UTAH OFFICE OF
ENERGY DEVELOPMENT

Utah, Transmission, & our Energy Office

November 18, 2025 | NASEO Transmission Training

Tim Kowalchik | Research Director
tkowalchik@utah.gov, energy.utah.gov

The Office

UTAH OFFICE OF
ENERGY DEVELOPMENT

Utah Office of Energy Development

Two main portions of the Office

Programs and Grants - Federal and state incentive, grants, education efforts

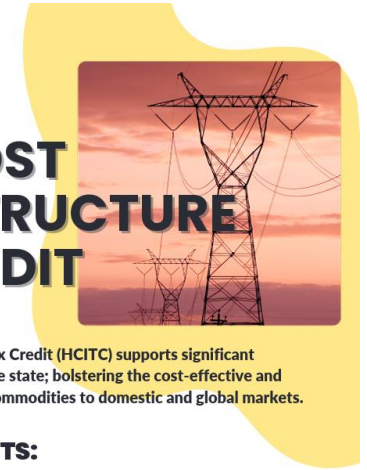
- High cost infrastructure tax credit , rural EV infrastructure , STEMfest

Research – In-house expertise on energy issues and guiding policy or initiatives

- Operation Gigawatt, Publications, SB 132

Self-contained entities

- San Rafael Energy Research Center – Research center for energy-related projects like supercritical CO2, and the focus of several private public MOUs to bring pilot nuclear projects to the center
- Nuclear Consortium – Foster statewide coordination between nuclear stakeholders to drive to nuclear deployments
- Advanced Energy and Nuclear Institute – Similar to the consortium, but between academia and the national labs and focusing on research



Legislative Backing

“Utah will develop its energy resources and plan its energy future with a focus on human well-being and quality of life, recognizing that reliable access to energy is vital for human health, adaptation, economic growth, and prosperity” - Utah State Code 79-6-301 (1)(a)(i)

79-6-401 - The Office of Energy Development

- Primary resource for advancing energy and mineral development in the state
  - Work within the boundaries set by the legislature to fulfill the governor’s objectives

- Implement the state energy policy and the governor’s energy/mineral goals

- Charged with preparing the states strategic energy plan
  - Pursue innovative technologies
  - Promote efficient use and development of resources
  - Consulting with stakeholders and data-driven decision making
  - Coordinate and collaborate with other state agencies (79-6-404)

Strategic Energy Plan: Main Elements

- Industry Standard Data
- National Lab Partnerships
- Optimized Investment
- Infrastructure Innovation
- Energy Needs
- Technology Innovation
- Energy Services
- Resource Development
- Academic Research
- Workforce Development

79-6-401
HB 48 (2024)

- Transmission
- Pipelines
- Budget
- Federal Issues

Initial Transmission Engagements

UTAH OFFICE OF
ENERGY DEVELOPMENT

Working Group and Publications

2019: Transmission study of Utah's electrical grid to identify constraints – Senate Bill 3

- Working group formed to give input into scoping and process, OED-led
- 2020 Energy Strategies selected as vendor

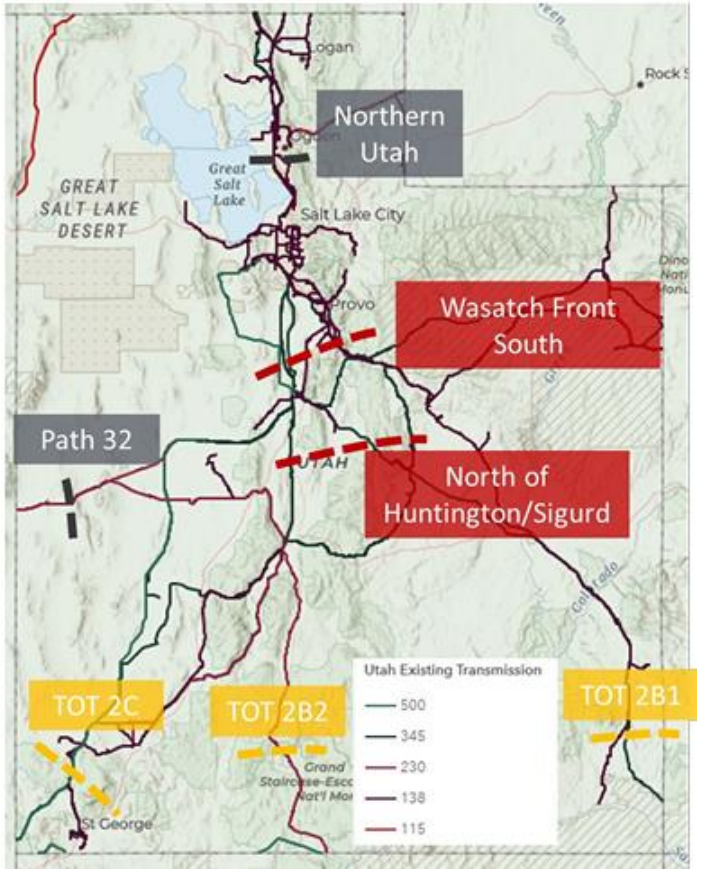
Resulted in 2021 Utah Transmission Study

- Identified likely constraints
- Extra transmission buildout
- Economic value and state investment

Still using values and estimates today
Potential for future study on a "modern grid"

Other publications

- Energy Markets
- Gasoline
- Nuclear Energy



Policy Engagement

HB 212 - Advanced Transmission Technologies

Defines range of Advanced Transmission Technologies to be considered

- Technologies that “increase the capacity, efficiency, or reliability of electric transmission infrastructure”

Mandates electric utilities filing an addition or expansion to transmission system study ATT effectiveness

- Specifically calls out the IRP process and general rate case
- High level metrics for the study to look at: “reduce transmission system congestion”

Directs the Utah Public Service Commission to encourage ATT development

- Analysis from utilities must be provided to PSC
- If the analysis shows cost-competitiveness, prudently incurred costs shall be approved

SB 132 – Electric Utility Amendments

Proposes alternative process for serving large-load customer demand
- Recognizes existing utility process can't build generation fast enough
- Allow the consumers to directly build their own energy sources

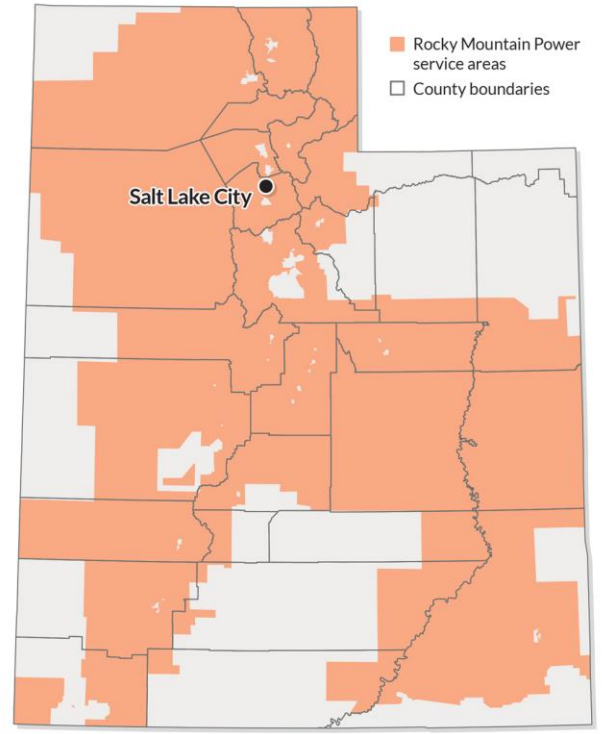
Drives private partnerships between generators and consumers
- Data-centers and advanced manufacturers
- Co-locate for heat, power, similar industries

Huge potential for generator development
- Require constant, stable, and scalable energy
- Willing to pay for access to supply,
  - Can drive down costs of nuclear and geothermal

Figure 4

Rocky Mountain Power Provides Most of Utah's Electricity

Areas served by the state's largest electric utility



Note: Rocky Mountain Power is a public utility and subsidiary of PacifiCorp and serves customers in regions throughout Utah, Idaho, and Wyoming.

Source: Oak Ridge National Laboratory, *Electric Retail Service Territories*, Dec. 11, 2023

Regional Engagement

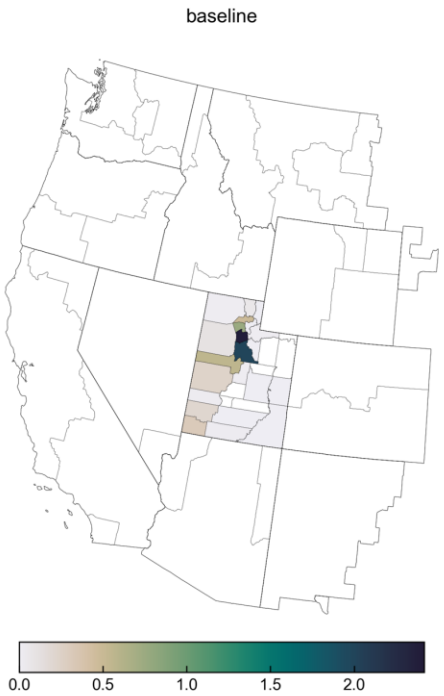
Future work on external engagements to offer modeling scenarios
- Tri-state engagement with Wyoming and Idaho already
- Engage with state energy office/equivalents for regional perspective
  - Joint comments, siting corridors, RTOs

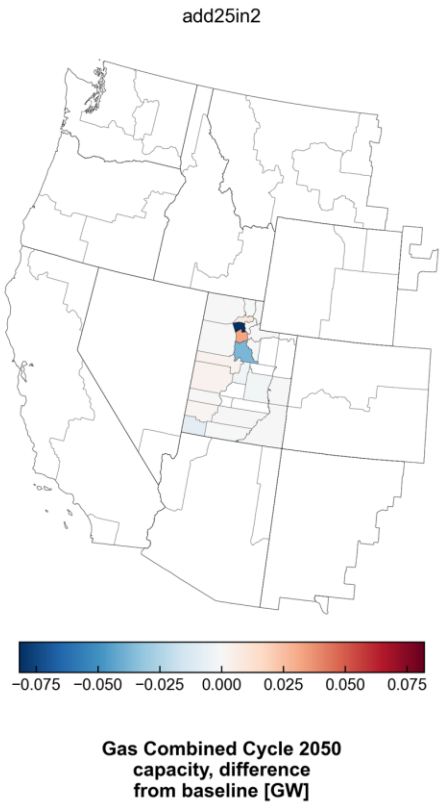
Work with national labs on modeling and potential grant partners

Engage with NGOs, WECC, WIEB, CREPC, FERC 1920

Work with local communities on their questions
- Initial engagement with Uintah County
- Looking at adding 50MW growth
  - Led to needing a different natural gas plant

Partner with local universities on general energy issues beyond grid





Thank You

tkowalchik@utah.gov | 801-865-4353

energy.utah.gov

DIVISIONS

OFFICES

Extra slides

UTAH OFFICE OF
ENERGY DEVELOPMENT

Operation Gigawatt

UTAH OFFICE OF
ENERGY DEVELOPMENT

Operation Gigawatt

“Energy is the engine that drives our society forward, we need more energy at a time when our supply is decreasing. We will build upon Utah’s ‘any of the above’ energy policy with a ‘more of the above’ approach by doubling our energy-generating capacity over the next 10 years.” - Gov. Cox, Press Release, October 8, 2024

Four Pillars to Energy Abundance

- **Increasing transmission capacity** so more power can be placed on the grid and moved to where it is needed
- **Expanding energy production**, including investing in the state’s current energy infrastructure while developing new sustainable sources
- **Enhancing Utah’s policies** to enable clean, reliable energy like nuclear, geothermal, battery storage and natural gas
- **Investing in innovation** and **research** that aligns with the state’s energy policies

Utah's Electricity History

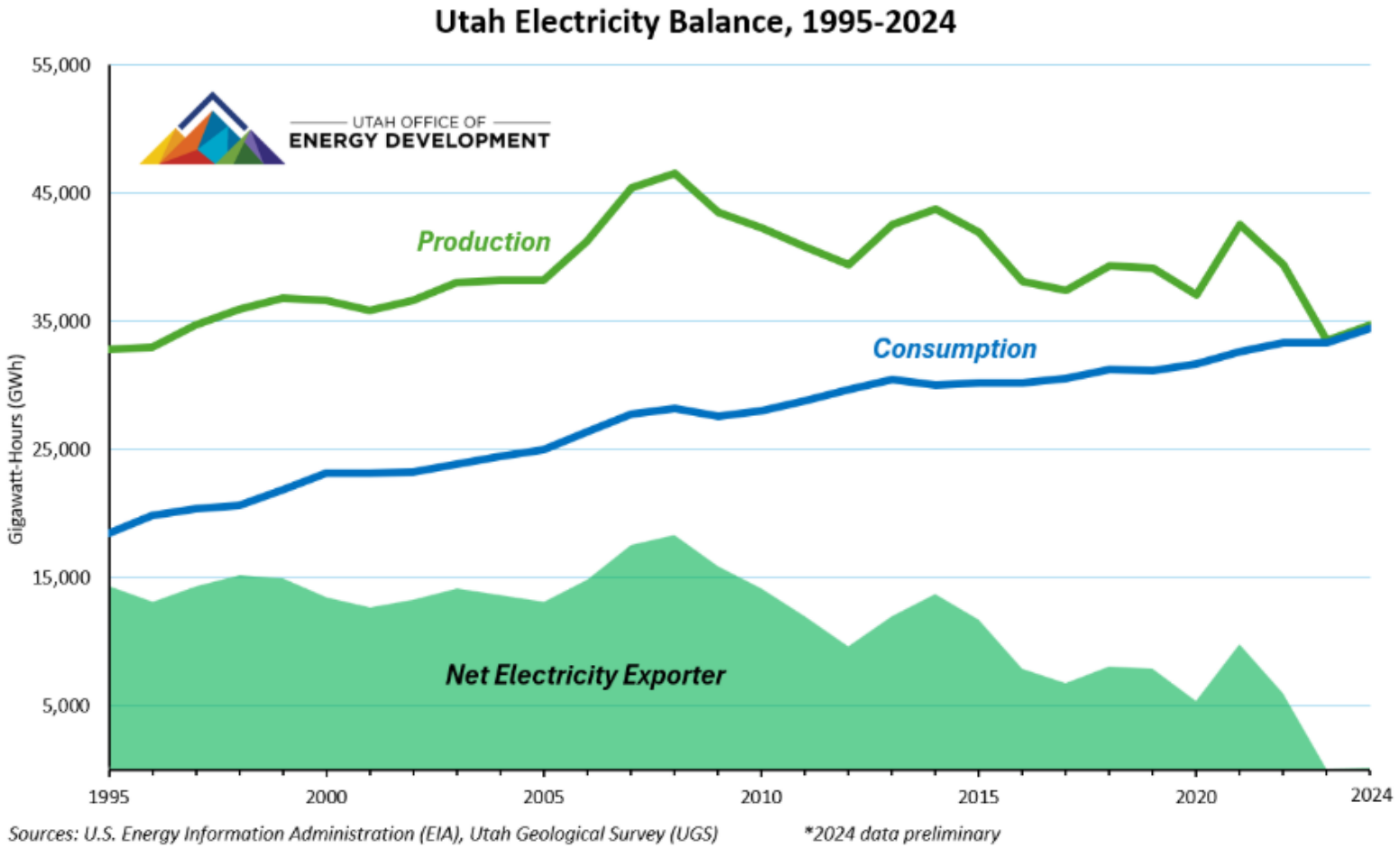
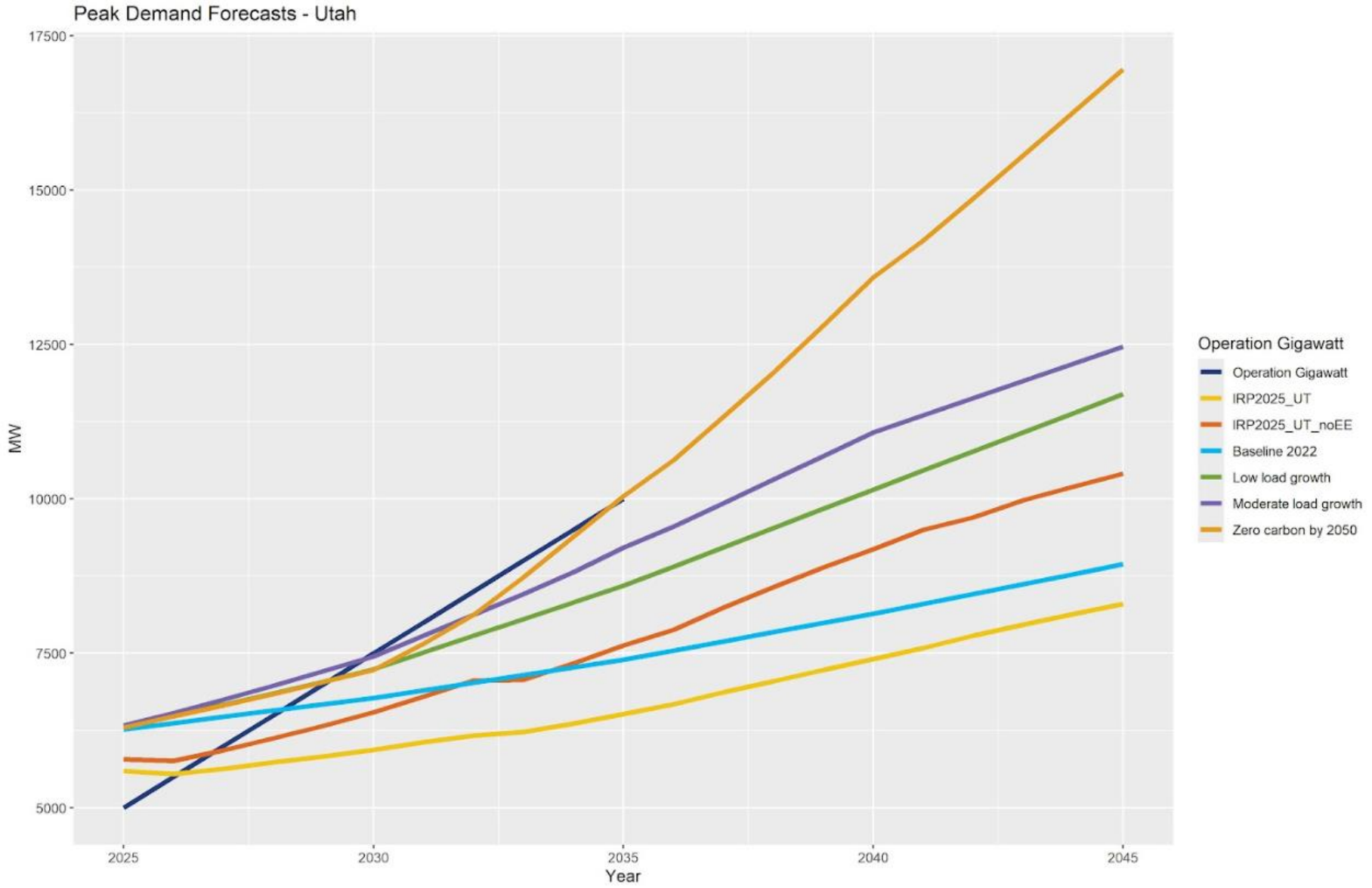


Figure 9. Utah's electricity generation and consumption from 1995 to 2024.

Demand Growth



National Transmission Needs

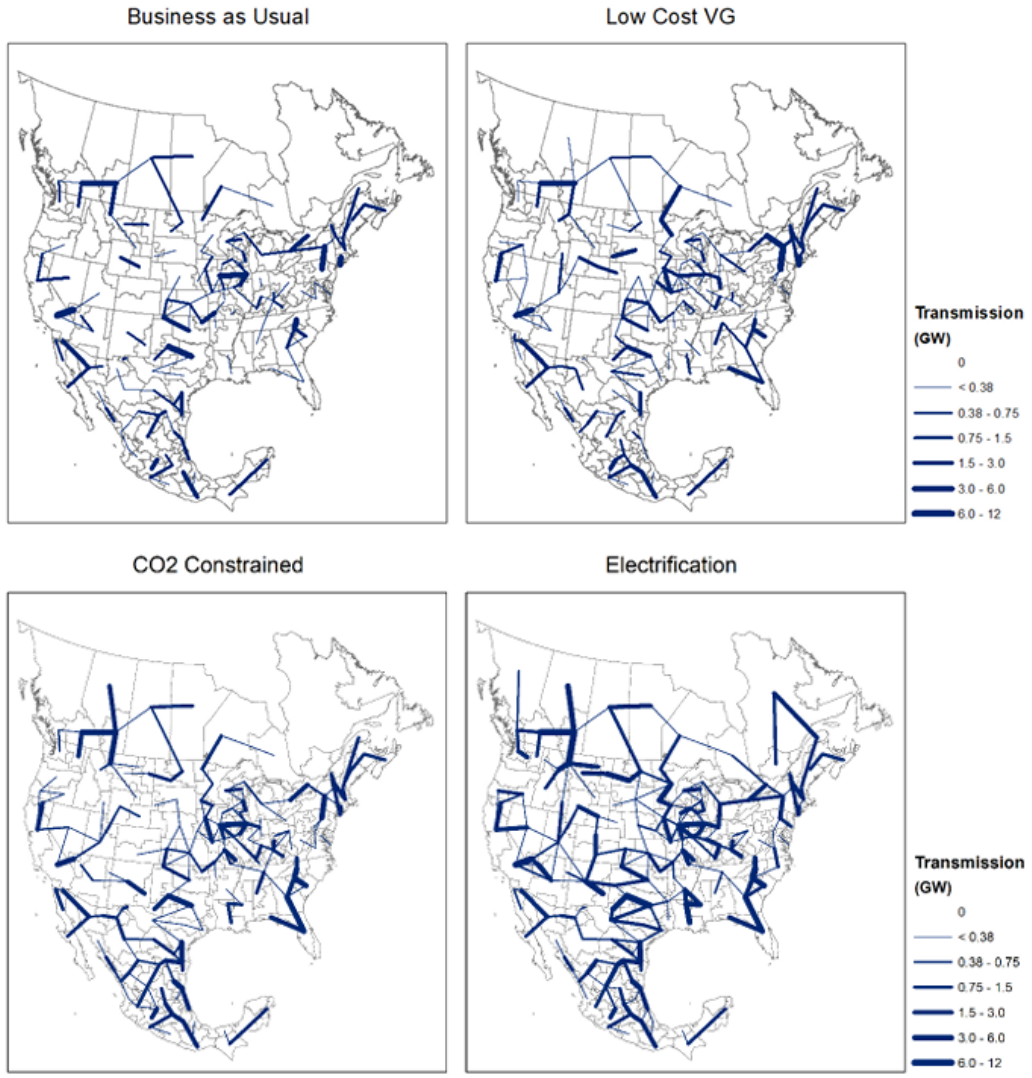


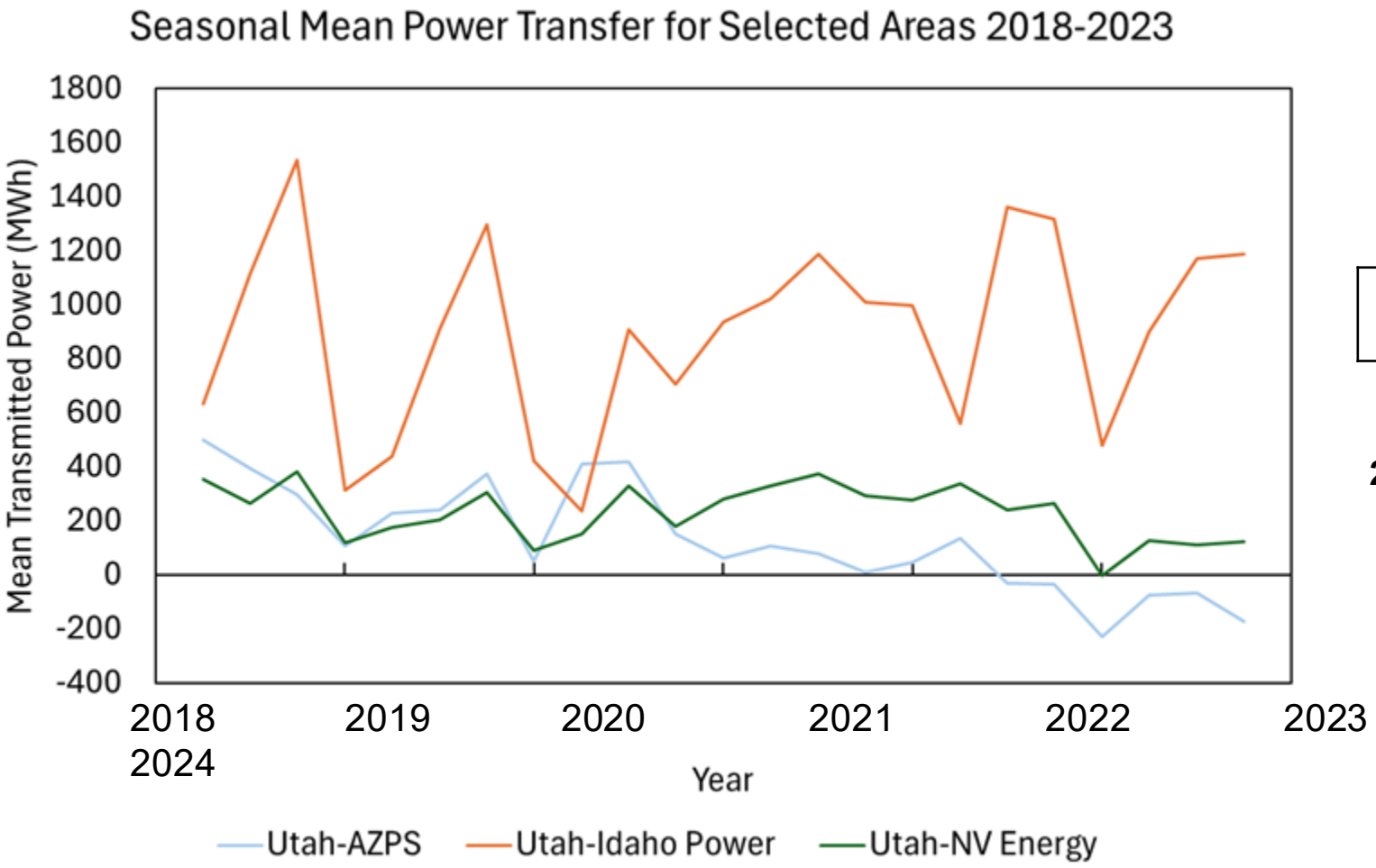
Figure 30. New transmission capacity in the core scenarios

The lines on this map represent transmission interfaces between the zones in the model, and they typically represent aggregated transmission lines.

Modeling

UTAH OFFICE OF
ENERGY DEVELOPMENT

Transferred Power vs Congestion



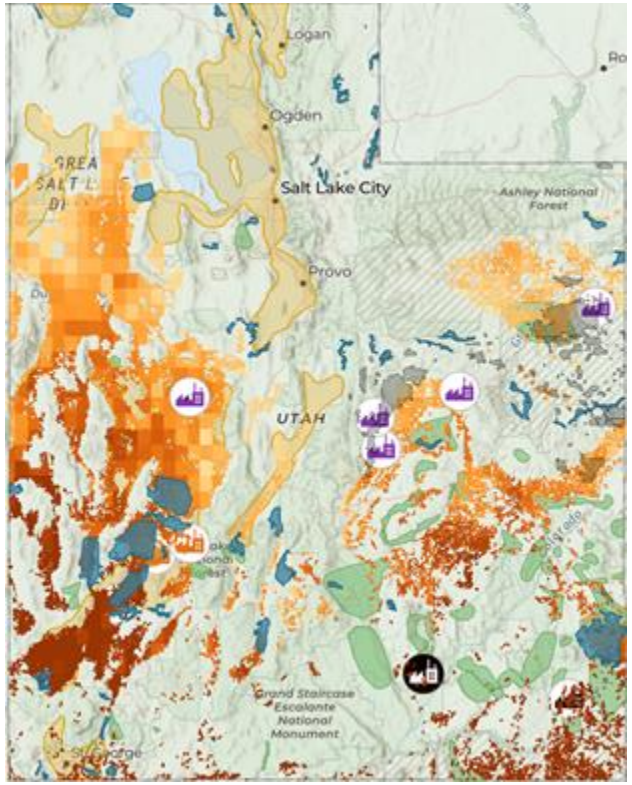
Total LMP congestion value ($/MW 2023 sum)			
Year	**AZPS**	**Idaho Power**	**NV Energy**
2018-2023	593922	296421	612237

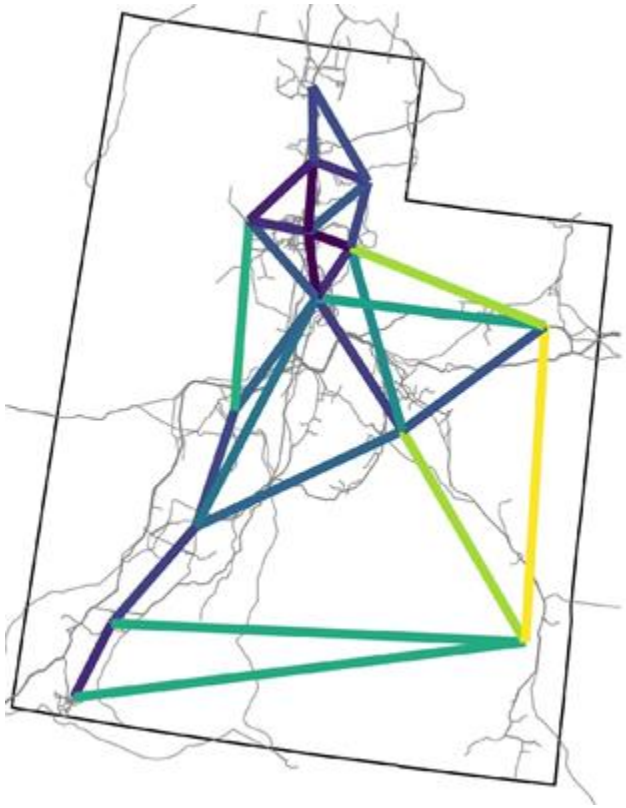
Cross reference the mean flow in/out of Utah by year with the total congestion value for 2018-2023 period

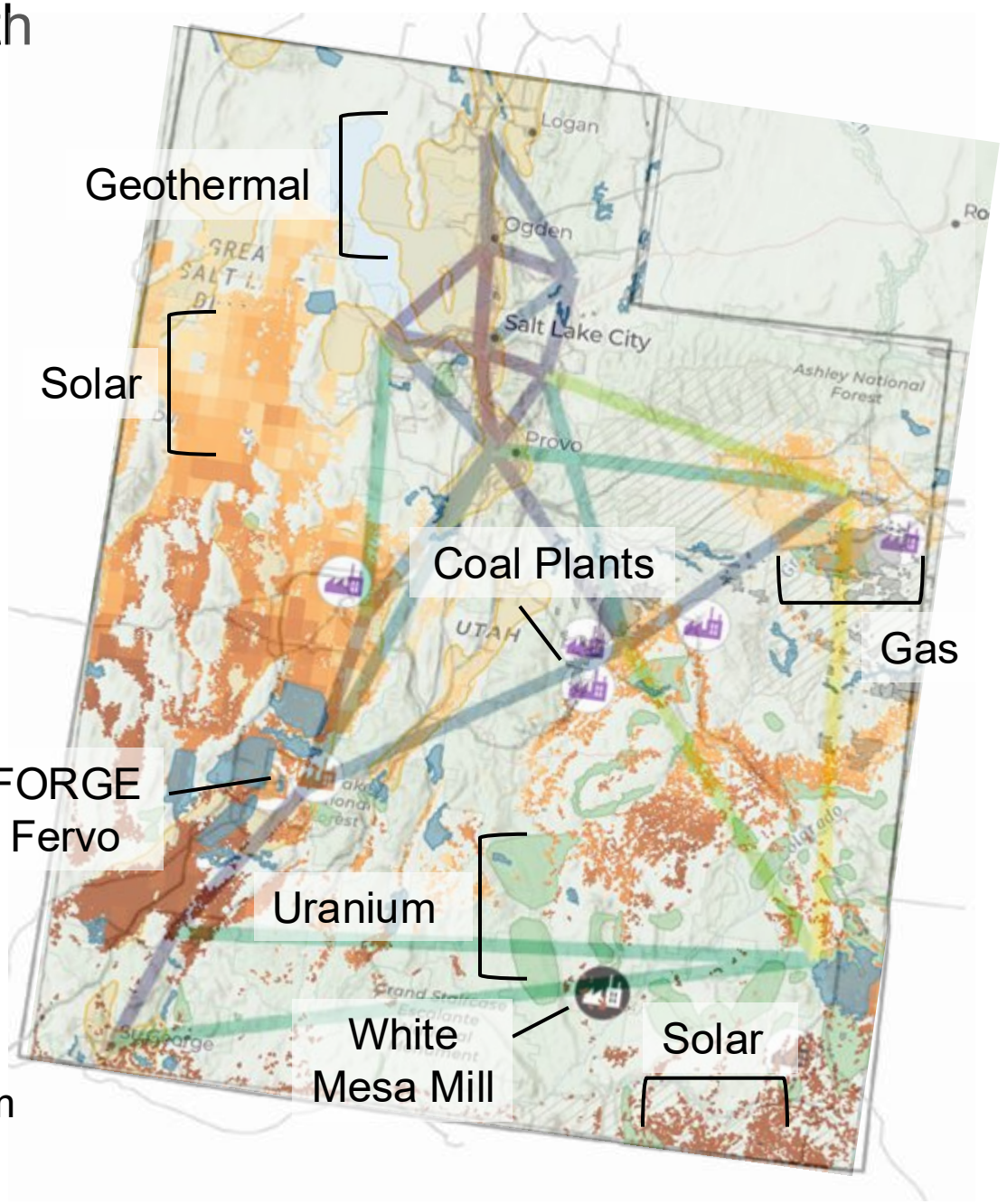
We see the largest flow out of Utah to Idaho Power - corresponds to the smallest LMP difference

Expected, energy flow will directly correspond to demand/supply and existing transmission

Potential Growth







Combine UREZ energy zones with transmission congestion
Looking at a high-level view of where generation is realistic

Geothermal - Generally along the front and near existing transmission.
Forge and Fervo driving innovation

Coal plants and Uranium - Potential for coal-to-nuclear conversions
Vertically integrate nuclear supply chain with uranium

Solar - potential throughout the state, mixed near/far from transmission

Generation in the east and south-east may cause more congestion

Sample Results - Maps