**Summary/Key sections of the 2024 Current Issue Study Resources Document**

The full document can be found [here.](https://envirothon.org/wp-content/uploads/2023/09/2024-Current-Issue-Part-A.pdf)

Envirothon lists 5 Key Topics

* Introduction to Energy and Traditional Energy Infrastructure
* Renewable Energy and Infrastructure
* Renewable Energy and Natural Resources
* Global Perspectives on Energy
* Local Action and Energy Equity

Below is a detailed guide on the important/relevant parts of this document in terms of the Regional and State exams. This will be your main source. After this list there are two more sections with additional sources and key topics to zoom in on local/regional stories, data, and more.

For clarity this first section is relevant to both State and Regional exams. The two sections following this one are exam specific (with some overlap).

Page 5- Energy Units

* Understand and compare/contrast.
	+ Btu
	+ Joule
	+ Kilowatt-hour

Page 8- Review Fossil fuels

* Review types of fossil fuels
* Understand the environmental and health impacts.
* Where are these resources derived from?
* What are the extraction methods?
* Fracking (pg 11)

Page 35- More fossil fuel history

* 35-46
* Good background information. Parts of this will be referenced in the exam.

Page 16- Renewable Energy

* Note the types.
* Where they come from
* Some may be more familiar, like solar and wind. Note the less popular like geothermal and biomass.
* Page 20 Key points followed by a short video.

Page 55-75

* Fact sheets on all renewables
* Some of the dark sides shown.

Page 105-135

* Some great stories and innovation examples.
* Highlights the benefits to community, farming, pollinators, etc.
* Try to be familiar with one or two stories for a short answer response.

Page 190-204

* Energy Justice workbook
* Mentions a lot of policies and federal programs that would be relevant to the policy sections of the tests.

Regional Test: Renewable Energy for a Sustainable Future

**Learning Objectives/Study Guide- REGIONAL**

Key Topic 1: Renewables and Infrastructure

* Identify and describe different types of renewable energy sources
* Explain how each renewable source generates energy.
* Compare the **environmental impacts** of renewables and non-renewables, and how climate change interacts with energy types.

Key Topic 2: Renewables in the U.S.

* Understand the use of renewables in the United States.
* Identify which sectors use renewables the most and the least.
* Explain ways in which we can expand renewables use via innovation, infrastructure, and development projects.
* Have a brief knowledge of the history of renewables.

Key Topic 3: Minerals and Mining

* Identify the natural materials needed for the move towards renewables.
* Identify the areas in the U.S. with the largest deposits of lithium and other valuable materials in the renewable shift.
* Brief history of fossil fuel mining and extraction.

Key Topic 4: Policy

* Identify and describe large scale plans, acts, laws, and regulations that promote the use of renewables.
* Learn about the different funding resources and grants that are available to promote a shift to renewables.
* Note the Justice aspects of some of these acts and federal programs as well.

**Study Resources- REGIONAL**

Key Topic 1:

* [Renewable energy explained - U.S. Energy Information Administration (EIA)](https://www.eia.gov/energyexplained/renewable-sources/)
	+ Within the source there are tabs/links on each of the main renewable energy sources, these are to be used as study material.
* [Clean Energy | Department of Energy](https://www.energy.gov/clean-energy)
* [Fossil Fuels | Union of Concerned Scientists (ucsusa.org)](https://www.ucsusa.org/energy/fossil-fuels)
* [Climate Change Impacts on Energy | US EPA](https://www.epa.gov/climateimpacts/climate-change-impacts-energy)

Key Topic 2:

* [U.S. renewable energy consumption by source and sector, 2022 (eia.gov)](https://www.eia.gov/totalenergy/data/monthly/pdf/flow/renewable_energy_2022.pdf)
* [U.S. energy consumption by source and sector, 2022 (eia.gov)](https://www.eia.gov/totalenergy/data/monthly/pdf/flow/total_energy_2022.pdf)

Key Topic 3:

* [Critical Mineral Commodities in Renewable Energy | U.S. Geological Survey (usgs.gov)](https://www.usgs.gov/media/images/critical-mineral-commodities-renewable-energy#:~:text=Critical%20Mineral%20Commodities%20in%20Renewable%20Energy%201%20Solar,movement%20of%20the%20wind.%20...%203%20Batteries%20)
* [fs20233007.pdf - National Map of Focus Areas for Potential Critical Mineral Resources in the United States (usgs.gov)](https://pubs.usgs.gov/fs/2023/3007/fs20233007.pdf)
* [Maine Has the Lithium America Needs, But Won't Allow Mining | TIME](https://time.com/6294818/lithium-mining-us-maine/)

Key Topic 4:

* [FACT SHEET: How the Inflation Reduction Act’s Tax Incentives Are Ensuring All Americans Benefit from the Growth of the Clean Energy Economy | U.S. Department of the Treasury](https://home.treasury.gov/news/press-releases/jy1830)
* [UPDATED FACT SHEET: Bipartisan Infrastructure Investment and Jobs Act | The White House](https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/02/updated-fact-sheet-bipartisan-infrastructure-investment-and-jobs-act/)
* [FACT SHEET: Biden-Harris Administration Outlines Priorities for Building America’s Energy Infrastructure Faster, Safer, and Cleaner | The White House](https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/10/fact-sheet-biden-harris-administration-outlines-priorities-for-building-americas-energy-infrastructure-faster-safer-and-cleaner/)

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State exam: Renewable Energy for a Sustainable Future

**Learning Objectives/Study Guide- STATE**

Key Topic 1: Kentucky’s Energy profile

* Analyze Kentucky’s energy use.
* Identify the sectors that use the most energy, and what sources are used.

Key Topic 2: KYE3 (Our energy plan)

* Identify the 3 foundations of the plan. (Linked below)
* Examine and understand the plans goals, and the steps needed to meet them.

Key Topic 3: Current Infrastructure

* Describe how Kentucky is using reclaimed mines to implement renewable energy.
* Identify what tools we currently possess to help make the transition easier.
* [EERE Success Story – Kentucky Releases Unique Solar Project Siting Tool | Department of Energy](https://www.energy.gov/scep/articles/eere-success-story-kentucky-releases-unique-solar-project-siting-tool)
* [State’s massive solar project challenges traditional energy stronghold: ‘We’re both proud and excited’ (msn.com)](https://www.msn.com/en-us/money/markets/state-s-massive-solar-project-challenges-traditional-energy-stronghold-we-re-both-proud-and-excited/ar-AA1mmfJf)
	+ Both links above are specific cases that will be referenced, a broader resource (linked below) will also be used in this topic.

Key Topic 4: Policy

* Identify and describe large scale plans, acts, laws, and regulations that promote the use of renewables in Kentucky.
* Learn about the different funding resources and grants that are available to promote a shift to renewables.
* Note the Justice aspects of some of these acts and federal programs as well.

Key Topic 5: Alternative fuel and EVs

* Identify the types of alternative fuels and the benefits they have.
* Analyze Kentucky’s alternative fuel data and usage.

Key Topic 6: General renewable/fossil fuel knowledge

* Identify and describe different types of renewable energy sources.
* Explain how each renewable source generates energy.
* Compare the **environmental impacts** of renewables and non-renewables, and how climate change interacts with energy types.
* Brief history of both renewables and fossil fuels

**Study Resources- STATE**

Key Topic 1:

* [Kentucky Energy Dashboard (arcgis.com)](https://kygis.maps.arcgis.com/apps/MapSeries/index.html?appid=fac6f090e2b24d3097689674cf960838)
	+ At the top of the page click the tab that says, “Kentucky Energy Profile”. Explore this site in general.

Key Topic 2:

* [KYE3\_Final\_10.18.2021.pdf](https://eec.ky.gov/Energy/Documents/KYE3_Final_10.18.2021.pdf)

Key Topic 3:

* [EERE Success Story – Kentucky Releases Unique Solar Project Siting Tool | Department of Energy](https://www.energy.gov/scep/articles/eere-success-story-kentucky-releases-unique-solar-project-siting-tool)
* [State’s massive solar project challenges traditional energy stronghold: ‘We’re both proud and excited’ (msn.com)](https://www.msn.com/en-us/money/markets/state-s-massive-solar-project-challenges-traditional-energy-stronghold-we-re-both-proud-and-excited/ar-AA1mmfJf)
* [Kentucky Energy Dashboard (arcgis.com)](https://kygis.maps.arcgis.com/apps/MapSeries/index.html?appid=fac6f090e2b24d3097689674cf960838)
	+ For this specific topic click on all tabs on the side to view the infrastructure maps.
* Other sources listed may also fall under this topic as well.

Key Topic 4:

* [FACT SHEET: How the Inflation Reduction Act’s Tax Incentives Are Ensuring All Americans Benefit from the Growth of the Clean Energy Economy | U.S. Department of the Treasury](https://home.treasury.gov/news/press-releases/jy1830)
* [UPDATED FACT SHEET: Bipartisan Infrastructure Investment and Jobs Act | The White House](https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/02/updated-fact-sheet-bipartisan-infrastructure-investment-and-jobs-act/)
* [FACT SHEET: Biden-Harris Administration Outlines Priorities for Building America’s Energy Infrastructure Faster, Safer, and Cleaner | The White House](https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/10/fact-sheet-biden-harris-administration-outlines-priorities-for-building-americas-energy-infrastructure-faster-safer-and-cleaner/)

Key Topic 5:

* [Kentucky Alternative Fuels - Kentucky Energy and Environment Cabinet](https://eec.ky.gov/Energy/Data-Maps/Pages/Kentucky-Alternative-Fuel-Infrastructure.aspx#/analyze?region=US-KY&show_map=true)
* [Alternative Fuels Data Center: Kentucky Transportation Data for Alternative Fuels and Vehicles (energy.gov)](https://afdc.energy.gov/states/ky)
* [Sustainable Transportation and Fuels | Department of Energy](https://www.energy.gov/eere/sustainable-transportation-and-fuels)

Key Topic 6:

* [Renewable energy explained - U.S. Energy Information Administration (EIA)](https://www.eia.gov/energyexplained/renewable-sources/)
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* [Fossil Fuels | Union of Concerned Scientists (ucsusa.org)](https://www.ucsusa.org/energy/fossil-fuels)
* [Climate Change Impacts on Energy | US EPA](https://www.epa.gov/climateimpacts/climate-change-impacts-energy)