

From cable demand to accountable cuts.

A practical way to think about drum allocation, remaining stock and the connection between the engineering plan and what actually happens on site.

6 minute read 21 September 2026 For EPC engineering and construction teams

01 / THE ALLOCATION PROBLEM

A total length is only the beginning.

A cable schedule describes demand: identifiable cable runs, their specifications, endpoints and required lengths. A drum register describes supply. The allocation problem is to connect the two while respecting the constraints that make the proposed cuts usable.

Adding all required lengths is a useful first check. It does not prove that the individual runs fit. One continuous 700 m run cannot be supplied by two separate 400 m pieces unless a permitted, engineered jointing arrangement exists. Likewise, equal lengths with different cable specifications are not interchangeable.

Useful allocation therefore keeps each cable and each drum identifiable. It considers compatible specification, the length available on the drum and the required length of each run. Project rules and field commitments matter alongside the arithmetic.

The useful question: can we satisfy the same cable demand while keeping the remaining stock in a more useful form?

Same demand. Same stock. A different arrangement.

Consider nine uncut cable runs of one specification: 4C × 95 mm², copper, XLPE. Their required lengths are **550, 470, 400, 300, 280, 270, 250, 250 and 190 m**, totalling **2,960 m**. The available stock is four untouched drums of 1,000 m each.

A practical baseline takes the longest run first and checks every opened drum in order, using the first with enough room. It opens another drum only when none can fit the next run. This produces the four-drum arrangement below; the final 190 m run returns to DR-002, where it fits.

The improved plan considers the runs together and rearranges several assignments. It opens only three drums while supplying every run continuously and in full. Simply moving one cut or swapping a pair would not free the fourth drum in this example.

Illustrative allocation · all lengths in metres		
Drum	Longest first	Rearranged
DR-001	550 + 400 = 950 50 remaining	550 + 250 + 190 = 990 10 remaining
DR-002	470 + 300 + 190 = 960 40 remaining	400 + 300 + 280 = 980 20 remaining
DR-003	280 + 270 + 250 = 800 200 remaining	470 + 270 + 250 = 990 10 remaining
DR-004	250 allocated 750 remaining	Unopened 1,000 available
Demand met	2,960	2,960
Drums opened	4	3
Remaining on opened drums	1,040	40
Total stock left	1,040	1,040

At least three drums are needed because 2,960 m of demand cannot fit into two 1,000 m drums. The rearranged plan reaches that minimum for these inputs.

The improvement is the **form of the remaining stock**: one full drum stays unopened, with just 40 m left across the three opened drums. The total amount of cable remaining is still 1,040 m. It would be incorrect to describe the 1,000 m unopened drum as 1,000 m of cable saved or waste eliminated.

4,000 m stock = 2,960 m assigned + 40 m on opened drums + 1,000 m unopened

Conservation is the starting check for any credible comparison.

This small example assumes compatible stock, continuous cuts and no additional project restrictions. It demonstrates allocation logic, not a forecast of a project's savings or the performance of the production solver.

These CSV files explain the example. For a product calculation, use the current Excel template supplied inside the application.

03 / BEFORE AND AFTER PROCUREMENT

Two decisions. Two sets of inputs.

Pre-order planning

Start with cable demand and the permitted drum-length ranges for each cable type. Explore the drum requirements before procurement commitments are made. In the current pre-order workflow, cable data drives the calculation; an uploaded drum sheet is ignored.

Post-order allocation

Start with the drums available to the project. Use their declared available lengths, together with relevant commitments and project rules. A manufactured length and today's remaining stock are different facts.

Keep the purpose of each calculation visible. A planning result is not a stock receipt, purchase order or field instruction. An execution calculation should not silently overwrite the record of what has already been issued or cut.

This separation also helps review. An engineer can explain whether a changed result follows from revised demand, different drum assumptions, an actual cut or a correction to the recorded balance.

Planning a cut does not consume cable.

An allocation commits a length in the plan. A confirmed physical cut consumes cable from a drum. Laying progress describes another event: how much of that cut cable has been installed. Recording these separately makes a drum balance more meaningful.

For example, a drum starts with a recorded opening of 1,000 m. A crew confirms a 420 m actual cut. The recorded remaining balance becomes 580 m. A later progress entry does not debit the same 420 m again. If the actual measurement needs correction, the change should retain the earlier event and its explanation.

Available for a revised plan = physical balance – issued reservations – fixed commitments

Example: 730 m remaining – 200 m issued – 0 m fixed = 530 m available for the selected revision.

Physical balance and planning capacity answer different questions. A 730 m drum may physically contain 730 m, yet only 530 m may be available to a new proposal because another crew already holds an instruction for 200 m.

The record is only as reliable as the information supplied. An approved declaration is not a fresh physical measurement. Unknown or disputed stock requires reconciliation; it should not be treated as spare capacity merely because a spreadsheet contains a number.

05 / RESPONSIBLE REVISION

Improve the plan without losing the work.

Route changes and revised requirements are part of EPC delivery. Recalculation should distinguish movable, unissued demand from work that has already been issued, cut or progressed. A shorter new requirement does not automatically invalidate a crew's existing instruction.

Elecsense's execution preparation identifies matches with existing cables and drums, supports an explicit revision route, and protects committed work. It takes reservations into account rather than assuming that every remaining metre can be reassigned.

Changes after a calculation can also matter. If relevant stock or eligibility changes, a proposal may become stale while its saved inputs and reports remain useful as evidence. A calculation result and the authority to act on it should stay separate.

Measure the result you can explain.

A helpful comparison reports quantities that can be reconciled to the inputs:

- **Demand met:** which cables are allocated, which remain unresolved, and the total required length.
- **Drums opened:** the number used by the proposal, with full drums preserved shown separately.
- **Remaining lengths:** how stock is distributed across drums, together with restrictions on its use.
- **Field variance:** the relationship between planned and confirmed actual cuts, with their history.

Financial value needs further context: a credible baseline, current rates, the ability to reuse stock, and whether an unreleased purchase can actually change. A better arrangement on paper is not automatically a realized cash saving. Keep these distinctions visible when discussing value with engineering, construction and commercial teams.

07 / The first customer release

Cable intelligence, grounded in the workflow.

Cable Optimizer connects pre-order and post-order calculations, retained inputs and results, Excel reports, protected execution preparation, and field PullCards with actual-cut recording, notes and laying progress. Confirmed cuts update recorded drum balances.

Cable jointing and GPS-based drum location are part of the first customer release. Jointing must follow the project's permitted engineering arrangements; this brief's worked example assumes continuous cuts. Automatic cut-triggered reoptimization, native mobile applications and the broader engineering suite remain future directions.

A useful pilot starts with a representative schedule, clear cable specifications, trustworthy stock declarations and the people who own the engineering and field decisions. Agree the access roles, data terms and onboarding steps before operational data is shared.

Put the concepts into practice.

MVP project access is invitation-only. [Explore the allocation example](#) or request a demonstration to discuss a pilot; an enquiry does not create an account or grant project access.