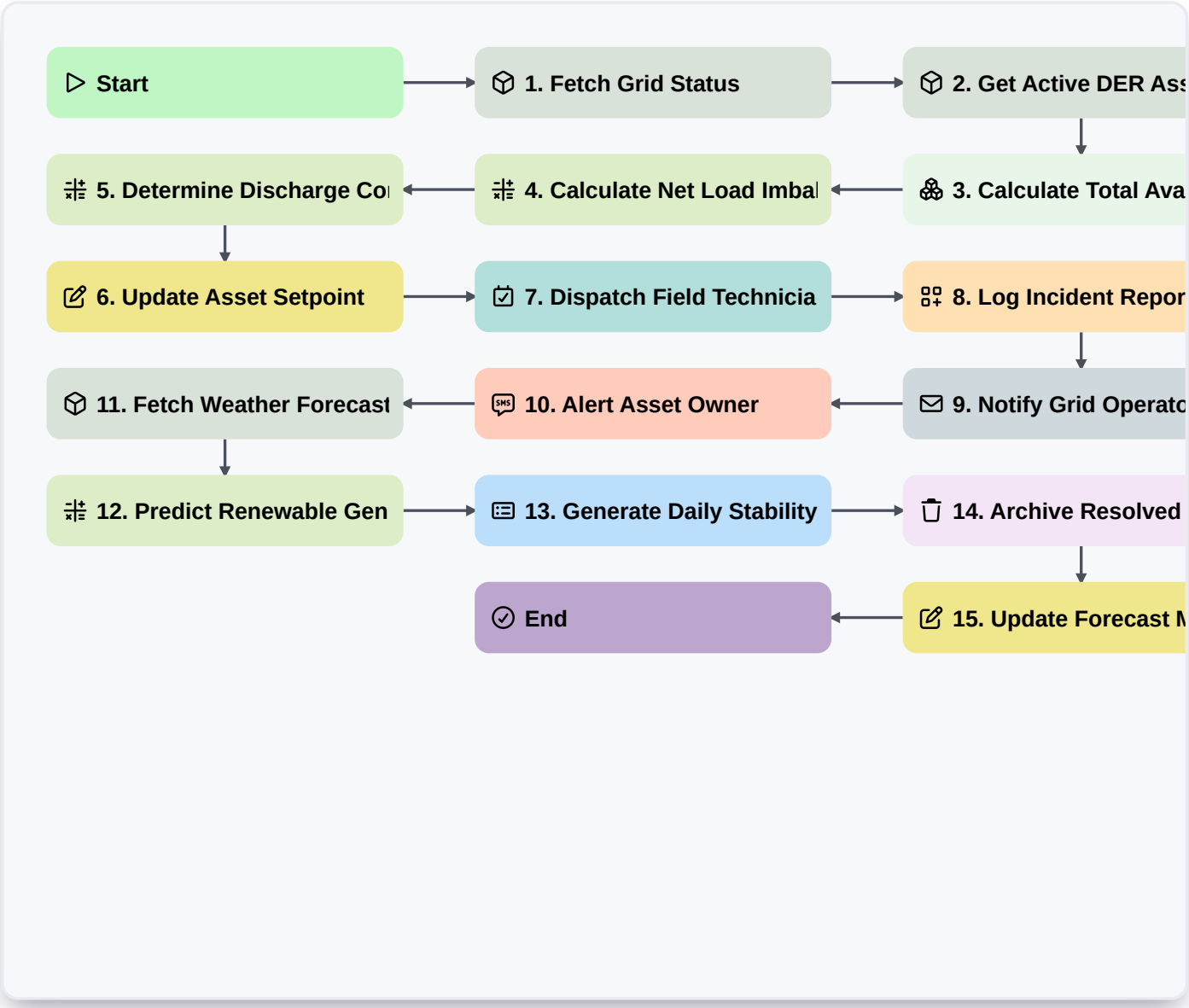
ChecklistGuro

Distributed Energy Resource Management



Start
Start of the Workflow/Process.

1. Fetch Grid Status
Retrieve current frequency and voltage levels from the Grid Sensor data model.

2. Get Active DER Assets
Retrieve all active Distributed Energy Resource (DER) entries currently connected to the local substation.

3. Calculate Total Available Capacity
Sum the 'max_discharge_power' property of all active Battery Energy Storage Systems (BESS) entries.

4. Calculate Net Load Imbalance
Subtract total available DER capacity from the current Grid Load requirement to determine deficit/surplus.

5. Determine Discharge Command
Calculate the required power output (kW) needed from assets to stabilize the grid based on the imbalance.

6. Update Asset Setpoint
Update the 'target_output_kw' property in the specific DER entry to match the calculated command.

7. Dispatch Field Technician
Create a task for the Maintenance Team if a DER asset reports a critical hardware error.

8. Log Incident Report
Create a new entry in the 'Grid Incidents' data model when a significant voltage deviation is detected.

9. Notify Grid Operator
Send an email to the Grid Operations Center regarding the automated intervention executed.

10. Alert Asset Owner
Send an SMS to the private property owner if their battery is being remotely discharged for grid stability.

11. Fetch Weather Forecast
Retrieve solar irradiance and wind speed predictions from the Weather Forecast data model.

12. Predict Renewable Generation
Use forecasted weather data to calculate the expected solar/wind production for the next 4-hour window.

13. Generate Daily Stability Report
Generate a performance report summarizing total energy dispatched and grid stability metrics.

14. Archive Resolved Incident
Remove the incident entry from the 'Active Alerts' data model once the grid returns to nominal range.

15. Update Forecast Model
Update the 'Expected Generation' field in the Energy Forecast model based on recent real-time actuals.

End
End of the Workflow/Process.