

100% PORTUGAL

Transition to 100% wind, water, and solar (WWS) for all purposes
(electricity, transportation, heating/cooling, industry)



Residential rooftop solar
7.4%



Solar plant
12.1%



Concentrated solar plant
2.8%



Onshore wind
35%



Offshore wind
15%

2050

PROJECTED ENERGY MIX



Commercial/govt rooftop solar
9.6%



Wave energy
1%



Geothermal energy
0.6%



Hydroelectric
15.7%



Tidal turbine
0.8%



40-Year Jobs Created

Number of jobs where a person is employed for 40 consecutive years

Operation jobs:



18,466

Construction jobs:



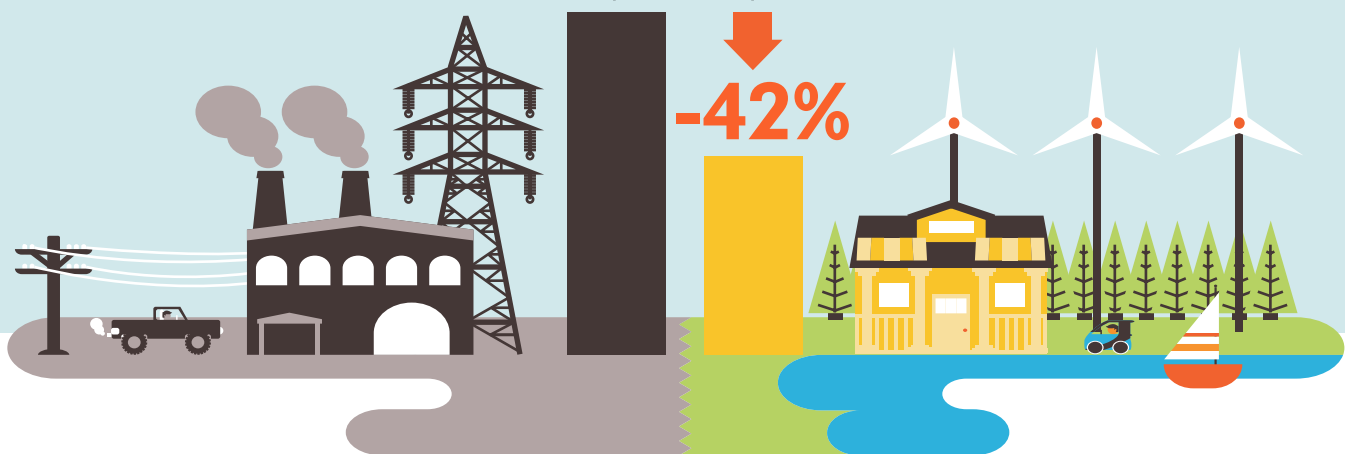
19,753

= 2,000

Using WWS electricity for everything, instead of burning fuel, and improving energy efficiency means you need much less energy.

2050 Demand with BAU

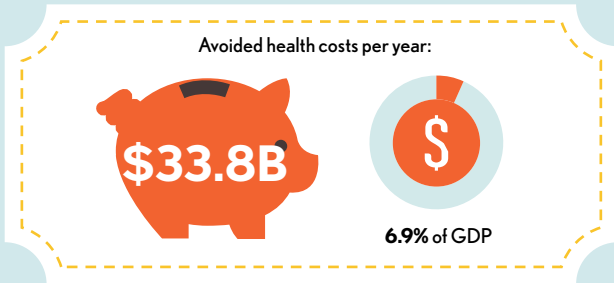
2050 Wind, Water, Solar



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Avoided Mortality and Illness Costs



Air pollution deaths avoided every year: **3,487**



= 200



Plan pays for itself in as little as **0.9** years from air pollution and climate cost savings alone.

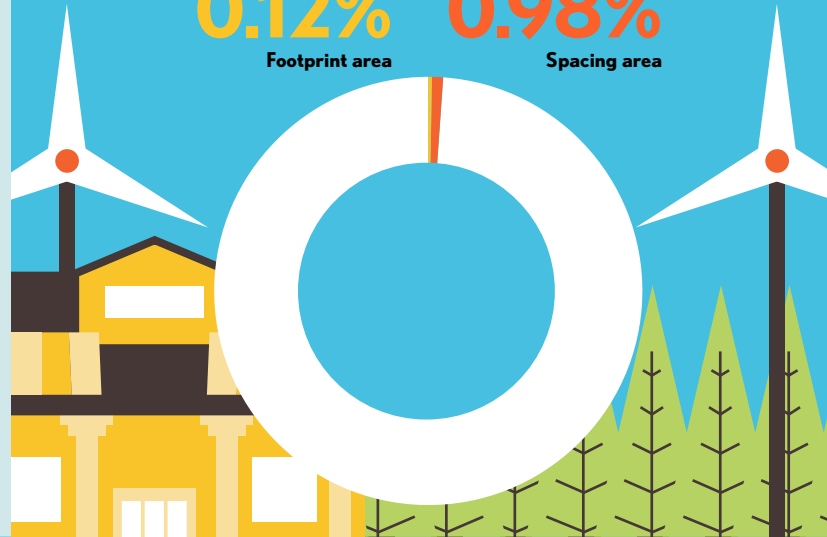
Percentage of Land Needed for All New WWS Generators

0.12%

Footprint area

0.98%

Spacing area



Future Energy Costs 2050

BAU (Business as usual)

WWS (Wind, water, solar)



Average fossil-fuel energy costs*

11.2 c/kWh

*Health and climate external costs of fossil fuels are another 5.7c/kWh



Average WWS electricity costs

9.7 c/kWh

Money in Your Pocket

= \$1,000

Annual energy, health, and climate cost savings per person in 2050: **\$6,151**



Annual energy cost savings per person in 2050: **\$132**

