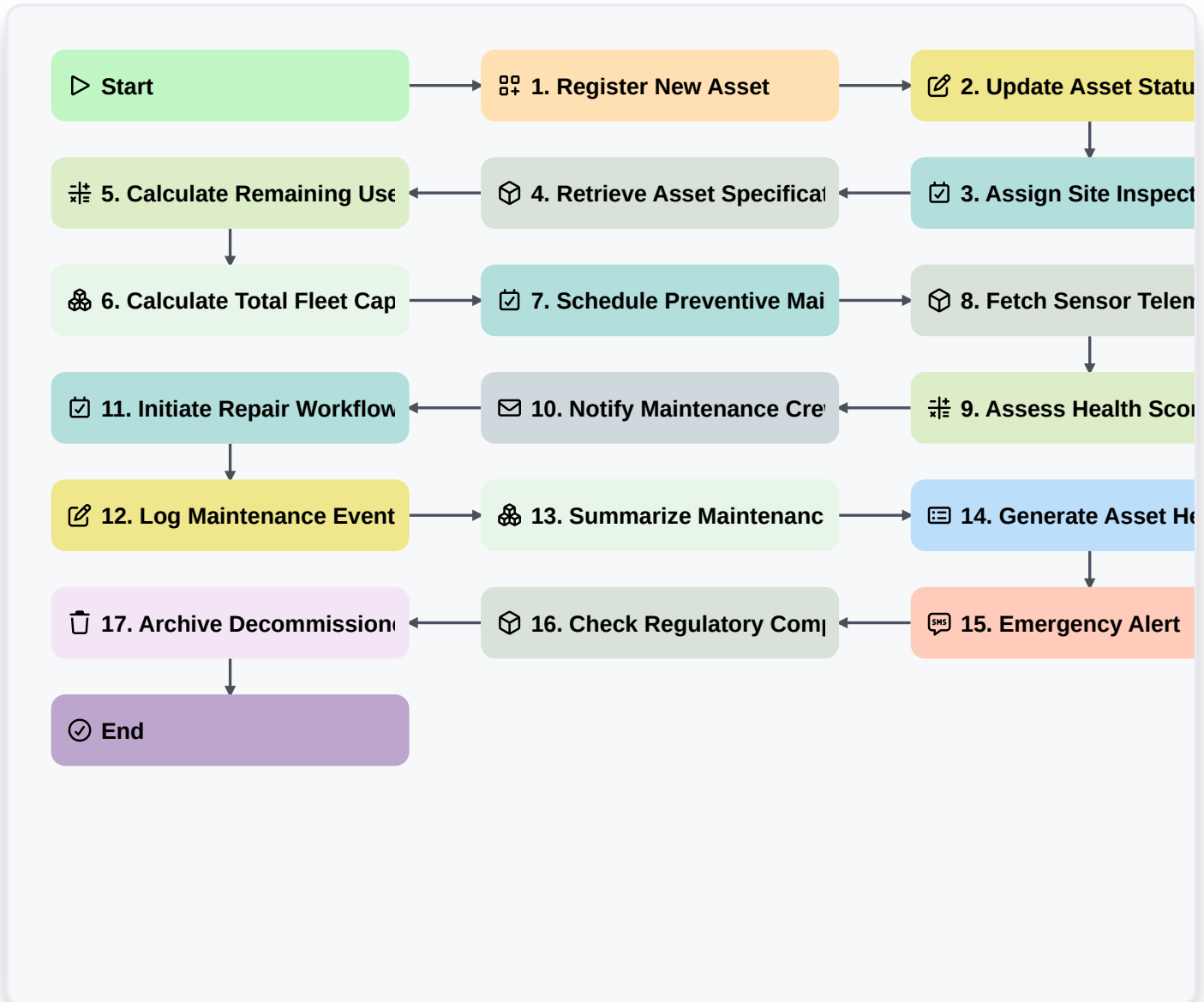


# Energy Asset Lifecycle Management



## Start

Start of the Workflow/Process.

## 1. Register New Asset

Create a new entry in the Asset Data Model to initiate the lifecycle (e.g., Wind Turbine, Solar Array, or Transformer).

## 2. Update Asset Status

Update the operational status of an asset (e.g., Moving from 'Planned' to 'Under Construction' or 'Active').

## 3. Assign Site Inspection

Generate a task for a field engineer to perform a physical inspection of the asset.

## 4. Retrieve Asset Specifications

Fetch technical specifications and metadata from the Asset Data Model for use in downstream calculations.

## 5. Calculate Remaining Useful Life (RUL)

Execute a formula using 'Installation Date' and 'Degradation Rate' to estimate the asset's expiration date.

## 6. Calculate Total Fleet Capacity

Aggregate the 'Power Output' property from all assets in the 'Active' status to determine total grid contribution.



### **7. Schedule Preventive Maintenance**

Create a recurring maintenance task based on the calculated service interval.

### **8. Fetch Sensor Telemetry**

Retrieve the most recent temperature or vibration readings from the IoT sensor data model.

### **9. Assess Health Score**

Apply a formula to sensor data and historical downtime to determine a numerical health index for the asset.

### **10. Notify Maintenance Crew**

Send an email alert to the engineering team when a health score falls below a critical threshold.

### **11. Initiate Repair Workflow**

Create a high-priority task for the repair team when an anomaly is detected.

### **12. Log Maintenance Event**

Update the Asset Data Model to record the date, cost, and components replaced during a repair.

### **13. Summarize Maintenance Costs**

Calculate the total sum of all 'Repair Cost' entries for a specific asset over the last 12 months.

### **14. Generate Asset Health Report**

Generate a comprehensive PDF report summarizing the performance and status of all assets in a specific region.

### **15. Emergency Alert**

Send an SMS to the Operations Manager if an asset enters a 'Critical Failure' state.

### **16. Check Regulatory Compliance**

Retrieve the latest environmental regulation parameters to validate current asset emissions.

### **17. Archive Decommissioned Asset**

Remove the asset from the 'Active Fleet' view (or move to archive) once the decommissioning task is complete.

### **End**

End of the Workflow/Process.