

# DAI – RBC Demand Daily Bias Producer v1.3

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**Design Framework:** DAI + RBC Framework v5.85 (October 2025)

**Governance References:** ChatGPT Interaction Guidelines v1.1 (Live), Home Assistant Development Guidelines – DAI/RBC v1.0 (Live), DAI + RBC High-Level Design v1.0 (Live)

**Change Reference:** Documentation – Detailed Design Creation (No behavioural change).

## 1. Functional Overview

This automation schedules the nightly update of the Demand Daily bias by invoking the RBC Bias Blueprint script instance ``script.rbc_update_bias_demand_daily`` at 23:40 each day. The blueprint computes a robust EWMA bias value based on (Actual – Estimate) for the daily demand window and persists the result to the helper

``input_number.rbc_bias_demand_daily``. The automation itself contains no inline mathematics; it only orchestrates the timing, calls the blueprint script, and records a logbook entry confirming execution.

## 2. Entity Map

Entity ID	Purpose	Direction
script.rbc_update_bias_demand_daily	RBC Bias Producer (Daily Demand) – Robust EWMA blueprint instance	Execute
input_number.rbc_bias_demand_daily	Stored daily demand bias (kWh)	Write

## 3. Trigger Matrix

Trigger ID	Condition	Purpose
t_2340	Time = "23:40:00"	Primary daily execution for bias update

## 4. Logic Flow

1. At 23:40, the automation triggers with id `t\_2340`.
2. Call `script.rbc\_update\_bias\_demand\_daily` (single-threaded execution).
3. Blueprint script computes EWMA bias, clamps to safety bounds, and writes to `input\_number.rbc\_bias\_demand\_daily`.
4. Record a logbook entry including the trigger id and current date to confirm the update.
5. Default branch logs a no-op message if a non-matching trigger fired.

## 5. Guards and Safety

- No inverter writes are performed by this automation.
- Uses `mode: single` to avoid overlap; the blueprint also enforces idempotence for the daily period.
- Visual-Editor-safe YAML structure (service/target/data) per Guidelines v1.0.
- Skips are logged by the blueprint if inputs are unavailable or invalid.

## 6. Scheduling

Runs once per day at 23:40 (local time). The schedule ensures the daily demand data is complete before the bias is updated.

## 7. Acceptance Tests

Test ID	Scenario	Expected Result
T1	Normal daily run at 23:40	Bias helper updates; logbook entry created; runtime < 2 s.
T2	Script unavailable / disabled	Automation logs a failure or no-op; helper unchanged.
T3	Duplicate trigger scenario	Only one bias write recorded for the day (blueprint idempotence).
T4	Visual-Editor validation	YAML loads with no schema errors; triggers show

`t\_2340`.

## 8. Version Lineage & Governance

v1.3 – Current live version. Uses the shared RBC Bias Producer blueprint to update the Daily Demand bias. This document introduces a Detailed Design record with no functional change to the automation.

Governance: Protected Architecture Mode v5.9; Two-Phase Code-Change Gate v2.2. This document aligns with the DAI + RBC High-Level Design and the DAI/RBC Technical Coding Framework.

## 9. YAML Reference (Read-Only Excerpt)

alias: RBC – Demand Daily Bias Producer v1.3

triggers:

- id: t\_2340
- trigger: time
- at: "23:40:00"

actions:

- choose:
  - conditions:
    - condition: trigger
    - id: t\_2340
  - sequence:
    - service: script.turn\_on
    - target:
      - entity\_id: script.rbc\_update\_bias\_demand\_daily
    - service: logbook.log
  - data:
    - name: RBC – Demand Daily Bias Producer
    - message: "Triggered Demand Daily bias update for {{ now().date() }}."

## 10. Compliance Checklist

- ✓ Entity name ↔ ID alignment verified (script.rbc\_update\_bias\_demand\_daily, input\_number.rbc\_bias\_demand\_daily).
- ✓ Visual-Editor-safe syntax confirmed (service / target / data).
- ✓ Single trigger with id present (t\_2340) and default branch logs no-op.
- ✓ No inverter writes; Master-only rule unaffected.
- ✓ Design references included; no behavioural change introduced.