

Figure S1: MAPE for Vanilla LSTM given weekly (168) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons (32, 64, 128).

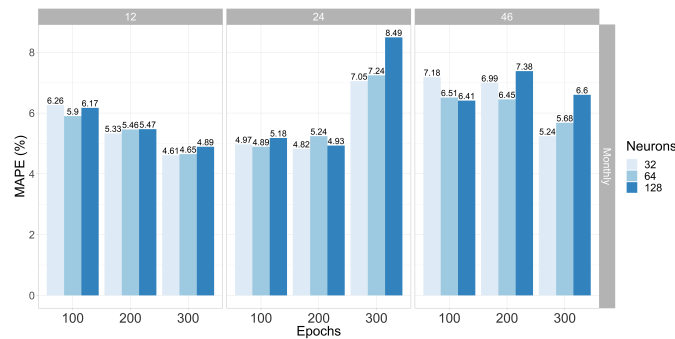


Figure S2: MAPE for Vanilla LSTM given monthly (720) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons (32, 64, 128).

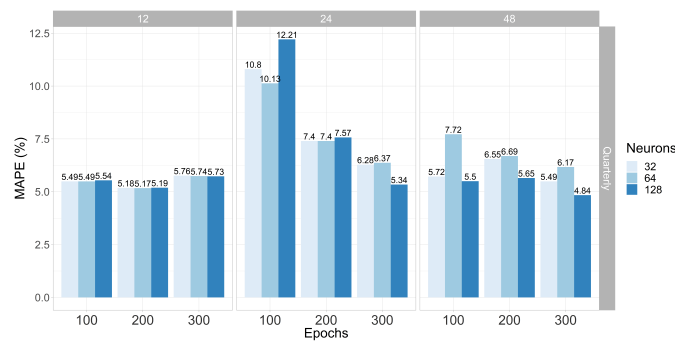


Figure S3: MAPE for Vanilla LSTM given quarterly (2,160) time steps, batch size (12, 24, 48), epochs (100, 200, 300), and number of neurons (32, 64, 128).

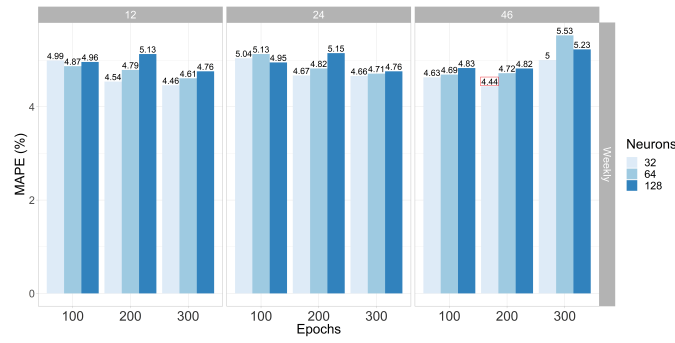


Figure S4: MAPE for Bidirectional LSTM given weekly (168) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons (32, 64, 128).

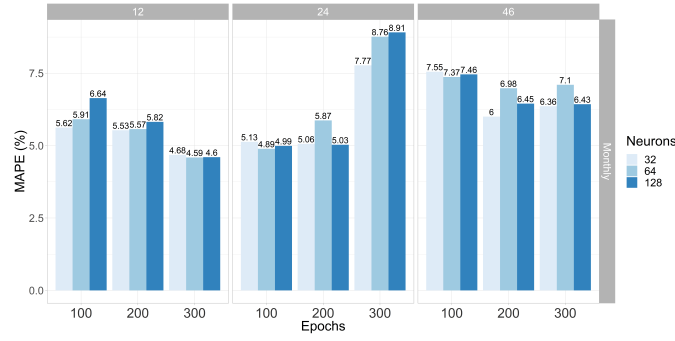


Figure S5: MAPE for Bidirectional LSTM given monthly (720) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons (32, 64, 128).

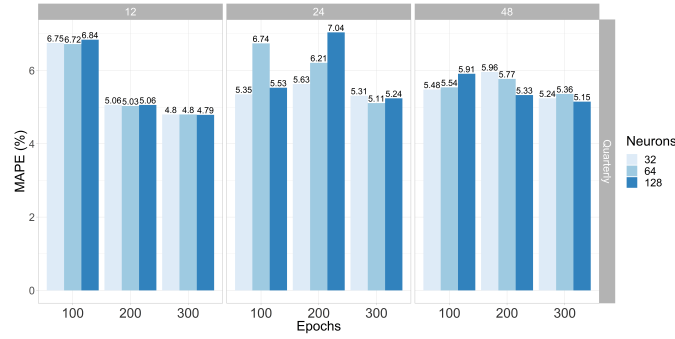


Figure S6: MAPE for Bidirectional LSTM given quarterly (2,160) time steps, batch size (12, 24, 48), epochs (100, 200, 300), and number of neurons (32, 64, 128).

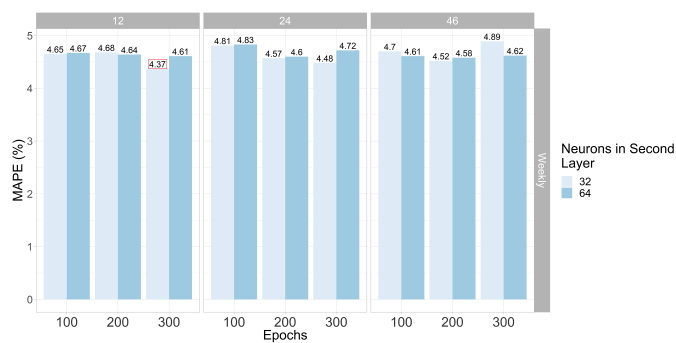


Figure S7: MAPE for Stacked LSTM with 32 neurons in the first hidden layer, given weekly (168) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons in the second hidden layer (32, 64).

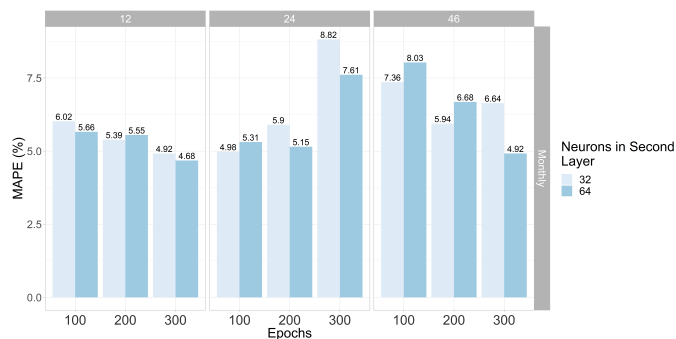


Figure S8: MAPE for Stacked LSTM with 32 neurons in the first hidden layer, given monthly (720) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons in the second hidden layer (32, 64).

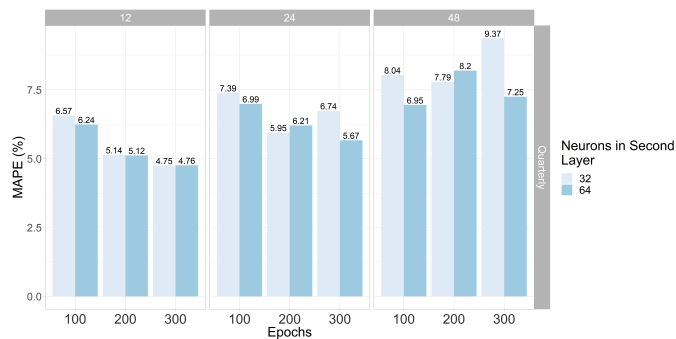


Figure S9: MAPE for Stacked LSTM with 32 neurons in the first hidden layer, given quarterly (2,160) time steps, batch size (12, 24, 48), epochs (100, 200, 300), and number of neurons in the second hidden layer (32, 64).

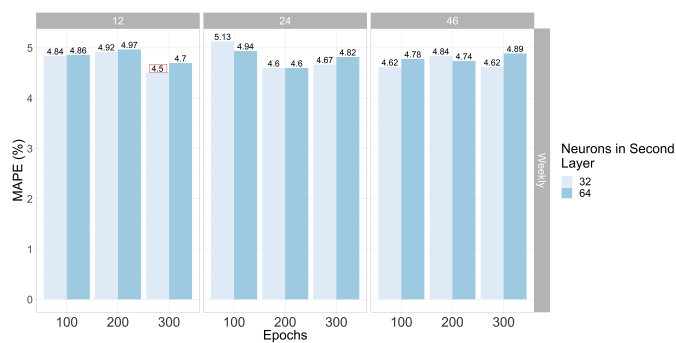


Figure S10: MAPE for Stacked LSTM with 64 neurons in the first hidden layer, given weekly (168) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons in the second hidden layer (32, 64).

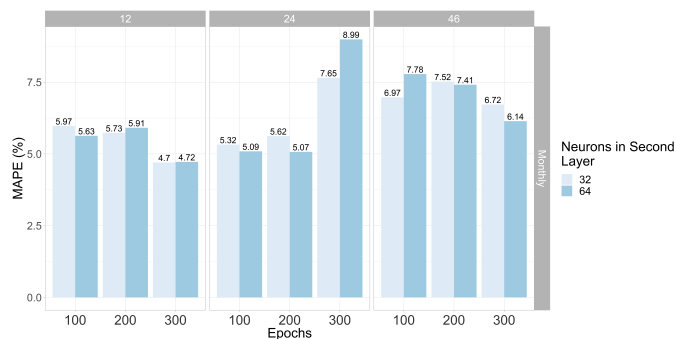


Figure S11: MAPE for Stacked LSTM with 64 neurons in the first hidden layer, given monthly (720) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons in the second hidden layer (32, 64).

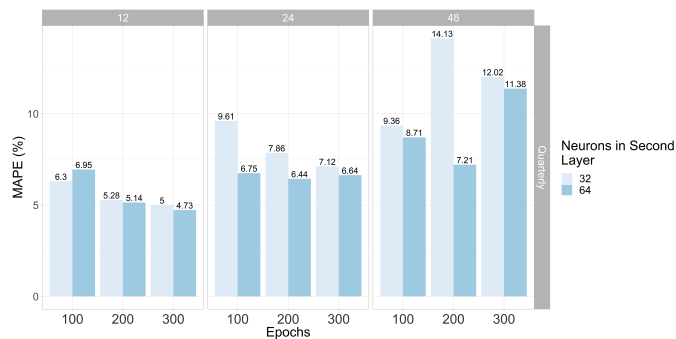


Figure S12: MAPE for Stacked LSTM with 64 neurons in the first hidden layer, given quarterly (2,160) time steps, batch size (12, 24, 48), epochs (100, 200, 300), and number of neurons in the second hidden layer (32, 64).

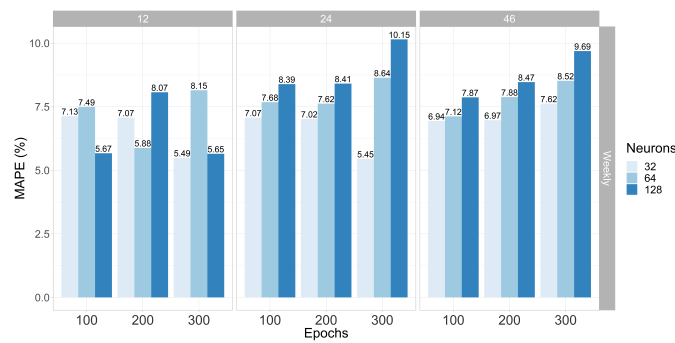


Figure S13: MAPE for Convolutional LSTM given weekly (168) time steps, batch size (12, 24, 46), epochs (100, 200, 300), and number of neurons (32, 64, 128)

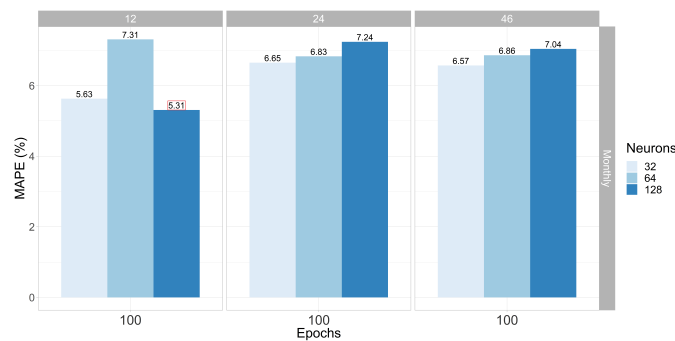


Figure S14: MAPE for Convolutional LSTM given monthly (720) time steps, batch size (12, 24, 46), epochs (100), and number of neurons (32, 64, 128).

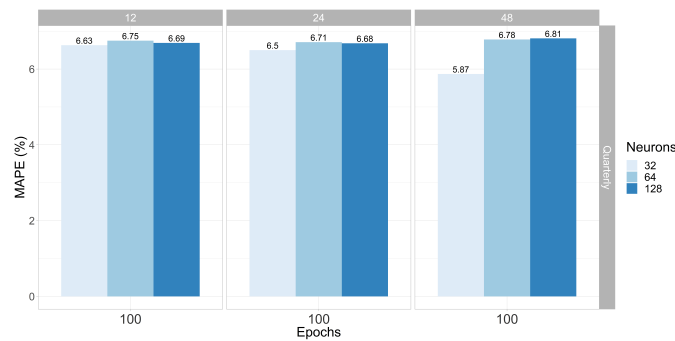


Figure S15: MAPE for Convolutional LSTM given quarterly (2,160) time steps, batch size (12, 24, 48), epochs (100), and number of neurons (32, 64).

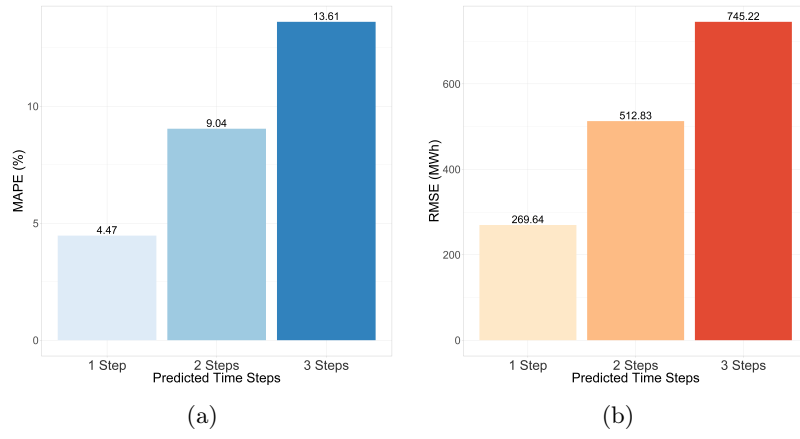


Figure S16: (a) Recorded MAPE (%) and (b) RMSE (MWh) for each step-ahead predicted, given a configuration of 168 input time steps, 200 iterations, batch size of 46, and 32 neurons in the hidden layer.

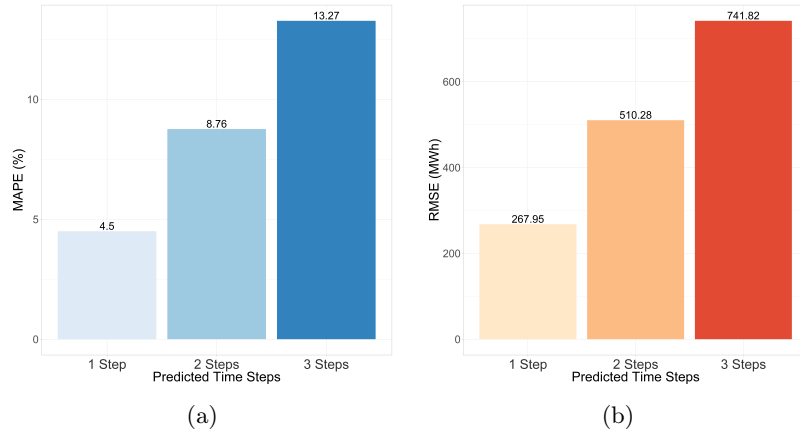


Figure S17: (a) Recorded MAPE (%) and (b) RMSE (MWh) for each step-ahead predicted, given a configuration of 168 input time steps implemented with 200 epochs, batch size of 46, and 32 neurons.

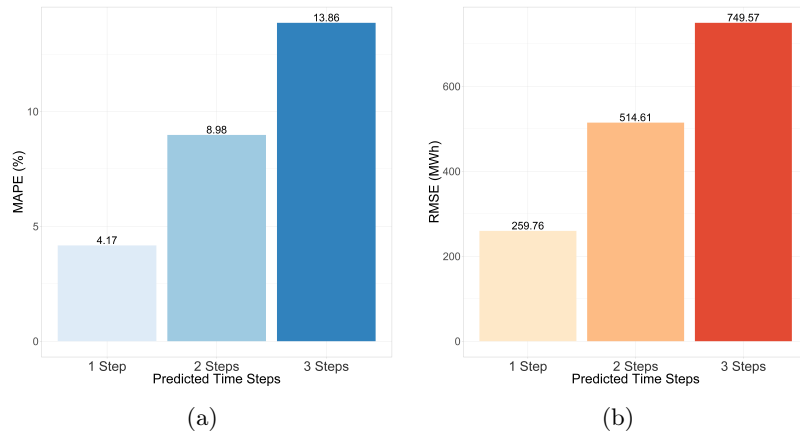


Figure S18: (a) Recorded MAPE (%) and (b) RMSE (MWh) for each step-ahead predicted, given a hyperparameter configuration of 168 input steps, 32 neurons in both layers, 300 epochs, and batch size 12.

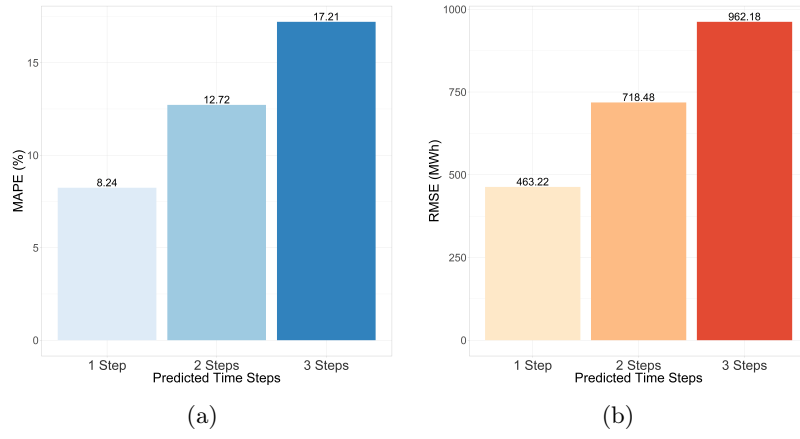


Figure S19: (a) Recorded MAPE (%) and (b) RMSE (MWh) for each step-ahead predicted, given a hyperparameter configuration of 720 input time steps, neurons, 100 epochs, and batch size 12.

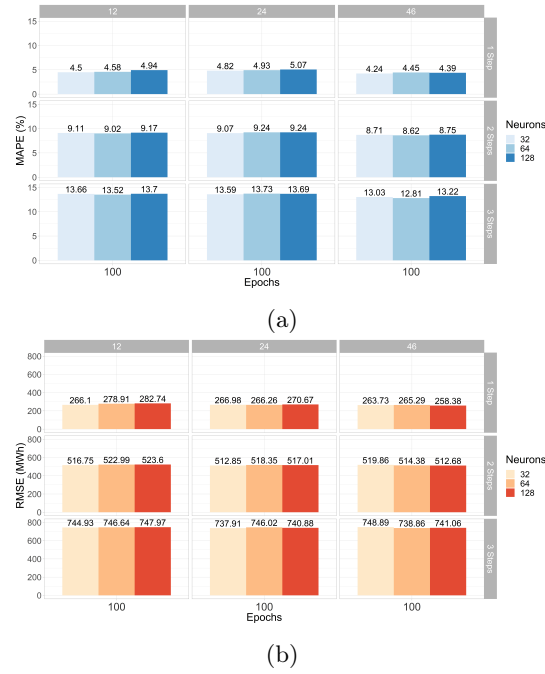


Figure S20: (a) Recorded MAPE (%) and (b) RMSE (MWh), given by 168 input time steps and 100 epochs, classified by batch size (12, 24, 46), neurons (32, 64, 128), for each step-ahead predicted (steps 1, 2, 3).

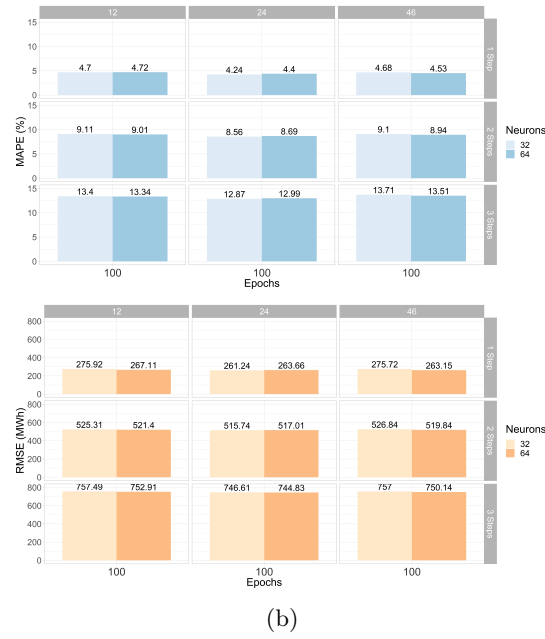


Figure S21: (a) Recorded MAPE (%) given by 720 input time steps and 100 epochs, classified by batch size (12, 24, 46), neurons (32, 64) and output time step (1, 2, 3). (b) RMSE (MWh) for each step-ahead predicted.

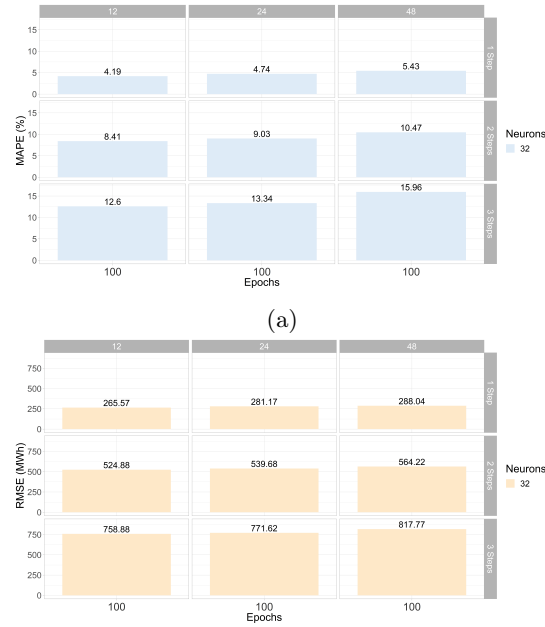


Figure S22: (a) Recorded MAPE (%) given by 2,160 input time steps and 100 epochs, classified by batch size (12, 24, 46), neurons (32) and output time step (1, 2, 3). (b) RMSE (MWh) for each step-ahead predicted.

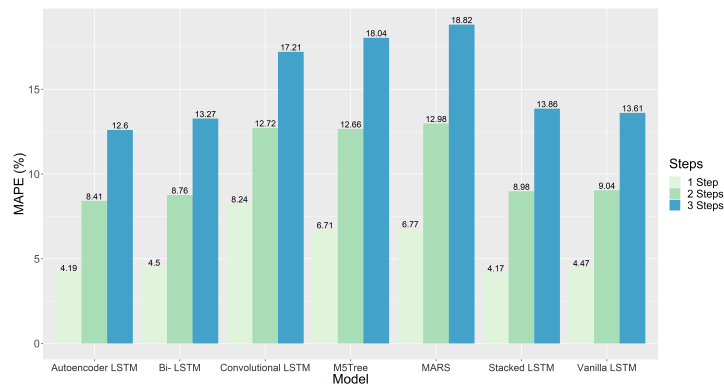


Figure S23: Reported MAPE (%), by model and time step predicted.

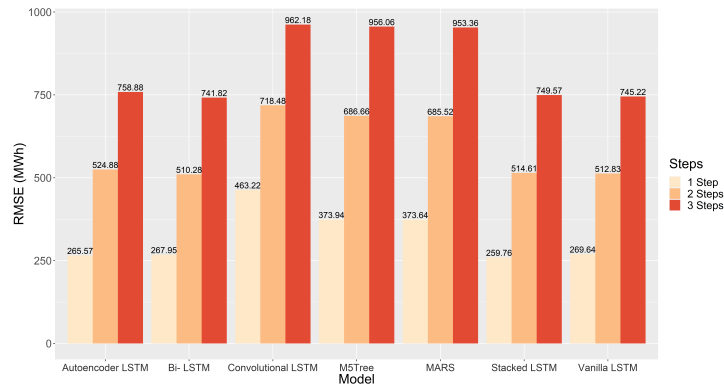


Figure S24: Reported RMSE (MWh), by model and time step predicted.

Model	Input Time Steps	Forecasted Steps	MAPE Range (%)	Mean MAPE (%)	RMSE Range (MWh)	Mean RMSE (MWh)	Implementation Time hh:mm:ss
Autoencoder LSTM	Weekly (168)	1	4.24 - 5.07	4.66	258.38 - 282.74	268.78	39:11:22
		2	8.62 - 9.24	8.99	512.68 - 523.60	517.61	
		3	12.81 - 13.73	13.44	737.91 - 748.89	743.68	
	Monthly (720)	1	4.24 - 4.72	4.55	261.24 - 275.92	267.80	60:11:42
		2	8.56 - 9.11	8.90	515.74 - 526.84	521.02	
		3	12.87 - 13.71	13.30	744.83 - 757.49	751.50	
	Quarterly (2,160)	1	4.19 - 5.43	4.79	265.57 - 288.04	278.26	121:40:19
		2	8.41 - 10.47	9.30	524.88 - 564.22	542.93	
		3	12.60 - 15.96	13.97	758.88 - 817.77	782.76	

Table S1: Performance summary for Autoencoder LSTM for three-steps ahead forecasting.