csa connectivity standards alliance

Matter & Home Energy Management

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Global Leadership
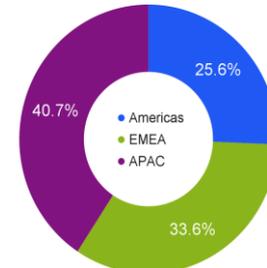

Global Collaboration

Since 2002, **Connectivity Standards Alliance** has been dedicated to **simplifying** the complex, creating an **open path** to IoT adoption and innovation, and promoting **universal open standards**, enabling all objects to securely connect & interact.

What we do:
✓ Standards Development
✓ Testing and Certification
✓ Market Reach and Influence

850+ Members Companies*

9,800+ individuals participating in **49** countries

- Americas 25.6%
- EMEA 33.6%
- APAC 40.7%

Key take away

Domestic DSR needs mass-market consumer adoption

Matter will connect every device in your smart home

Add Matter Energy Management to every Energy Smart Appliance

Adding energy management is a small addition with huge consumer benefits

What is Matter?

Matter is the open, universal standard for the smart home, developed by industry-leading companies around the globe

Matter defines a **common data model for all devices** ensuring **interoperability** – overcoming the biggest challenge energy companies face

Simple
Easy to purchase, takes out the guesswork.

Makes it easy to setup and control your smart devices with multiple ecosystems.

Interoperable
Devices and ecosystems with the Matter mark are compatible by design.

Customers can choose which devices and ecosystems to connect.

Reliable
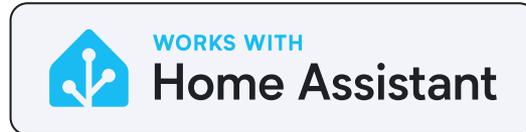Consistent and responsive local connectivity that still works if your Internet connection is down.

Secure
Authenticated before joining the network, using encryption to transfer data.
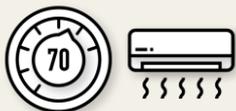
Out of the Box interoperability with any smart home ecosystem

Works with Apple Home

works with alexa

works with Google Home

Works with Samsung SmartThings

WORKS WITH Home Assistant

Devices Supported by Matter

HVAC Control

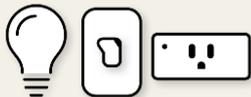Window Coverings and Shades

Safety and Security

Energy Management

Lighting and Electrical

Door Locks

Media Devices

EV Chargers
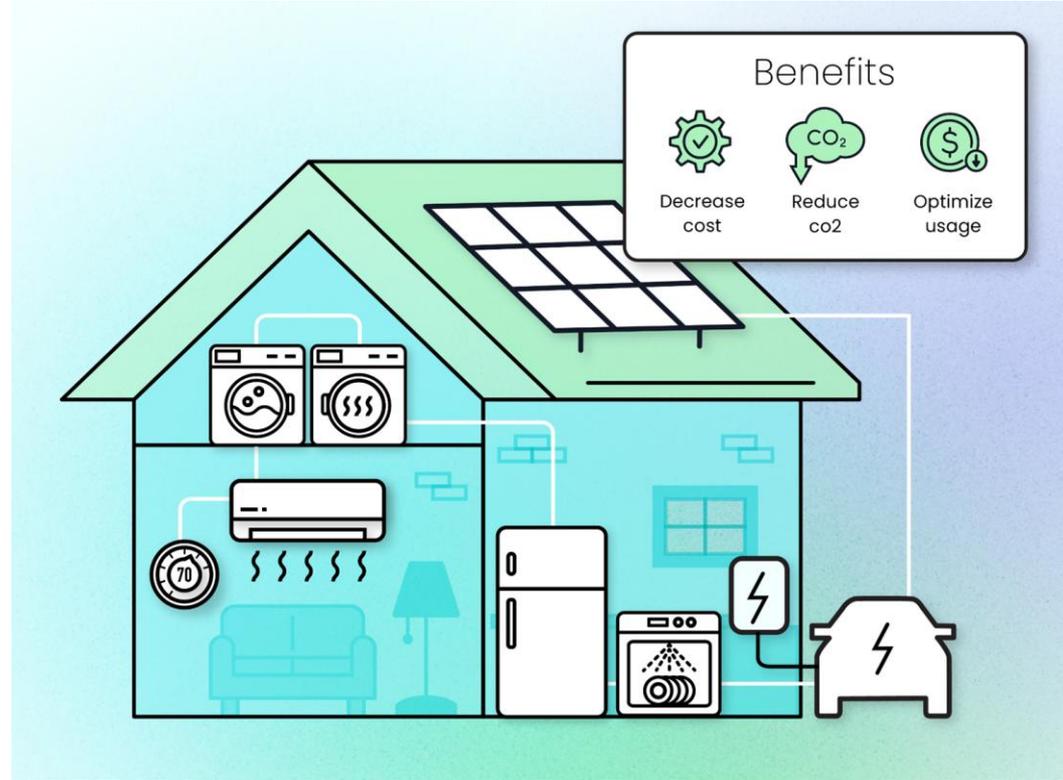
Controllers and Bridges

Appliances

Air Quality

Water Management

Home Energy Management System (HEMS)

The Energy Management feature enables Matter devices that support the functionality to:

- **Report real-time power**, voltage, and current to help understand current conditions

- **Forecast** power, detailing expected **energy usage** over the next few hours

- Shift start times, pause operations, adjust instantaneous power, or **respond to grid events by increasing or decreasing power usage, as needed**

Matter Energy Management (1.3 + 1.4)

Electrical Power Measurement (EPM):

- **<u>Any</u>** device can now report the instantaneous AC or DC Active Power, Voltage, Current, Frequency (and lots more!)
- Measurement accuracy
- Ranges (min/max values in a measurement period)

Electrical Energy Measurement (EEM):

- **<u>Any</u>** device can now report Cumulative or Periodic Energy Imported and/or Exported
- Measurement accuracy
- Also allows the client to know when cumulative counter was reset

EVSE support (1.3) for EV Charging

- Basic status reporting (Enabled/Disabled, Error)
- Control (Enable/Disable) with automatic shut-off (time)
- Current Limit setting (charging rate)
- Randomisation Delay
- Charging Preferences
- Charging session history
- Events

- *Relies on EPM and EEM clusters to report Power and Energy consumption*

- *Can use the DEM to allow forecasting of electrical power profile and modification of charging profiles.*

Device Energy Management (DEM) (1.4)

- Any device can share their Power (or State) Forecast
- User opt-out preferences (Grid or Local control)

Allows a Home Energy Management System (HEMS):
- Start Time Adjustment
- Power Adjustment
- Pause / Resume
- Forecast Adjustment

Aligns to SAREF ontology (used by EU CoC)

Matter Energy Management (1.4)

New Device Types:

- Device Energy Management
- Solar Power
- Battery Storage
- Water Heater
- Heat Pump

Matter Energy Management (1.5)

Commodity Price
- Any device can get current cost of Energy & Forecast price over next 12-24 hours

Electrical Grid Conditions
- Any device can get current Grid Carbon / Local Carbon (e.g. home solar) forecast over next 12-24 hours

Commodity Tarriff (based on Zigbee)
- More complex version of Commodity Price (includes special days, tariff component break-down)

Commodity Metering (based on Zigbee)
- Records actual energy consumption / export in given periods
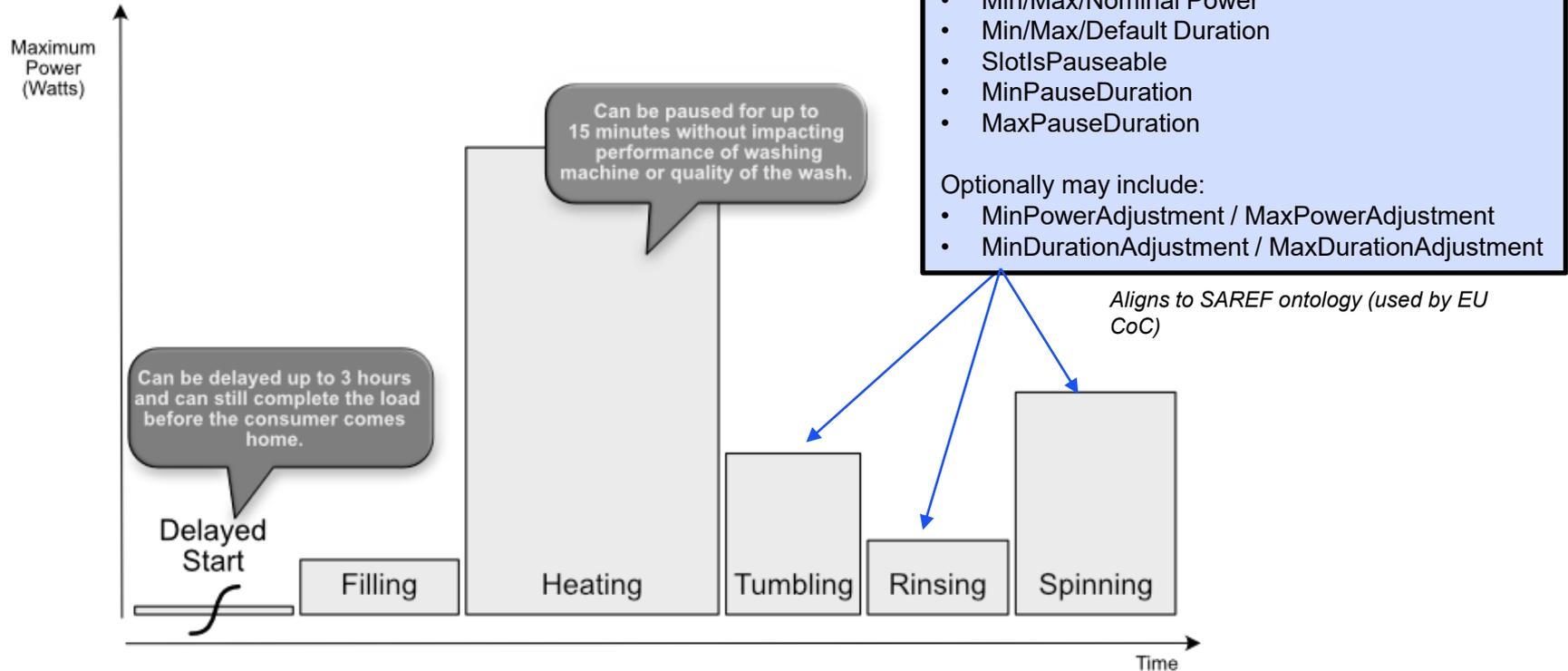
EVSE cluster

Removed 'Provisional' status (now Certifiable in products)

- Supports "State of Charge" reporting
- Supports charging targets using SoC as well as Added Energy
- Support V2X (Bi-directional charging)

Ready for EU regulations for V2X (1st Jan 2027)
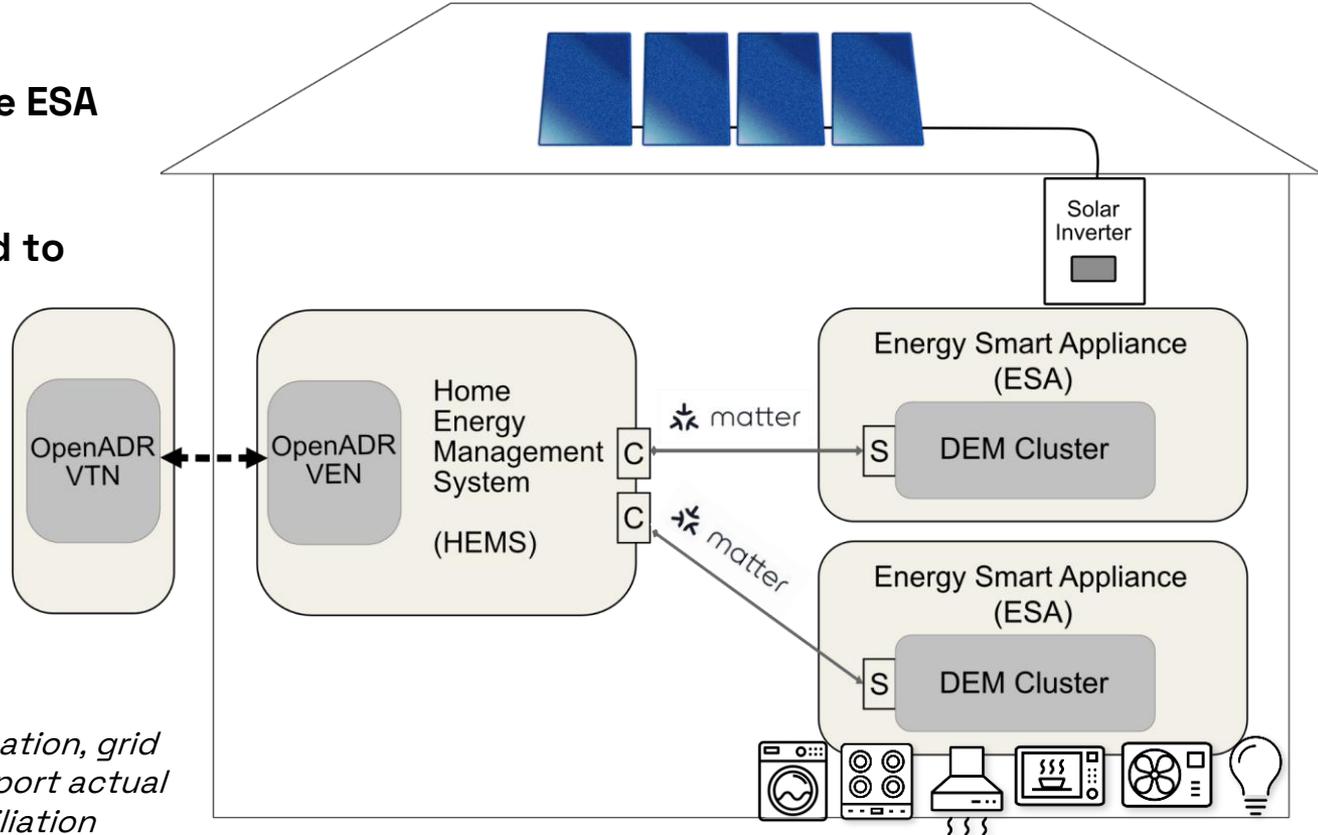
Washing Machine example – Power forecast

Device Energy Management (DEM) power forecast

List of up to 10 'Slots'
- Min/Max/Nominal Power
- Min/Max/Default Duration
- SlotIsPauseable
- MinPauseDuration
- MaxPauseDuration

Optionally may include:
- MinPowerAdjustment / MaxPowerAdjustment
- MinDurationAdjustment / MaxDurationAdjustment

Aligns to SAREF ontology (used by EU CoC)

OpenADR 3.0 to Matter Interworking

Matter deals with in-home ESA communication

OpenADR 3 allows the grid to talk to the home

OpenADR can share pricing information, grid events, handle ESA 'offers' and report actual power 'response' back for reconciliation

Reasons to believe

- Matter is Open Source and Royalty Free

- Matter connects any device or appliance in your smart home

- Matter provides ease of use – scan a QR code and you're up and running

- Matter is supported by all major smart home ecosystems / tech giants

- Matter is supported by multiple silicon vendors and module suppliers

- Matter provides trust & transparency around Data Privacy

- Matter supports strong certification through Authorized Test Labs

- Matter evolves and iterates at a fast pace

- Matter has strategic liaisons to provide a complete solution

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Key take away

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Thank you!