

Hydro Modeling Results



IRP Advisory Council

Nov. 10, 2022

John Hildreth

Principal Engineer



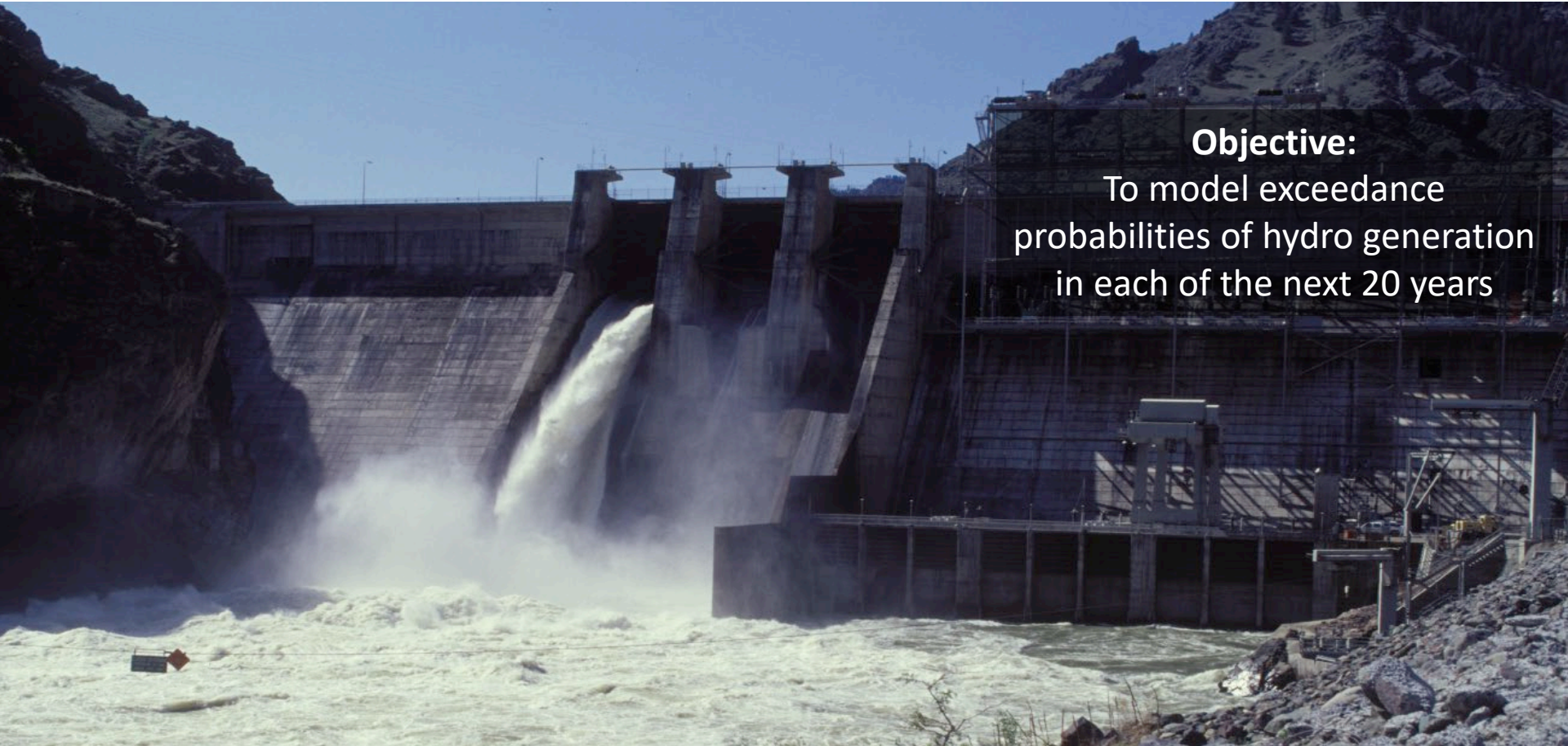
Importance

- Hydro generation modeling that goes into Aurora lays the building blocks for all other resources in the IRP.
- Idaho Power has almost 1,800 megawatts (MW) of hydroelectric generation capacity.
- Hydro is our largest energy resource.
- Hydro is an inexpensive fuel source and key factor in Idaho Power's ability to keep rates low for our customers.
- Hydro is a highly flexible resource that supports reliability of the system.

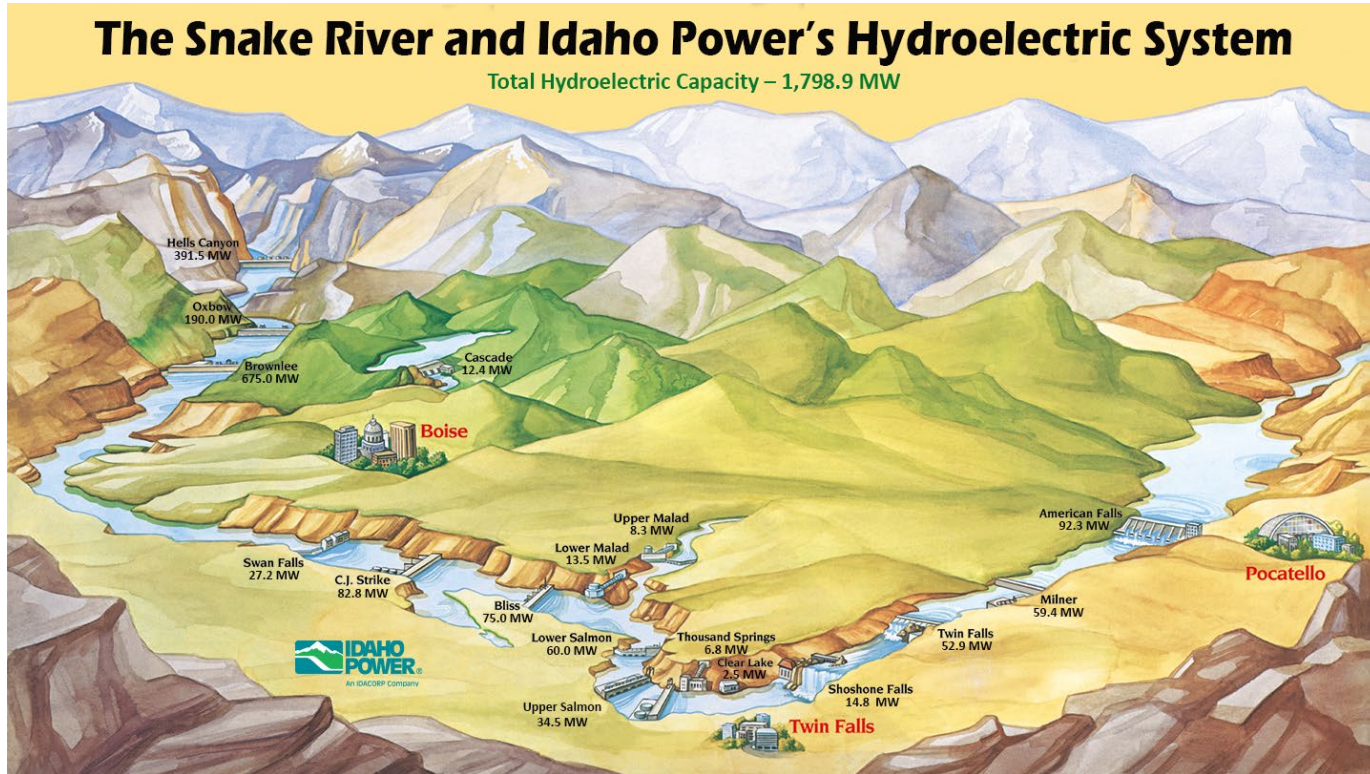
IRP Hydro Generation Planning

Objective:

To model exceedance probabilities of hydro generation in each of the next 20 years



Part 1: Snake River and Idaho Power's Hydroelectric System



Video
link

Part 2: Climate Change



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Climate Change

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Climate Change

Supplemental Sustainability
Reporting

Climate change is a significant policy issue that will have major implications for Idaho Power and may transform the energy industry.

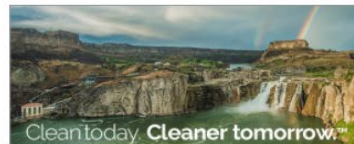
Policy and societal decisions made about climate change policy will significantly affect our customers and the future prices they pay for energy.

For more than 100 years, Idaho Power has relied on clean generation resources like our hydroelectric plants that have little if any greenhouse gas emissions.

Although our generation portfolio currently includes fossil fuel generation, our carbon emissions are [some of the lowest](#) in the utility industry.

Our [long-range plan](#) details Idaho Power's glide path away from coal-fired generation, and our [Clean Today, Cleaner Tomorrow](#) initiative is a commitment to provide 100% clean energy by 2045 while keeping your electricity reliable and affordable.

Video
link

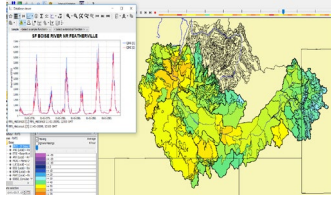


Idaho Power is committed to our goal of **100% clean energy by 2045.**

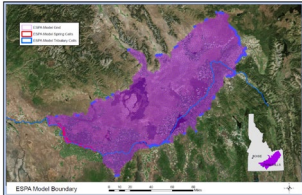
[Learn more](#) ➔

Part 3: Hydro Resource Modeling

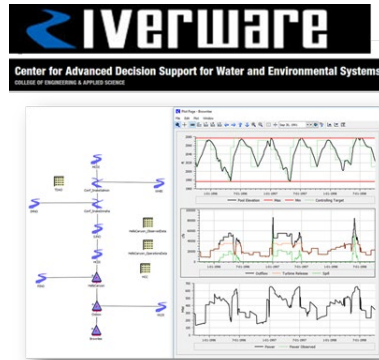
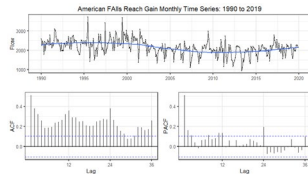
EFS Cloud Seeding SA



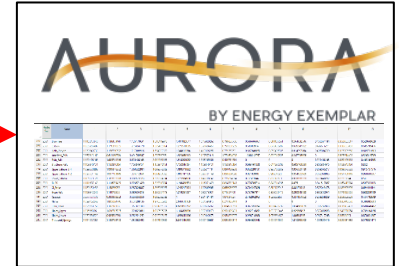
ESPAM 2.2



Statistical Trend Modeling



Monthly Exceedance
Plant Hydro Generation
(average MW [aMW])

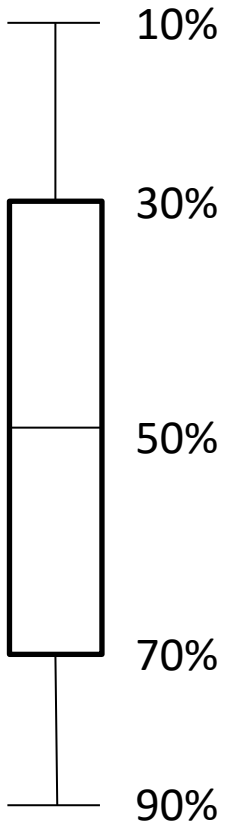


Video
link

Planning Flow Results

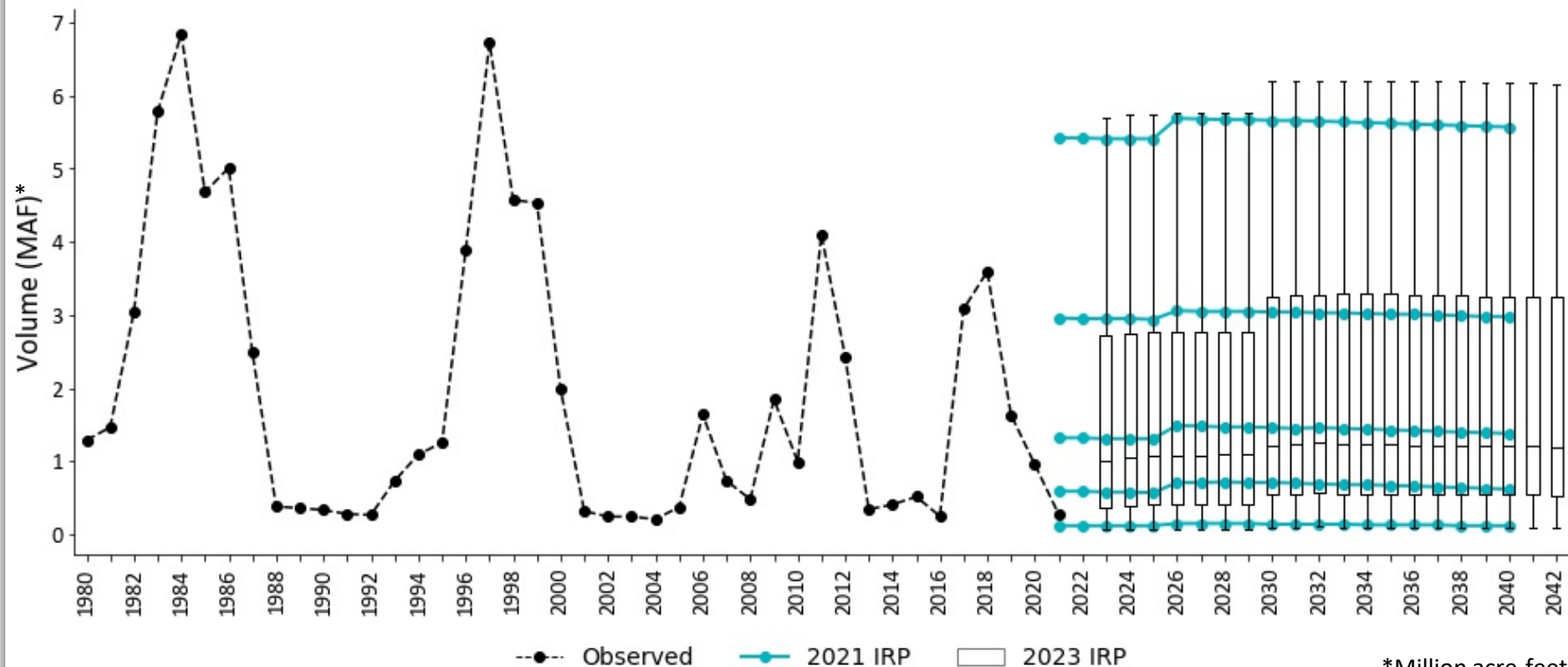


Exceedance Plot Interpretation



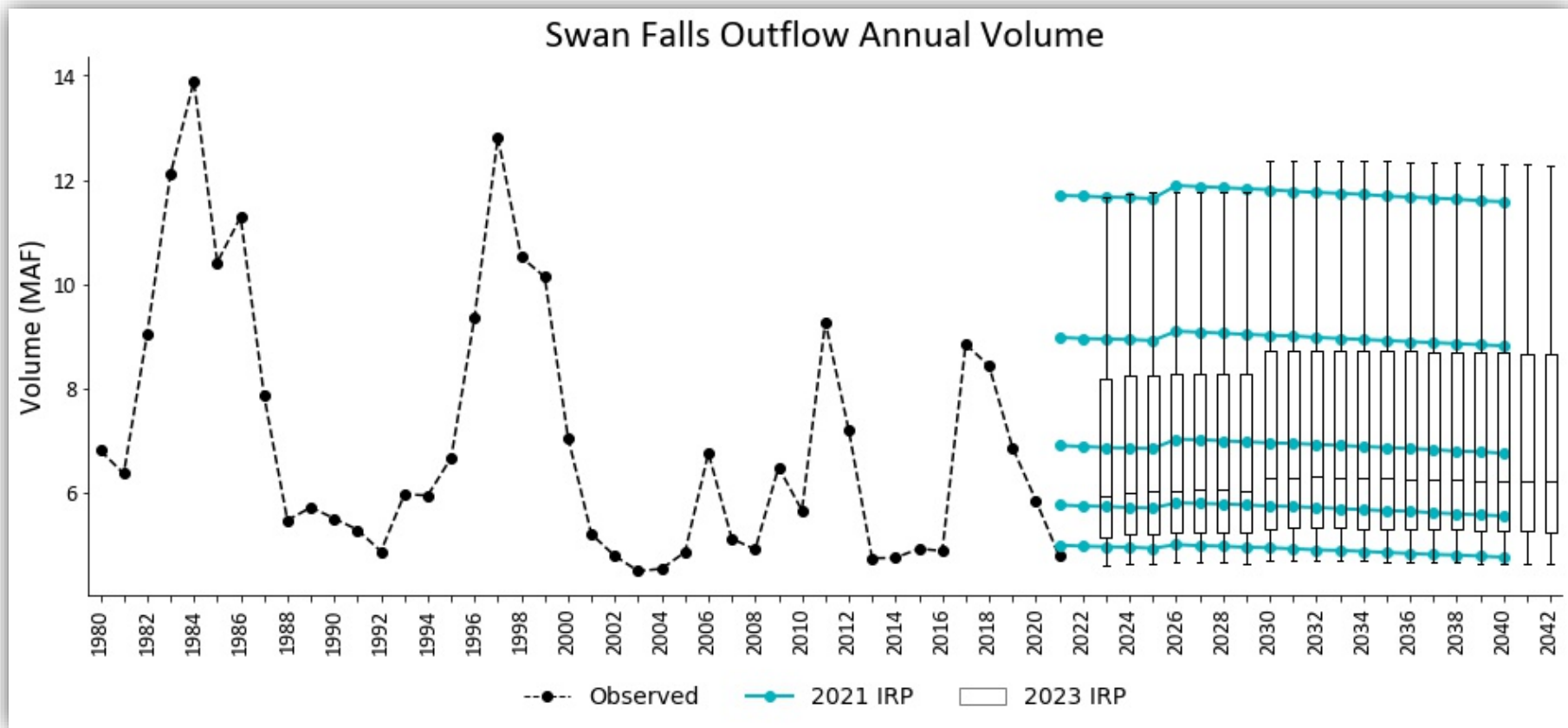
Milner Results

Milner Outflow Annual Volume

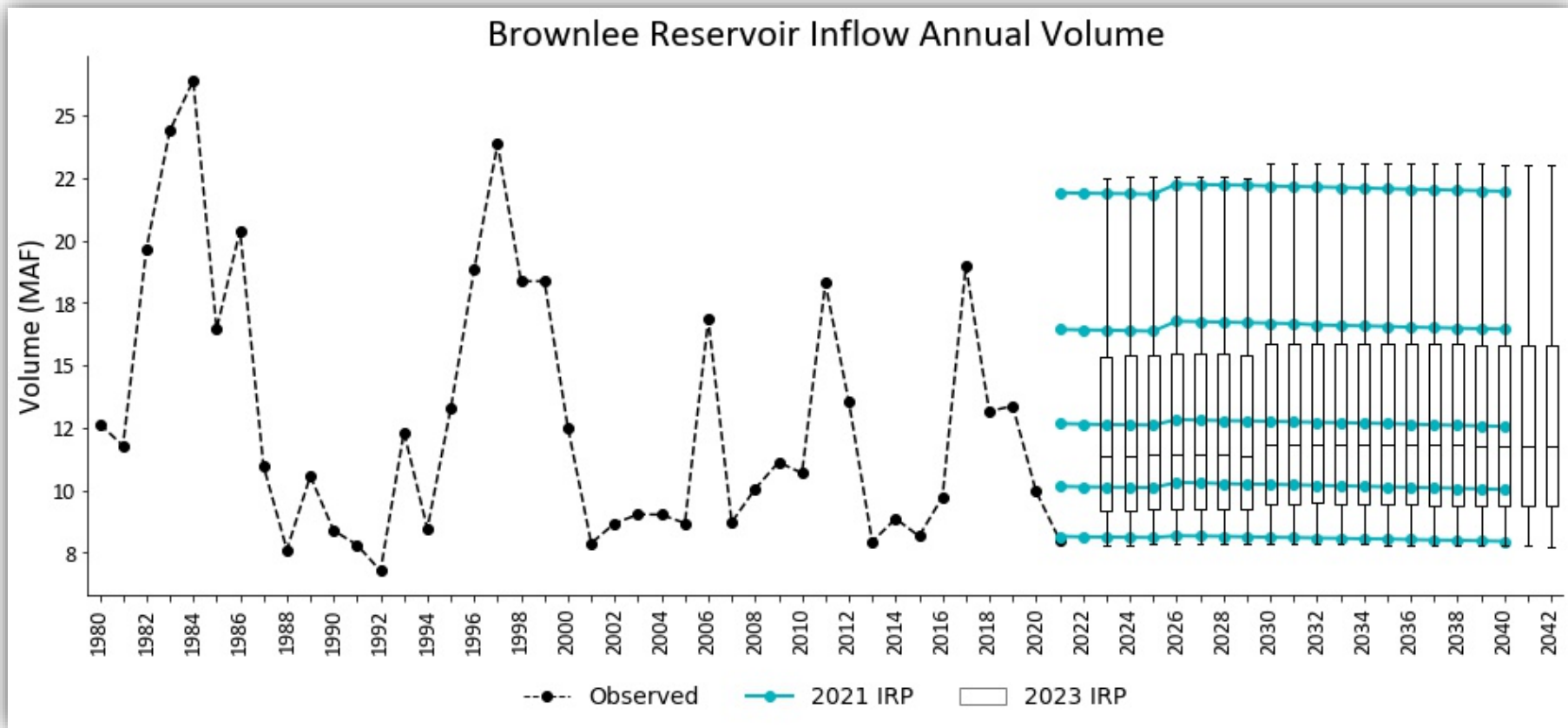


*Million acre-feet

Swan Falls Results



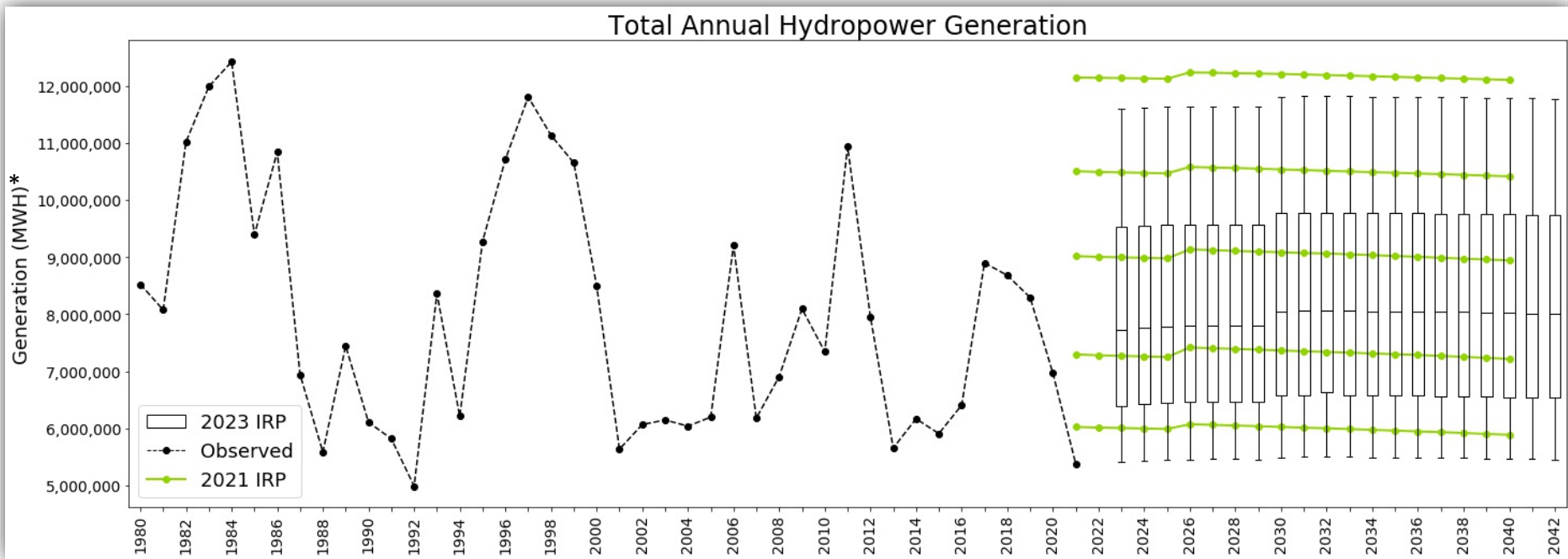
Brownlee Inflow Results



Planning Generation Results

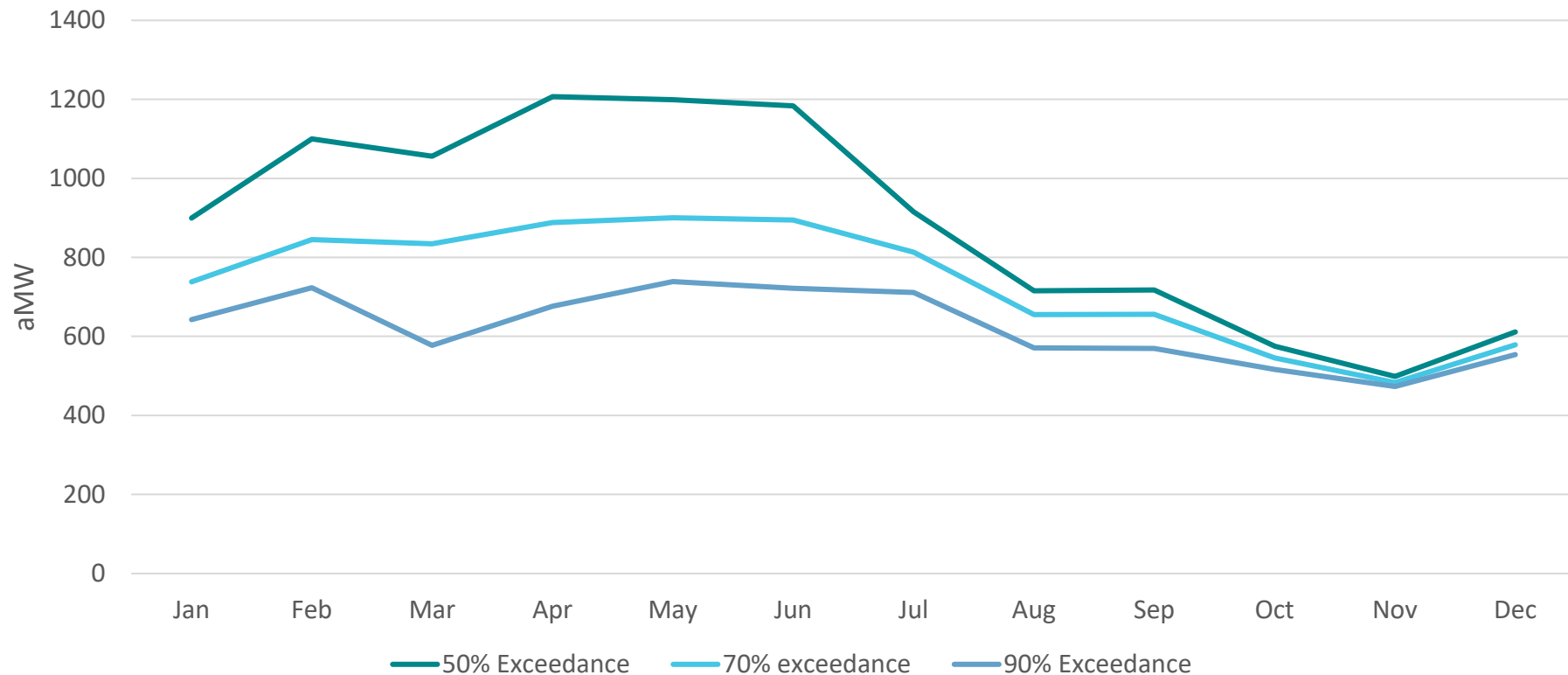


Annual Hydro Generation Results



*Megawatt-hour

Monthly Hydro Generation Results: Year 2025 of IRP



Questions?

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