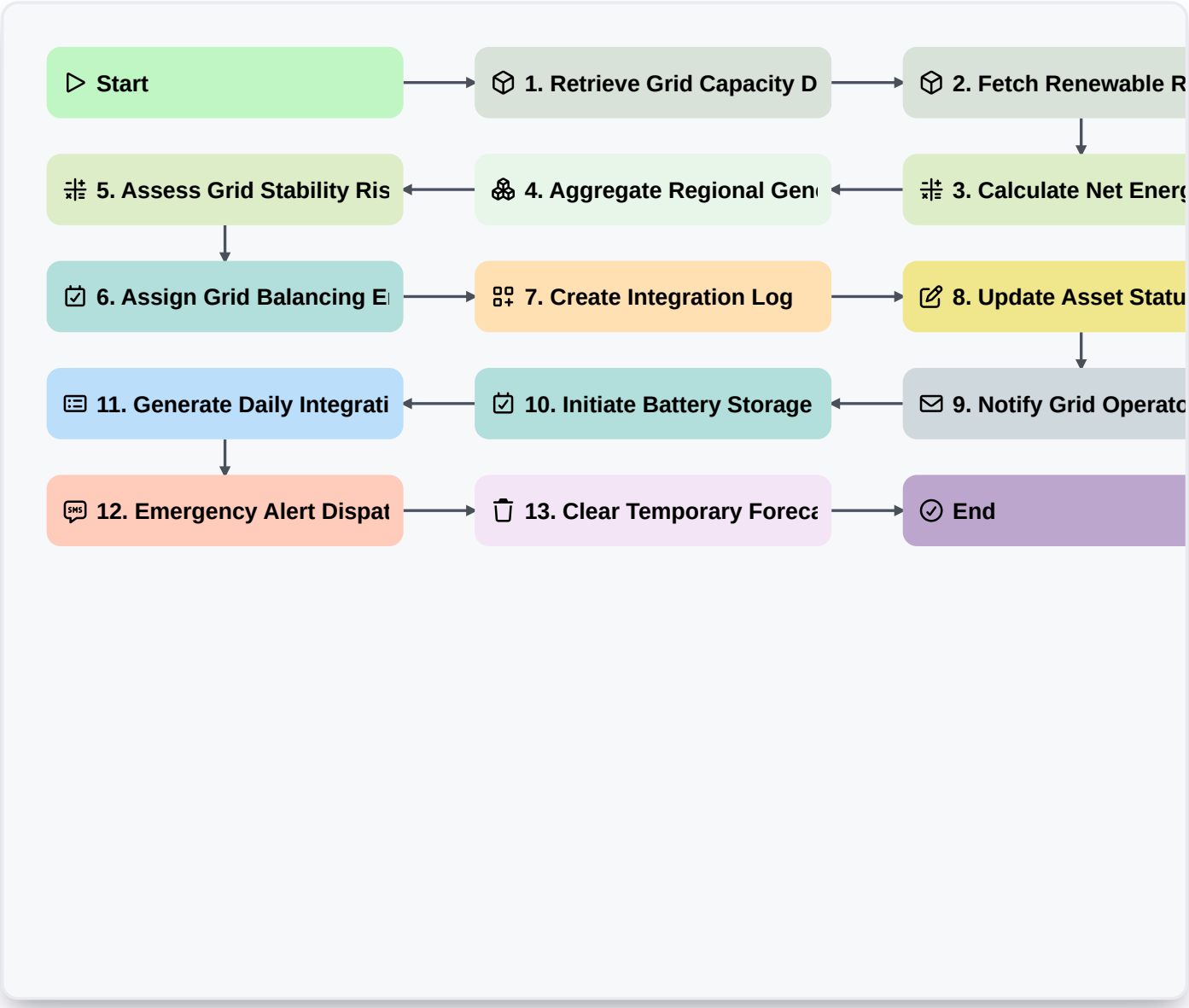
ChecklistGuro

Renewable Energy Grid Integration Process



Start
Start of the Workflow/Process.

1. Retrieve Grid Capacity Data
Fetch current maximum load and available capacity from the Grid Infrastructure data model.

2. Fetch Renewable Resource Forecast
Retrieve solar/wind generation forecasts for the upcoming 24-hour period.

3. Calculate Net Energy Delta
Calculate the difference between forecasted renewable generation and predicted grid demand.

4. Aggregate Regional Generation
Sum the total expected power output from all active solar and wind farm entries.

5. Assess Grid Stability Risk
Execute formula to determine risk level based on Delta and current capacity margins.

6. Assign Grid Balancing Engineer
Create a task for the Operations Team to adjust battery storage settings if risk is high.

7. Create Integration Log
Create a new entry in the 'Integration History' data model to log the current session parameters.

8. Update Asset Status
Update the 'Operational Status' field of specific renewable assets to 'Active' or 'Throttled'.

9. Notify Grid Operators
Send an email alert to the Control Center with the calculated load projections.

10. Initiate Battery Storage Dispatch
Create a task for the Storage Management system to discharge or charge BESS (Battery Energy Storage Systems).

11. Generate Daily Integration Report
Generate a summary report of all renewable energy fluctuations and grid responses for the day.

12. Emergency Alert Dispatch
Send an SMS to the On-call Supervisor if the Grid Stability Risk exceeds the critical threshold.

13. Clear Temporary Forecast Cache
Delete expired short-term forecast entries from the temporary data model to optimize performance.

End
End of the Workflow/Process.