

# The Human Earth (MAE 124/ESYS 103)

## Lecture 12

Energy: Fossil Fuels and Renewables

# Hydro Power: Traditional Mills



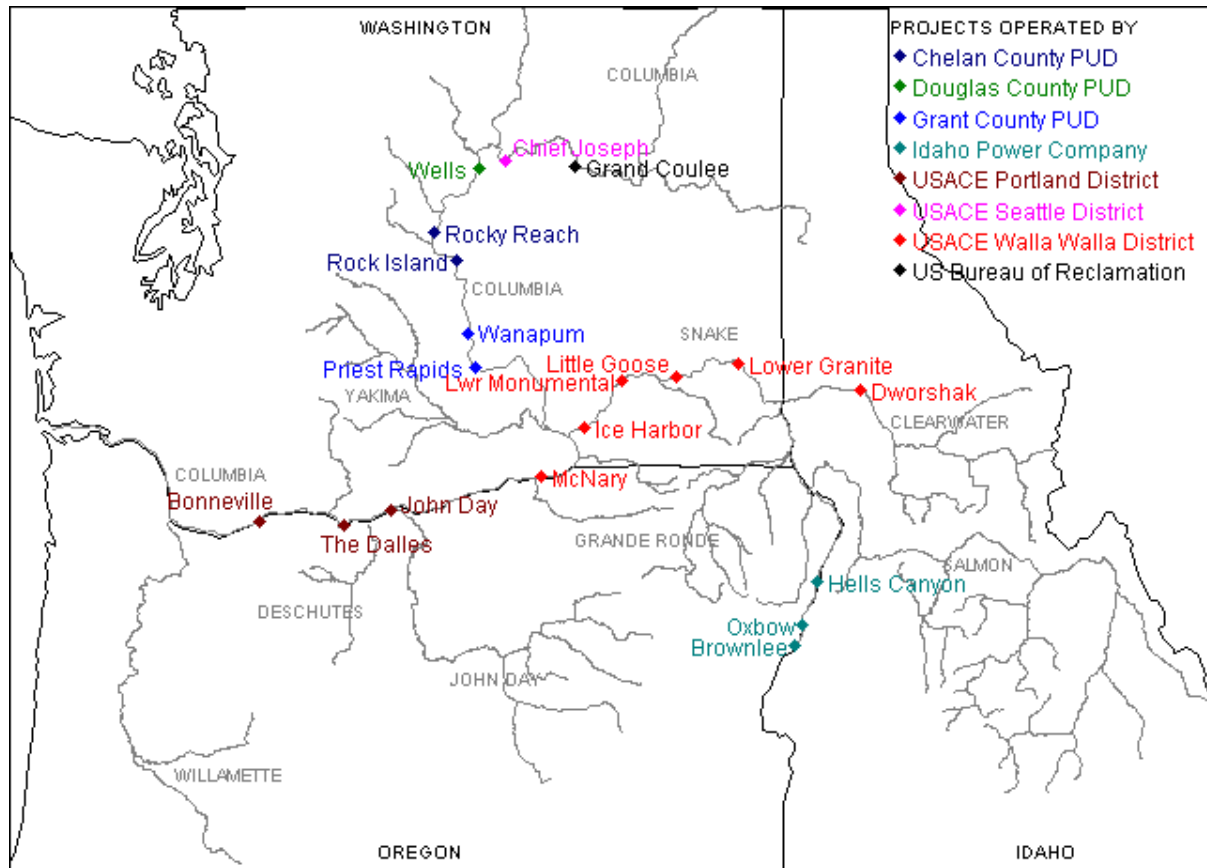
<http://www.dickinson.edu/carlisle/barnitz/therriault.html>

# Hydro Power: Niagara Falls



[http://en.wikipedia.org/wiki/Niagara\\_Falls](http://en.wikipedia.org/wiki/Niagara_Falls)

# Hydro Power: Dams on the Columbia River



<http://www.cbr.washington.edu/crisp/hydro/index.html>

# Hydro Power: Three Gorges Dam (China)



[http://en.wikipedia.org/wiki/Three\\_Gorges\\_Dam](http://en.wikipedia.org/wiki/Three_Gorges_Dam)

# Windmills



Pitstone Green, Buckinghamshire, England, <http://www.windmillworld.com/>

# Windmills Today

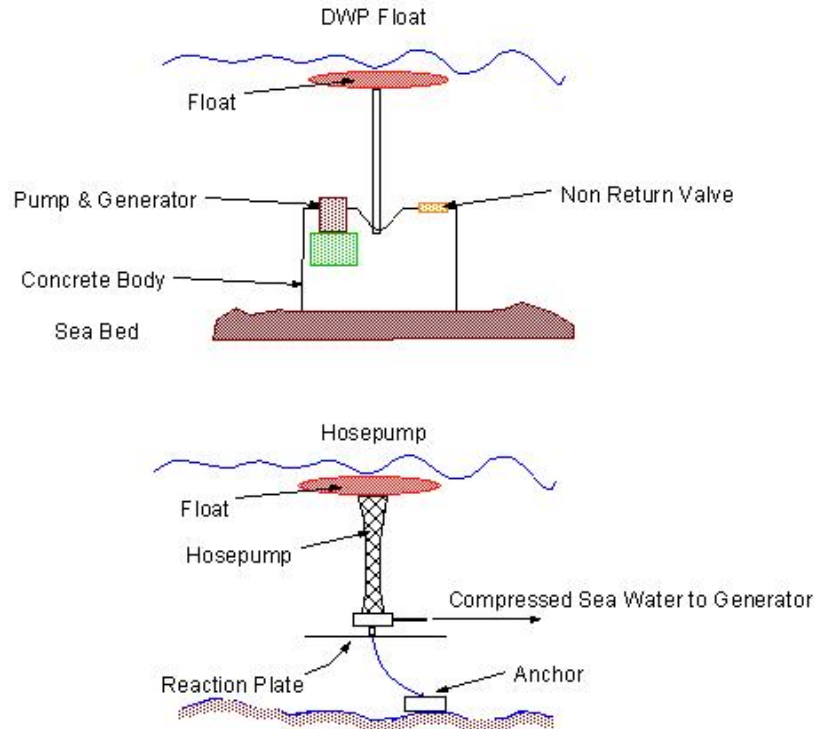


power 530,000 homes with avg usage 6500 kWh per year, <http://www.energy.ca.gov/wind/windfacts.html>

<http://www.palmsprings.com/services/wind.html>

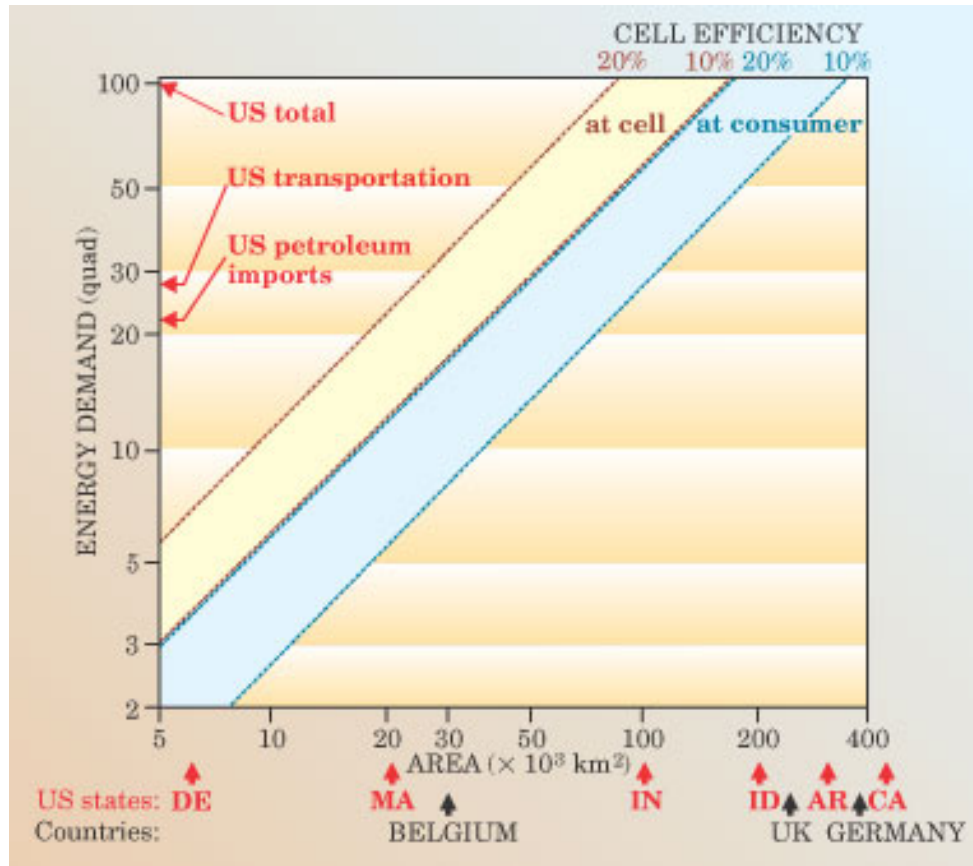
# Wave Energy

DIAGRAM REPRESENTATIVE OFFSHORE WAVE ENERGY DEVICES





# Solar Energy Land Requirements



# Million Solar Roofs



Building Integrated Photovoltaics <http://www.worldchanging.com/archives/002853.html>