

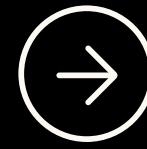


POUTINE OVERFLOW

LOAD PREDIQT

Presented by SHERBY





PROBLEM

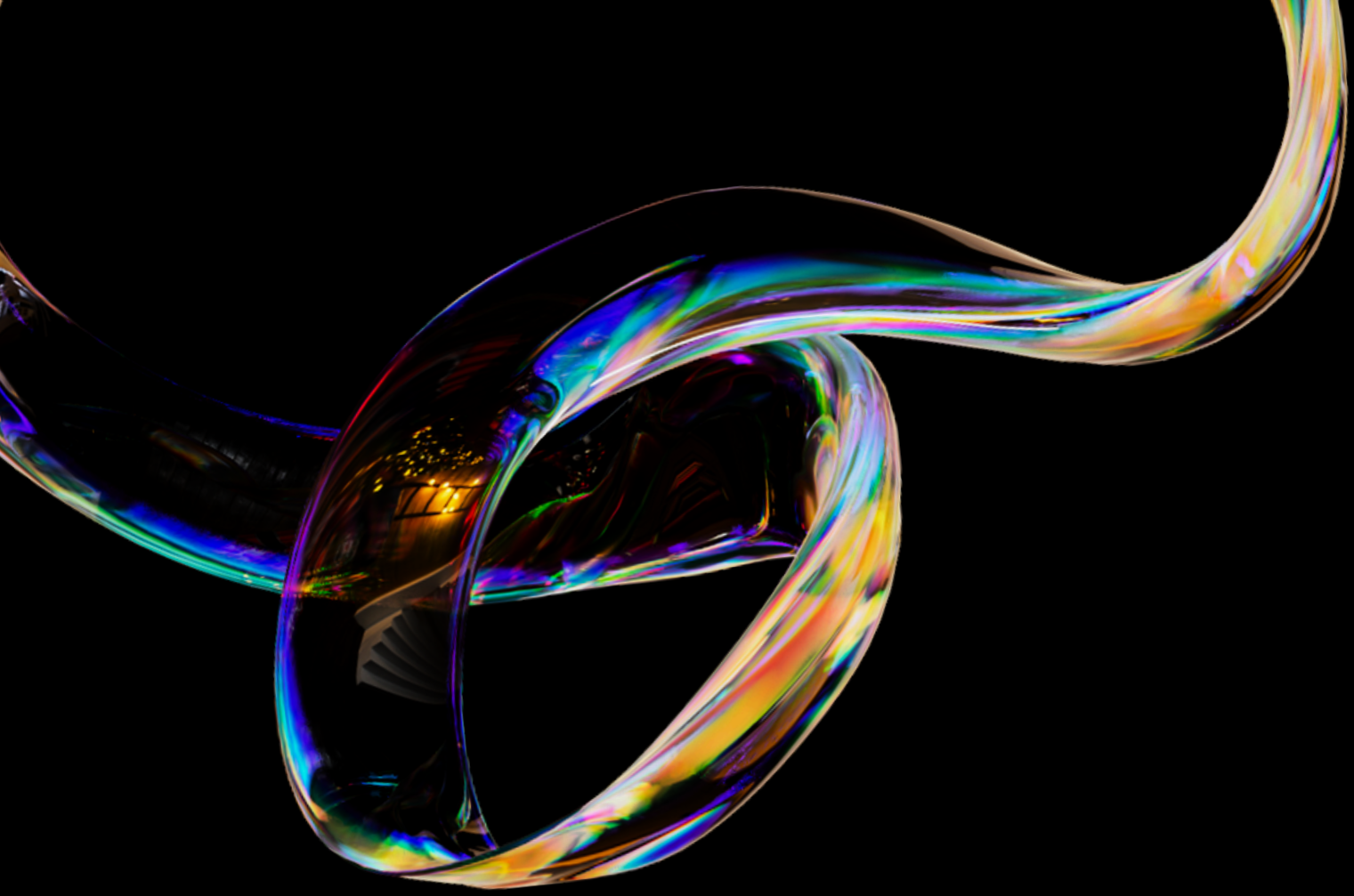
Electricity demand is on the rise and emerging factors complexify predictions ; thus a need to predict accurately the power consumption appears.

- Electric vehicles
- Climate change
- Complexification of power grid

Challenges :

- Multiplicity of factors
- Limitations of classical with high-dimensional inputs

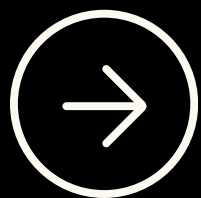




WHO WE ARE

Our Goal

We aim to provide electricity producers such as Hydro-Québec with the means to accurately predict short-term energy consumption.



OUR INNOVATIVE SOLUTION

Hybrid Quantum Neural Network (HQNN)



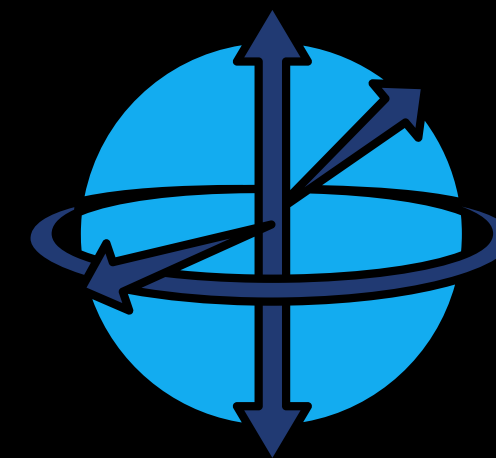
Money

The possibility to make accurate predictions would make it so consumers lose less money generating excess energy or underproducing.



Environment

Beyond the economic cost, the environmental impact of energy production is currently far too great. We must prioritize sustainability and protect our planet.



Quantum edge

Quantum is emerging as the next major differentiator in tech. Early adopters will gain a decisive competitive edge and establish themselves as innovation leaders in a rapidly evolving landscape.

The background features a dark, swirling marbled pattern in shades of blue, purple, and black. In the bottom-left corner, there is a white starburst graphic composed of numerous thin, radiating lines.

WHY QUANTUM?

- Superposition can be applied to model a greater range of variables that determines the energy demand
- Can use correlation between interdependant variables more efficiently than classical algorithms (entanglement)

MEET THE TEAM

Thank you for your time! Reach out to us for questions.



**GABRIEL
MICHAUD**
Fast Learner



**JULIAN
SANCHEZ**
Lawyer



**THOMAS
POULIN**
Machine Learning Expert



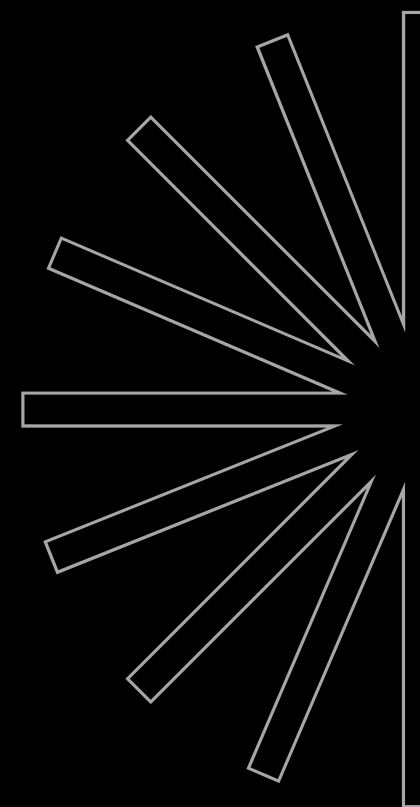
**MATHIS
ROCHFERT**
Frontend Expert



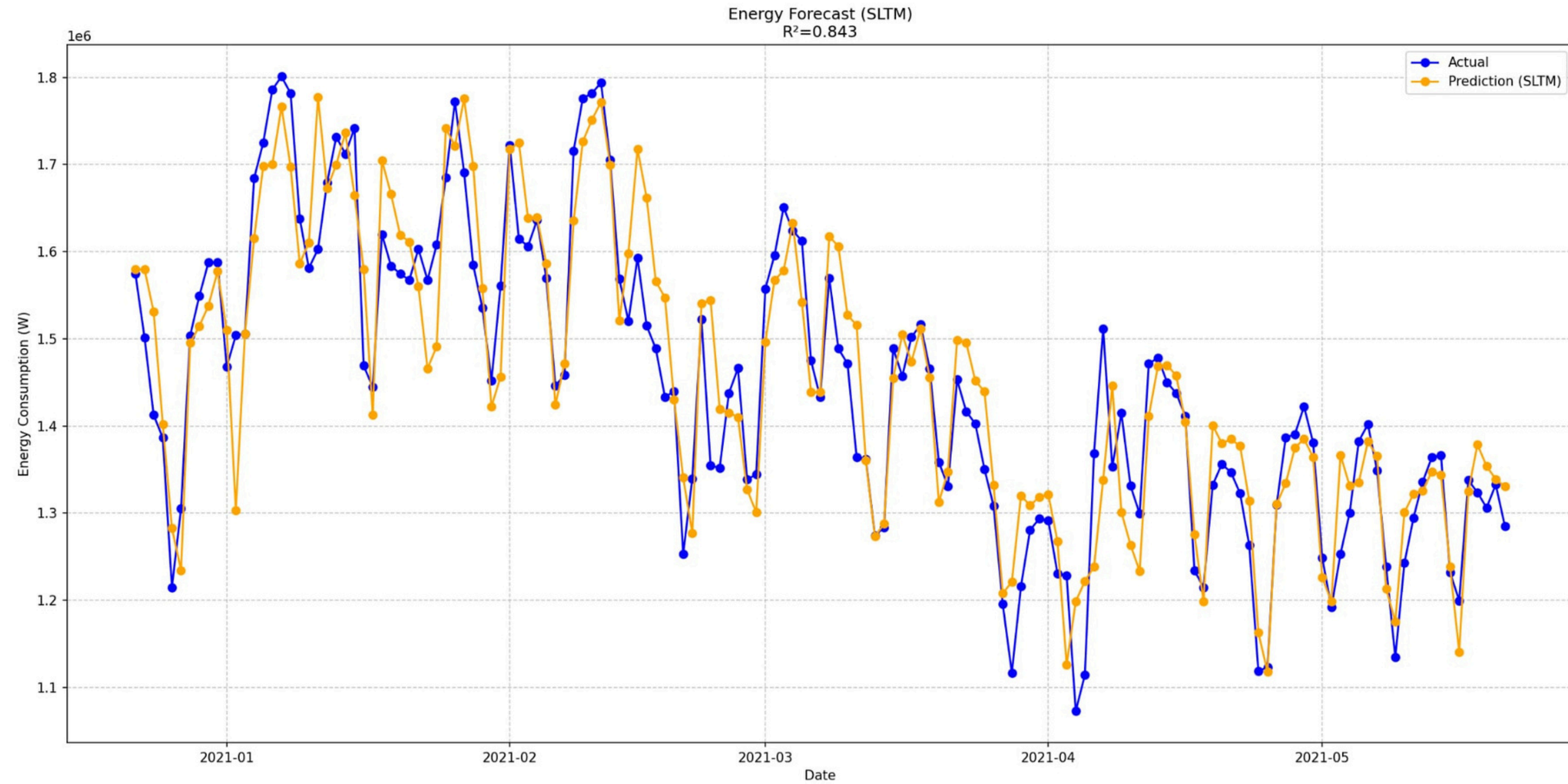
**JASMIN
PELLETIER**
Master of Quantum



DEMO

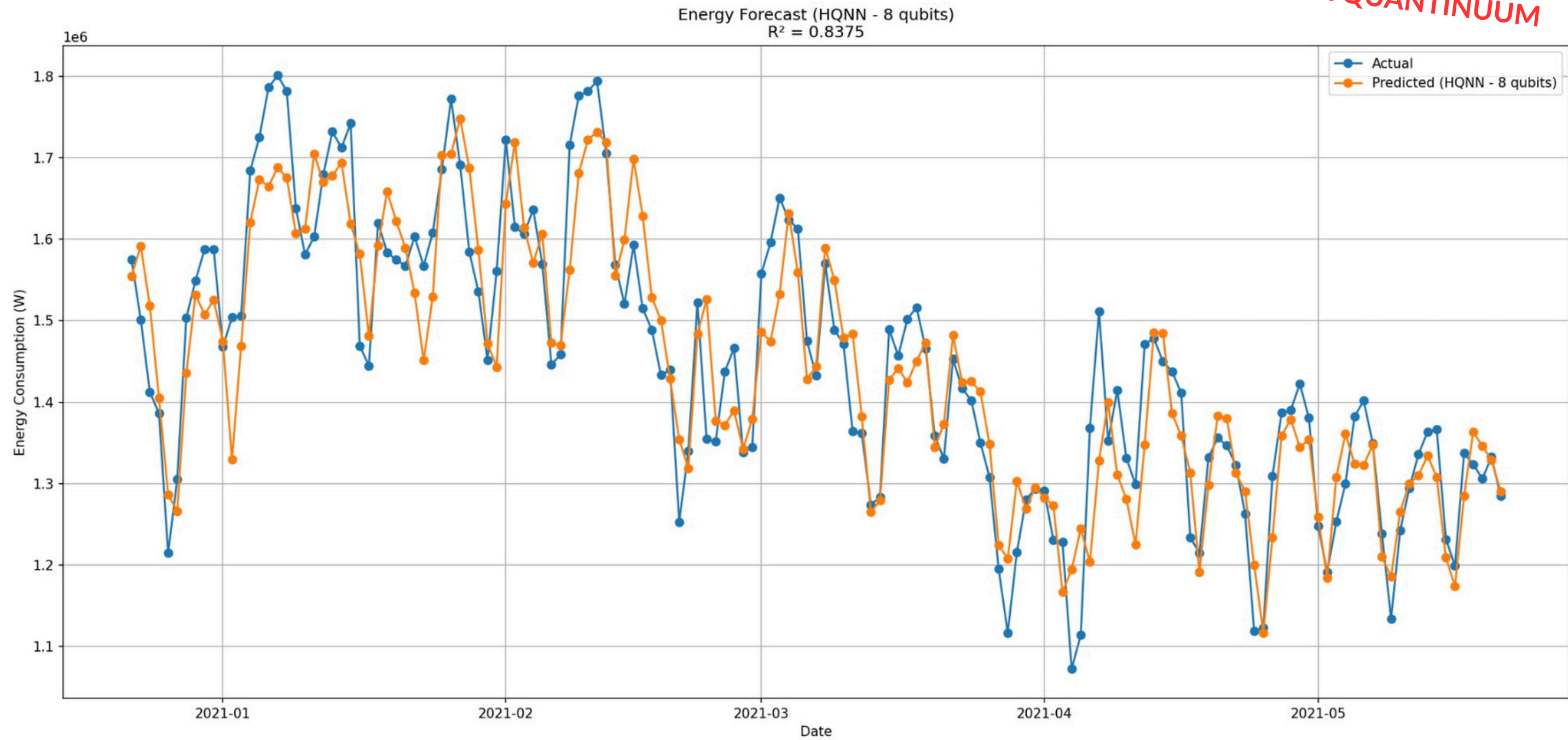


RNN-Classic

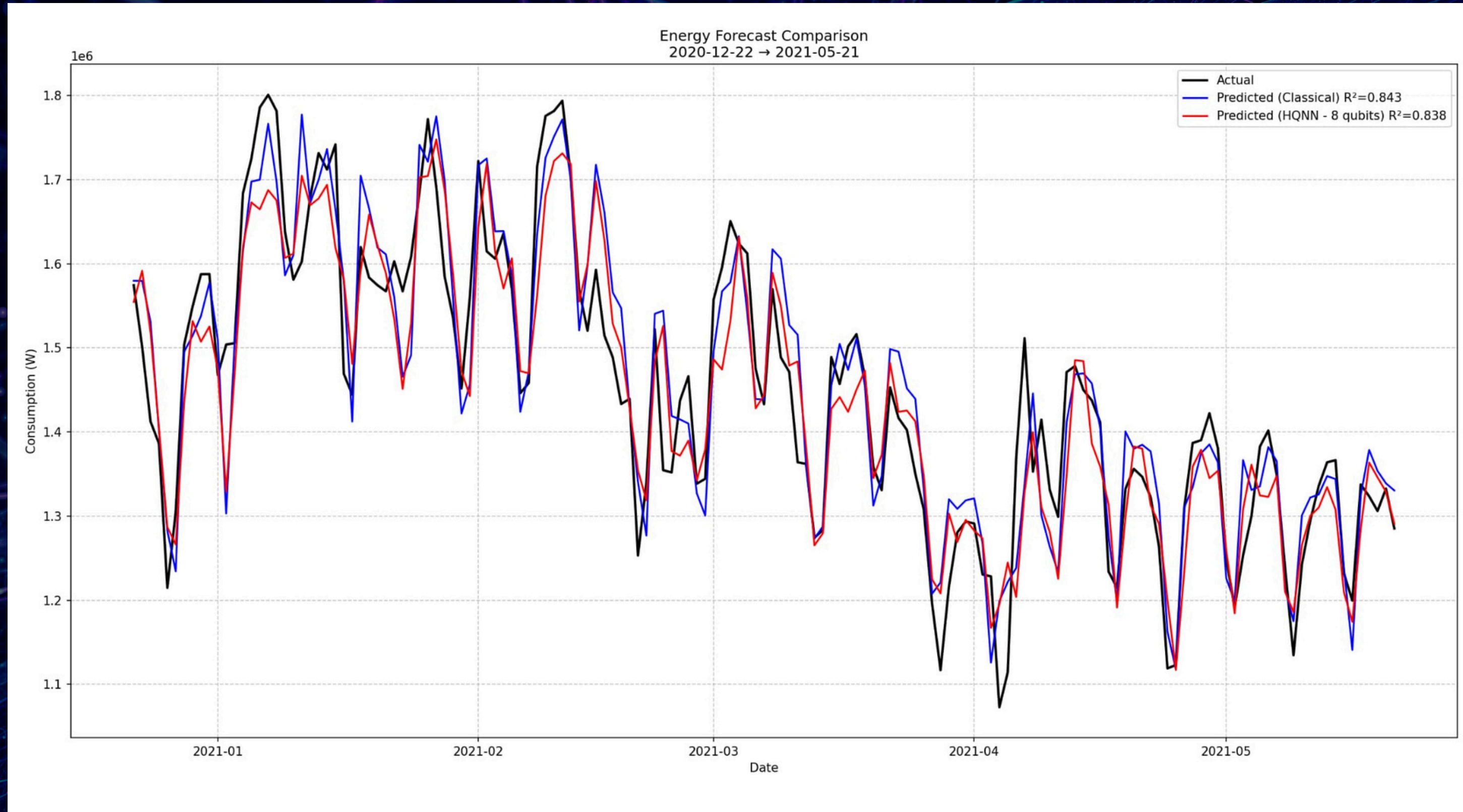


HQNN - QUANTUM

RUN ON H2 EMULATOR QUANTINUUM



COMPARISON



Method	Nb_sequences	Epochs	R ²	RMSE	MAE
LSTM	30	30	0.904	63185	49075
LSTM	50	30	0.910	61324	47559
LSTM	100	30	0.912	60576	46791
HQNN - 8 qubits (H2)	30	30	0.903	63599	49566
HQNN - 8 qubits	175	30	0.905	62870	48966
HQNN - 8 qubits	1000	30	0.846	80197	64389