**DIRECTORATE OF TECHNICAL EDUCATION**
**VOCATIONAL & INDUSTRIAL TRAINING**
**HIMACHAL PRADESH, SUNDERNAGAR**
**(E-mail- traininghp@rediffmail.com, PH- 1907-267416, 267631)**

No. EDNTEH-F007/123/2023-NCVET/NOC Opening New ITI-48877 Dated 20/11/2026

To

The Director,
Department of Information & Public Relations,
Himachal Pradesh, Shimla-2.

**Subject:-** **Public Notice regarding inviting applications/proposals for opening of new Private ITIs and addition of new trade(s)/unit(s) in existing Private ITIs for the next academic session.**

Sir,

Please find enclosed herewith-public notice regarding inviting applications/proposals for opening of new Private ITIs, Addition of new trade(s)/unit(s) in existing Private ITIs for the next academic session 2027-28.

It is therefore, requested that public notice may please be got published in the leading News Papers in Hindi and English on 22/11/2026 and 23/11/2026 as well as in the News Magazines within Himachal Pradesh.

All District and local units of your Department may please be requested to give it wide publicity through Akashvani Shimla/FM Radio Stations even in the remotest areas of the State and outside state.

"This may please be treated as Most Urgent and given top priority."

Yours faithfully,

Director
Technical Education
Vocational & Industrial Training
Himachal Pradesh, Sundernagar

Encl: As above.

Endst. No. As above- 48878-881 Dated 20/11/2026

Copy to alongwith a copy of the public notice forwarded to:-

1. The Principal Secretary (Technical Education) to the Govt. of Himachal Pradesh, Shimla- for favour information with reference to letter No. TE-B/248/2026 (E-376776) dated 15-10-2026.
2. DDO (Internal) and Store Officer (Internal) for information and necessary action.
3. TO-I (Internal) for information and necessary uploading on the departmental website.
4. All the Principal of Govt./Pvt. ITIs in Himachal Pradesh for information and necessary action and for giving wide publicity.

Director
Technical Education
Vocational and Industrial Training
Himachal Pradesh, Sundernagar

**DIRECTORATE OF TECHNICAL EDUCATION**
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# PUBLIC NOTICE

In continuation to previous Advertisement dated 16-10-2026 for inviting proposals for advertisement of new Private ITIs and the introduction of new trades/units in existing Private ITIs, it is brought to the notice of general public that the Directorate General of Training (DGT), Government of India, has reopened the DGT Affiliation Portal for submission of Affiliation applications upto 25-11-2026 for the following categories :-

1. Establishment of New ITIs/MSTIs.
2. Addition of New Trades/Units in Existing ITIs.

Interested applicants, including individuals, societies, trusts, private limited companies and existing ITIs, who intend to establish a new NCVET-affiliated ITI in Himachal Pradesh or introduce additional trades/units in an existing ITI, may submit their proposals in accordance with the "NCVET Affiliation Norms for ITIs - 2025", available at the following link: https://www.dgt.gov.in/sites/default/files/2025-12/Circular-for-Affiliation-Norms-for-ITIs-2025.pdf . The new ITI affiliation criteria prescribed by DGT in 2025 shall be applicable.

In addition, the state-specific guidelines regarding the issuance of No Objection Certificates (NOCs) and the revised fee structure shall also be applicable at various stages of the process. These guidelines are available on the Department's official website: https://techedu.hp.gov.in/

Applicants intending to establish a new ITI must apply with the following minimum number of trades and units:

- For Hilly Areas: Minimum 02 trades and 04 units.
- For Other Areas: Minimum 04 trades and 08 units.

At least one of the proposed trades must fall under the 'New Age Trade/Sector' category, as defined in the Department's Skill Gap Analysis Report, available on the Department's website. The applicant must first register on the DGT Affiliation Portal: https://affiliation-dgt.skillindiadigital.gov.in/

The portal will remain open for submission and processing of applications until 25-11-2026. At the time of registration, applicants are required to deposit the prescribed DGT fee of ₹5,000/- or such amount as specified on the portal. After submission of the proposal, the requisite non refundable State application fee i.e. Rs. 15,000/- is required to be deposited upto 10-12-2026 through online mode in SCVT Account No. 55076226411, SBI, Govt. Polytechnic Sundernagar Branch, IFSC Code SBIN0051300 (SEC ST Council Vocational Training Sundernagar) and the receipt of the same alongwith hard copy of the Detailed Project Report (DPR)/Proposal (including various NOC's/document of relevant department as prescribed in additional State Guidelines) will have to be submitted in the office of Directorate Technical Education Vocational & Industrial Training Institute, Sundernagar, Himachal Pradesh on or before 10-12-2026 upto 05.00 P.M.

**Information and Instructions :-**

i) All applications invited/submitted through the portal shall be processed strictly in accordance with the Affiliation Norms– 2025 and additional guidelines of State. Further upon fitness of the proposal NOC will be issued by depositing additional fees i.e. Rs. 20,000/- during State-I process.

ii) The DGT and State application Fee structure for Stage-I and Stage-II, Inspection etc. is separate at various stage of application/affiliation process for which applicant has to be vigilant and take action time to time.

iii) The criteria prescribed by DGT (Affiliation Norms-2025) and State/State Council of Vocational Training (SCVT) which is available on the DGT Portal and Departmental Website respectively shall have to be followed simultaneously by the applicants during application and affiliation process.

iv) No admission shall be.allowed till affiliation is granted by DGT.

v) The proposal shall have a one-year window from the date of NOC issuance to complete Stage-II application, failure to complete the State-II application within the time frame will result in its rejection. In such cases the applicant must restart the process from the beginning, following the standard procedure for a new ITI affiliation.

vi) If application at Stage-I is approved by the State, a system generated NOC will be issued.

In case NOC is not issued within 03 months by the State Government the proposal may be treated as deemed rejected.

vii) In case of non-issuance of NOC within prescribed time limit, this Directorate shall not be responsible or liable for any financial/physical implications.

viii) The application processing will be only through DGT portal/desktop assessment. However, the State may conduct physical inspection to ensure or authenticate the documents and other geographic/demographic parameter during Stage-I and II process if required.

ix) The fee once submitted shall not be refunded/adjusted.

x) The applications once submitted shall not be allowed to be edited/modified as per DGT guidelines.

xi) If applicant applied for MSTI Scheme (unserved block) the application will be considered as per MSTI guidelines before issuing the NOC.

xii) The applicant are advised to go through all prescribed DGT and State guidelines carefully before submitting your application on the portal.

xiii) The grading criteria is essential for addition of trade/unit and shifting of location etc. which may be referenced from the DGT norms.

xiv) Applications will be accepted or rejected in accordance with the DGT Affiliation norms 2025, timelines issued and additional guidelines of the State.

xv) For any other clarification please contact Directorate of Technical Education Sunder Phone Number 01907-266120/266820 email: techedu-hp@nic.in well before the closing date.

XXX

Director
Technical Education
Vocational & Industrial Training
Himachal Pradesh, Sundernagar

State Additional guidelines

Additional guidelines approved by State Govt. vide Letter No. : TE-B/12/2024, dated 21-05-2026 for implementation in the State of H.P for submission of application and issuance of NOC for establishment/opening of new Private ITI, addition of trades/units in existing Private ITIs, Shifting/Relocation of Existing Private ITI as per Affiliation Norms – 2025 :-

| Sl. No. | Component | Criteria fixed by DGT | Additional Criteria proposed at State Level |
|---|---|---|---|
| 1. | Establishment of New Private ITI | -- | The Society/Trust/Organization willing to start a new Private ITI Addition of Trade Units in existing Private ITIs, change of site location, merger of ITIs will have to submit online application for Stage-I alongwith an application fee of Rs. 15,000/- through online mode.<br>Detailed Project Report (DPR) for opening of a new Private ITI should also be submitted through offline mode for scrutiny so that the same is submitted to Govt. for issuance of NOC after inspection.<br>The Relevant revenue paper (not more than 6 month old), safe land patch undertaking, three phase power availability, Public Road connectivity, Water availability, Local Area authority NOC, ITR of organization, Financial status etc. may also be attached in the Detailed Project Report. |
| | | i State Directorate shall assess whether there is sufficient demand for the trade(s) applied by the applicant or it will fulfil the skill requirements of that particular district/block. Based on this skill gap analysis, State Directorate may take the decision on NOC application. | At least 01 Trade should be New Age Trade/Sector Category as per Skill Gap Analysis Report of the Department (Copy enclosed). |

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| | | | |
|---|---|---|---|
| | | ii. The State Directorate may implement trade rationalization by rejecting the NOC application if the trade proposed for affiliation has recorded more than 50% vacant seats in the same district over the past two consecutive years. | The State Directorate may implement trade rationalization by rejecting the NOC application if the trade proposed for affiliation has recorded more than 50% vacant seats in the same district over the past three consecutive years. |
| | | iii. State Directorate shall also ensure that the institute meets the land requirement set by DGT for opening a new ITI. | -- |
| | | iv. State Directorate shall also confirm if the applicant fulfils the minimum criteria of 04 trades required for opening a new ITI. | There should be minimum 02 Trades in H.P. being the Hilly Area State |
| | | v. For applications submitted under the MSTI Scheme, the concerned State Directorate must ensure that the block where the institute is proposed to be located is unserved. The decision on such NOC applications must be made in accordance with the guidelines outlined in Section 5.1 of Chapter 5. | -- |
| | | vi. The NOC application can be rejected if any fabricated or forged document are submitted by the applicant. | The NOC application can be rejected if the area of business/operation of the Society/Trust/Organization is beyond the jurisdiction as per set Laws. |
| 2. | Addition of Trades/Units in existing Private ITIs | i. If the grading of the institute falls below the benchmark criteria set by the DGT, the State/UT may reject the NOC application for the addition of trade/units. | -- |

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| | | | |
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| | | ii. The State may conduct a skill gap analysis and trade rationalization for ITI applications, based on the 50% vacant seats criterion, similar to the process followed for new ITIs. | For addition of Trades, admissions and Skill Gap Analysis Report of the Department should be taken into consideration. Number of Trades can be curtailed keeping in view above factors and there should be diversity of Trades. Number of Govt./Private ITIs/Trades existing in a specific region should also be considered. |
| | | iii. The NOC may be rejected, if de-affiliation proceeding is initiated against the ITI due to serious complaints which clearly impacts the quality of ongoing training, or if any fabricated or forged document are submitted by the applicant. However, such decision, Affiliation Norms for ITIs Year-2025 if any, rests solely with the concerned State/UT Directorate, with no intervention from the DGT. | The NOC may be rejected if the applicant fails to deposit the prescribed fee for Stage-I and for issuance of NOC within stipulated time period. |
| 3. | Shifting/Relocation of Existing Private ITI | i. If shifting includes new trade/unit addition, ensure minimum grading requirements (as per grading score at the time of application) are fulfilled. | -- |
| | | ii. Institutes with only existing trades being shifted are exempted from minimum four trade and grading score criteria. | -- |
| | | iii. For MSTIs established in unserved blocks, relocation shall be permitted only within the same block, as MSTI relaxations are block-specific. | -- |

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| | | | |
|---|---|---|---|
| | | -- | The applicant existing Private ITI should submit following documents :-<br>1. Resolution passed by its Society/Trust/Organization/ Board for relocation/shifting of the Institute.<br>2. An affidavit regarding no training and financial liabilities and non-dispute of any sort and their clearance, if found at later stage.<br>3. NOC from the Local Body where the Institute is proposed to be shifted/relocated.<br>4. NOC of HPSEBL. Jal Shakti Vibhag and other concerned Department where the Institute is proposed to be shifted/relocated.<br>5. Availability of public road transport facility where the Institute is proposed to be shifted/relocated. |

The other provisions for renewal of affiliation, Name Change, DST Affiliation, Closure of ITI, De-affiliation/Surrender of Trades/Units as per Affiliation Norms for ITIs-2025 will be applicable at State level also.

**Note :-**

i) **The provision/criteria mentioned in Column No. -3 in the Table ibid may vary and the applicant will have to verify the same before applying on the DGT Affiliation Portal.**

ii) **The applications will be scrutinized on first come- first served basis for issuance of NOC.**

iii) **The proposal/application will be considered for issuance of NOC only within a period of three months after the closing date of DGT Affiliation Portal. In case, the NOC is not issued with this time period, the proposal/application will be deemed to be rejected.**

iv) **No admissions are allowed in any Trade/Unit before obtaining affiliation from DGT.**

DGT & STATE Fee structure

Fee Structure approved in the 9th meeting of the Governing Council of State Council of Vocational Training (SCVT) Society held on 06-04-2026 for establishment/opening of new Private ITI, addition of trades/units in existing Private ITIs, Shifting/Relocation of Existing Private ITI as per Affiliation Norms – 2025 :-

| Sl. No. | Type of Fee to be charged | Fee to be paid to the DGT (in Rs.) | Fee to be charged by the State (in Rs.) | Remarks |
|---|---|---|---|---|
| 1 | Stage-I Application Fee | 5,000/- plus GST | 15,000/- | **For opening of new Private ITI, Addition of Trade/Units in existing Private ITIs, change of site location and merger of ITIs.** |
| 2 | Fee to be charged for issuance of NOC | -- | 20,000/- | |
| 3 | Stage-II Application Fee | 10,000/- plus GST | 20,000/- | |
| 4 | Joint Inspection Fee | -- | 20,000/- | |
| 5 | Fee for second and final re-scheduling of Joint Inspection | 5,000/- | 20,000/- | |
| 6 | Application Fee for Renewal of Affiliation | 5,000/- plus GST | 15,000/- | Only for renewal of Affiliation |
| 7 | Application Fee for Name change | 5,000/- plus GST | 5,000/- | Only for Name change |
| 8 | Application Fee for DST Affiliation | -- | 5,000/- | Only for DST Affiliation |
| 9 | Application Fee for closure of ITI, De-affiliation/Surrender of Trades/units | -- | 5,000/- | Only for closure of ITI, De-affiliation/Surrender of Trades/Units |

# Report

# on

# Skill Gap Study for Emerging

# &

# High-Potential Manufacturing Sectors

**By**

**Department**
**of**
**Technical Education**
**Vocational and Industrial Training ,**
**Himachal Pradesh**

# Index


| Sr. No | Content | Page No |
|---|---|---|
| 1. | Summary | 1 |
| 2. | 1. Himachal Pradesh in National Development Context | 2 |
| 3. | 2. Objectives | 2 |
| 4. | 3. Sector-wise Overview | 3 |
| 5. | 3.1 Clean Energy & Electric Mobility | 3 |
| 6. | 3.2 Advanced Manufacturing: Pharma, Food Processing & Textiles | 3-5 |
| 7. | 3.3 Semiconductors, Artificial Intelligence, Robotics & Automation | 5-6 |
| 8. | 4. Demand Outlook | 7 |
| 9. | 5. Strategic Recommendations | 7 |
| 10. | 5.1 Curriculum & Program Reforms | 7 |
| 11. | 5.2 Modular & Stackable Skill Pathways | 7 |
| 12. | 5.3 Infrastructure Strengthening & Faculty Development | 7 |
| 13. | 5.4 Industry–Institution Collaboration | 7 |
| 14. | 6. Expected Outcomes | 8 |

# Skill Gap Study for Emerging & High-Potential Manufacturing Sectors


## Summary

Himachal Pradesh stands at a critical juncture where **strategic skilling interventions** can significantly accelerate its transition towards **sustainable growth, advanced manufacturing, and digital competitiveness**, fully aligned with the national vision of **Viksit Bharat @2047**. The State enjoys distinct comparative advantages including abundant renewable energy resources, a well-established pharmaceutical and food processing manufacturing base, emerging electric mobility adoption, and a widespread network of technical education institutions. However, these advantages are currently underleveraged due to **systemic skill gaps across technical, digital, and applied domains**.

**This Skill Gap Study presents a comprehensive assessment of emerging and high-potential manufacturing and technology sectors**, encompassing **Clean Energy and Electric Mobility, Advanced Manufacturing (pharmaceuticals, food processing, textiles), and High-Technology domains such as semiconductors, artificial intelligence, robotics, and automation**. The analysis indicates that **industrial demand is rapidly shifting towards automation, digitisation, green technologies, and quality-intensive manufacturing**, whereas the **existing skilling ecosystem remains largely theory-oriented, fragmented, and insufficiently aligned with contemporary and future industry requirements**.

The report places before the Conference a set of **clear policy decisions**:

(i) Comprehensive curriculum modernization,
(ii) Introduction of demand-driven ITI/Diploma programs,
(iii) Establishment of sector-focused **Centres of Excellence**,
(iv) Structured faculty upskilling and industry immersion, and
(v) Institutionalization of robust **industry–academia partnerships**. Implementation of these measures is expected to generate **quality employment**, enhance industrial productivity, reduce training costs for enterprises, and position Himachal Pradesh as a **model State for future-ready skilling**.


## 1. Himachal Pradesh in the National Development Context

India's growth trajectory over the next two decades will be driven by **manufacturing competitiveness, clean energy transition, and adoption of advanced digital technologies**. Flagship national initiatives such as the **IndiaAI Mission**, **Semicon India Programme**, **National Electric Mobility Mission**, **Green Hydrogen Mission**, and **SAMARTH Udyog Bharat 4.0** collectively envision large-scale job creation in technology-intensive and sustainability-linked sectors. These missions explicitly

recognise that the availability of **industry-ready skilled manpower at scale** is a decisive success factor.

Himachal Pradesh is uniquely positioned to align with these national priorities. Its surplus clean power generation, environmentally sensitive development approach, strong pharmaceutical cluster in the **Baddi– Barotiwala–Nalagarh Industrial Area (BBNIA)**, and growing EV ecosystem provide a strong foundation for future industrial growth.

Simultaneously, the State has a substantial skilling infrastructure comprising **ITIs, Polytechnics, Engineering Colleges, and non-formal training centres**. Addressing identified skill gaps will enable effective convergence with central schemes, attract private investment, and ensure inclusive employment generation, particularly for youth in rural and semi-urban areas.

## 2. Objectives

The key objectives of this combined Skill Gap Study are to:

- Undertake a **sector-wise assessment of current and projected manpower demand** in emerging and high-potential manufacturing sectors up to 2030.
- Identify **technical, digital, managerial, and transversal skill gaps** across ITI, Diploma, and Degree levels.
- Examine the **relevance and adequacy of existing curricula**, pedagogical approaches, faculty capacity, and training infrastructure.
- Recommend a **future-ready, modular, and scalable skilling framework** aligned with NSQF, Skill India, and WorldSkills standards.

### 2.1 Alignment with National Missions

The State's skilling strategy is designed to converge with flagship national initiatives, ensuring that Himachal's youth are competitive on a global scale.

| National Mission | HP Sector Alignment | Priority Focus Areas |
|---|---|---|
| IndiaAI Mission | AI, Robotics & Automation | Model deployment, Data Analytics, IIoT |
| Semicon India | High-Technology Domains | PCB Assembly, Testing, Embedded Systems |
| Green Hydrogen Mission | Clean Energy | Electrolyser O&M, Biomass & Biogas |
| PM E-DRIVE Scheme | Electric Mobility | BMS, Powertrain diagnostics, Charging Infra |
| SAMARTH Udyog 4.0 | Advanced Manufacturing | Smart Factories, PLC/SCADA, Digital Twins |

# 3. Overview

## 3.1 Clean Energy & Electric Mobility

### Sector Overview

Himachal Pradesh has a strong comparative advantage in clean energy due to abundant hydropower, vast untapped solar potential, emerging biomass and biogas opportunities, and a rapidly growing electric mobility ecosystem. While hydropower dominates current generation, the next phase of growth lies in **distributed solar, energy storage, EV charging infrastructure, and O&M services**. This transition is creating new job roles across installation, operation, diagnostics, and system integration, demanding a specialised and safety-oriented workforce.

### Skill Gap Analysis

#### A. Technical Skill Gaps

- Limited hands-on skills in **solar PV system installation, inverter configuration, energy storage systems, and grid integration**
- Inadequate exposure to **EV powertrains, Battery Management Systems (BMS), high-voltage safety, and EV diagnostics**
- Weak competencies in **EV charging station installation, load management, and smart metering**
- Insufficient skills in **preventive and predictive O&M** for renewable assets, especially in hilly and cold-climate conditions

#### B. Curriculum & Pedagogical Gaps

- Curricula largely **theory-centric**, with minimal coverage of EVs, storage systems, hybrid renewable technologies, and safety standards
- Poor alignment with **NSQF, industry job roles, and emerging green occupations**
- Limited modular, short-term, and stackable certification courses for upskilling existing technicians
- Pedagogy lacks **project-based learning, live installations, and field exposure**

#### C. Infrastructure & Faculty Gaps

- Inadequate laboratories for **EVs, batteries, charging systems, solar inverters, and energy storage**
- Faculty with limited **industry exposure and certification in emerging green technologies**
- Weak apprenticeship and structured OJT linkages with solar EPCs, DISCOMs, EV service providers, and OEMs

## 3.2 Semiconductors, Artificial Intelligence, Robotics & Automation

### Sector Overview

Semiconductors, Artificial Intelligence (AI), Robotics, and Automation constitute the backbone of **Industry 4.0** and are central to India's **Viksit Bharat 2047** vision. National initiatives such as the **IndiaAI Mission**, **Semicon India Programme**, and **SAMARTH Udyog Bharat 4.0** are driving large-scale investments in advanced manufacturing, digital infrastructure, and smart industrial systems.

While Himachal Pradesh does not yet host large semiconductor fabrication units, the State holds strong potential in **electronics assembly, embedded systems, automation services, AI-enabled applications, digital manufacturing, and MSME-based high-tech services**. The existing network of Engineering Colleges, Polytechnics, ITIs, ATLs, and skilling schemes provides a foundational ecosystem; however, **industry-ready skills for emerging technologies remain inadequate**, limiting the State's ability to fully leverage national programmes and future industrial opportunities.

## Skill Gap Analysis

### A. Technical Skill Gaps

- Limited practical skills in **Artificial Intelligence, Machine Learning, Data Analytics, and AI model deployment**
- Inadequate exposure to **embedded systems, sensors, industrial electronics, and PCB assembly/testing**
- Skill shortages in **industrial automation, PLC/SCADA systems, robotics programming, and mechatronics integration**
- Weak competencies in **digital manufacturing, IIoT, cyber-physical systems, and smart factory operations**
- Insufficient hands-on experience with **semiconductor-related support roles**, such as electronics testing, clean-room practices (basic level), and precision instrumentation

### B. Curriculum & Pedagogical Gaps

- Curricula across B.Tech., Diploma, and ITI levels remain **largely theory-centric**, with limited application-oriented learning
- Emerging programmes (AI/ML, AI & DS, IoT, Mechatronics) lack **industry-grade projects, system-level design, and deployment exposure**
- Weak integration of **interdisciplinary learning**, combining electronics, computing, mechanical systems, and automation
- Predominant **teacher-centric pedagogy**, with insufficient emphasis on project-based, experiential, and problem-solving approaches
- Limited alignment with **future job roles, NSQF levels, and evolving industry standards**

### C. Infrastructure & Faculty Gaps

- Insufficient availability of **advanced laboratories** for AI, robotics, automation, embedded systems, and digital manufacturing
- Shortage of **licensed software, modern equipment, and industrial-grade tools** required for cutting-edge training
- Faculty members have limited **industry exposure and hands-on experience** in emerging and high-technology domains
- Inadequate opportunities for **faculty upskilling, certification, and sabbaticals in industry or R&D environments**

- Weak **industry–academia linkages**, resulting in limited meaningful internships, apprenticeships, and real-world project exposure for students

### D. Cross-Cutting Observations

- Existing skilling schemes largely address **entry-level and short-term employability**, but are not designed for advanced and emerging technologies
- There is a growing mismatch between **rapidly evolving industry demand** and the **current pace of curriculum and infrastructure upgrades**
- Without targeted intervention, the State risks missing opportunities created by **national semiconductor, AI, and Industry 4.0 missions**

### E. Policy-Relevant Implications

- Immediate need to **re-orient technical education towards application-driven, industry-linked skilling**
- Establishment of **Centres of Excellence (CoEs)** in AI, Robotics, Automation, and Embedded Systems is critical
- Faculty development, modern infrastructure, and structured industry collaboration are **key enablers for workforce readiness**
- Strengthening these sectors will support **high-quality employment, MSME innovation, and digital transformation** in Himachal Pradesh

## 3.3 Advanced Manufacturing: Pharma, Food Processing & Textiles

### Sector Overview

The **Baddi–Barotiwala–Nalagarh Industrial Area (BBNIA)** represents one of the most significant manufacturing clusters in North India, hosting nearly **5,000 industrial units**, including approximately **700 pharmaceutical industries**, **10 major textile units**, and **15 large food processing and FMCG industries**. Collectively, these sectors form a **quality-intensive, compliance-driven, and technology-evolving manufacturing ecosystem**.

Pharmaceutical and biotechnology industries dominate the cluster and operate under stringent regulatory frameworks such as **GMP, QA/QC, validation, and data integrity**, while textile and food processing industries are rapidly transitioning towards **modern machinery, automation, quality assurance, and export-oriented production**. Across all sectors, there is a growing adoption of **automation, digital monitoring systems, AI-enabled quality control, and data-driven manufacturing**, which is significantly reshaping workforce requirements.

Sustained industrial growth has generated strong demand for **skilled shop-floor technicians, quality and compliance personnel, maintenance staff, and digitally competent operators**. However, the availability of industry-ready manpower remains a key constraint.

## Skill Gap Analysis

### A. Technical Skill Gaps

- Insufficient skills in **GMP-compliant manufacturing, clean-room practices, SOP adherence, and regulatory documentation**, particularly in pharmaceutical units
- Limited exposure to **process equipment, instrumentation, utilities, and automated production systems** across sectors
- Weak competencies in **quality control, validation, testing, and compliance systems** (Pharma, Textiles, Food Processing)
- Shortage of technicians trained in **automation, PLC/SCADA, industrial electronics, and process control**
- Inadequate skills in **food safety standards (HACCP, FSSAI), cold-chain management, and automated packaging systems**
- Limited familiarity with **AI, data analytics, digital manufacturing tools, and system integration**

### B. Curriculum & Pedagogical Gaps

- Absence of **sector-specific ITI and diploma programmes** for Pharmaceutical/Biotechnology and Textile industries
- Curricula not adequately aligned with **industry regulations, compliance frameworks, and evolving job roles**
- Overemphasis on **theoretical instruction**, with minimal project-based, plant-based, and experiential learning
- Digital competencies, automation, and AI concepts **not systematically embedded across non-IT disciplines**
- Teaching–learning processes remain **discipline-siloed**, with limited interdisciplinary and problem-solving orientation
- Minimal use of **industry simulations, case studies, and live production scenarios**

### C. Infrastructure & Faculty Gaps

- Absence of **dedicated training laboratories and pilot-scale facilities** for pharmaceuticals, textiles, and food processing
- Outdated workshops and labs lacking **modern machinery, automation trainers, licensed software, and digital tools**
- Faculty members with limited **exposure to regulated manufacturing environments and Industry 4.0 technologies**
- Inadequate opportunities for **faculty upskilling, industry certification, and hands-on industrial training**
- Weak **industry-led apprenticeship, internship, and sandwich course models**, reducing real-world exposure for students.

## 4. Demand Outlook

Based on policy targets, industrial expansion plans, and stakeholder consultations, demand for skilled manpower in emerging sectors is expected to grow steadily over the next five years. **Clean Energy and Electric Mobility** are projected to witness annual manpower growth of **10–15%**, driven by solar expansion, EV adoption, and charging infrastructure rollout. **Pharmaceuticals, Food Processing, and Textiles** will require a growing pool of automation-ready technicians and quality professionals. Demand in **AI, Semiconductors, and Automation** is expected to grow at an accelerated pace, particularly for hybrid roles combining domain knowledge with digital skills.

Overall, industry demand will increasingly favour **multi-skilled, digitally literate, safety-certified, and adaptable workforce profiles.**

## 5. St ategic Recommendations

### 5.1 Curriculum & Program Reforms

Introduce sector-specific ITI and Diploma programs in Electronics & Allied Emerging Technologies, with focused streams in Renewable Energy Electronics (power electronics, solar PV systems, inverters), EV Electronics & Embedded Systems, Pharmaceutical & Chemical Plant Instrumentation, Food Processing Automation, Textile Machinery Electronics, Industrial Automation (PLCs, SCADA), Artificial Intelligence, and Robotics.

Modernize and modularize existing Electronics curricula to align with Skill India Mission, National Skills Qualifications Framework (NSQF), WorldSkills standards, and Industry 4.0 requirements, ensuring regular industry-led curriculum revisions, hands-on lab upgradation, and integration of digital, embedded, and smart manufacturing competencies.

### 5.2 Modular & Stackable Skill Pathways

- Develop short-term, medium-term, and long-term modular programmes enabling continuous upskilling and reskilling.
- Enable stackable certifications allowing learners to progress from certificates to diplomas while remaining employable at each stage.

### 5.3 Infrastructure Strengthening & Faculty Development

- Establish **Centres of Excellence (CoEs)** in Clean Energy, EVs,**Automation, and AI in select ITIs and Polytechnics**
- Implement industry-led **Training of Trainers (ToT)** programmes and structured faculty sabbaticals.

### 5.4 Industry–Institution Collaboration

- Institutionalise structured apprenticeships, dual training models, and industry-certified programmes
- Promote CSR and PPP-based collaborative skill centres with placement linkage

## 6. Expected Outcomes

- Creation of a future-ready, industry-aligned workforce across priority sectors
- Enhanced employability and reduced skill mismatch.
- Improved industrial productivity and reduced training costs for enterprises.
- Stronger alignment of State skilling initiatives with **Viksit Bharat @2047**, green growth, and digital transformation goals.

Annexure I

## List of New Age / Future Skills Courses Under CTS

| Sr.No. | Name of Trade | Duration | NSQF Level |
|---|---|---|---|
| 1. | 5G Network Technician | One year | 4.5 |
| 2. | Additive Manufacturing (3D Printing) Technician | Two Year | 3.5 |
| 3. | Aeronautical Structure and Equipment Fitter | Two Year | 4 |
| 4. | Artificial Intelligence Programming assistant | One year | 3.5 |
| 5. | CNC machining Technician | Two Year | 4 |
| 6. | Computer Aided Manufacturing (CAM) Programmer | One year | 3.5 |
| 7. | Cyber Security Assistant | One year | 3.5 |
| 8. | Data Annotation Assistant | One year | 3.5 |
| 9. | Drone Pilot (Junior) | Six Month | 3 |
| 10. | Drone Technician | Six Months | 3 |
| 11. | Engineering Design Technician | One year | 3.5 |
| 12. | Fiber to Home Technician | Six months | 3 |
| 13. | Geo Informatics Assistant | One year | 3.5 |
| 14. | Green Hydrogen Production Technician | One Year | 3.5 |
| 15. | Industrial Internet of Things (IIoT) Technician | Two Years | 4.0 |
| 16. | Industrial Robotics and Digital Manufacturing | One year | 3.5 |
| 17. | Information Technology | Two Year | 4 |
| 18. | Internet of Things Technician (Smart Agriculture) | One year | 3.5 |
| 19. | Internet of Things Technician (Smart City) | One year | 3.5 |
| 20. | Internet of Things Technician (Smart Healthcare) | One year | 3.5 |
| 21. | Manufacturing Process Control & Automation | One year | 3.5 |
| 22. | Mechanic Electric Vehicle | Two Year | 4 |

| Sr.No. | Name of Trade | Duration | NSQF Level |
|---|---|---|---|
| 23. | Multimedia, Animation & Special Effects | One year | 3.5 |
| 24. | Semiconductor Technician | One Year | 4.5 |
| 25. | Small Hydro Power Plant Technician | Two Year | 4 |
| 26. | Smartphone Technician Cum App Tester | 6 Months | 3.5 |
| 27. | Software Testing Assistant | One year | 4.5 |
| 28. | Solar Technician (Electrical) | One year | 3.5 |
| 29. | Technician Mechatronics | Two Year | 4 |
| 30. | Virtual Analysis and Designer - FEM (Finite Element Method) | Two Year | 4 |
| 31. | Wind Plant Technician | Two Year | 4 |

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