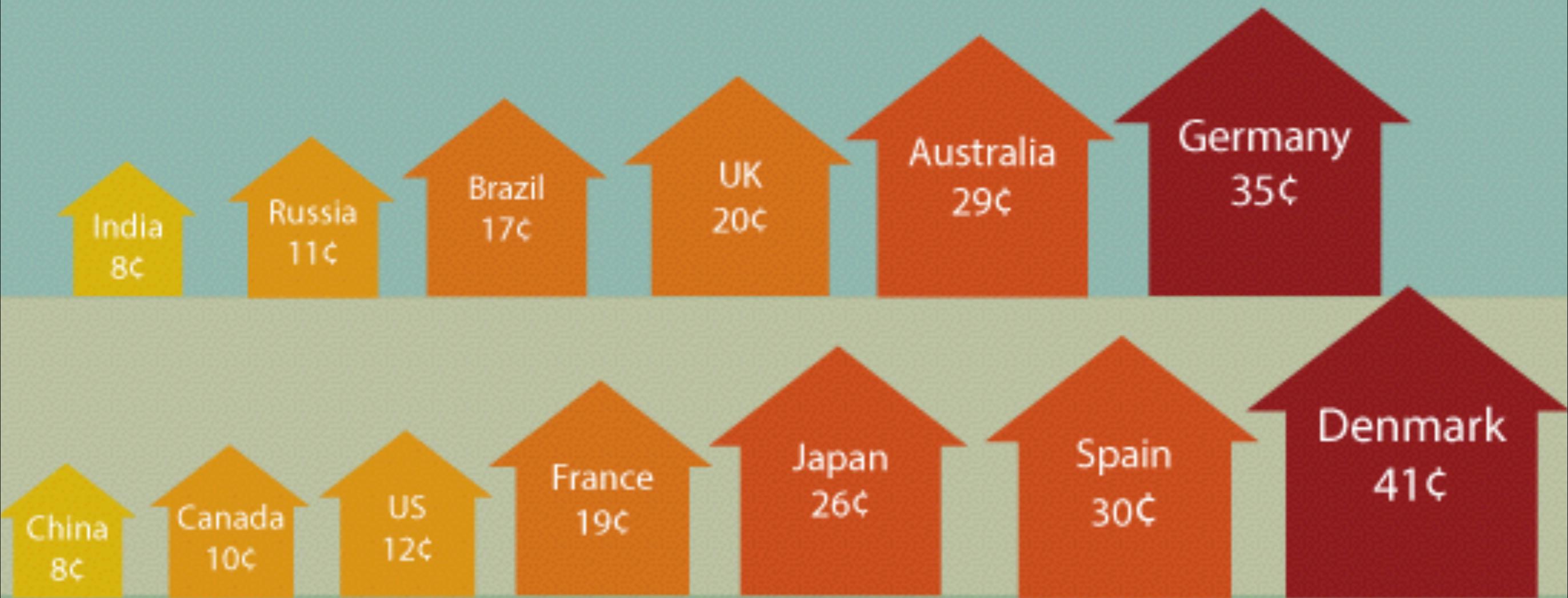


How much does electricity cost?

Average national electricity prices in US cents/kWh (2011)



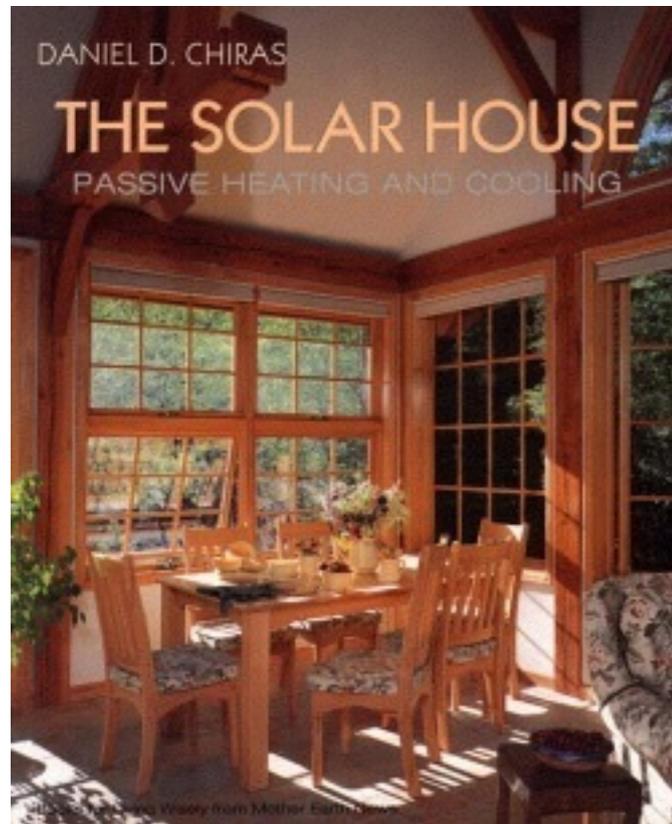
Data: average prices from 2011 converted at mean exchange rate for that year

Sources: IEA, EIA, national electricity boards, OANDA shrinkthatfootprint.com

ENVS 132
Solar Home Design - #12

Final - Study Session
Benoit Delaveau, MS, BEAP

TEXTBOOK GROUP NOTES

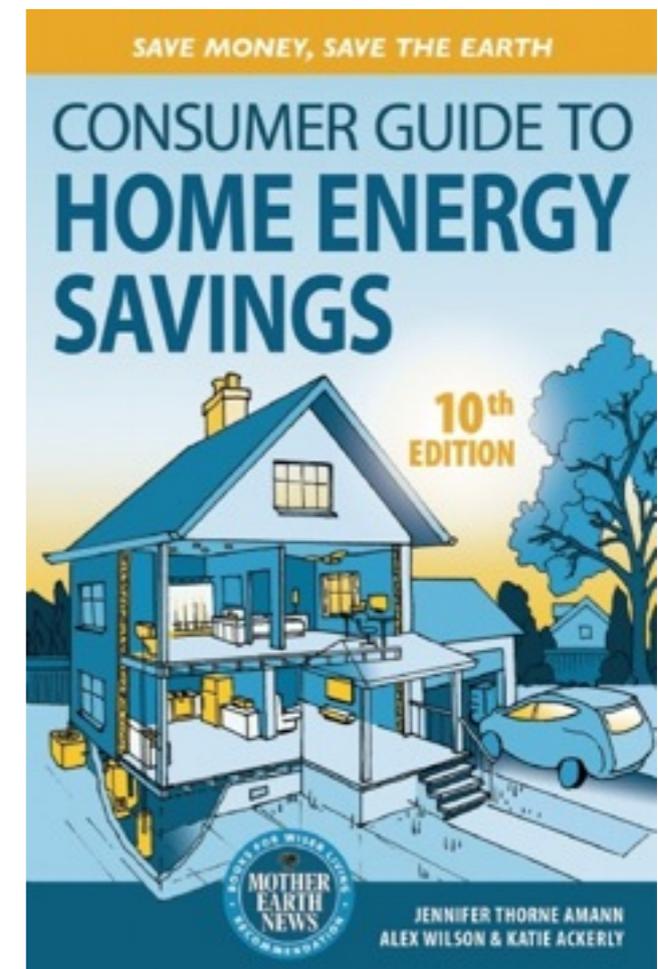


Chiras

Chap 1, 2, 3, 4, 5 , 6.

group notes already emailed

Consumer Guide to HES
Chap 6 to 12
group notes emailed tonight



LECTURE #7 - Residential Lighting



What's the key difference in kitchen lighting design since the 50s?
How many light sources in new homes on average in the US? in CA?

What CFL stands for? When was this technology invented?

What LED stands for? When was this technology invented?

What % of electricity can be saved with CFL? LED?

True/False: the residential bulb market is growing (# of bulbs)

True/False: a majority of houses already switched to CFL or LED.

How many lux. a person with good vision needs to read a newspaper or a magazine? Where should the luxmeter should be placed to do the measurement?

What unit is used to define a lamp illumination (light output)?

A lamp electricity consumption? What's color temperature?

LECTURE #8 - Appliances



What are the 3 more intense single uses in US residential electricity?

Which single device/appliance uses more in all US houses?

Why fridges and freezer became 3 times more efficient in 20 years?

What is the annual cost to run a 1990 fridge? A recent fridge?

What is the correct temperature range for a fridge?

Why clothe dryer efficiency did not progress over the last 20 years?

How many loads per week does the EPA bases its estimates for a clothe washer? For a dishwasher?

What is the energy cost for running a typical dishwasher per load?
(450kwh per year 5 loads a week - \$0.15 / kWh - 52weeks in a year)

What is the energy cost for running a typical LED bulb? (12.5w
4 hours a day - \$0.15 / kWh - 365 days in a year)

LECTURE #9 - Renewable Energy



What is the lowest step on the Energy Ladder? The highest?

Why is electricity considered the most advanced source of energy?

According to Lawrence Lab chart what is the % of total lost energy?

What are the 4 common fuels to produce electricity in the US?

What happened to CA electricity generation in January 2012?

How many nuclear power plants are still active in CA today?

What are the 2 sources that seem to be the future for CA electricity?

Define renewable energy?

By law, what portion of electricity should come from renewables (excluding nuclear) by 2030 in CA ?

In 2010, how many pounds of CO₂e were produced per MWh by PG&E?

Which company is the major stakeholder in the largest solar power plant in the world? What is the power output of Ivanpah in MW?

How much power represents all solar roof in CA in MW, in % of total?

LECTURE #10 - Indoor Air Quality



What SBS and BRI stand for?

What are the 3 deadly indoor air pollutants in homes?

From which device/appliances Carbon Monoxide can come from?

What are the symptoms of CO intoxication?

Is there any safe level to second hand smoke?

Where is Radon coming from? What are the risks to Radon exposure?

True/False: Super insulated homes have more risks of poor IAQ

What is the name of the technical solution used to bring purified air in super insulated homes?

ASHRAE standards for living areas air exchange?

Dust allergies come from.....?

Best remedies to prevent mold in living spaces?

LECTURE #11 - Water & Energy



What % of CA electricity goes to CA State Water Project?

Why most of the power plants use a lot of water?

What is the % of total US water withdrawal used by thermoelectricity?

What is the highest single water use in CA for residential water?

CA is using more or less water than 30 years ago?

How many gallon(s) per minute for a low-flow shower head?

How many gallon(s) per flush for a high efficiency toilet?

Best way to detect leaks (even invisible)?

What is the main difference between an active and passive solar water heater?

What is the volume of water typically used per day per residential occupant in CA? per year?

Final - Wed 12/11 12:15-2:30pm CL308

1. All class documents authorized (textbooks, lecture slides, reading notes)
2. 30 questions - 1/2 point each - no partial credit
3. Bring a calculator or your iPhone...

