

Chapter 14

Nonrenewable Resources – Group Project



Nuclear Power Plants

Worldwide

- ❖ Create a map with all the nuclear power plans in the world
- ❖ make sure to be up to date
- ❖ Indicate on the map the NPP that were shut down by the governments
- ❖ Create a statistical analyses on:
 - ❖ Production of the energy by nuclear PP vs. other fossils fuels vs renewable energy for each country
 - ❖ Create a list of nuclear PP disasters since 1950's

Nuclear Power Plant Disasters

Here is the list of the NPP disasters:

1. Three Mile Island Accident
2. Fukushima
3. Chernobyl

- For each disaster provide the reason for the accident, the contamination of the environment, the containment of the area, future of the area, impact on civilians and ecology/nature
- Find a 2 min short video documenting the disaster

GROUP 1: Petroleum, Crude Oil

- **Define** petroleum, or crude oil
- **Explain** how it is extracted, processed, and what are the final products, use diagrams, drawings, pictures – provide short animation showing the extraction (2-3 min)
- Name the countries that are the major producers, consumers, as well as exporters and importers
- Explain the role of OPEC
- Point out the **negative environmental impacts** of the petroleum use (oil spills), and extraction
- Talk about tar sand and oil shale as alternatives
- Provide clear understanding of advantages and disadvantages of crude oil production and usage

CREATE MCQ exit ticket (5 questions, answer key)

- Find **TedTalk** to explain the crude oil production, or environmental degradation

PowerPoint –5 pages, 4 pictures, 3 diagrams, tables, or charts

Video clip about extracting, processing the oil (up to 2 min)

Total presentation 25 min (exit ticket included)

GROUP 2: Coal

- ❖ **Define** coal, types of coal, the efficiency
- ❖ **Explain** how it is extracted, processed, and used, use diagram, graphs, photos
- ❖ Name the countries that are the major producers, consumers, as well as exporters and importers
- ❖ **Explain** what are synfuels, such as SNG and others
- ❖ **Explain** the process of coal gasification and coal liquefaction
- ❖ Point out the **negative environmental impacts** of the coal mining, usage, and air pollution
- ❖ Provide clear understanding of advantages and disadvantages of coal production and usage

CREATE MCQ exit ticket (5 questions, answer key)

- Find **TedTalk** to explain the oil production, or environmental degradation

PowerPoint –5 pages, 4 pictures, 3 diagrams, tables, or charts

Video clip about extracting, processing the oil (up to 2 min)

Total presentation 25 min (exit ticket included)

GROUP 3: Natural Gas

- **Define** natural gas
- **Explain** how it is extracted, processed, used, use diagram, graphs, photos
- Name the countries that are the major producers, consumers, as well as exporters and importers
- **Explain** what is LPG and LNG
- Point out the environmental impacts of the natural gas extractions and usage
- Provide clear understanding of advantages and disadvantages of natural gas production and usage

CREATE MCQ exit ticket (5 questions, answer key)

- Find **TedTalk** to explain the natural gas production, or environmental degradation

PowerPoint –5 pages, 4 pictures, 3 diagrams, tables, or charts

Video clip about extracting, processing the oil (up to 2 min)

Total presentation 25 min (exit ticket included)

GROUP 4: Nuclear Power

- ❖ **Define** nuclear power, where does the U235 come from
- ❖ **Explain** how it is produced and how is the energy extracted from it, use diagram, graphs, photos
- ❖ Name the countries that are the major producers/consumers
- ❖ **Explain** the nuclear fuel cycle
- ❖ Point out the **environmental impacts** of the nuclear power production/usage (radioactive waste, public safety)

CREATE MCQ exit ticket (5 questions, answer key)

- Find **TedTalk** to explain the nuclear power production, or environmental degradation

PowerPoint –5 pages, 4 pictures, 3 diagrams, tables, or charts

Video clip about extracting, processing the oil (up to 2 min)

Total presentation 25 min (exit ticket included)