

# How to Build a 100% Renewable Grid

1. A continent wide HVDC network with enough capacity to meet each grids maximum demand.
2. An overbuild of wind and solar capacity equal to 3-5 X the current thermal capacity in each grid. (Repeat every 20 years)
3. Iron clad agreements between power suppliers, and grid operators to supply power when needed, whether to the local grid or elsewhere on the continent
4. Contracts with wind & solar power providers to disable power when supply exceeds demand
5. Enough local battery storage to always meet the evening peak
6. Ample hydro/pumped hydro in facilities able to handle rapid, frequent & drastic changes in reservoir levels when wind & solar are insufficient. And enough turbines/pumps to handle. (Or an energy storage miracle)
7. Enough batteries, synchronous generators and other equipment to provide FCAS for grid stability at all times
8. Contracts with major power consumers for interruptible power
9. Contracts and hardware/software to enable rooftop solar to be shut off/throttled when grid stability is threatened
10. Demand response hardware/software and agreements to restrict demand for non-essential power in times of supply shortages
11. Gas turbine plants and/or diesel power plants on standby for extreme events
12. The political will and economic power to enact the above.

Then double everything to handle the electrification of light transport, space heating and process heating. (While strengthening the LDC to handle increased demand)