**Model Development Phase Template**

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| Date | 20 July 2025 |
| Team ID | SWTID1750360304 |
| Project Title | Power consumption analysis for households |
| Maximum Marks | 5 Marks |

**Feature Selection Report Template**

In the forthcoming update, each feature will be accompanied by a brief description. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

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| **Feature** | **Description** | **Selected (Yes/No)** | **Reasoning** |
| **Global Active Power** | Minute-averaged active power consumption (kW) | Yes | Core metric for total household energy usage and cost calculations. |
| **Sub-metering 1** | Kitchen appliance energy (Wh): dishwasher, oven, microwave | Yes | Identifies high-consumption cooking behaviors and inefficient appliances. |
| **Sub-metering 2** | Laundry room energy (Wh): washing machine, dryer, refrigerator | Yes | Reveals patterns in laundry usage and potential for off-peak scheduling. |
| **Sub-metering 3** | HVAC system energy (Wh): water heater, air-conditioner | Yes | Critical for weather-dependent usage analysis and peak demand prediction. |
| **Voltage** | Minute-averaged voltage (V) | No | Less directly tied to cost/behavioral insights; primarily useful for grid stability studies. |
| **Global Reactive Power** | Minute-averaged reactive power (kW) | No | Relevant for electrical engineering but not actionable for consumer cost savings. |
| **Datetime** | Timestamp of recordings (dd/mm/yyyy hh:mm:ss) | Yes | Enables time-series analysis (hourly/daily/seasonal trends) and peak/off-peak categorization. |