Elastic Net Family (Weather TMP_C) — Model Evaluation Report

Generated: 2025-10-25 12:27
Target variable: `TMP_C`

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1. Executive Summary

This report compares multiple trained configurations.

- ☐ Lowest RMSE: **Baseline Linear Regression** (5.3225)
- ☐ Highest R²: **Baseline Linear Regression** (0.8206)

Lower RMSE / MAE means the model is closer to the true values.
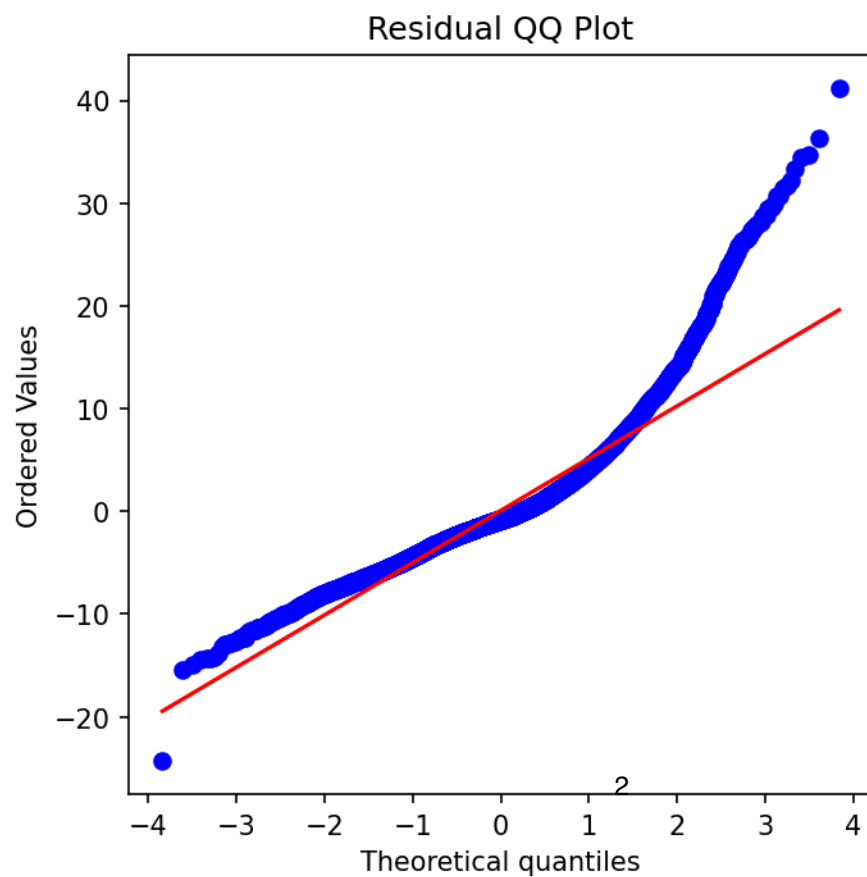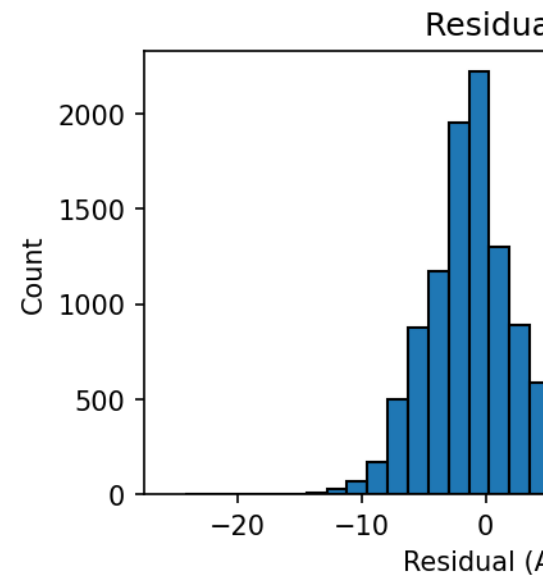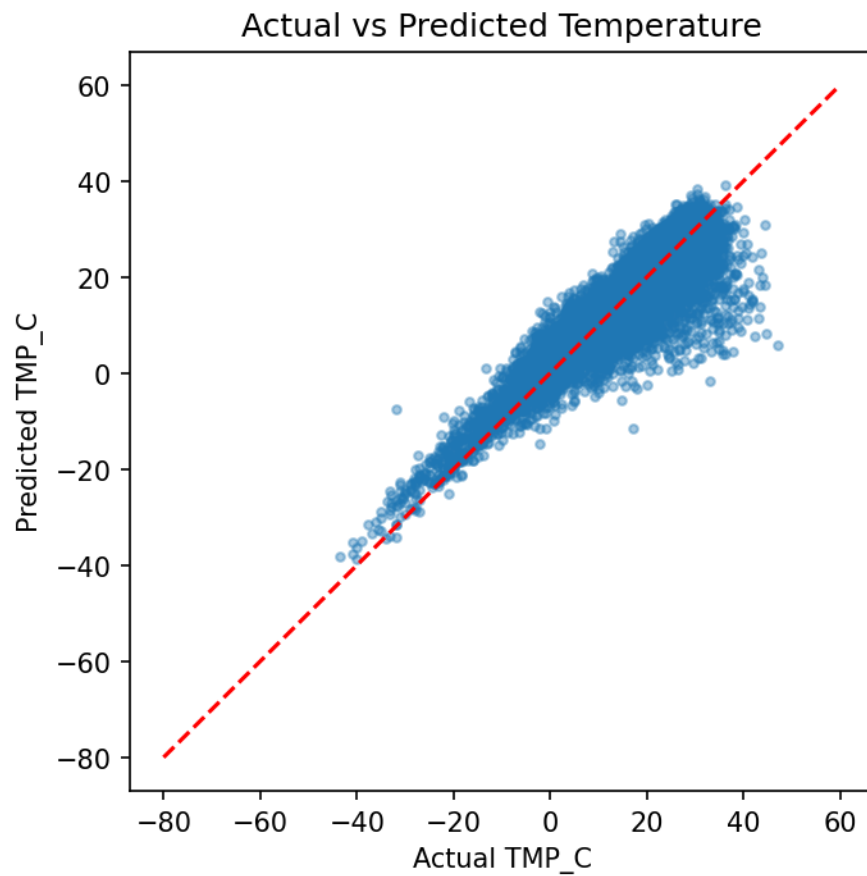An R² near 1.0 means the model explains most of the variation in the target.

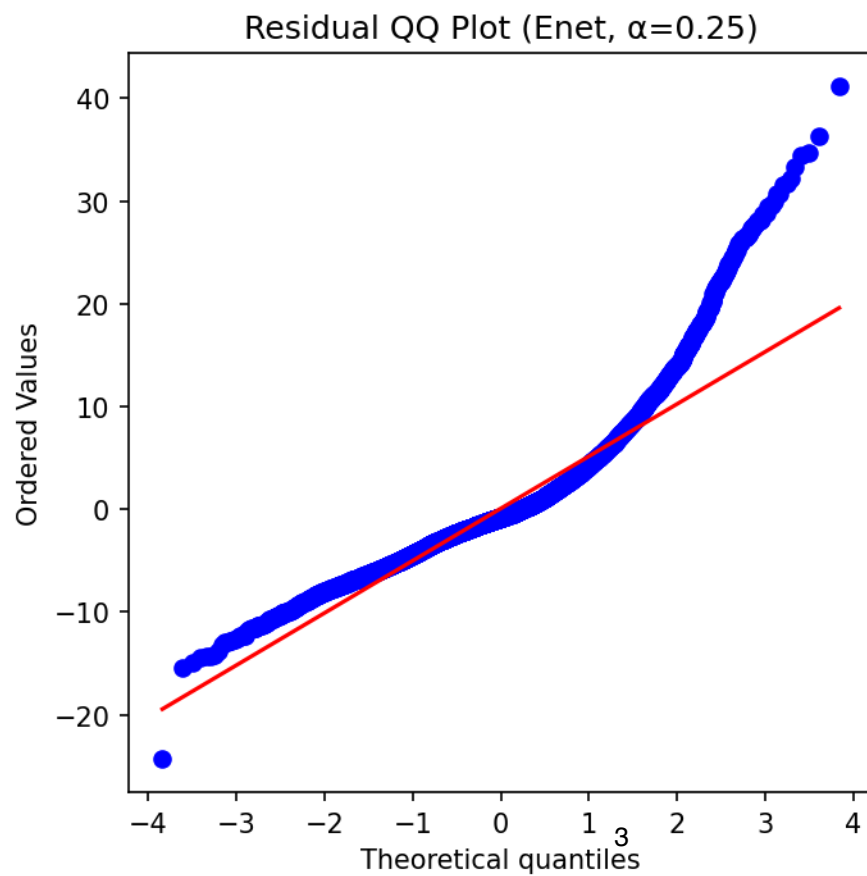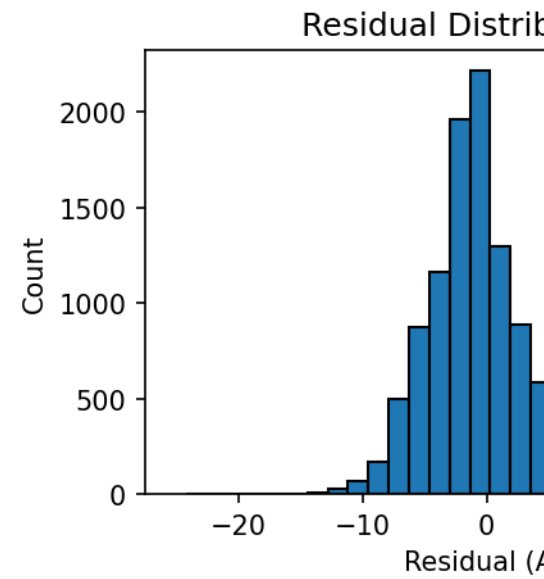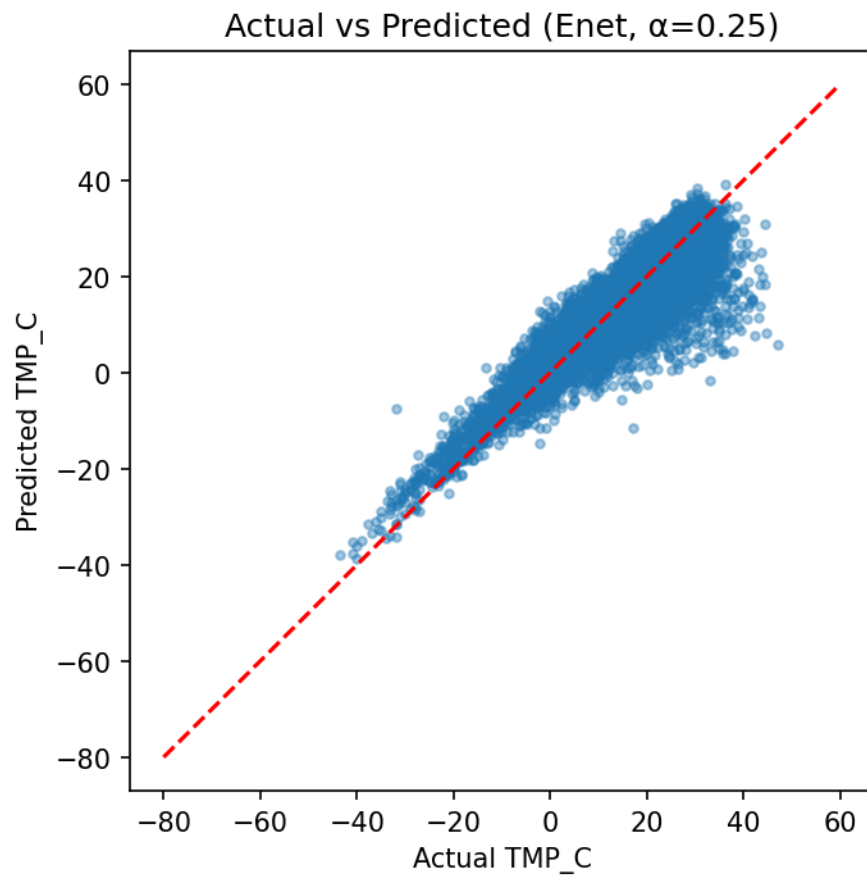## 2. Metrics Summary

Below is the table of performance metrics:

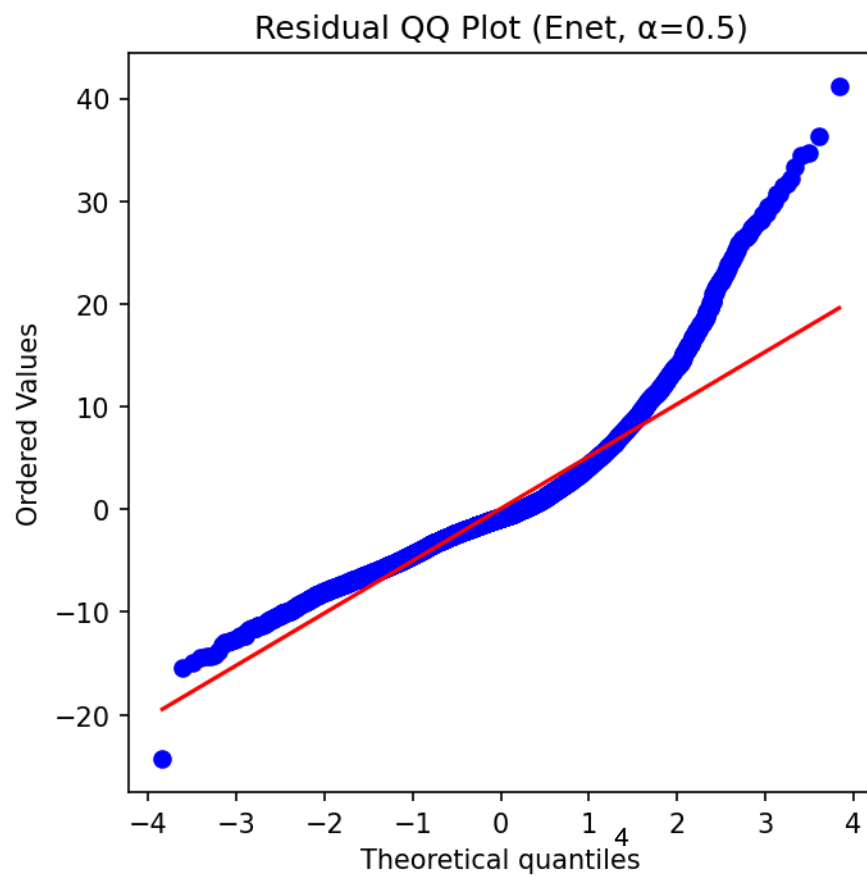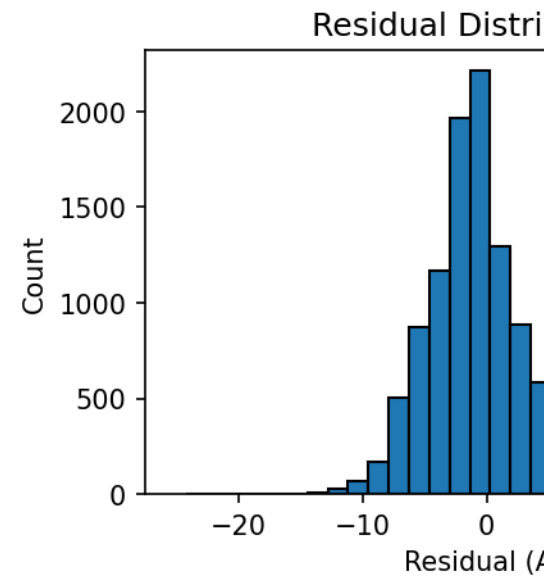| model	RMSE	MAE	R2	intercept
Baseline Linear Regression	5.3225	3.7743	0.8206	48.6964
Enet (alpha=0.25)	5.3225	3.7744	0.8206	13.1766
Enet (alpha=0.5)	5.3225	3.7745	0.8206	13.1766
Enet (alpha=0.75)	5.3225	3.7743	0.8206	13.1766
Lasso (alpha=1.0)	5.3225	3.7744	0.8206	13.1766
Ridge (alpha=0.0)	5.3225	3.7748	0.8206	13.1766

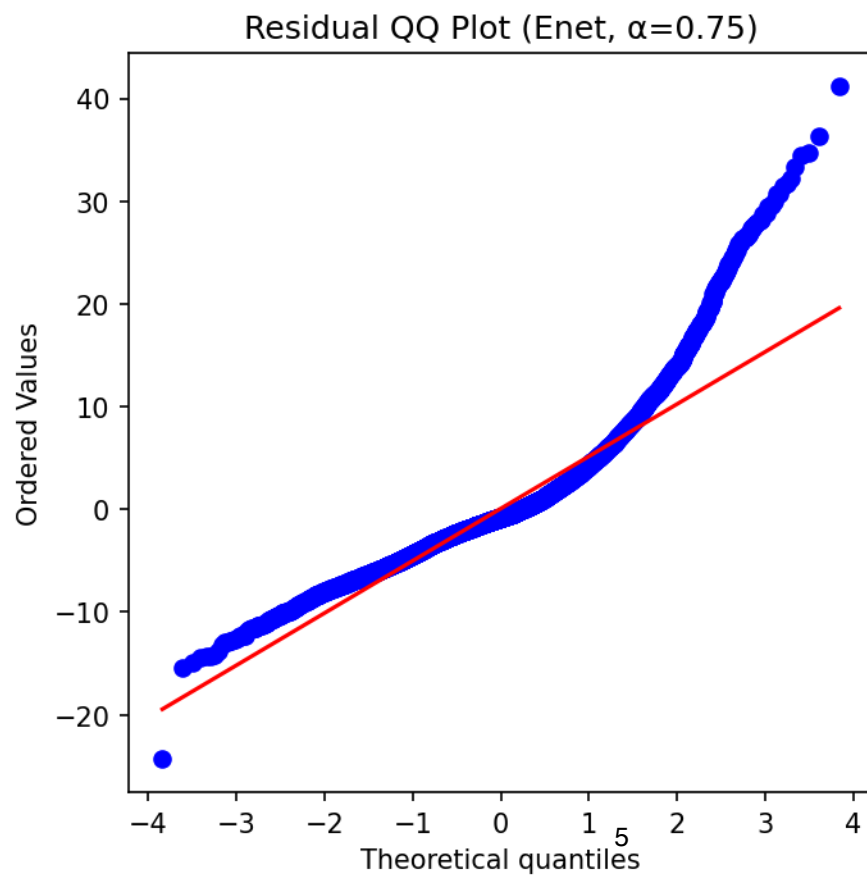# 3. Model Diagnostics (Linear / Elastic Net)

Baseline Linear Regression

Actual vs Predicted Temperature

Residual

Residual QQ Plot

Enet (alpha=0.25)

Actual vs Predicted (Enet, α=0.25)

Residual Distrib

Residual QQ Plot (Enet, α=0.25)

Enet (alpha=0.5)

Actual vs Predicted (Enet, α=0.5)

Residual Distri

Residual QQ Plot (Enet, α=0.5)

Enet (alpha=0.75)

Actual vs Predicted (Enet, α=0.75)

Residual Distrib

Residual QQ Plot (Enet, α=0.75)

Lasso (alpha=1.0)

Actual vs Predicted (Lasso, α=1.0)

Residual Distrib

Residual QQ Plot (Lasso, α=1.0)

Ridge (alpha=0.0)

Actual vs Predicted (Ridge, α=0.0)

Residual Distrib
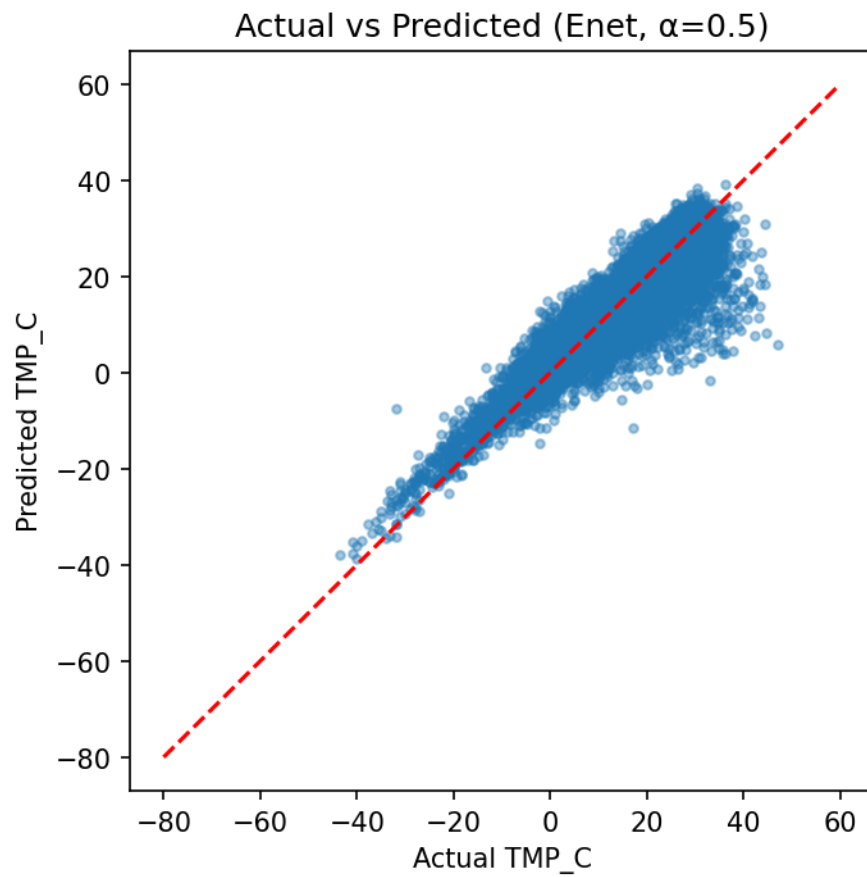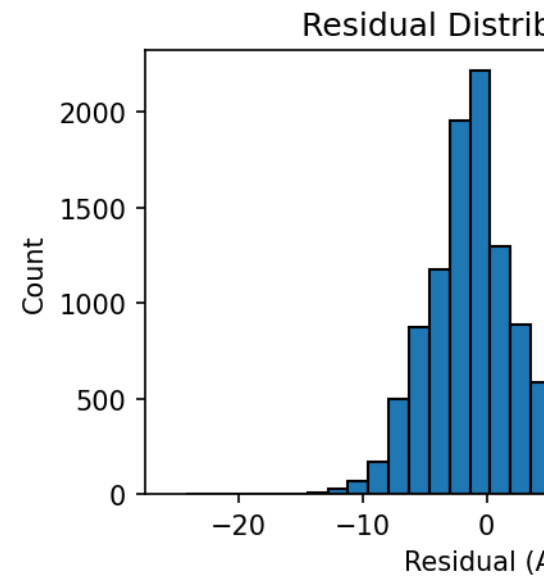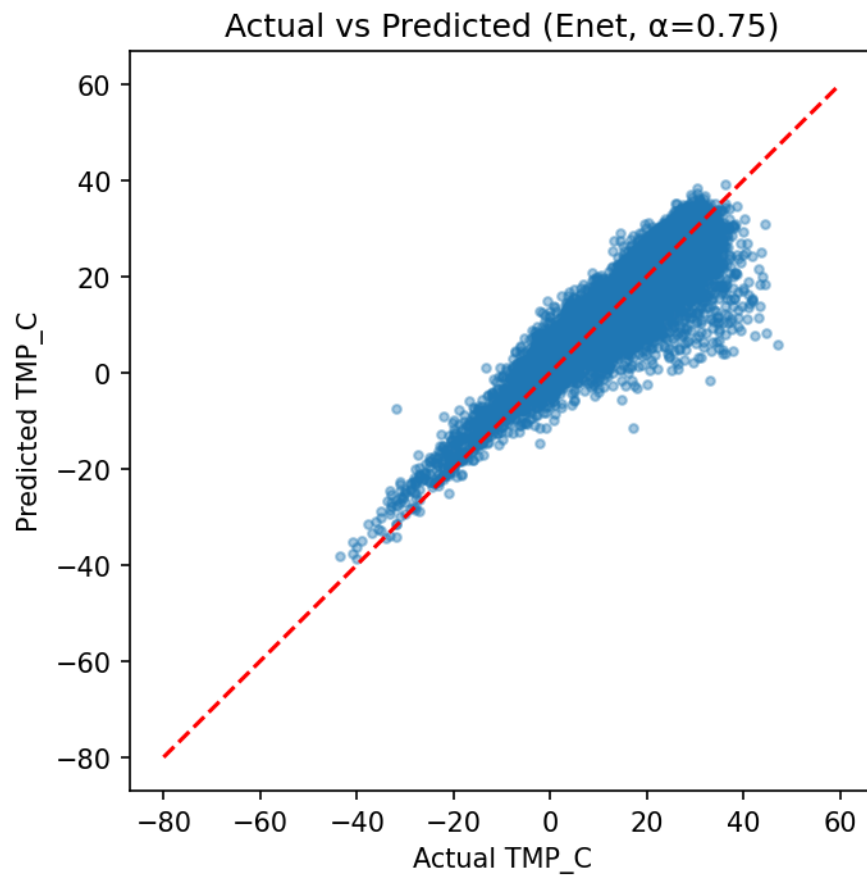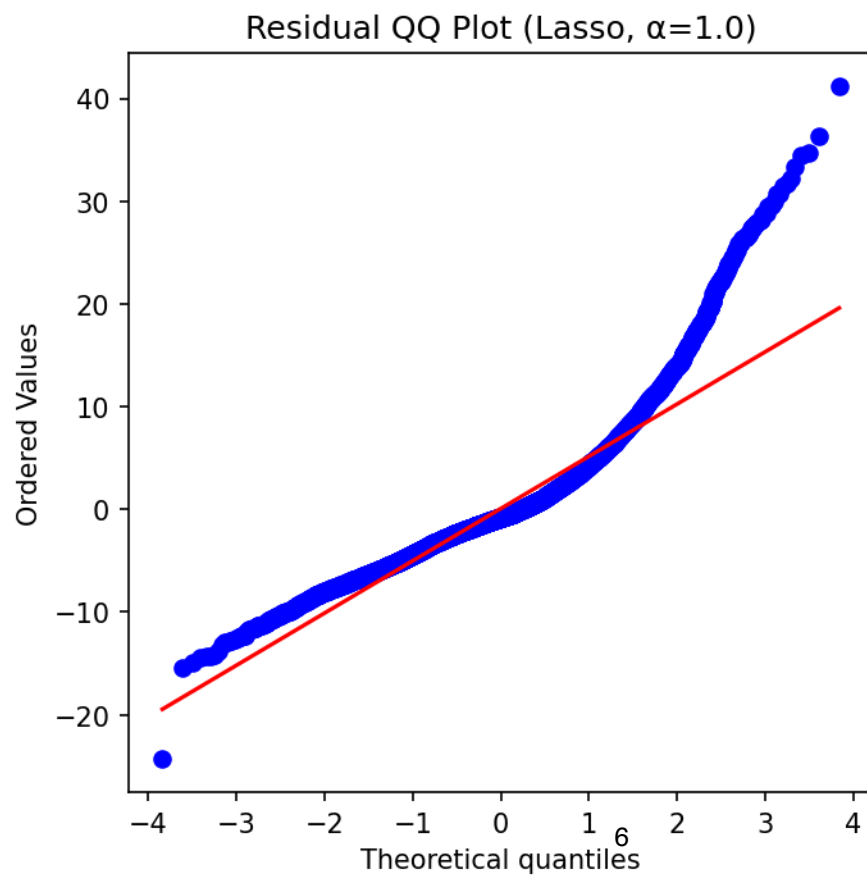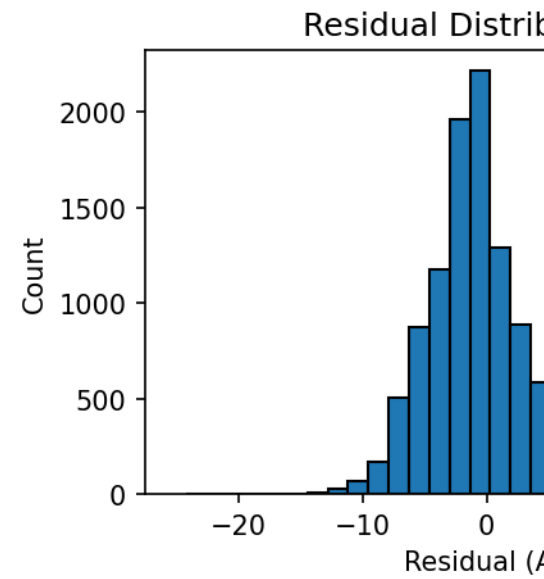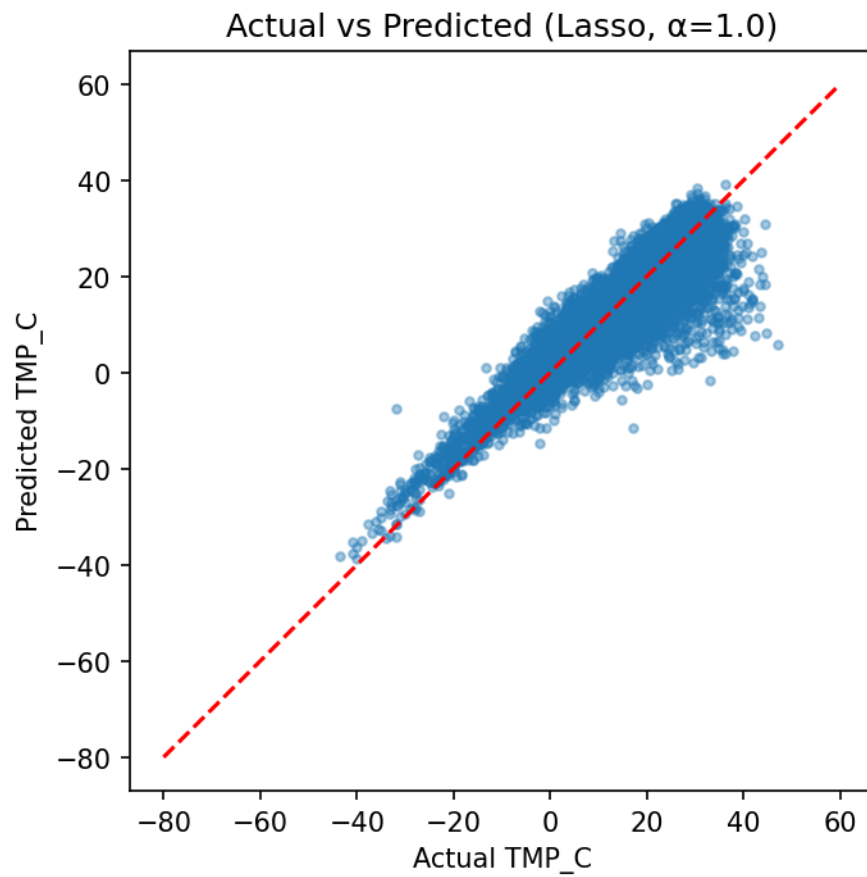
Residual QQ Plot (Ridge, α=0.0)
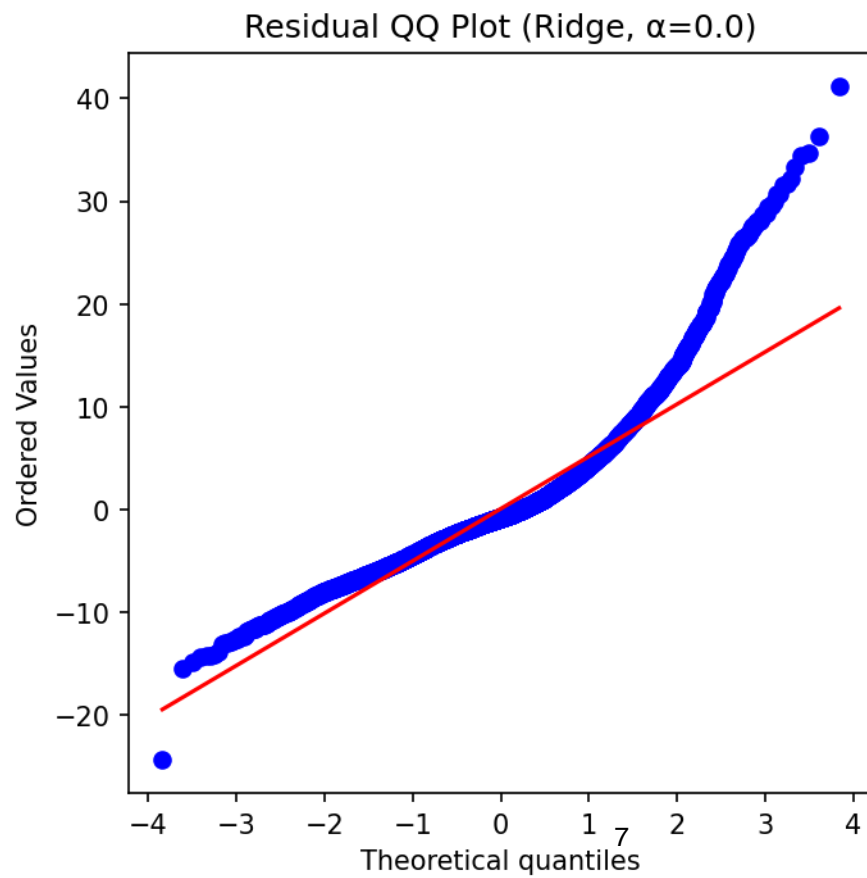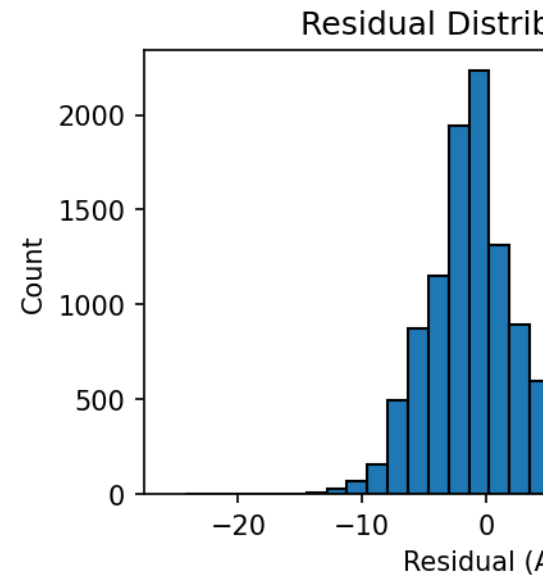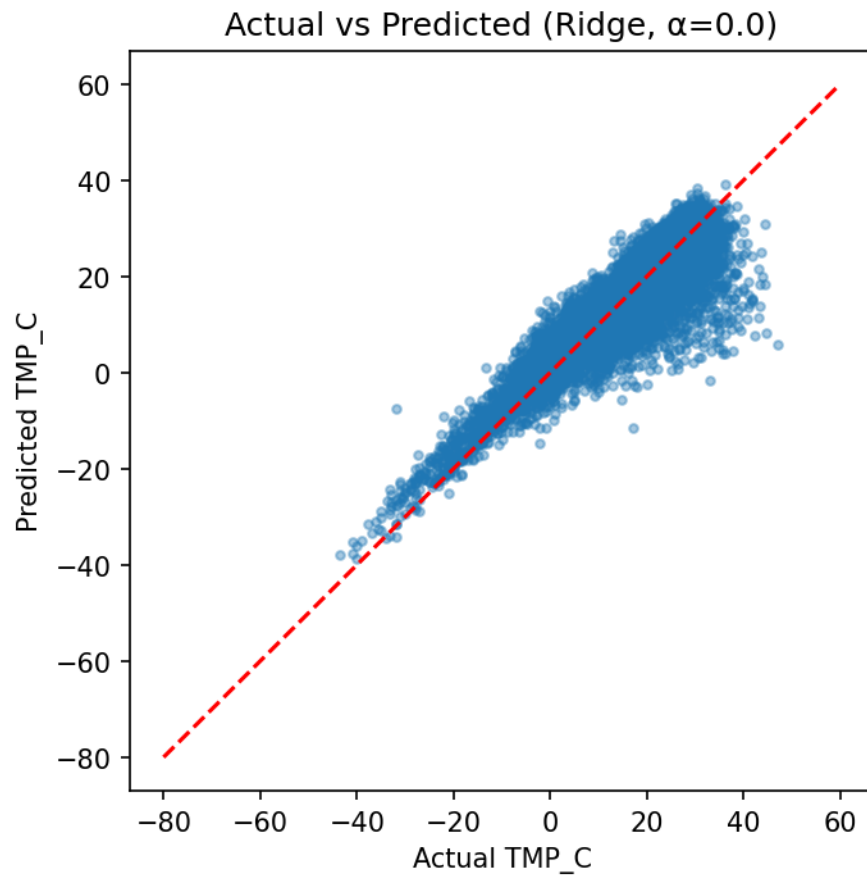
4. Key Takeaways

- RMSE and MAE quantify average prediction error (lower = better).
- R^2 shows how much variance in `TMP_C` is explained (closer to 1 = better).
- Comparing runs (baseline vs tuned / different alphas / etc.) shows how optimisation changes accuracy.
- Plots (feature importance, residuals, actual vs predicted, learning curve) help explain *why* each model behaves the way it does.

Report auto-generated for `Elastic Net Family (Weather TMP_C).`