AOPL.TECH

Industry 4.0 Readiness Checklist and 12-Month Roadmap

For Indian manufacturers. Score your plant in 15 minutes, then follow the steps in order.

1. Visibility
RFID, IoT

2. Connectivity
IT and OT

3. Energy
IBMS

4. Compliance
OCEMS, air

5. Automation
Robots, AI

Asset Online Pvt Ltd (AOPL) · aopl.tech
RFID and AIDC · Smart buildings · Environmental intelligence · IT infrastructure · AI and robotics
Bengaluru · Hyderabad · Chennai · Mumbai · Delhi NCR · Pune

Part 1: The readiness checklist (40 points)

Tick a box only if it's true today, not planned. One point per tick. Be strict: a half-done item scores zero.

A. Assets and inventory

Check	Yes
Every fixed asset has a unique tag (barcode or RFID) that matches the fixed asset register	☐
Last physical verification was completed within the last 12 months, with discrepancies closed in the books	☐
We know the location and custodian of every high-value asset	☐
System stock matches physical stock within 2% in stores	☐
Goods in and goods out are scanned, not typed	☐
Returnable assets (pallets, bins, cylinders, tools) are counted per trip	☐
Calibration and maintenance due dates are tracked per asset, not in a separate Excel	☐

B. Data and systems

Check	Yes
One item master and one asset master shared by ERP, stores and maintenance	☐
Production counts reach the ERP the same day without retyping	☐
Machine downtime is logged with a reason code	☐
Managers see one dashboard for output, quality and downtime	☐
Data from the last 12 months can be pulled in under an hour	☐
Someone owns data quality (a name, not a department)	☐
Key machines expose data (PLC, OPC UA, Modbus or sensors)	☐

C. Network and security

Check	Yes
Wi-Fi or wired network covers the whole shop floor and stores, not just offices	☐
Machines (OT) sit on a separate network segment from office IT	☐
A firewall controls traffic between OT and IT, and to the internet	☐
Remote access by vendors is logged and time-limited	☐
We can report a cyber incident to CERT-In within 6 hours (named owner, process written down)	☐
Backups of critical systems are tested at least twice a year	☐

D. Energy and buildings

Check	Yes
Electricity is sub-metered by area or major load (HVAC, compressors, lines, lighting)	☐
Someone reviews energy per unit of output every month	☐
HVAC setpoints and schedules were checked in the last 6 months	☐
Lighting is controlled by schedule, daylight or occupancy in large areas	☐
Fire, access, CCTV and HVAC alarms can be seen in one place	☐
Compressed air leaks are surveyed at least once a year	☐

E. Environment and compliance

Check	Yes
We know whether our consent to operate requires OCEMS, CEMS or effluent monitoring	☐
Where required, analysers send live data to CPCB and the state board without gaps	☐
Analyser calibration records are current and auditable	☐
Ambient or indoor air quality is measured where people work	☐
We can produce emissions and energy data for a customer's ESG questionnaire within a week	☐
Exceedance alerts go to a named person, not a shared inbox	☐
Water consumption and discharge are metered	☐

F. People and process

Check	Yes
A senior person owns the digital plan and has a budget	☐
At least two people on site are trained to run the systems day to day	☐
Every past pilot had a measured baseline and a written result	☐
Floor teams were told what the data is for before sensors went in	☐
Processes we want to automate are written down and stable	☐
Vendors hand over documentation and admin access at project close	☐
We review the plan every quarter against results	☐

Total possible: 40 points (A 7, B 7, C 6, D 6, E 7, F 7).

Part 2: What your score means

Score	Where you are (acatech stage)	Do this next
0-12	Computerisation: separate systems, manual counts	Tag assets and stores (section A). Fix the item and asset masters. Run one RFID pilot with a baseline.
13-22	Early connectivity: some systems talk, the floor doesn't	Network and OT separation (section C). Edge gateways on 5-10 key machines. Energy sub-metering.
23-31	Visibility: live data in parts of the plant	One dashboard for output, energy and compliance. BMS tuning. Close gaps in OCEMS data.
32-40	Ready for transparency and prediction	Root-cause analytics, predictive maintenance on critical machines, first cobot or vision cell.

Rule of thumb: don't start robot or AI projects until sections A, B and C each score at least 5. Most stalled projects skipped that groundwork.

Part 3: The 12-month roadmap

Months	What to do	What you should be able to show
1-2	Readiness audit, baseline numbers, RFID pilot on one asset class	Verified asset list for the auditor; before-numbers for stock and energy
3-4	Network, edge gateways, OT/IT separation	Machine and sensor data you trust
5-6	Energy sub-metering, BMS on the biggest loads	Monthly energy report; first savings
7-8	OCEMS / CAAQMS where required; indoor air quality in offices	Compliance data you can show a board or a buyer
9-10	Inventory RFID across stores and dispatch	Stock accuracy you can plan on
11-12	First cobot or vision cell; predictive maintenance on critical machines	Automation built on real data

Part 4: Work out payback before you buy

Fill this in for each project. If you can't fill a line with a real number, measure it first.

Line	How to calculate	Your number
One-time cost	Hardware + software + installation + training	₹
Running cost a year	Licences + AMC + consumables (tags, labels)	₹
Labour saved a year	Hours saved a month × 12 × loaded cost per hour	₹
Stock loss avoided a year	Last year's write-offs × expected reduction	₹
Energy saved a year	kWh saved × your tariff	₹
Downtime avoided a year	Hours avoided × contribution per hour	₹
Penalties or rework avoided	From last year's actuals	₹
Net saving a year	Savings – running cost	₹
Payback (months)	One-time cost ÷ (net saving ÷ 12)	

Use last year's actual numbers where you have them. Vendor estimates are a starting point, not a baseline.

Want a second pair of eyes? We'll walk your plant with this checklist and give you a written stage score and first-step plan.

aopl.tech/contact-us · WhatsApp and phone: 088846 22046

Sources: acatech Industrie 4.0 Maturity Index (update 2020); CARO 2020 clause 3(i)(b); CERT-In directions, 28 April 2022; CPCB directions on online continuous emission and effluent monitoring for 17 categories of highly polluting industries (2014).