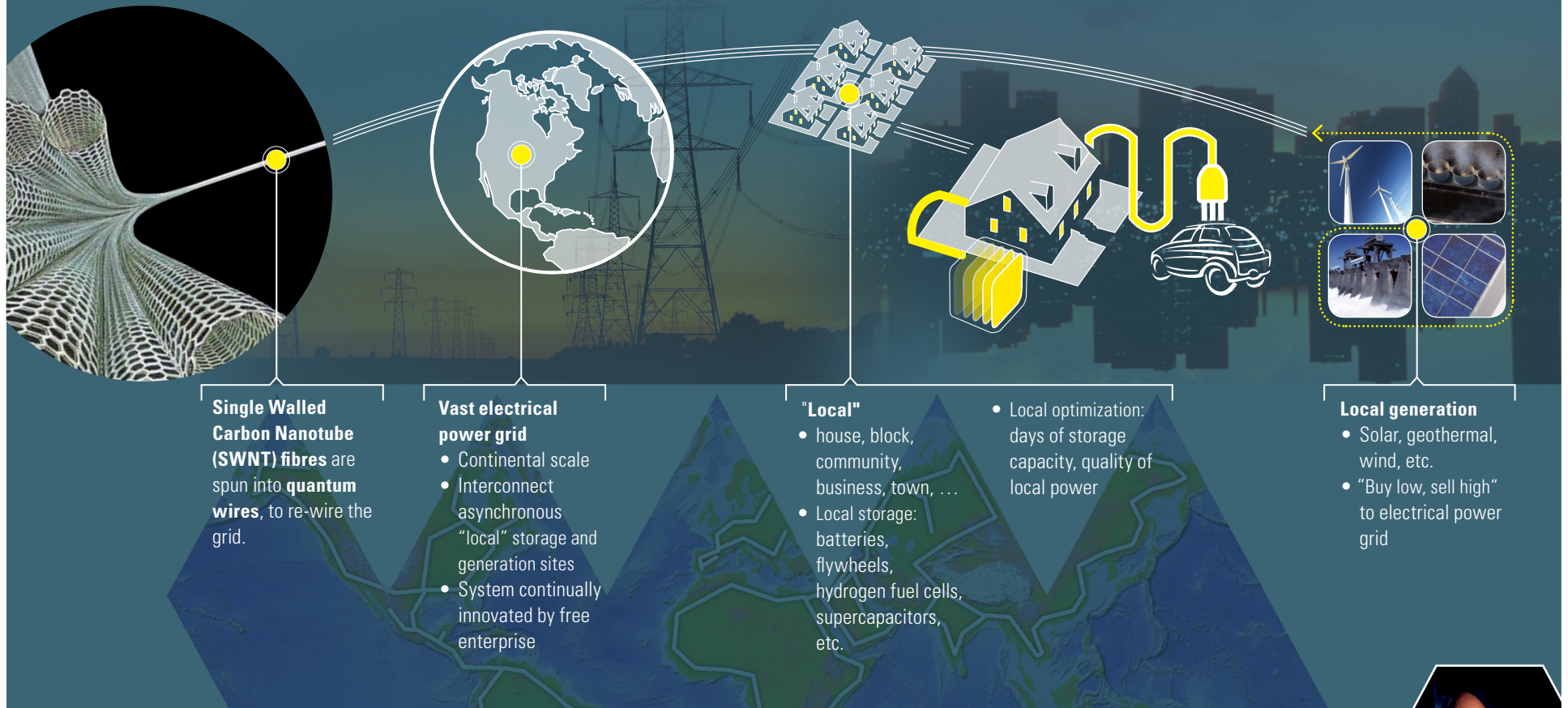


# The Distributed Storage-Generation Grid: One World Energy Scheme for 2050



Energy will be transported as electricity over wire, rather than by transport of mass (coal, oil, gas)



**Single Walled Carbon Nanotube (SWNT) fibres** are spun into **quantum wires**, to re-wire the grid.

**Vast electrical power grid**

- Continental scale
- Interconnect asynchronous "local" storage and generation sites
- System continually innovated by free enterprise

**"Local"**

- house, block, community, business, town, ...
- Local storage: batteries, flywheels, hydrogen fuel cells, supercapacitors, etc.

• Local optimization: days of storage capacity, quality of local power

**Local generation**

- Solar, geothermal, wind, etc.
- "Buy low, sell high" to electrical power grid

## THE BENEFITS OF THE QUANTUM WIRE:

### Expected Features

- 10x Copper Conductivity
- 6x Lighter
- Stronger Than Steel
- Zero Thermal Expansion

### Key Grid Benefits

- Reduced Power Loss
- Low-to-No Sag
- Lightweight
- Higher Current-Carrying Capacity

### SWNT Technology Benefits

- Type Specific
- High Purity
- Low Cost
- Scalable Processing

## THE WORLD OF THE GRID:

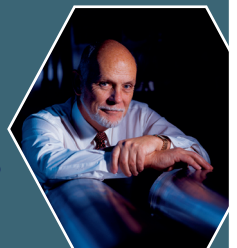
### Global grid

- Robust
- Massive primary power input to grid via HV DC lines.
- New input from vast solar farms in deserts,

wind, NIMBY nuclear, clean coal, stranded gas, wave, hydro, biomass, space-based solar... "Everybody Plays"

- Ethanol / Methanol / Hydrogen are transportation fuels
- Transition technology – Plug-in Hybrids

**Rick Smalley's vision** of a global energy network.



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