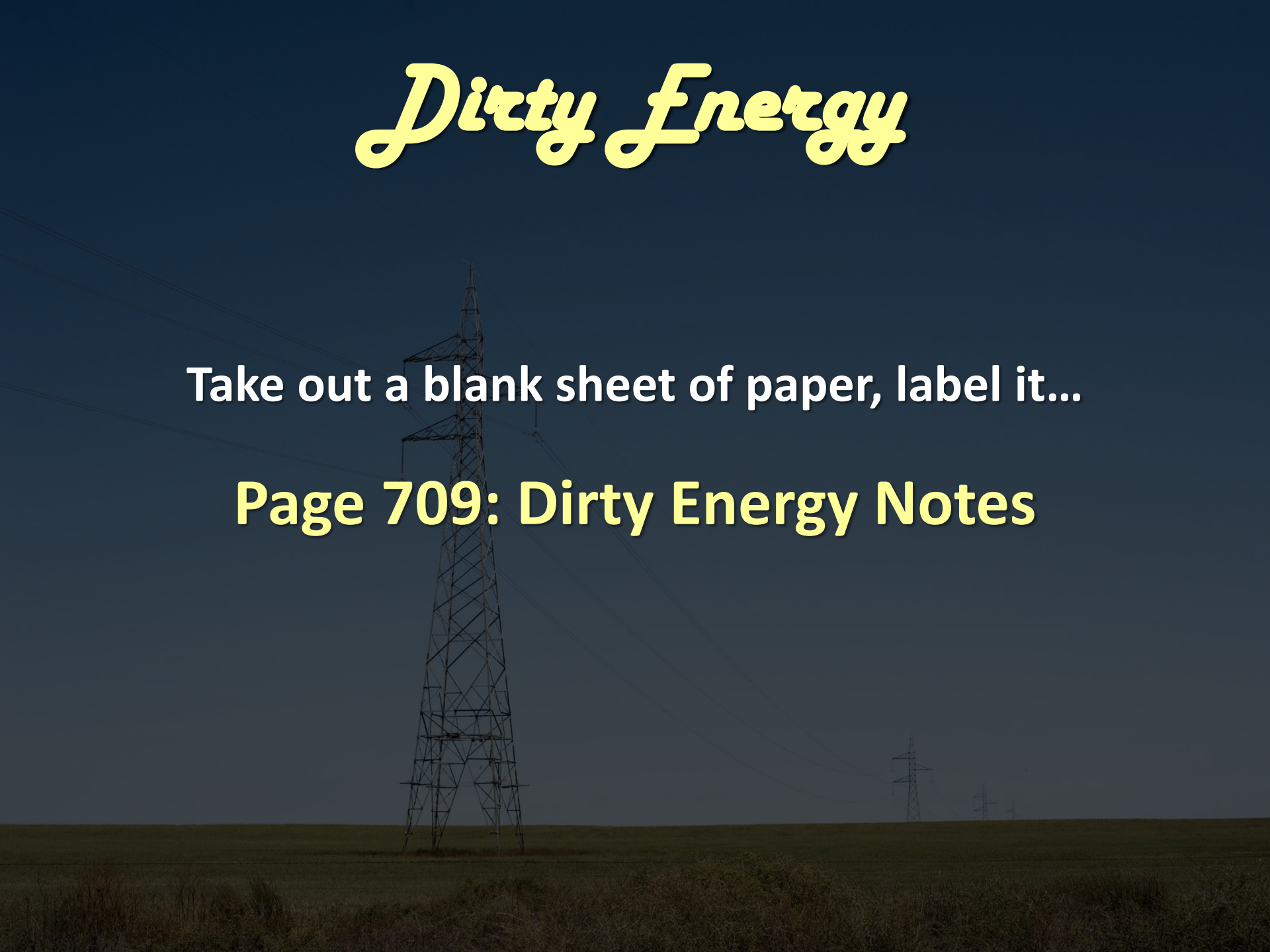
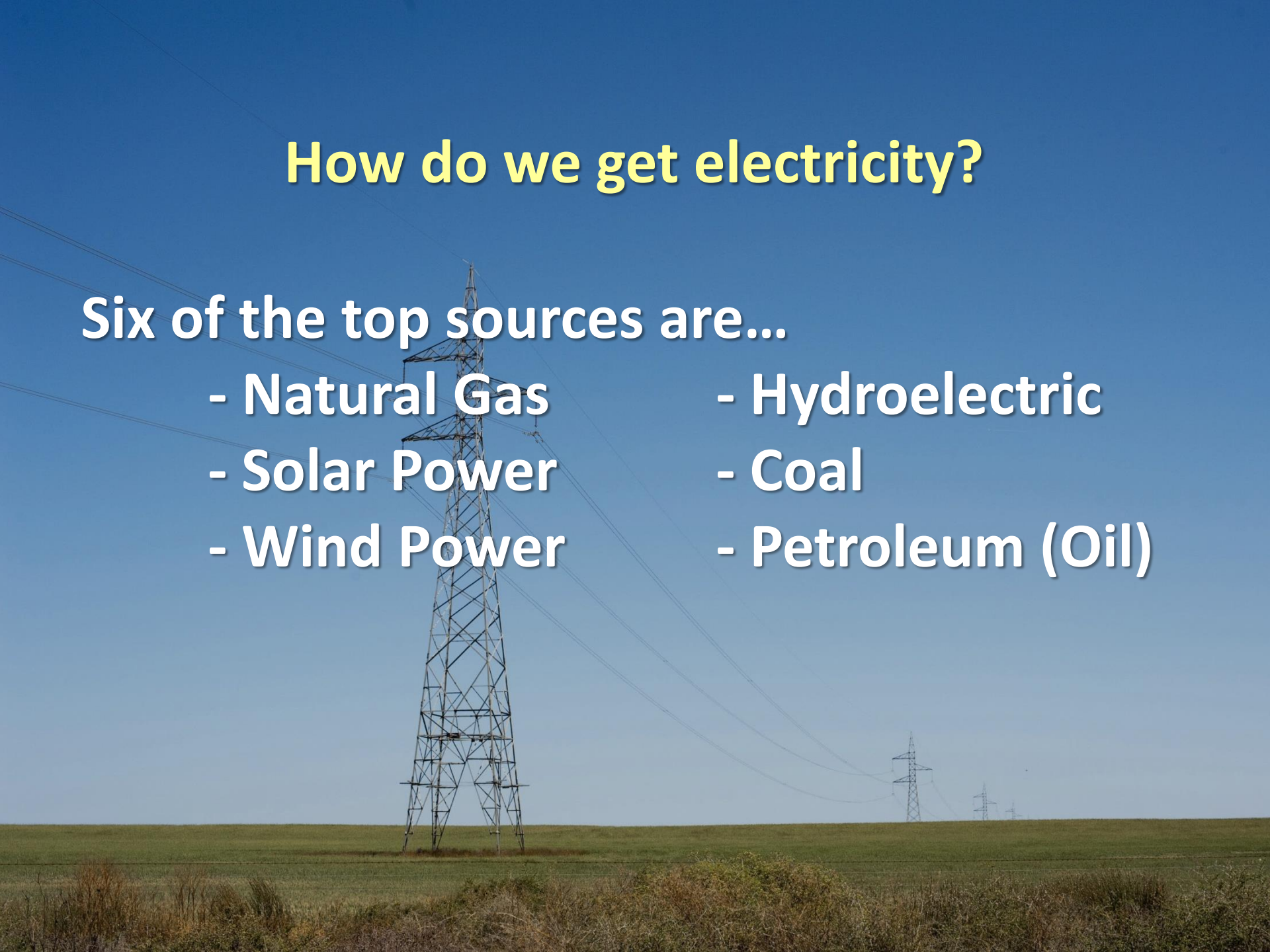
Dirty Energy



Take out a blank sheet of paper, label it…

Page 709: Dirty Energy Notes

How do we get electricity?

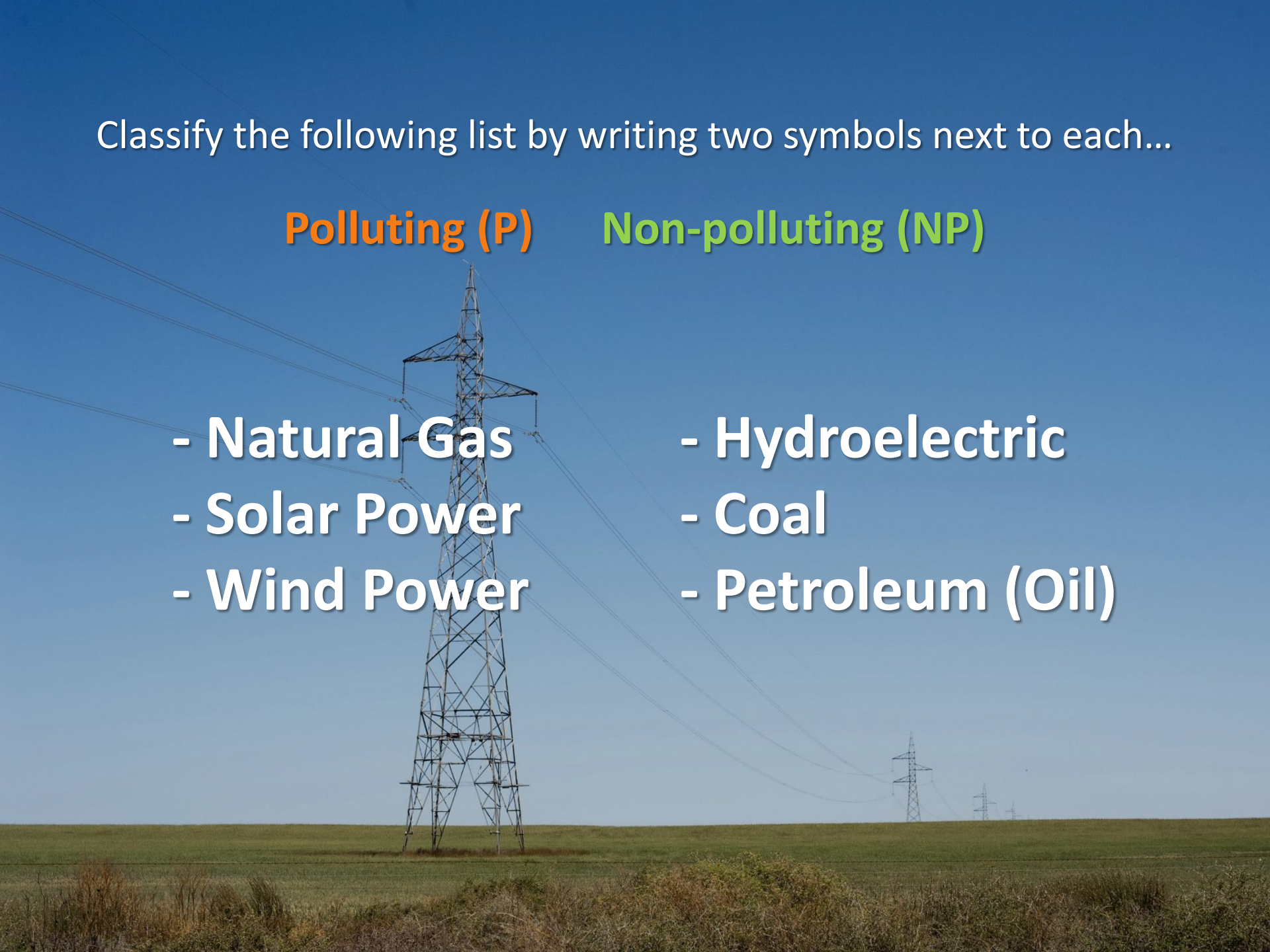


How do we get electricity?

Six of the top sources are…

- Natural Gas
- Solar Power
- Wind Power
- Hydroelectric
- Coal
- Petroleum (Oil)

We’re going to start today with a Type 2 assignment…



Classify the following list by writing two symbols next to each…

Polluting (P)

- Natural Gas
- Solar Power
- Wind Power

Non-polluting (NP)

- Hydroelectric
- Coal
- Petroleum (Oil)

Natural Gas – (Polluting)

Hydroelectric – (Non-Polluting)

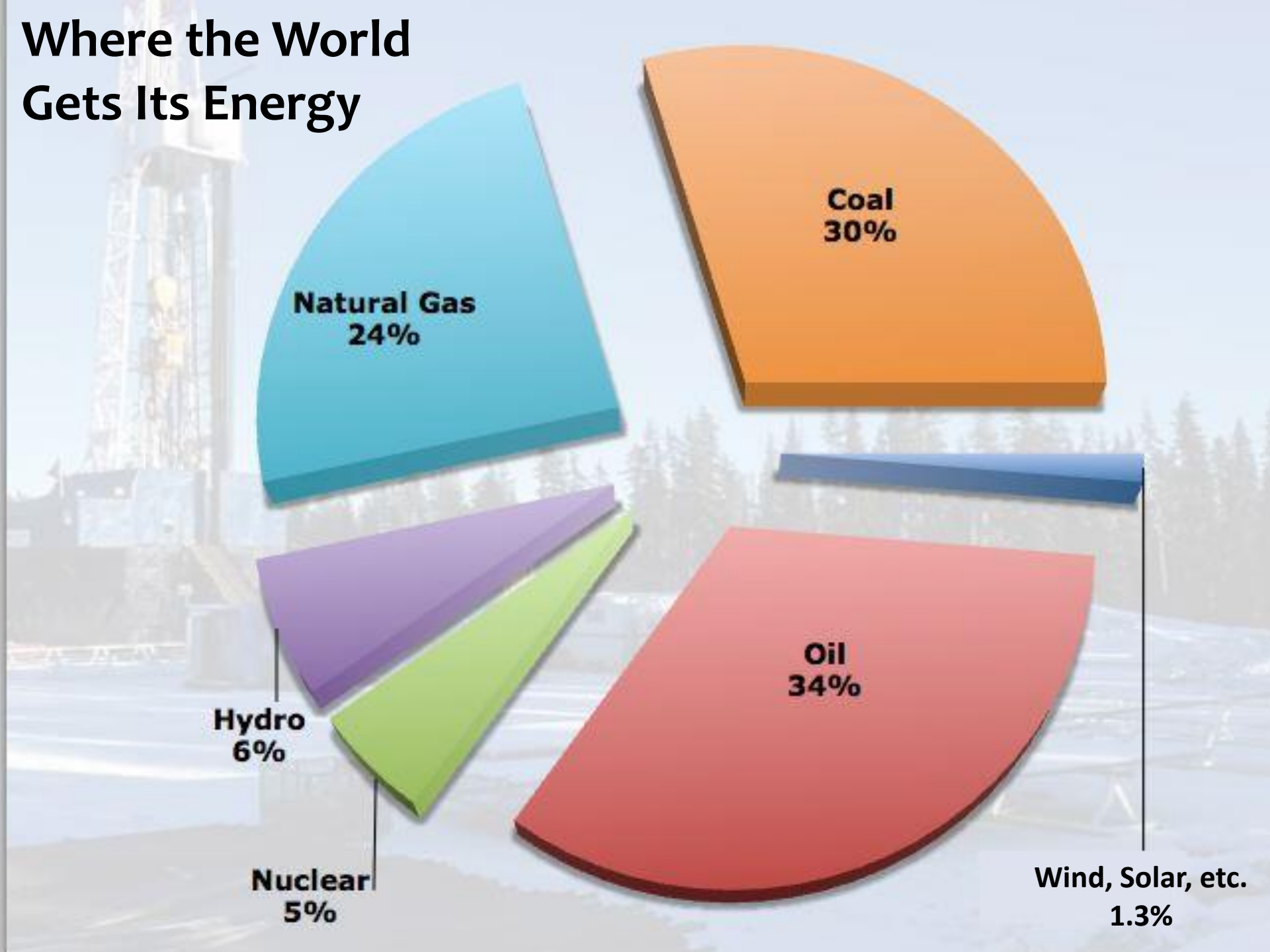
Solar – (Non-Polluting)

Coal – (Polluting)

Wind – (Non-Polluting)

Petroleum (Oil) – Polluting

Where the World Gets Its Energy

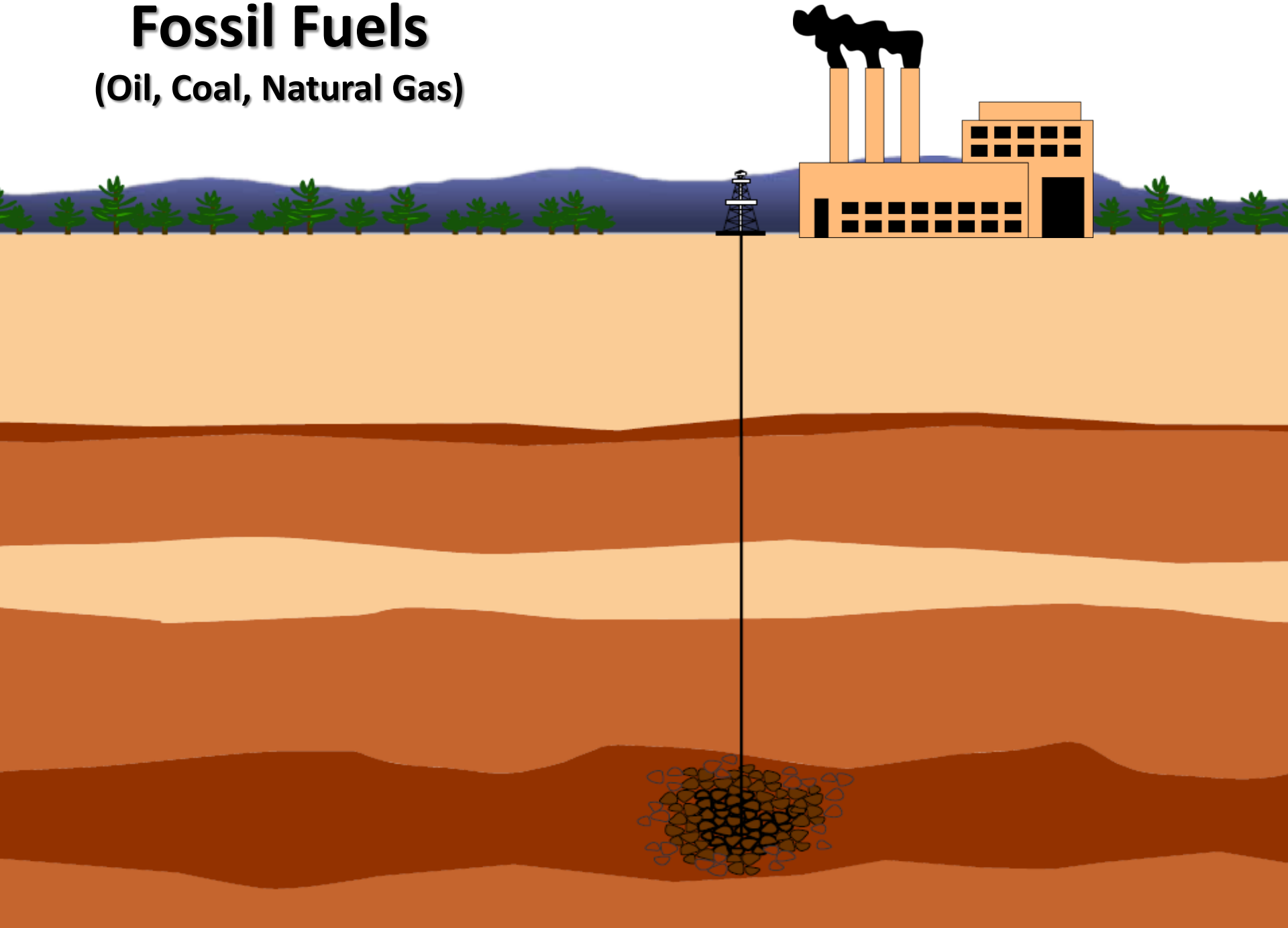


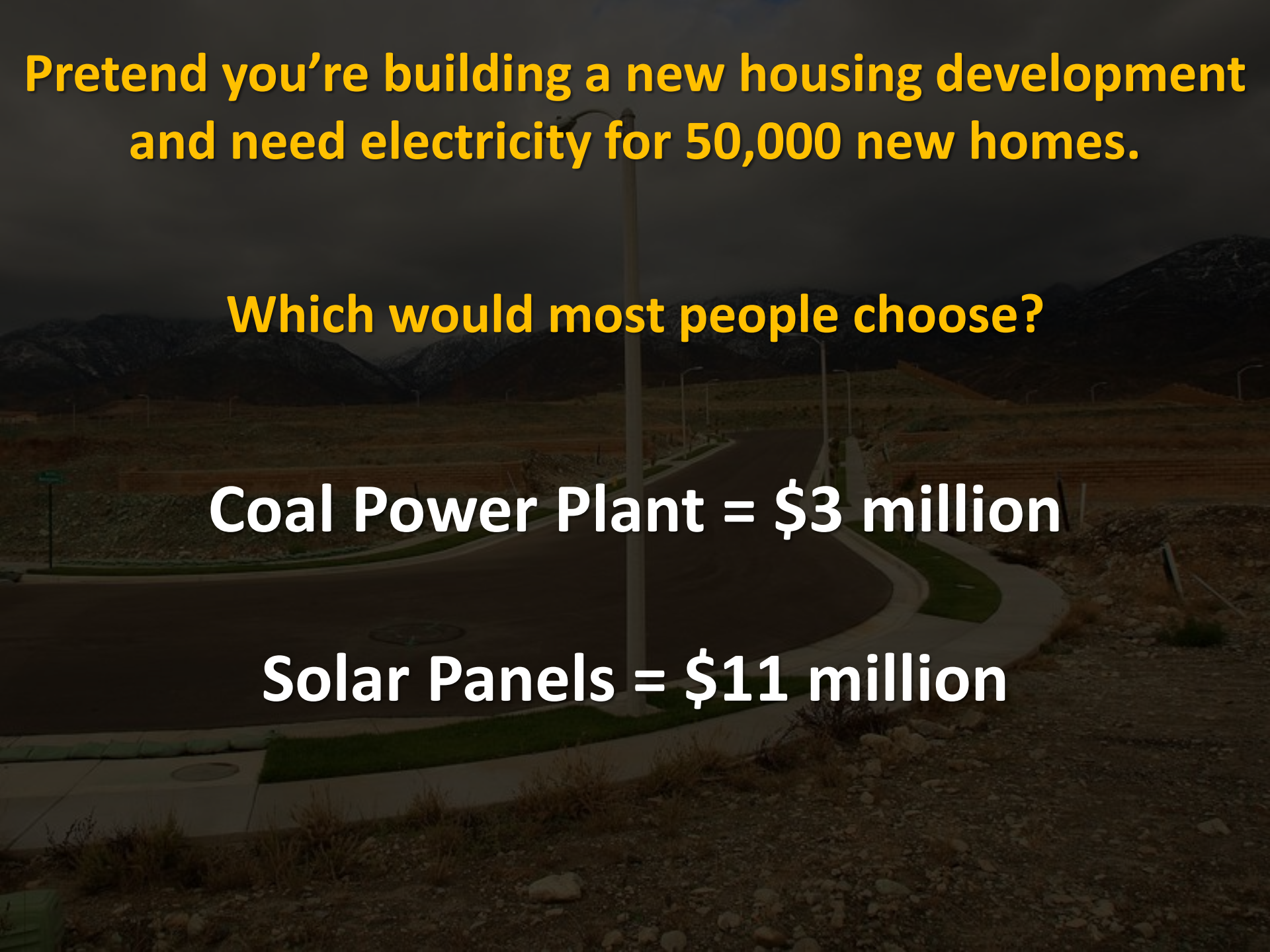
Renewable Energy

(Solar, Wind, Hydroelectric)

Fossil Fuels

(Oil, Coal, Natural Gas)





Pretend you're building a new housing development and need electricity for 50,000 new homes.

Which would most people choose?

Coal Power Plant = $3 million

Solar Panels = $11 million

Solar Power

Cost per Home: $260

COAL POWER

Cost per Home: $70

Solar Power

Cost per Home: $260

Cost to Remove Pollution:

none

Real Cost per Home:

$260

COAL POWER

Cost per Home: $70

Cost to Remove Pollution:

2,249 lbs of CO_2 **= $1,000**

13 lbs of SO_2 **= $50**

6 lbs of NO_2 **= $80**

Real Cost per Home:

$1,200

The Tragedy of the Commons!

Solar Power

Cost per MWh: $260

Cost to Remove Pollution:

none

Real Cost per MWh: $260

COAL POWER

Cost per MWh: $70

Cost to Remove Pollution:

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Solar Power

COAL POWER

Cost per MWh: $260

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The Tragedy of the Commons!

Cost to Remove Pollution:

none

Cost to Remove Pollution:

2,249 lbs of CO_2 = $1,000

13 lbs of SO_2 = $50

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How can we solve the Tragedy of the Commons?

1. Education
2. Teamwork

Real Cost per MWh: $260

Real Cost per MWh: $1,200

How can we level the playing field?

Real Cost per MWh: $260

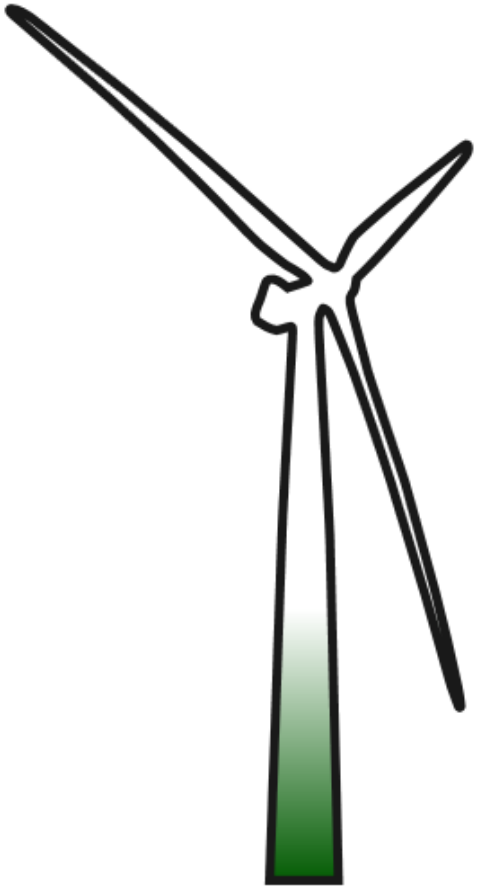
Real Cost per MWh: $1,200

Each pair of partners will write a law designed to help promote renewable energy.

Laws should be realistic and effective.

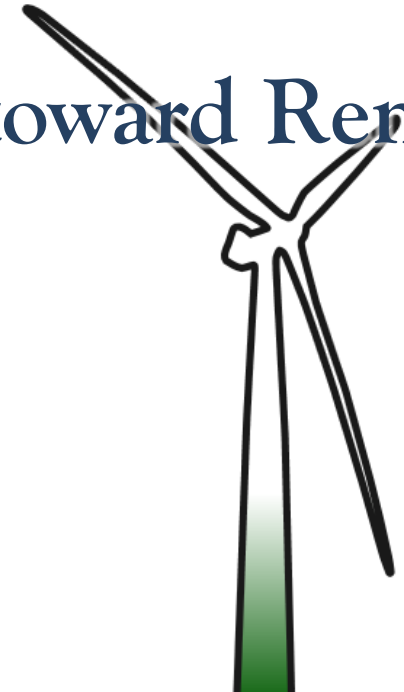
You'll have 10 minutes to design your law.

Laws will be voted on at the end of class.



2009 American Recovery and Reinvestment Act:

$5 Billion toward Renewable Energy



2009 American Recovery and Reinvestment Act:

$5 Billion toward Renewable Energy

$2.5 billion grant for research into energy efficiency and renewable energy technologies.

1.25 billion toward wind, solar, and hydroelectric