

Search for Solutions: Compressed Air Technology

John Newhagen, Amalia Newhagen, Michael Moore

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Introduction

Of the potential solutions to our ever-changing climate, compressed air technology is perhaps one of the most viable, at least at the small scale. The very notion of the technology sounds as if it straight out of a science fiction film. The solution is very much real, however, and is already in use at select locations around the world. The idea is simple: wind turbines are already a fantastic source of alternative energy, but their reliance on wind is crippling during times without gusts. During times when energy use is low, the energy is stored in the form of compressed gas in an underground storage tank. Then, when a not-so-windy day comes, the compressed air is drawn upon for energy instead.

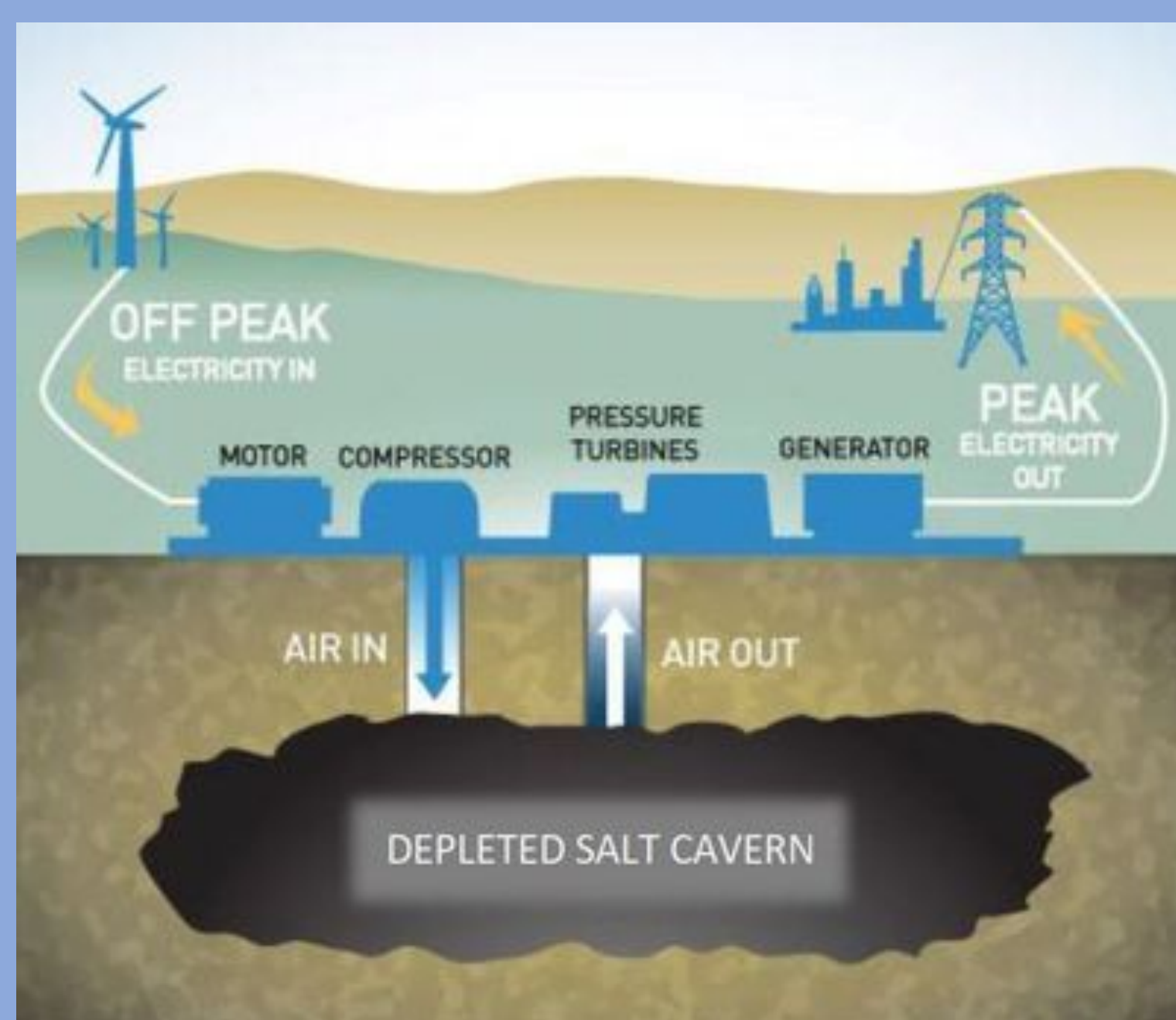
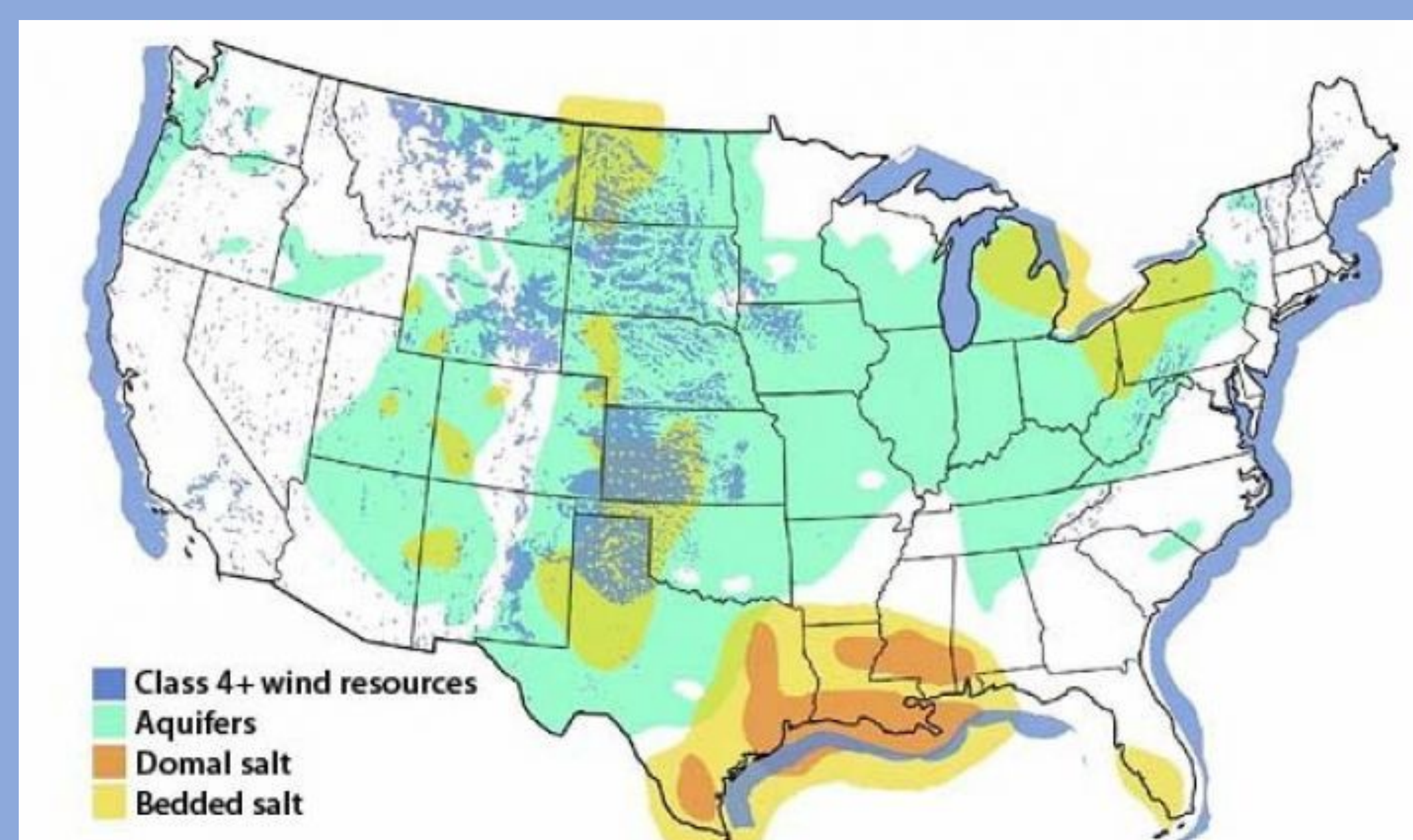
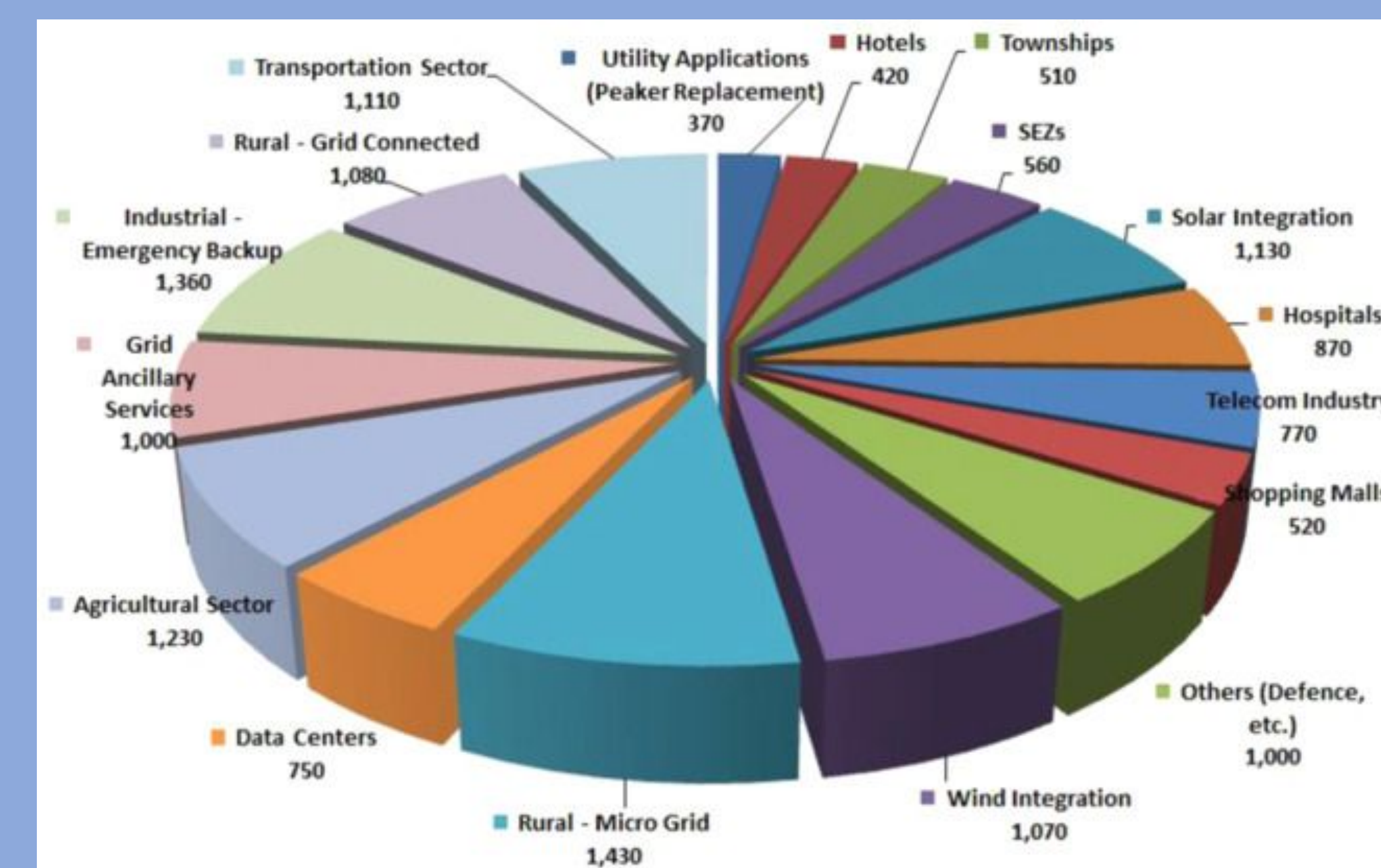


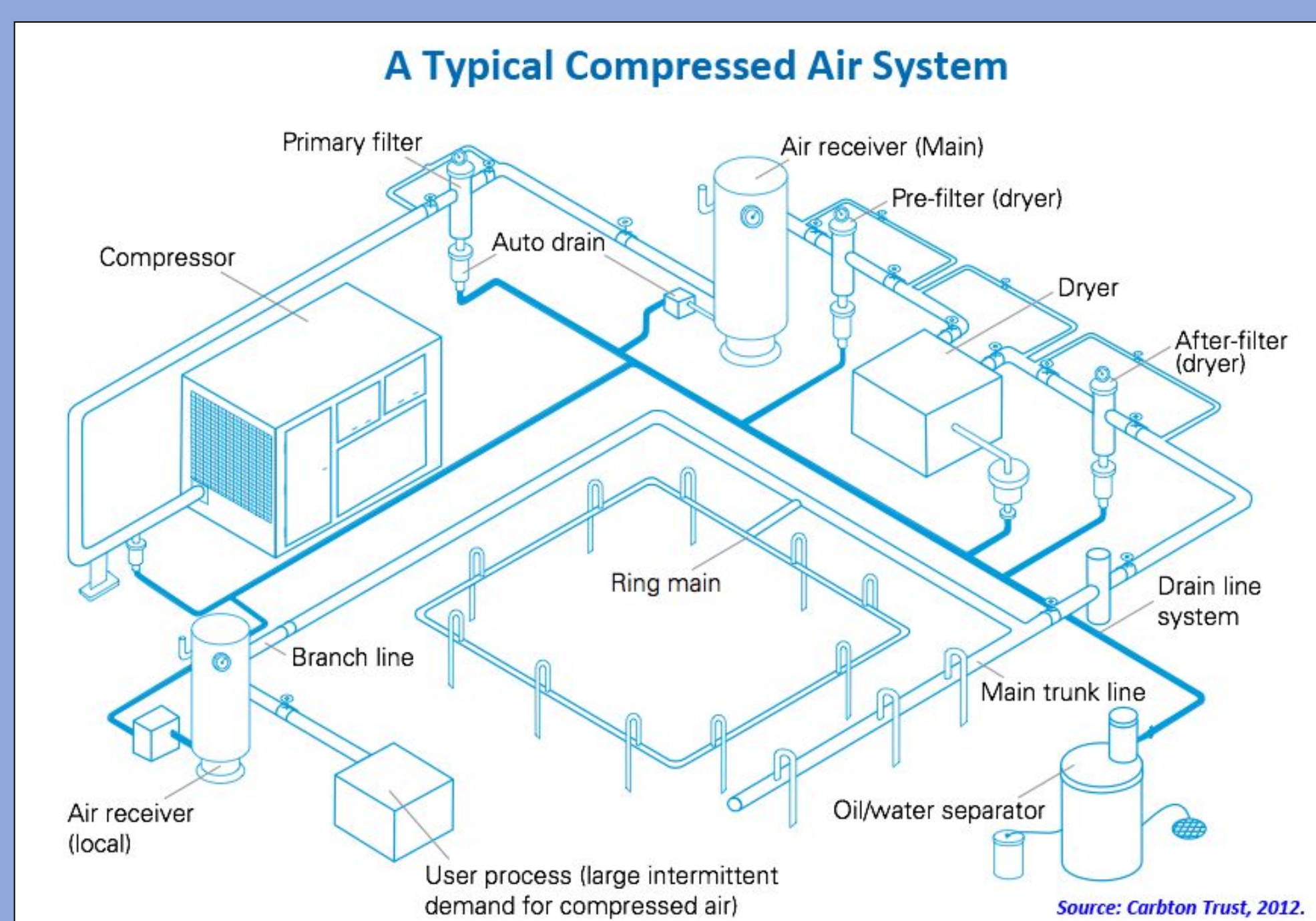
Diagram of a basic compressed air energy storage system. At off peak times, energy is stored as compressed gas, then released at peak times.



Map illustrating the possible sites of compressed air storage in the U.S. The storage of compressed air at a large scale requires ample space, so places like salt deposits and aquifers are ideal.



India's expected 2020 energy storage systems totals by industry in MW. Energy storage (including compressed air technology) is used in a variety of sectors, holding a large share in some.



This is what a typical compressed air system storage looks like. If U.S. companies switched to compressed air the potential emission reduction would be 4263 kt CO₂/y.



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