

WyLiberty Summary

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SUMMARIZATION OF: Wyoming's Nuclear Supply Chain Opportunities and Challenges: Uranium Enrichment (Nuclear Series Part 1) November 2023 - UW School of Energy Resources CERPA

SUMMARY

The report finds that while Wyoming has a favorable tax climate and an emerging nuclear supply chain, building a uranium enrichment facility would require massive investment, state subsidies, and acceptance of significant environmental and liability risks. Although potential economic benefits could reach billions in investment and hundreds of jobs, past enrichment projects show long delays and high uncertainty. Overall, the report concludes that enrichment in Wyoming is unlikely to proceed without substantial government support.

Uranium enrichment process (p10):

- 1st: Uranium mine sends uranium oxide (solid) to conversion facility
- 2nd: Conversion facility: converts oxide to uranium hexafluoride (gas)
- 3rd: Enrichment facility: separates hexafluoride into U-235 gas and U-238 gas
- 4th: Fuel fabrication facility: converts U-235 gas to solid, for use in power plants

Enriched uranium (p12):

- Source of demand for Wyoming mined uranium, supply of uranium for power plants

Barriers to development (p18):

- Economic: Large economies of scales required to build an enrichment plant.
- Existing Industry: Operating and historically permitted sites have an advantage over a new facility in Wyoming.

Factors Supporting Development (p25):

- Location: robust energy sector, developing nuclear supply chain
- Tax structure: fewer taxes for enrichment facility than other states

Benefits of Wyoming Uranium Enrichment (p39):

- \$5.3 billion facility (\$7.1 billion facility with double uranium output)
 - Jobs: 230 permanent jobs (286 jobs)
 - Induced/indirect state taxes: \$90 million (\$111 million)
 - Property taxes, net present value: \$66 million (\$82 million)
 - Annual property taxes: \$4.5 million (\$5.6 million)
 - \$5 million increase in facility's property taxes per year

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Benefits of Wyoming Uranium Enrichment (p39): continued ...

- Tax Revenue Increase: \$171-\$200 million (quoted in conclusion)
- Long-Term Development: Regional development of related supply chains in the nuclear industry

Costs of Wyoming Uranium Enrichment (p43)

- Direct Costs: \$10 - \$12 million in direct state support paid for construction
- Environmental Risk: Management of uranium hexafluoride waste is a large risk for surrounding areas.
 - \$7.2 billion insurance liability at two enrichment facilities in other states (p38)
- Social Cost: past uranium enrichment projects in other states have caused long delays, cancellations, even after permit approval

CONCLUSION

Wyo. government would need to subsidize uranium enrichment, too many risks for a private company to tackle itself.



You can find this report by visiting:

https://www.uwyo.edu/ser/_files/docs/research/publications/cerpa-nuclear1-paper.pdf