9 inputs determine the right nitrogen generation.

A distributor-facing pre-quote checklist. If the customer answers most of these at the first call, the second call is the quote.

01 **What's the customer currently spending on nitrogen each month, cylinders, dewars, or bulk liquid?**

This is the denominator on the entire payback case. Pull the last **12 months of supplier invoices**, not the customer's memory: most customers underestimate by 30-50% because hazmat fees, demurrage, and rentals show up on separate invoice lines. The full- spend number drives the case, without it the conversation stays theoretical.

02 **What nitrogen purity does the application actually need, PPM O2 or %?**

Sets the generator size and the feed-air ratio. **Tire fill and electrical-cabinet purge run at 95-99%**, food packaging and laser cutting at 99.5-99.9%, electronics and pharma at 99.999%. Higher purity costs more feed air per unit of nitrogen: roughly 10× feed air at 99.999% versus 3-4× at 99%, so under- or over-specifying purity directly affects capital cost and operating economics.

03 **What's the peak nitrogen flow rate (SCFM), and how long does the peak last?**

Size to peak, never average. **The buffer tank smooths but does not erase peaks**, and an undersized generator ends in supplemental cylinder deliveries that erode the payback case. Get the peak SCFM and the duration so the generator and buffer vessel are sized together.

04 **Where is the nitrogen consumed, at plant pressure, in cylinders, or somewhere with no building?**

This is the format decision. **Plant pressure** = standard PSA. **Cylinder pressure (2,200-3,500 PSIG)** = high-pressure fill system. **Remote site or no indoor space** = containerized. Get this answer before sizing anything; it determines the entire product family and the price band.

05 **What's the existing compressor's available SCFM at the PSA's required inlet pressure?**

PSA needs roughly **3-4 SCFM of treated feed air per 1 SCFM of nitrogen** at standard purity, and the ratio rises sharply with purity. If the existing plant compressor can't supply that on top of current demand, the install is dead before it starts: quote a compressor upgrade alongside the generator. SPC has the compressor under the same umbrella.

06 **Is a desiccant dryer (-40°F PDP) and a coalescing filter already in place upstream of where the PSA will sit?**

Mandatory. Carbon molecular sieve is destroyed by moisture and oil: a refrigerated dryer will not protect the beds, and a missing coalescing filter dumps oil aerosol into the generator. If either is absent or undersized, quote the upgrade as part of the install scope. This is protecting the customer's capital investment in the sieve beds, not an upsell.

07 **What's the install footprint, indoor floor space, outdoor pad, or no building at all?**

Drives format. Indoor floor space → standard skid or cabinet. Outdoor pad → containerized or enclosed standard. **No building** → containerized is the answer. Confirm pad rating, power (voltage + phase), ambient conditions, and the nitrogen-line routing out to the point of use.

08

What ROI horizon is the customer expecting, and is there CFO appetite for capital?

Steady-state customers in the $3K-$8K/month nitrogen-spend range typically land **18-30 month payback** on a standard PSA install. Mission-critical customers (aviation, defense, remote sites) often have non-financial drivers (supply-chain independence, mission readiness) that dominate the decision regardless of payback math. Match the talk track to the customer's actual decision driver.

09

Is the customer planning to relocate this asset later, or is this a permanent install?

Optionality matters on long-life capital. **Fixed installs are effectively stranded** if the site closes; containerized packages can be lifted onto a truck and relocated to the next site. Multi-site corporate customers and operations planning facility consolidation often choose containerized for the optionality alone.