

# Rough Cut Capacity Planning (RCCP): Rough Capacity Planning in Production Control

Rough Cut Capacity Planning (RCCP) is a mid-term capacity planning method that allows companies to check whether the available resources are roughly sufficient to meet the planned production programmes. It is frequently used as a rough preliminary stage to detailed fine planning and works with aggregated quantities and planning periods. For technical buyers, RCCP is relevant because the capacity statements derived from it feed directly into demand notifications, delivery schedules and contracts with suppliers.

## Key facts

- RCCP checks at an aggregated level whether the planned production programme is feasible with the existing key resources.
- Typically, RCCP works with time buckets ranging from weeks to months and not with individual operations or minute values.
- The focus is on bottleneck resources such as key machines, flow workstations or critical skilled personnel.
- RCCP is the bridge between sales and production planning and detailed schedule and capacity fine planning.
- Deviations in the RCCP frequently lead to negotiations on lead times, safety capacity and supplier contracts.
- In practice, RCCP also serves as a joint planning basis between sales, production and procurement, for example within S&OE.

## Definition: Rough Cut Capacity Planning

Rough Cut Capacity Planning refers to the rough, medium- to long-term check of capacity utilisation against the planned production programme. It aggregates requirements and resources at product family and work centre group level and deliberately dispenses with fine detail.

### Distinction from fine planning

In contrast to detailed capacity fine planning, which schedules individual work operations on a minute basis, RCCP works with throughput times, buckets and guideline capacities. This makes it quick to calculate and suitable for scenario comparisons, but it does not provide binding schedule commitments. Detailed planning only takes over once the rough structure has been assessed as feasible.

### Position in the planning hierarchy

RCCP sits between the aggregated production plan and fine control. While the production plan is usually quantity- and value-oriented, RCCP translates these quantities into resource loads. Changes arising from the RCCP flow back into the demand confirmation towards customers and into the framework agreements with suppliers.

## Methods and approach in RCCP

A number of proven methods have become established for rough planning. The choice of method depends on complexity, data quality and the planning horizon.

### Capacity bills and load profiles

With the capacity bill method, standard load profiles per product family are derived from the bills of materials and routings. Multiplied by the planned quantity, this yields the load per bottleneck resource and period. In practice, calculations are frequently based on average values, typically taking an efficiency factor of around 80 to 90 per cent per resource into account.

### Resource profiles and buckets

The resource profile method shifts the loads into the future along the lead times, so that schedule effects become roughly visible. In practice, planning periods often cover one week in the near-term range and one month in the long-term range. The shorter the buckets, the more reliable the statements, but also the higher the effort.

### Bottleneck-oriented planning

Instead of planning all resources, RCCP concentrates on a few bottlenecks. This considerably reduces the master data maintenance effort and increases the meaningfulness of the results, since the bottleneck resource determines the programme. Which resource is the bottleneck should be reviewed periodically, as this can shift with product utilisation.

## RCCP in interplay with procurement and suppliers

The results of rough capacity planning are a key input for supplier coordination. Anyone who knows their own utilisation can communicate demand credibly and request counter-capacities from the supplier.

### Demand communication and delivery schedules

Capacity bottleneck situations from the RCCP should be fed into demand confirmations and forecast communication towards suppliers at an early stage. Suppliers can respond with their own capacity reservations, advance procurement or adjusted lead times. For long-term secured quantities, inclusion in framework agreements is customary.

### Safety capacity and flexibility corridors

To cushion demand peaks, a safety capacity of typically 10 to 20 per cent of the key resources is frequently reserved in practice. With suppliers, this can be agreed via flexibility corridors, for example bandwidths for short-notice changes to quantities and delivery dates. The procurement manager should document these corridors and review them regularly.

### Dual sourcing as capacity risk management

If the RCCP shows sustained full utilisation of critical production resources, the risk of delivery failures increases. As part of dual source management, buyers can qualify additional sources of supply in order to spread capacity risks. A Risk Mitigation Plan should document which alternatives are activated when bottleneck alerts are issued.

## Key metrics and KPIs in RCCP

RCCP is steered using utilisation and variance key figures. The most important figures can be derived from planned and actual values of the key resources.

### Utilisation and capacity coverage

The central key figure is the planned utilisation per bottleneck resource and period. Values close to 100 per cent mean low flexibility; above 100 per cent signals overload and thus schedule risks. Capacity coverage sets available capacity against required capacity and makes deficits visible in hours or shifts.

### Plan fulfilment and variance analysis

Plan fulfilment shows how far the production plan deviates from the RCCP result. Regular variance analyses within the S&OE process uncover causes, such as data errors in the data model, incorrect efficiency factors or planned maintenance times. Meaningful KPIs presuppose clean master data management for routings and set-up times.

### Derivations for procurement

From the RCCP key figures, procurement-side target figures can be derived, such as the proportion of demand that can be covered within agreed lead times. Service level targets towards customers are also underpinned by realistic capacity data; an intended service level cannot be credibly promised without sound capacity planning.

## Risks and controls in RCCP

The meaningfulness of the RCCP depends heavily on data quality and planning discipline. Without control mechanisms, a sham plan quickly emerges that makes decisions on an uncertain basis.

### Data quality and master data risks

Outdated routings, unrealistic set-up times or incorrect capacity master data systematically distort the load profiles. Regular document review and plausibility checks of the master data are therefore mandatory. Changes to bills of materials after a design freeze must be incorporated into the planning data promptly.

### Process risks and controls

Frequent changes to the planning cycle without feedback to sales and procurement lead to planning confusion and loss of acceptance. A fixed planning rhythm with clearly defined release points is recommended. Deviations requiring contractual adjustments should be escalated; this may include an audit right at the supplier to verify its actual capacity situation.

## Current developments: digitalisation and integrated planning

RCCP is increasingly automated by software and integrated with replenishment and sales planning. Modern systems plan across buckets in daily steps and enable continuous scenario calculations.

### Automation and data models

The degree of automation in capacity planning is increasing, as ERP and planning systems automatically generate load profiles from current master data. This requires a consistent data model

across sales, production and procurement. AI-supported forecasts can stabilise the demand side but do not replace plausibility checks by planners.

### **Integrated planning along the supply chain**

RCCP results are increasingly shared with suppliers, for example within sales and operations formats. This creates a joint basis for the supplier's investment decisions and for delivery commitments. Specification management and raw material indexing also benefit, since capacity statements and price escalation clauses are based on the same planned quantities.

## **Definition: Rough Cut Capacity Planning**

Rough Cut Capacity Planning (RCCP) is a mid-term production planning method that checks at an aggregated level whether the available key resources are sufficient to cover the planned production programme. It works with planning periods and average values instead of individual operations.

### **Typical metrics**

#### **Planned utilisation of bottleneck resource: 80–90 %**

Values above 100 % indicate overload and schedule risks

#### **Capacity coverage: > 1.0**

Ratio of available to required capacity per period

#### **Plan fulfilment rate: > 95 %**

Proportion of the planned programme confirmed as feasible in the RCCP

#### **Safety capacity: 10–20 %**

Usual guideline value for reserved buffers on key resources

### **Practical example**

A medium-sized mechanical engineering company uses RCCP to plan the utilisation of its three bottleneck resources – turning centre, subassembly assembly and final inspection – over twelve months. During the first rollout, it becomes apparent that final inspection is over 115 per cent utilised in the third and fourth planning months, while sales has already signalled delivery commitments for this period. The procurement manager uses these figures to negotiate earlier delivery schedules and additional advance quantities with the supplier of critical inspection parts. In parallel, an external inspection capacity is qualified and documented in a Risk Mitigation Plan as a fallback.

- Introduction of a monthly RCCP cycle with fixed participation from sales, production and procurement
- Reduction of the planned resources to three bottlenecks to lower the master data maintenance effort
- Agreement of flexibility corridors with the supplier for critical inspection parts
- Establishment of an external inspection capacity as safety capacity for demand peaks

### **Conclusion**

Rough Cut Capacity Planning provides companies with a fast yet meaningful feasibility check of the production programme before detailed planning and commitments are made. The focus on a few bottleneck resources keeps the effort manageable and makes bottlenecks visible at an early stage. For

procurement, RCCP results are a valuable basis for negotiation and control, for example regarding lead times, flexibility corridors and sourcing strategies. What matters are clean master data, a fixed planning rhythm and regular feedback between sales, production and procurement. Those who master these points reduce schedule risks and increase the binding nature of commitments in both directions.

## Frequently asked questions

### What does Rough Cut Capacity Planning (RCCP) mean?

RCCP is a mid-term capacity planning method that checks at an aggregated level whether the available resources are sufficient for the planned production programme. It works with product families, time buckets and average values, making it the rough preliminary stage before detailed fine planning.

### What is the difference between RCCP and CRP?

CRP (Capacity Requirements Planning) works in detail at the level of individual operations and machines, calculating to exact lead times. RCCP, by contrast, looks at aggregated key resources and periods. In practice, RCCP is used for feasibility checks and CRP for operational scheduling.

### Which resources are considered in RCCP?

Typically only bottleneck resources such as key machines, bottleneck workstations or critical skilled personnel. This reduction keeps the maintenance effort low and increases the meaningfulness of the results. Which resources are bottlenecks should be reassessed periodically.

### How is RCCP implemented in companies?

In practice, RCCP is frequently run as part of ERP or APS systems based on load profiles and routings. For simple structures, a spreadsheet is sufficient. What matters is the data quality of the master data, not the software.

### Why is RCCP relevant for procurement?

The results show when and where capacity bottlenecks are looming, thereby providing the basis for forecast communication, delivery schedules and negotiations with suppliers. Buyers can derive safety capacity, flexibility corridors and alternative sources from them.

### How often should RCCP be carried out?

A monthly planning cycle with weekly updates of the near-term buckets is commonly used. With volatile demand, shorter cycles may be sensible. What is important is that results are reported back to sales and procurement on a binding basis.