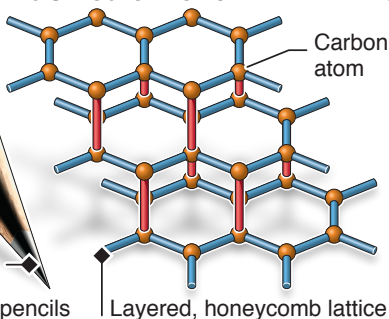


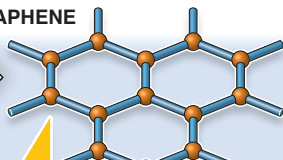
Graphene sieve makes seawater drinkable

Scientists have developed a graphene-oxide membrane capable of separating salt molecules from seawater – a breakthrough which could produce fresh drinking water for much of the developing world

ATOMIC STRUCTURE OF GRAPHITE

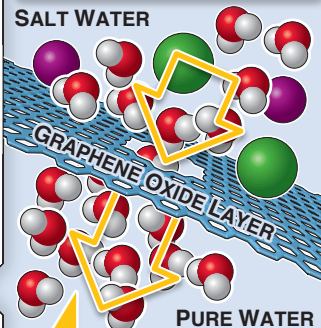


GRAPHENE



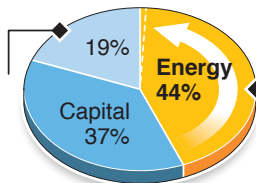
Theorised for decades, **graphene** is one atom-thick layer of pure carbon – finally created in UK lab in 2004

SALT WATER



Tiny holes cut into layer of graphene oxide allow water molecules through but hold back **sodium** and **chlorine**

TYPICAL NON-GRAPHENE DESALINATION COSTS

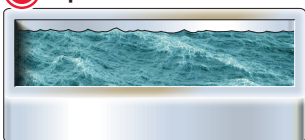


Graphene filtration could reduce energy use by **99%**

Graphite used as "lead" in pencils

DESALINATION PROCESS

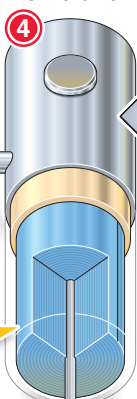
① Input: Sea water



② Sediment pre-filter

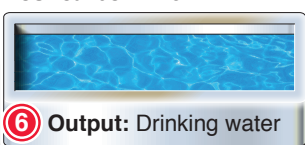
③ Carbon pre-filter

Reverse osmosis membrane



Running costs

Post-carbon filter



⑥ Output: Drinking water

Layers of graphene require **50%** less pressure to push sea water through than current desalination filters