CATALYST converge

Connecting your interval data, Part 1

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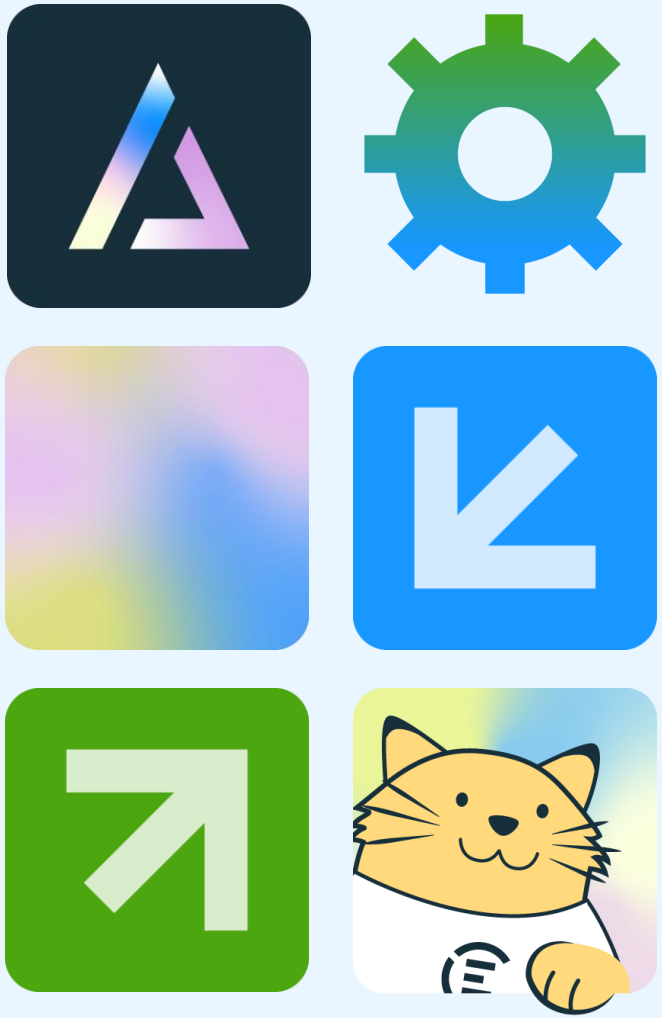
Agenda

1. Interval data fundamentals
2. Setting up meters & channels
3. Bringing data into EnergyCAP
4. Importing & validating data
5. Live demo
6. Advanced scenarios

Pop quiz!



1. **What is interval data and why does it matter?**

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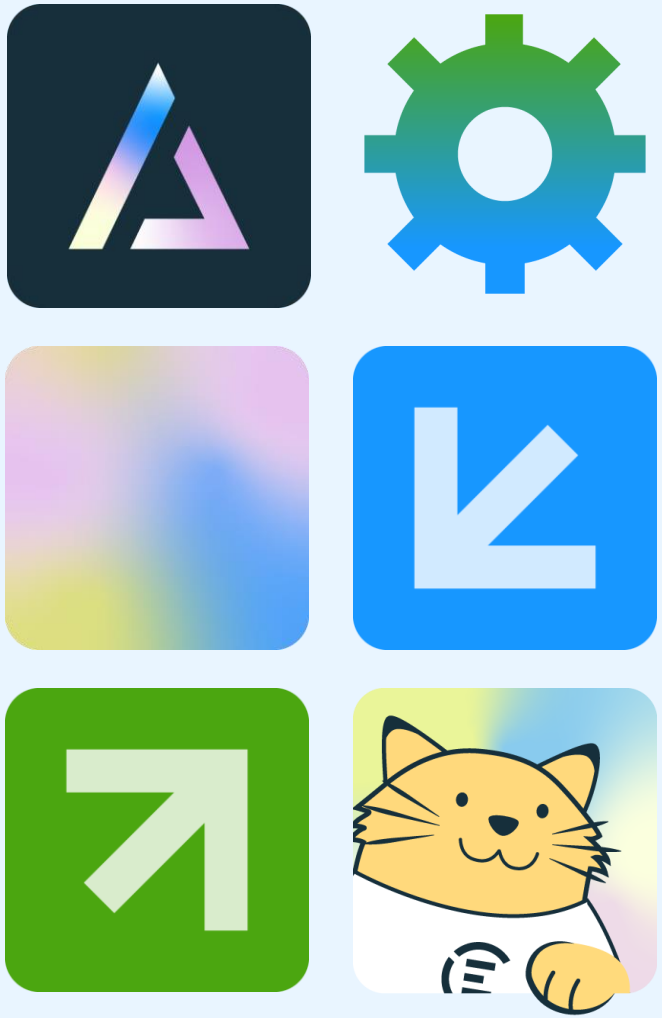

1. What is interval data and why does it matter?
2. How are you utilizing interval data today?

Interval data fundamentals

Why interval data, not just bills

Utility bills

- Monthly totals, one number per period
- Built for cost reporting and budgeting
- Tell you what you spent
- Arrive after the month is over

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- Tells you when and how energy was used
- Near real-time monitoring and analysis

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Example use cases

- Load profiles: see the daily usage shape
- Peak demand: find the spikes that drive charges
- Operations: catch equipment running off-schedule
- Waste: overnight and weekend usage
- Chargebacks: extend interval data

Part 2 at 11am

Readings: source → computed → summarized

Every imported reading moves through three stages

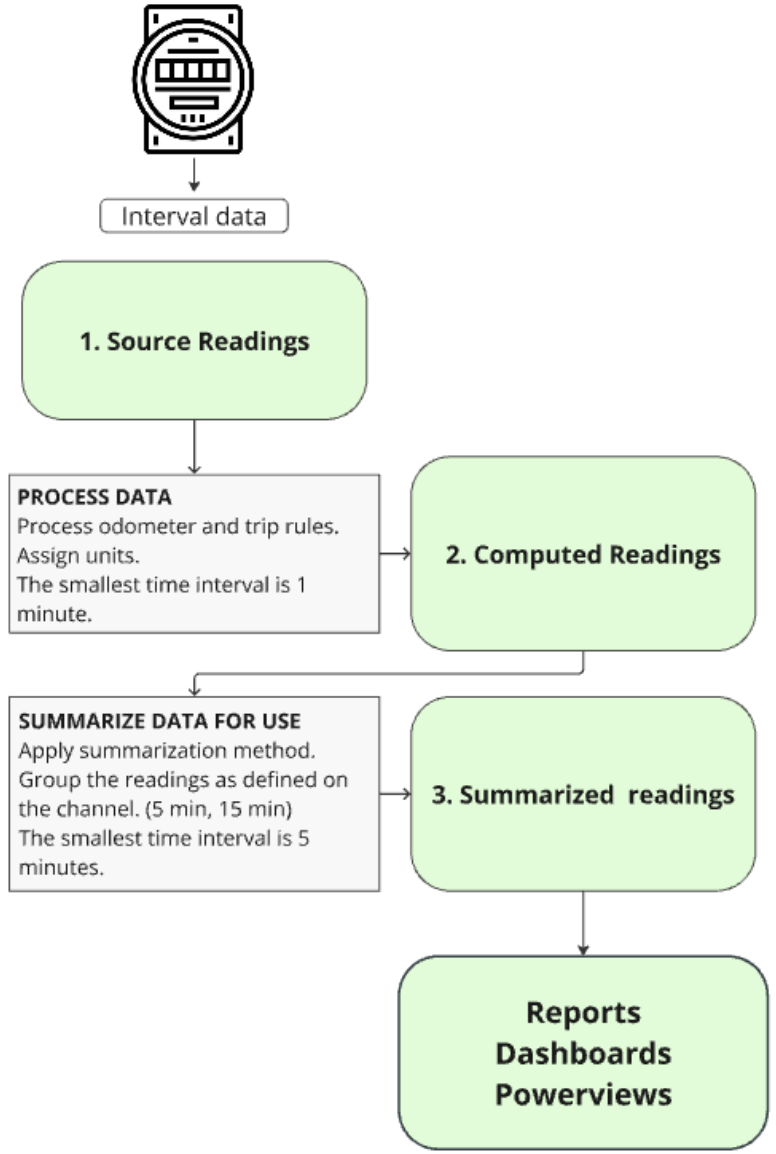
- **Source**: exactly as received, unprocessed by EnergyCAP
- **Computed**: channel rules and units applied, smallest interval one minute
- **Summarized**: the channel's summarization method applied per interval, smallest interval five minutes

Source and computed readings are not snapped to the clock; summarized readings are

- A 15-minute channel lands readings at 8:15, 8:30, 8:45

Summarized readings feed reports, PowerViews, Trend Insights, and dashboard widgets

- Calculated channels also build on summarized readings



Setting up meters and channels

Meters and channels

Meters

- The physical or virtual point of measurement
- One meter can carry multiple channels
- Meters can have either bills, interval data or *both*

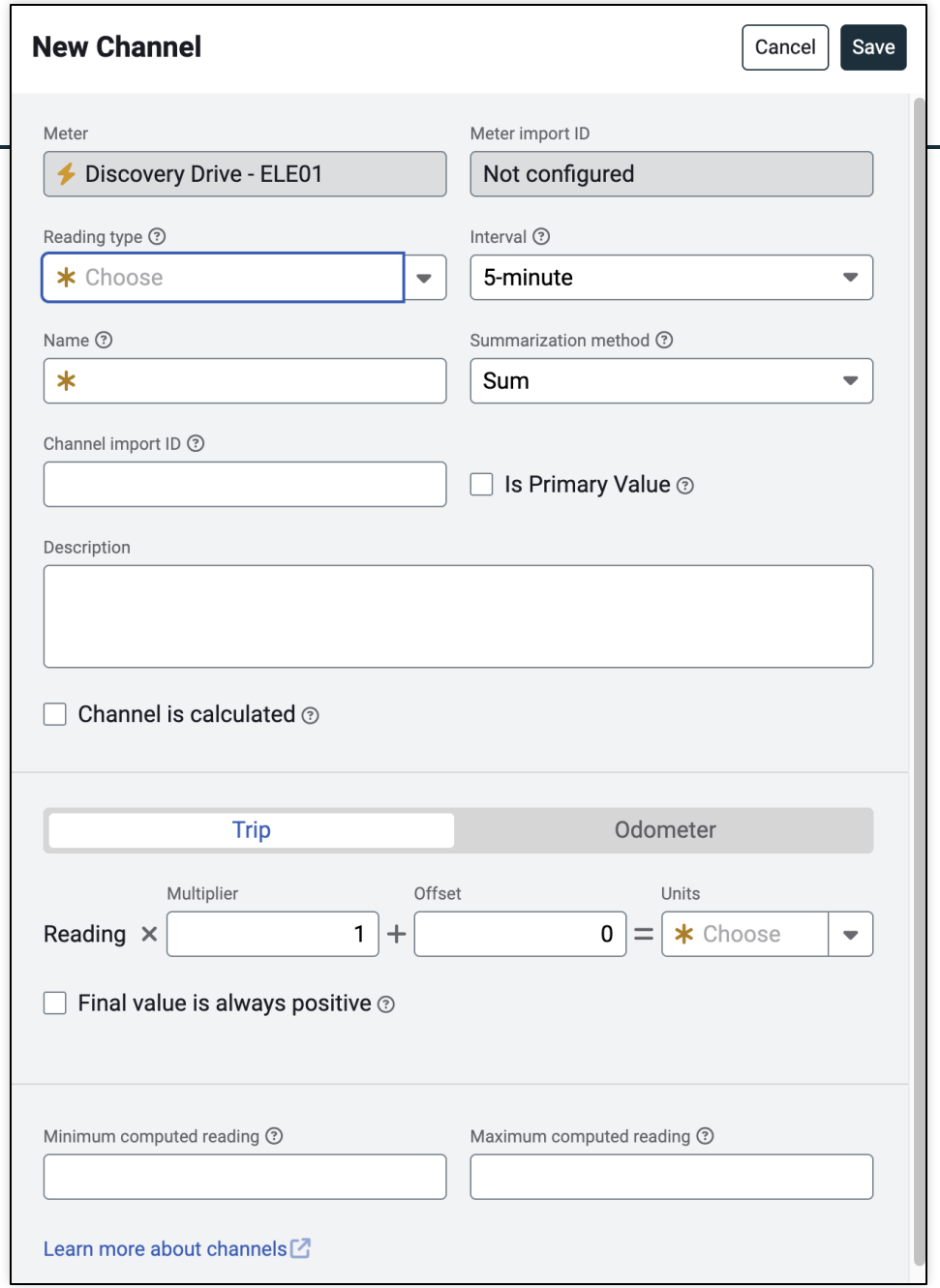
Channels

A single stream of readings on a meter

Common fields

- Type*
- Interval*
- Summarization method
- Primary value or demand
- Trip or Odometer
- Min and max readings

**A meter can have only one channel with the same type + interval combination*



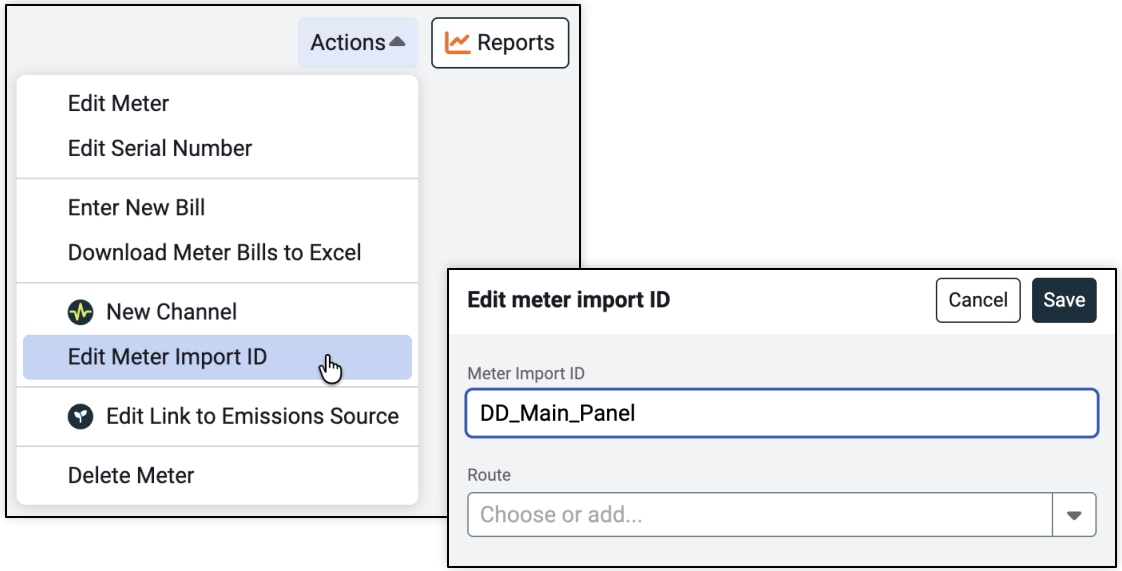
Meter and channel import IDs

Channels must exist on meters before interval readings can be imported on the meter

Use Meter or Channel Import IDs to map your readings to the correct meter and channel in EnergyCAP

Meter Import ID: set on the meter, shared by all of its channels

- Import matches on meter ID + interval + data type (use, demand, etc.)



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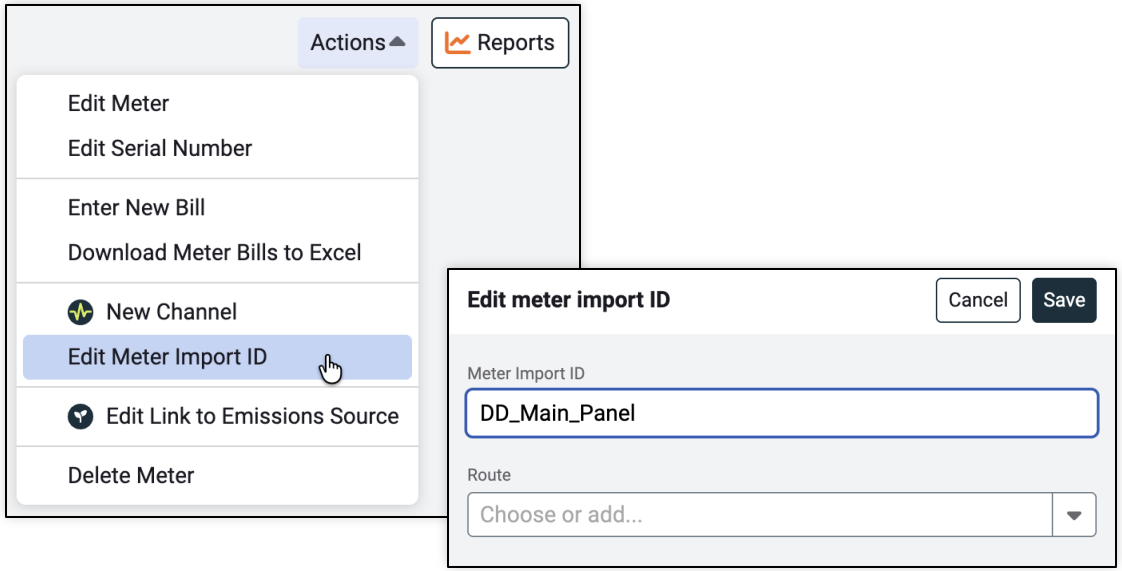
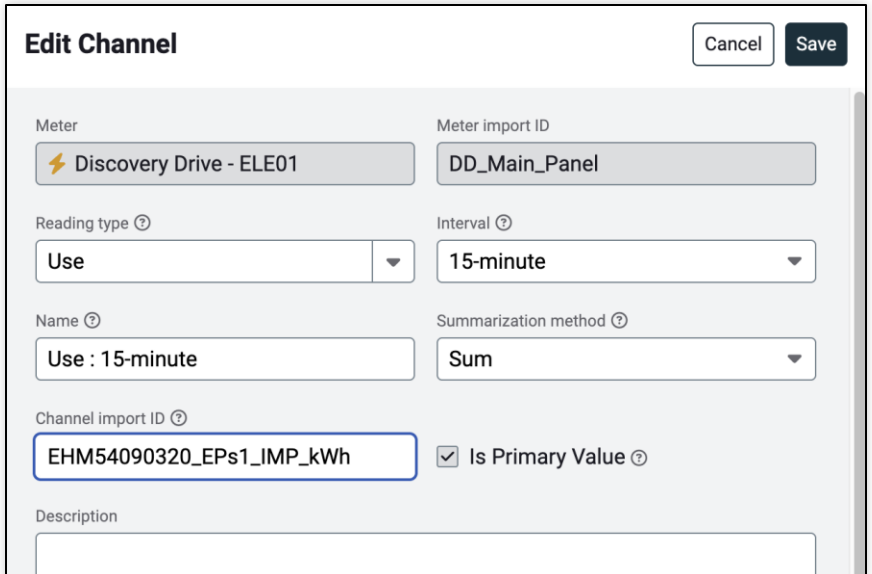
Channel Import ID: set on the channel, unique in the database

- Matches each row directly, no extra detail needed





Bringing data into EnergyCAP

Three ways to get data in

1. File imports

- Manual delimited file (CSV) upload
- Good for one-off or small-scale loads
- Best for a quick start, a small site, or a one-time backfill
- Use an import profile or setup spreadsheet template

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- Send files to SFTP or attached to email
- Reformatters available to handle incompatible files
- Imports up to 3x per day
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- Direct integrations with API enabled platforms and devices that communicate over the internet.
  - Individual meters (eGuage, AccuRev, Episensor, Solar PV platforms)
  - Gateways (connecting BACnet and Modbus connected systems to EnergyCAP)
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Automated by EnergyCAP

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Reading Import Profiles

Reusable mapping for recurring, automated imports

- Map your source files to standard fields
- Reuse for subsequent imports
- File needs a row with each and import ID, a timestamp, and a reading value
- Extra columns are ignored unless you map them
- Know whether your file uses a meter or channel import ID

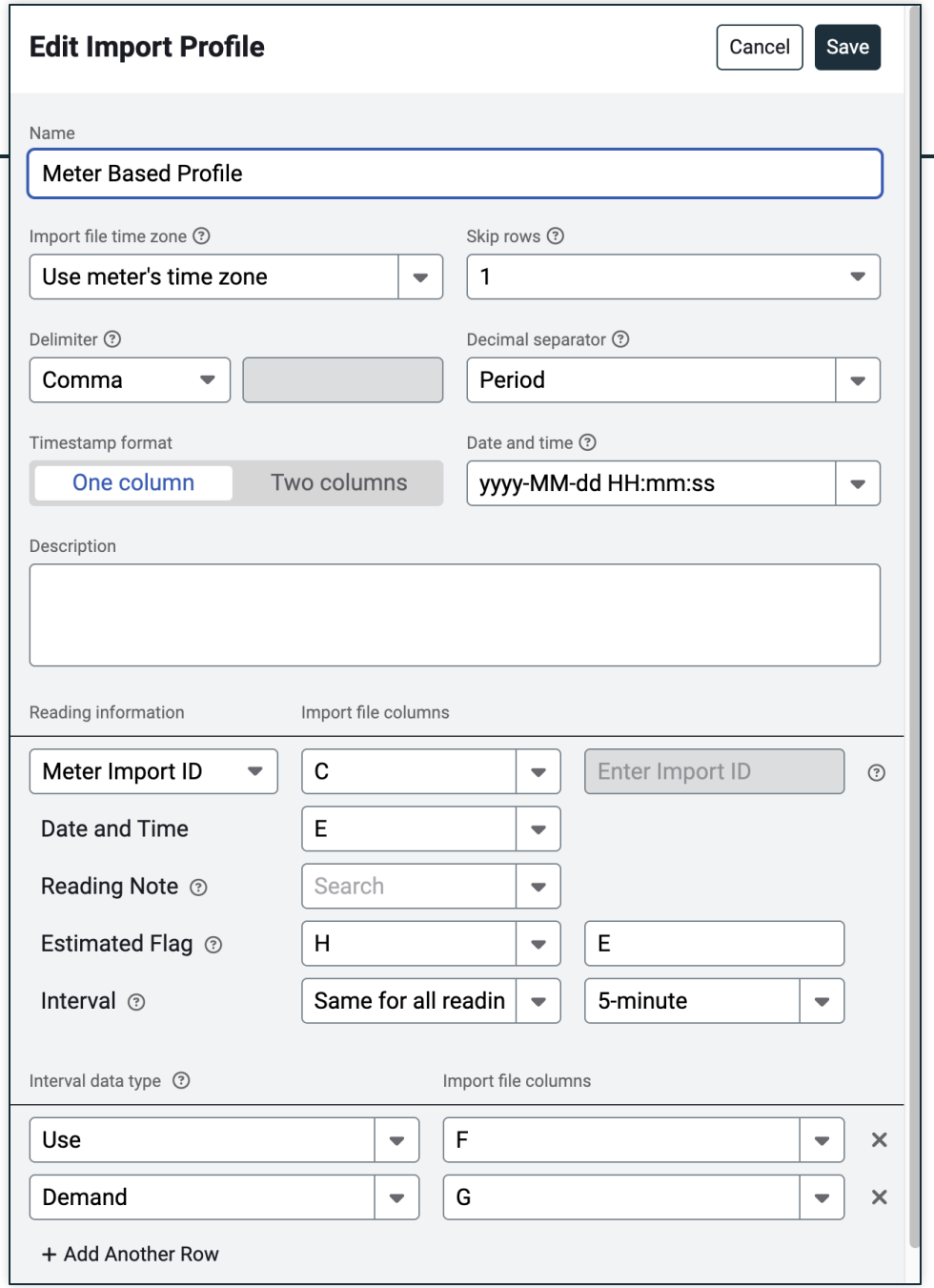
Reading Import Profiles

File-level Settings

- **Timezone**: Specific timezone or meter's timezone
- **Delimiter**: comma, semi-colon, tab, space, other
- **Timestamp format**: one column or two
  - Pick a format or enter custom

Column Mappings

- Meter or Channel **Import ID** (enter ID to pin profile to specific meter/channel)
- **Date and Time**
- **Note**
- **Estimated**
- **Interval**: same for all readings, or select column
- **Reading types** (Use, Demand, etc.)



Importing and validating data

Importing readings with a profile

Run the import

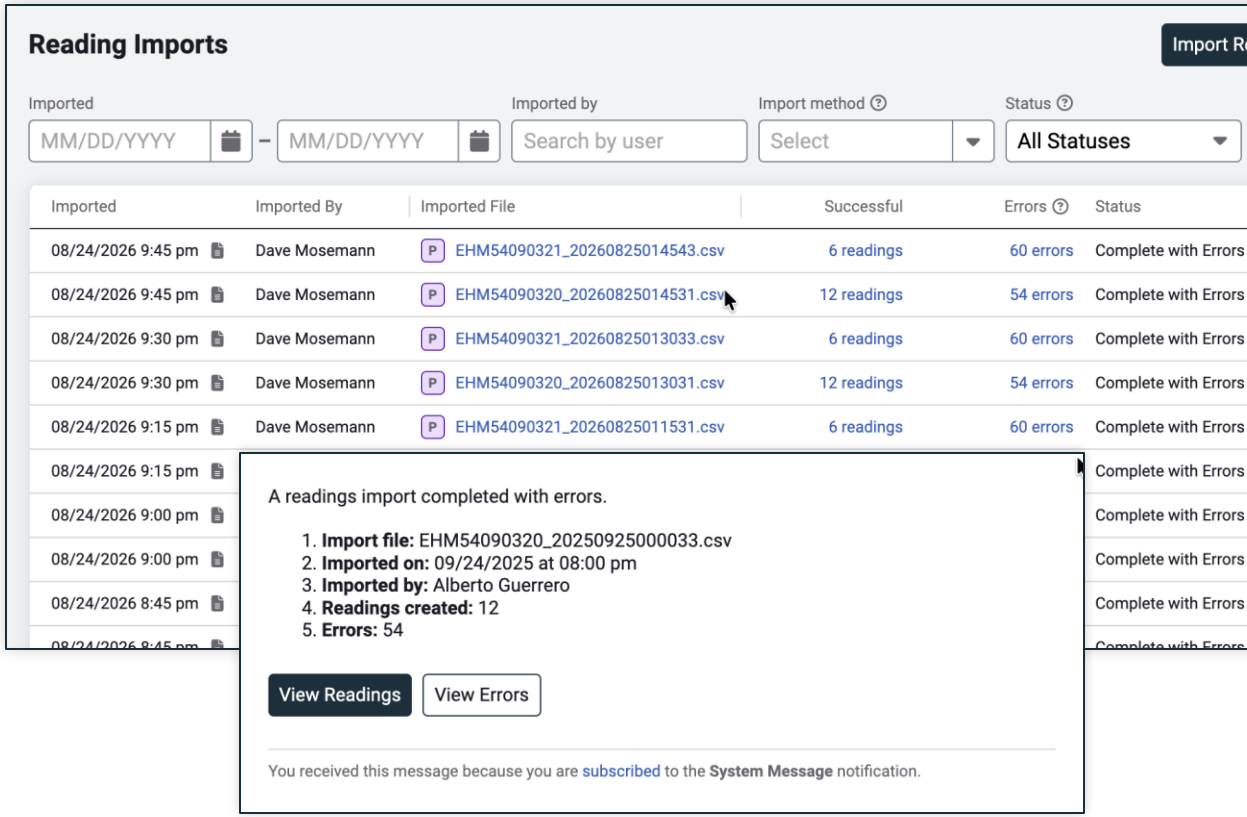
- Import Readings, select Use a Profile
- Choose a file, or a zip of files that share one profile (CSV and Excel can be mixed, 500 MB limit)
- Select the desired profile or create a profile on the fly

View results

- Reading Imports lists every file with its result
- Each row links to the imported file, the readings, and the error file
- Notification for imports with errors will be sent to system message topic

Handle errors

- Download original file with error messages
- An import cannot be reversed, so correct it forward
- Re-import with the same timestamps to overwrite the bad readings



	A	B	C	D
1	EHM54090321_P001_kW	8/24/26 21:30	0.216	Error: Channel not found;
2	EHM54090321_P002_kW	8/24/26 21:30	0.046	Error: Channel not found;
3	EHM54090321_P003_kW	8/24/26 21:30	1.036	Error: Channel not found;
4	EHM54090321_P004_kW	8/24/26 21:30	0.044	Error: Channel not found;
5	EHM54090321_P005_kW	8/24/26 21:30	0.1	Error: Channel not found;
6	EHM54090321_P006_kW	8/24/26 21:30	0.192	Error: Channel not found;
7	EHM54090321_P007_kW	8/24/26 21:30	0.259	Error: Channel not found;
8	EHM54090321_P008_kW	8/24/26 21:30	0.185	Error: Channel not found;

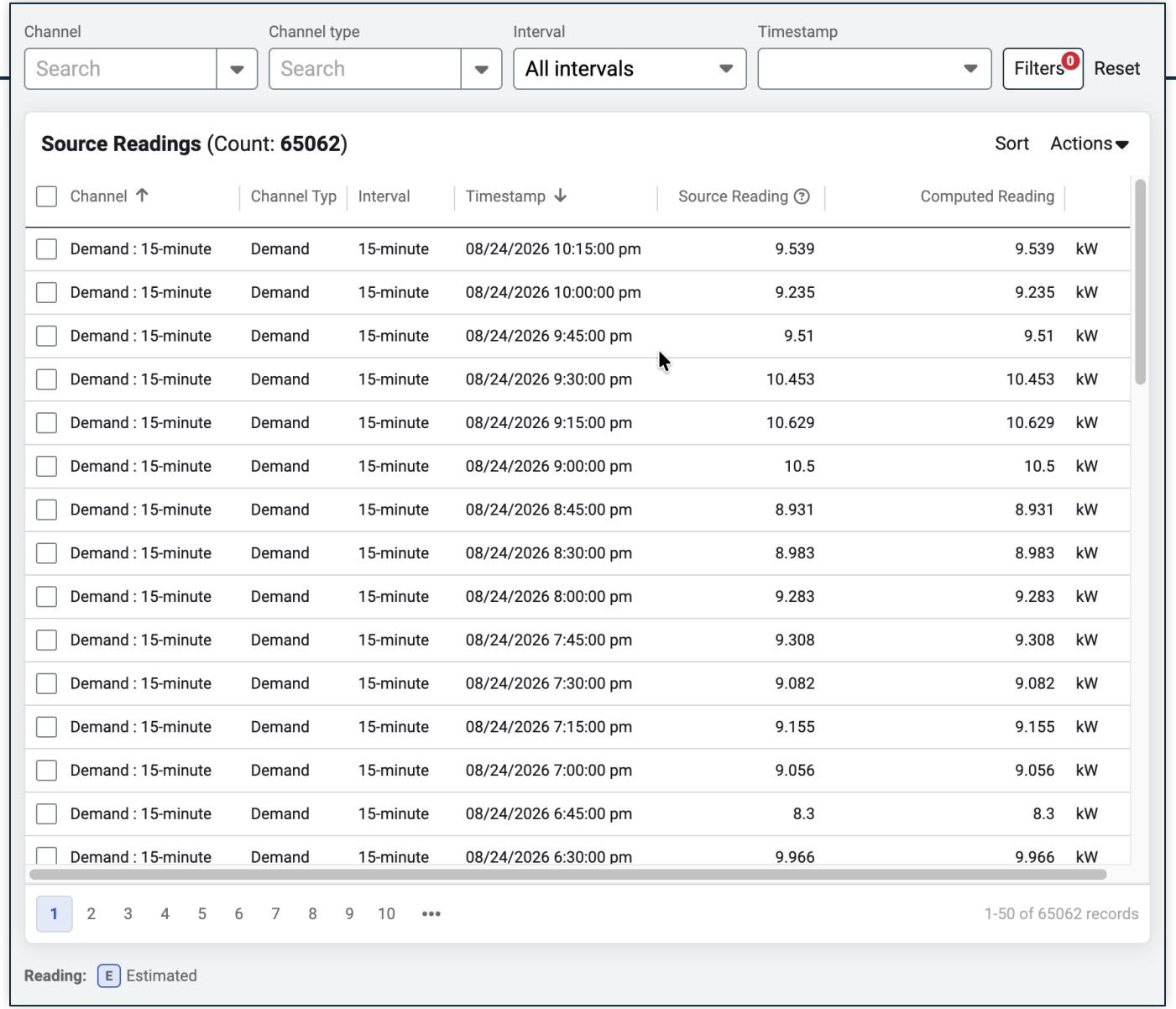
Readings lists

Source readings

- From imports log or individual meter
- See source value and computed result
- Select multiple to delete
- Download update spreadsheet to update or delete in bulk

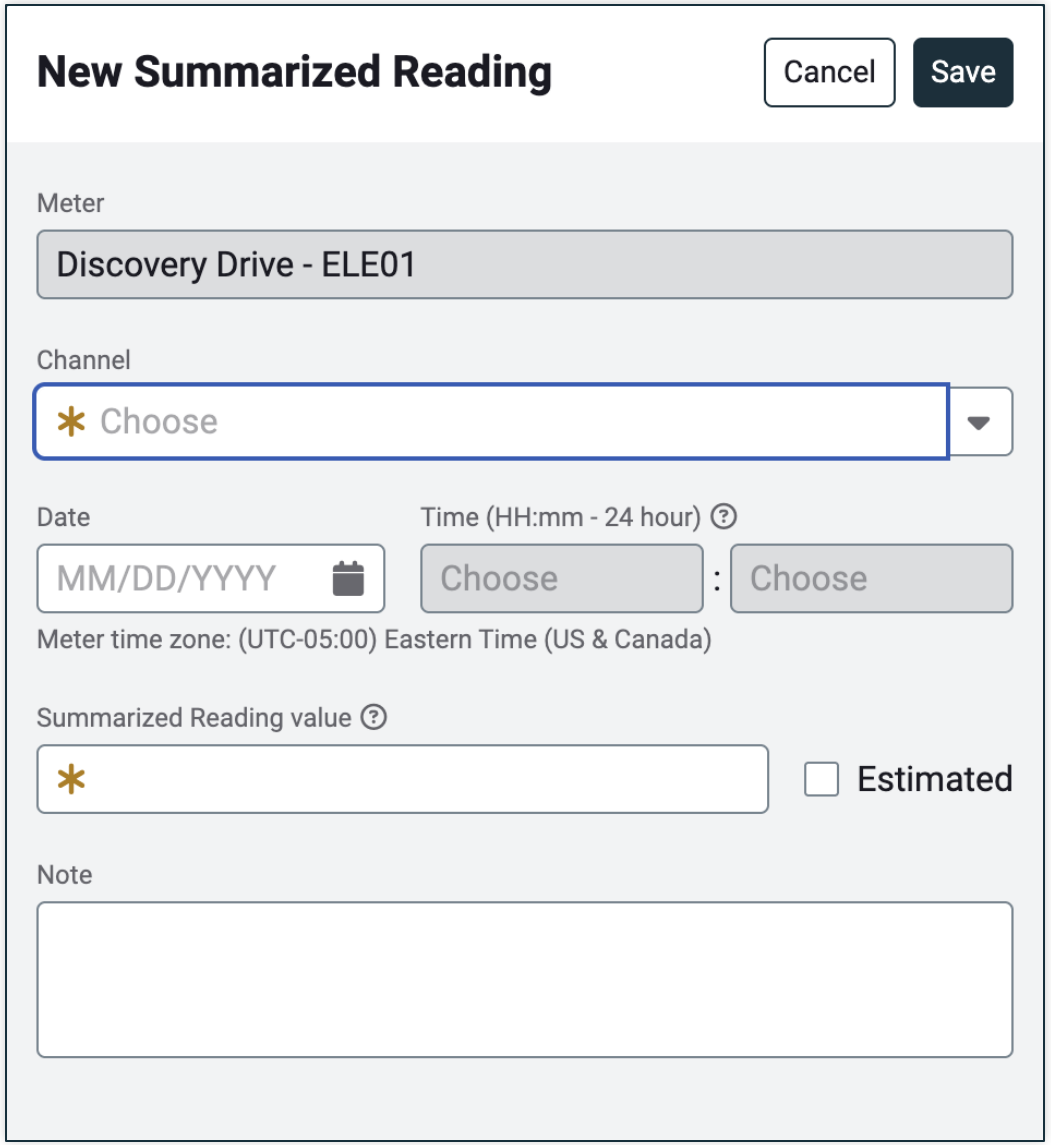
Summarized readings

- Values after summarization
- Filter by channel, type, interval
- Estimated readings tagged with **E**
- Edit or enter individual summarized readings



Manually enter and edit readings

- Manually enter a summarized reading to fill gaps or estimate missing readings
- Select channel
- Set date and time
- Summarized value is the value after multipliers and summarization calculations have been applied
- Estimated readings and notes show on charts



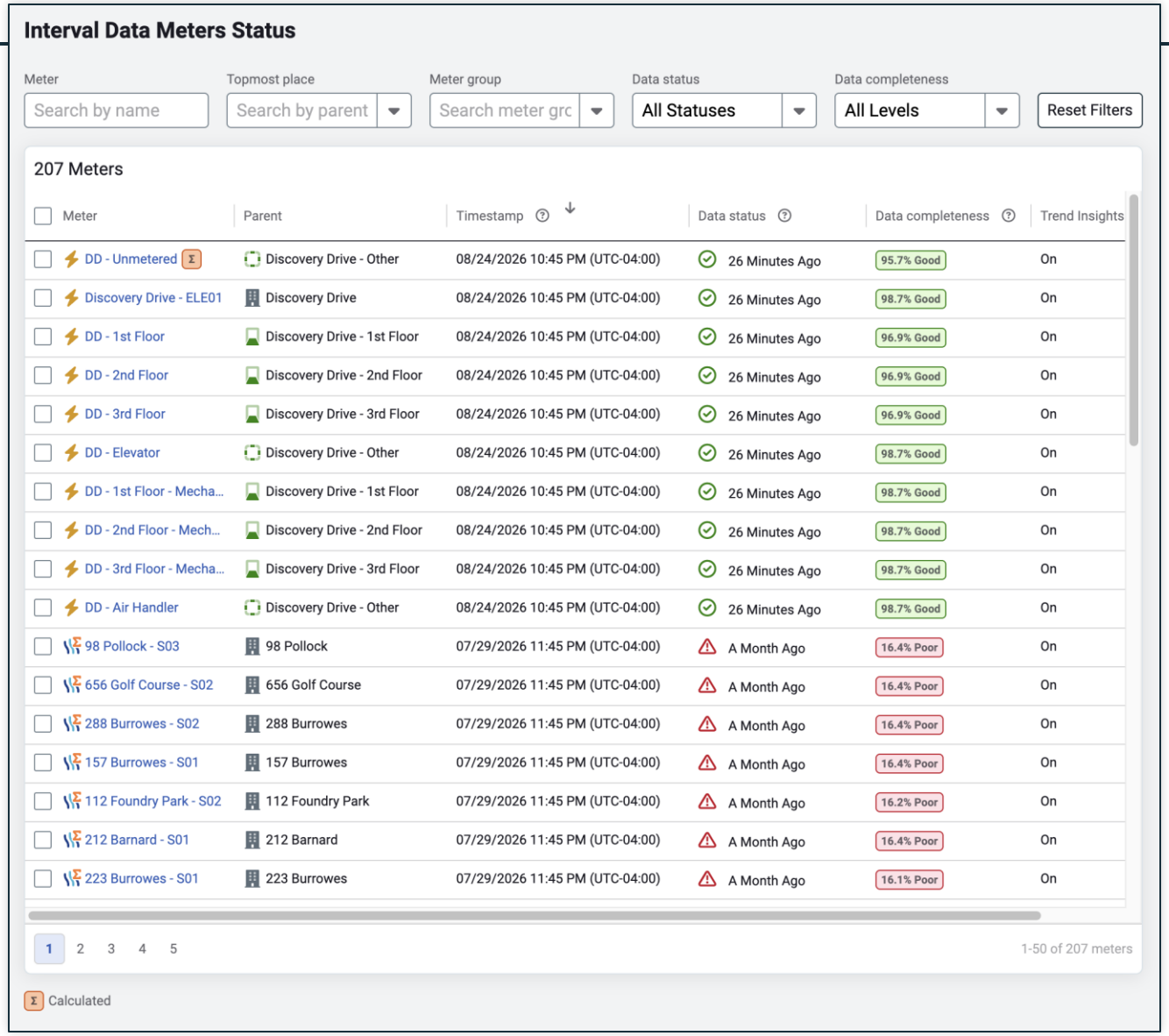
Interval data status

Data status

- Spot meters that have stopped reporting at a glance
- **Online**: readings in past 24 hours.
- **Delayed**: readings between 24 hours and 7 days ago.
- **Offline**: last reading more than 7 days ago.
- **No Data**: the meter has not reported any data since it was configured as an interval data meter.

Data completeness

- Compares the last 30 complete days of summarized readings against expected
- **Good**: above 95%
- **Fair:** 85%–95%
- **Poor:** below 85%
- **Insufficient Data:** no or not enough data



Live demo

Advanced scenarios

Calculated channels

Virtual reading based on formula including other channels on the same meter, or fixed constants

Use cases

- Calculating kWh from kW — estimate 15-minute use from average demand readings

- Summing individual phase demands into a total kW demand channel

- Cleaning data — turn small negative readings into zeros

- Unit or scale conversion using a fixed constant or multiplier

- Filling gaps — use != null to return a fallback value when no reading exists

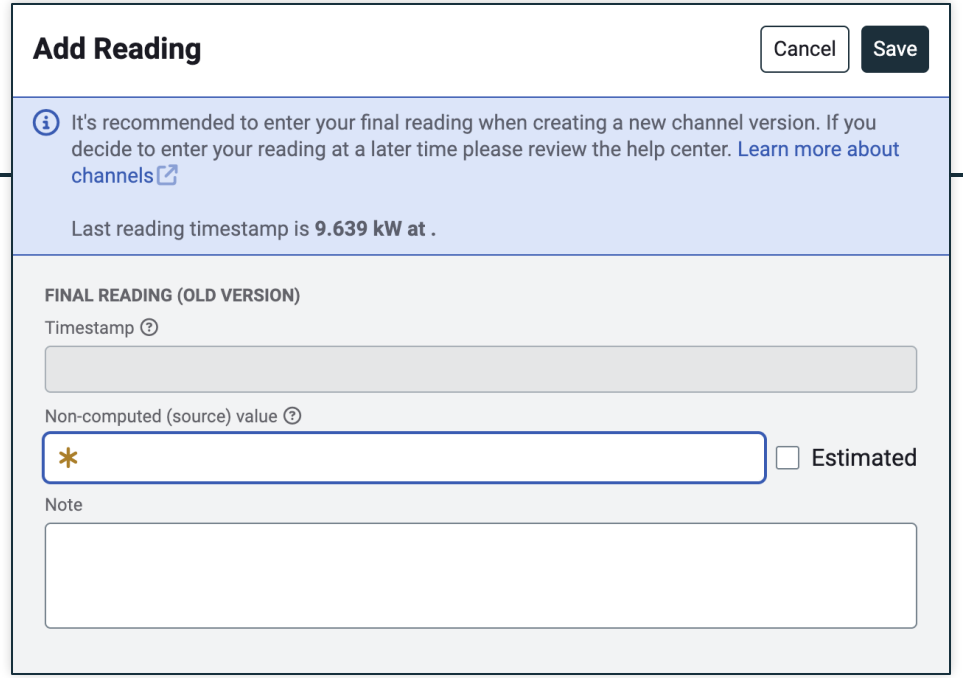
Good to know

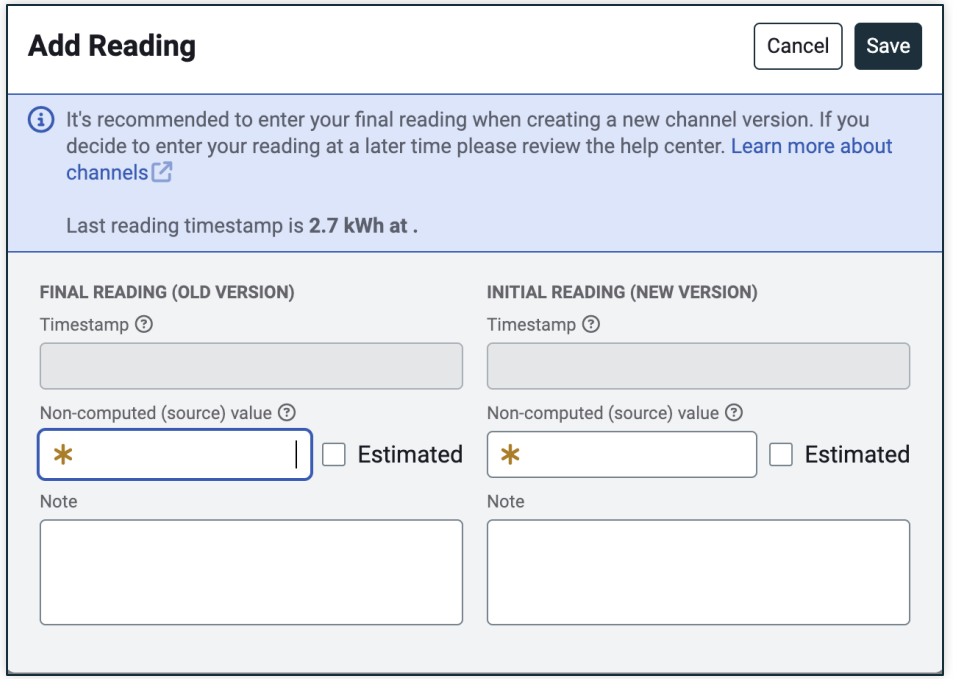
- A meter needs at least one non-calculated channel first
- A channel that already has readings can't be switched to calculated
- Calculated channels are not versioned and have no source readings
- Built on the summarized readings of the channels they reference

Versioning channels

When swapping out meters causing channel settings to change (multiplier, unit, etc.)

1. Create a new version
2. Set effective date
3. Optional
4. Enter final reading (non-computed)
5. For odometer channels, also enter first reading (non-computed)





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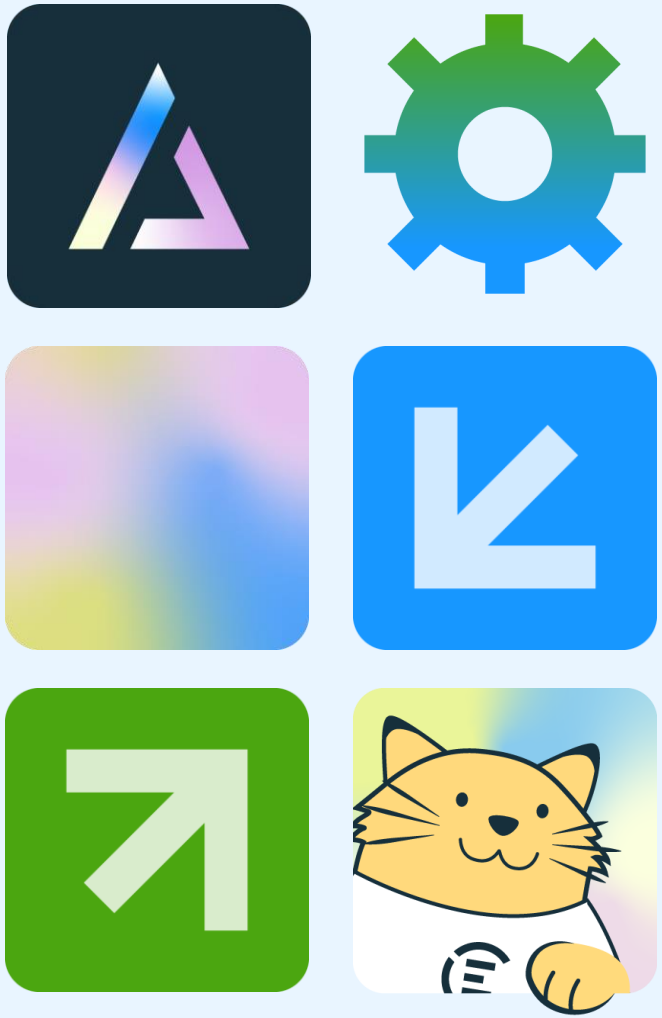

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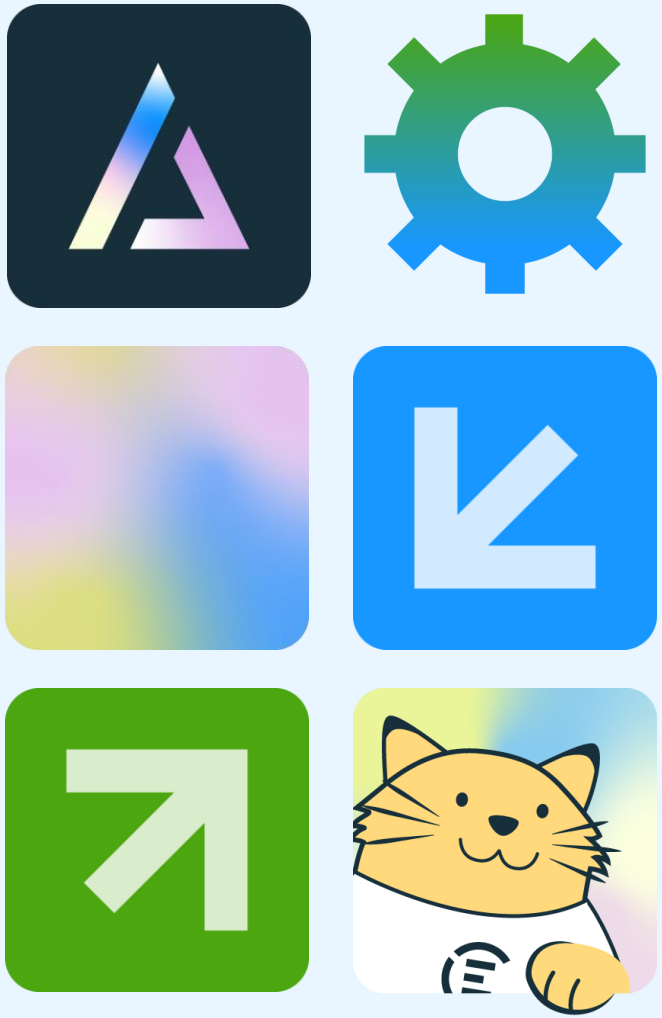

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2. What is important about an import ID?

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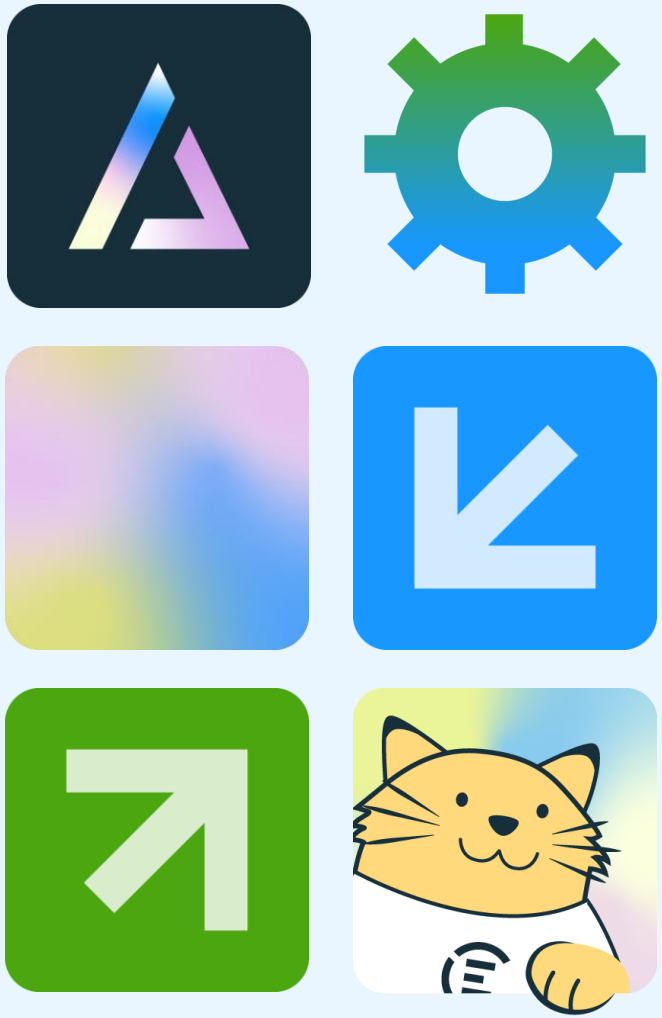

1. What are the 3 types of readings?
2. What is important about an import ID?
3. What are the 3 main ways to get interval data into EnergyCAP?

Questions?