

Electric Power

Why Focus on Electricity?

USA, 2015:

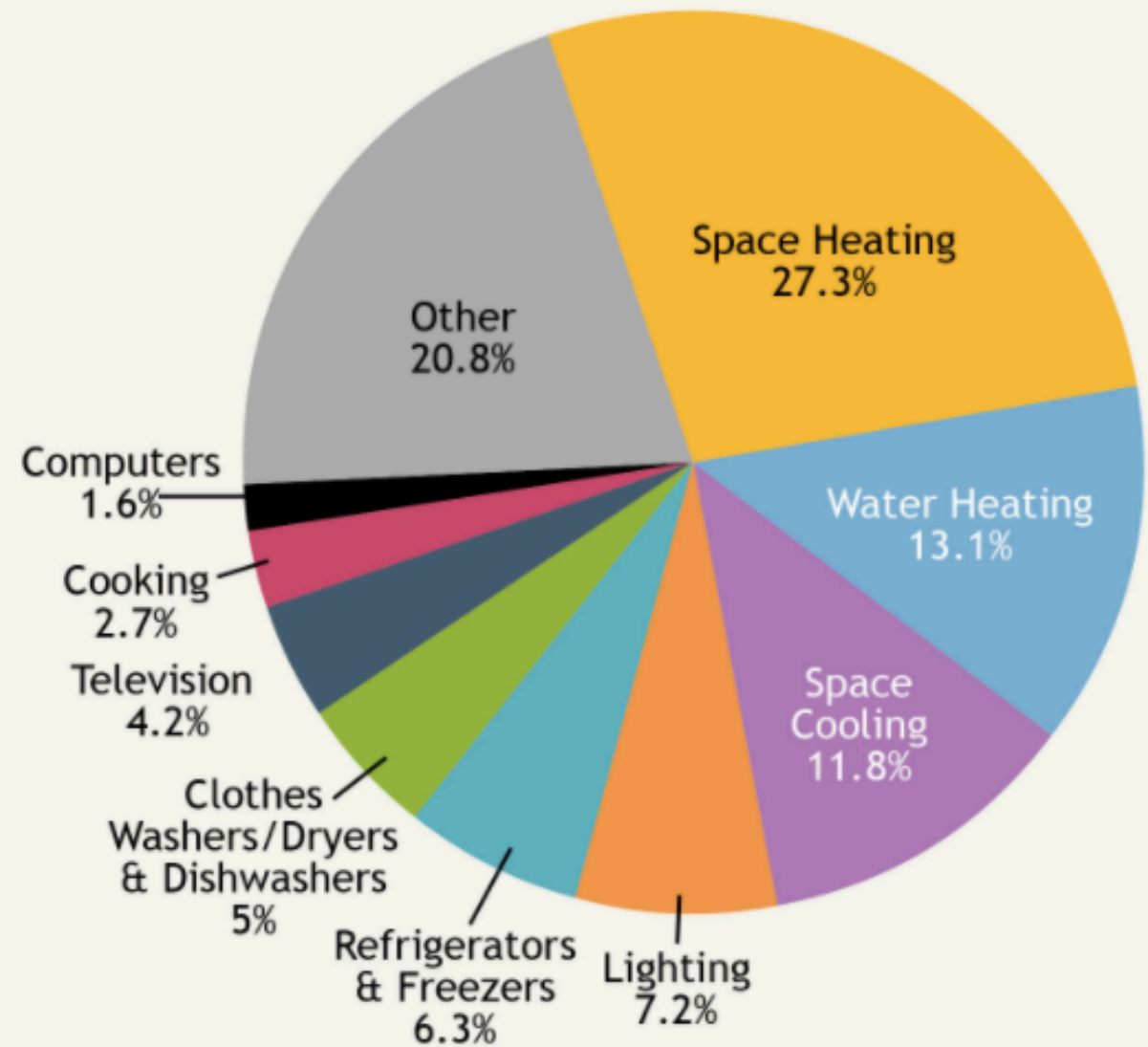
28% TRANSPORTATION
(moving people and cargo)

32% INDUSTRY

40% RESIDENTIAL
(homes & commercial buildings)

Source: *NeedToKnow*

Energy Usage in the U.S. Residential Sector in 2015



National Averages

(Watts per person)

Country	Avg Watts/person
Iceland	5777
Liechtenstein	4092
Norway	2740
Kuwait	2176
Bahrain	2069
UAE	1848
Canada	1704
Finland	1681
USA	1377

Country	Avg Watts/person
China	309
India	140
Bangladesh	40
Nigeria	14
Ethiopia	7
Rwanda	4
Somalia	3
Gaza Strip	0.01
WORLD	309

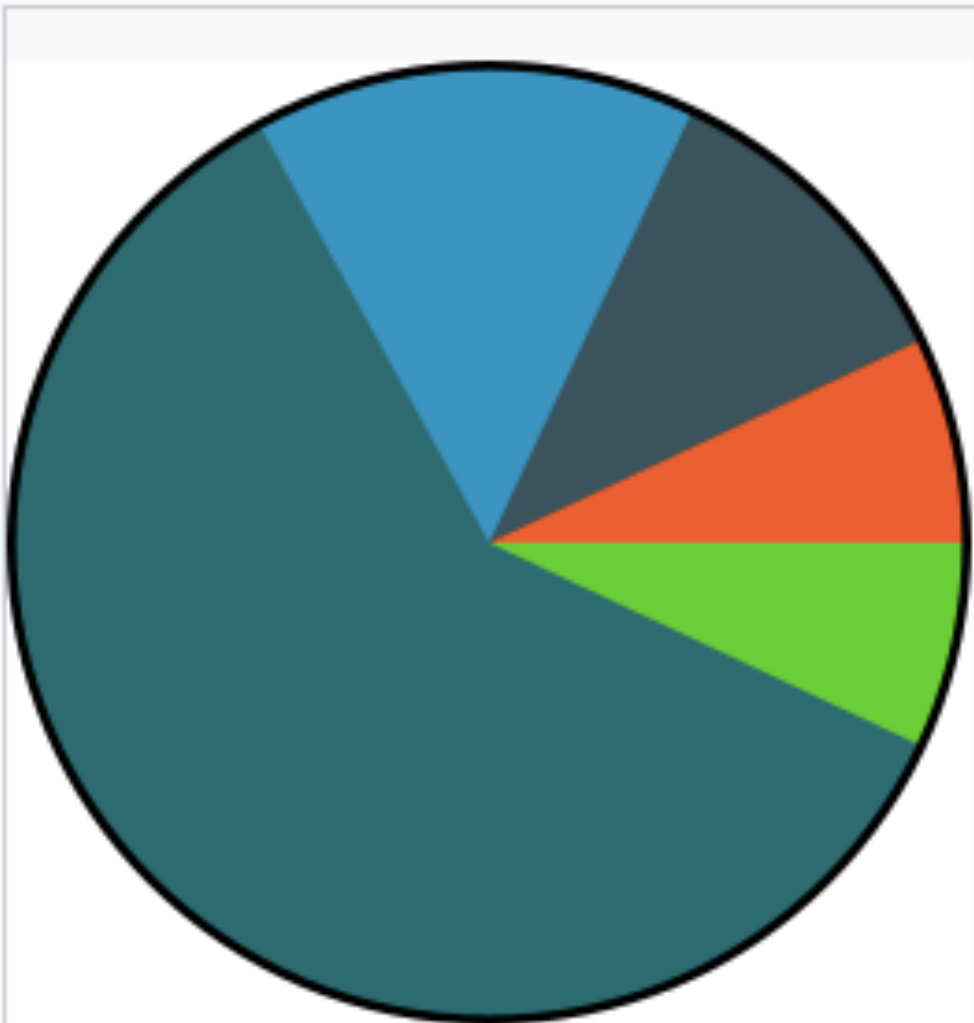
Source: Wikipedia

⇒ **2.3 × 10¹² Watts** for 7.4 billion people

Canada

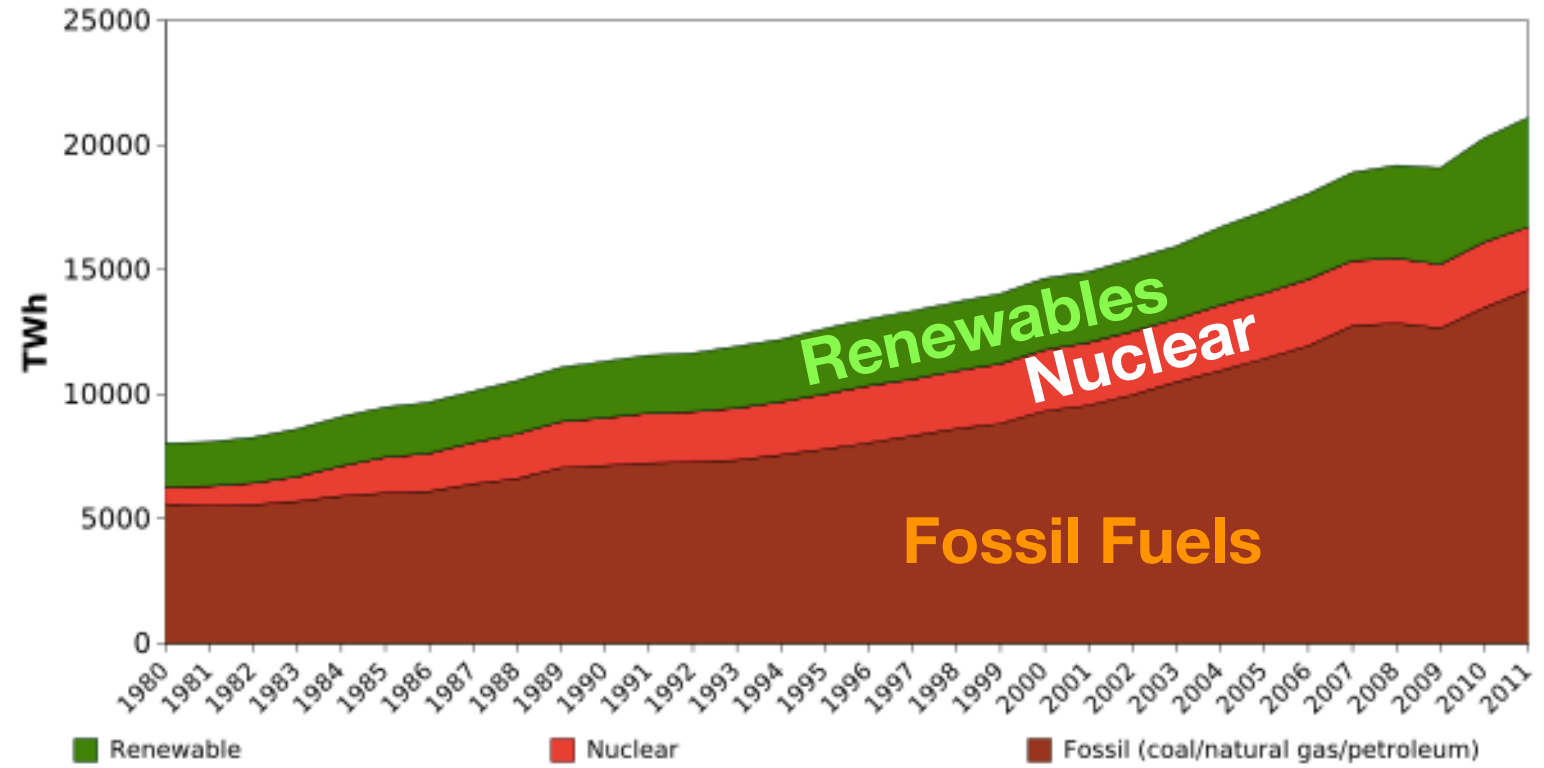
vs. World

Electricity generation by source in 2018^[1]

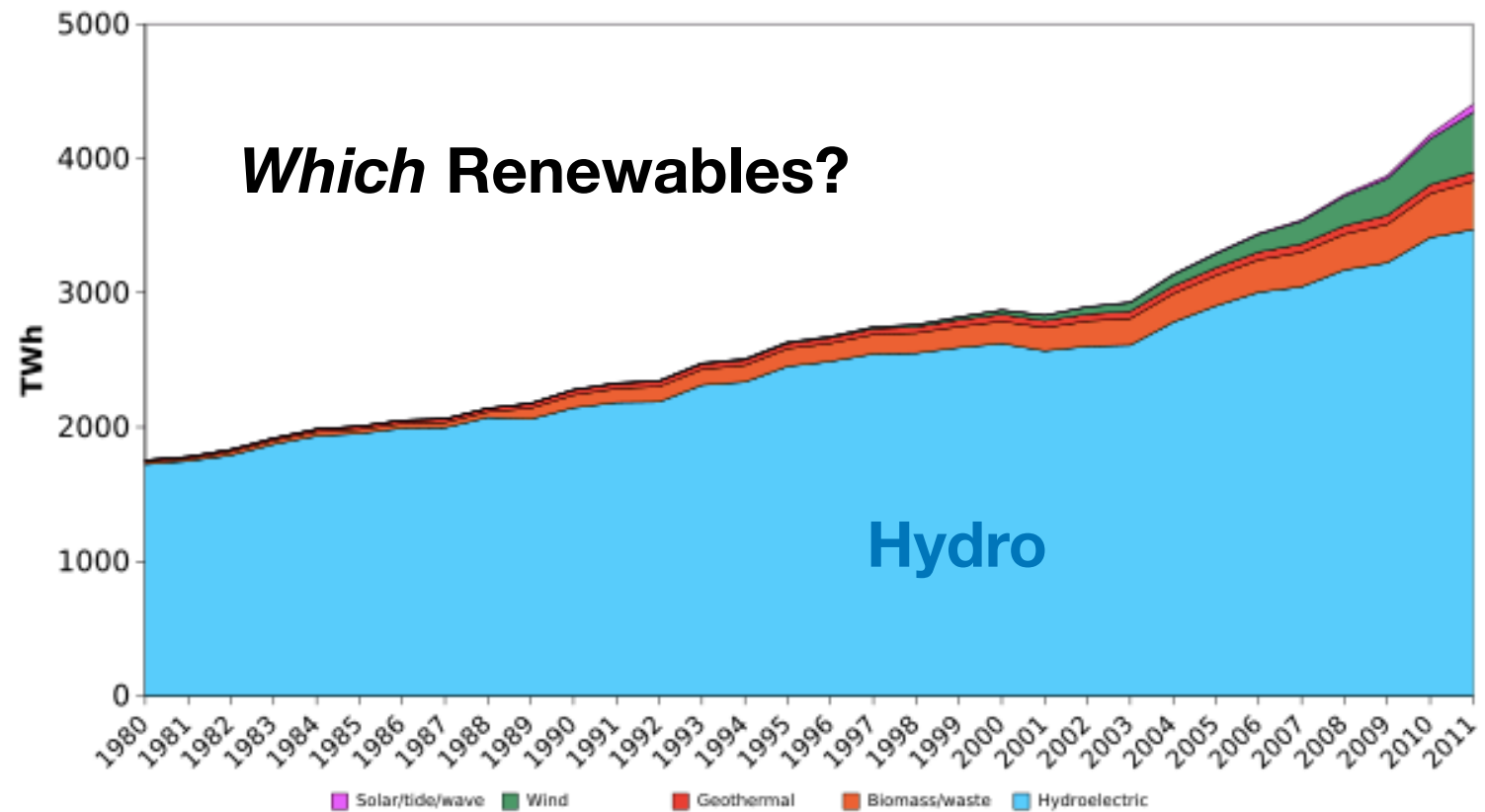


- Coal: 7 (7.0%)
- Natural gas, oil, and others: 11 (11.0%)
- Nuclear: 15 (15.0%)
- Hydro: 60 (60.0%)
- Non-hydro renewables: 7 (7.0%)

Annual Electricity Net Generation in the World



Annual Electricity Net Generation from Renewable Energy in the World



Which Renewables?

Hydro

False Polychotomies:

Should we focus our efforts on...

- Ending Use of Fossil Fuels,
- Developing More/Better Renewable Power,
- Developing More/Better Nuclear Power,
- Improving the Efficiency of Appliances, *or*
- Learning to “Get By With Less” ?

As usual, the answer is “YES!**”**

Wikipedia Sources

- [Electricity Generation](#)
- [Electric Power Usage](#)
- [Canadian Electrical Power by Source](#)