Recommendations from
“National Semiconductor Taskforce”

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Constituted by

the Hon’ble Chief Adviser’s Office

the Government of Bangladesh

Taskforce inception & objective:

The semiconductor industry is one of the fastest growing sectors globally with sales clocking up to +19% growth in Q1 2025 vs same period last year. While the importance of the sector is recognized and increasing impetus is observed from emerging economies like India, Malaysia and Vietnam, the domestic industry in Bangladesh is still at its infancy despite strong potential as demonstrated by a handful of local chip designing companies (USD 6 million export revenue annually).

Semiconductor is a priority sector identified in the National Foreign Direct Investment (FDI) heatmap exercise conducted by BIDA in Q4 2024 (Appendix A) and classified as a sector requiring policy & capacity support to unlock the long-term potential of the sector. Recognizing the immediacy and importance of the sector, a "National Semiconductor Taskforce" was formed under the Chief Adviser's Office on January 1st 2025 with representation from all relevant stakeholders including academia, industry, non-resident Bangladeshi experts and government policymakers. The mandate and objective of the taskforce was defined as follows:

1. Assess need-gap of the market and identify appropriate opportunity areas for Bangladesh.
2. Provide policy & capacity-building recommendations to enable the long-term sector viability.
3. Recommend an actionable roadmap (short-term, medium-term & long-term) to effectively penetrate the semiconductor industry.

The taskforce, after multiple rounds of brainstorming and consultation, presents the following findings.

"White space" identification:

The semiconductor value chain has 3 (three) distinct stages: chip designing, fabrication, and chip testing and packaging. The taskforce assessed Bangladesh's ability to compete across these different stages of the value chain (Table 1) to identify and prioritize the right areas based on current conditions, required investment and resource commitment and availability of input factors.

The clear recommendation is to **focus on stage 1** or Design immediately and **stage 3** or Testing and Packaging for the short to medium-term horizon. Bangladesh already has a homegrown set of design engineers working with global brands (e.g. Silicon Valley companies) on chip design; and there is massive potential to scale up this subsector by upskilling the large pool of engineering and science graduates in the country. Testing & packaging is moderately labor intensive (especially testing) where Bangladesh can effectively utilize its competitive cost base and demographic dividend as an advantage; access to machines & subsequent training of technicians would be the key prerequisites

to unlocking this stage for Bangladesh. Fabrication or chip manufacturing requires significant expertise, precision and expensive equipment and, therefore, remains unviable for Bangladesh in the short to medium term.

Table 1: Assessment of Bangladesh's ability to compete in different stages of semiconductor production

Stages	Current presence or expertise	Investment & Resource Commitment	Availability of input factors	Ability to compete
Design				**Immediate**
Fabrication				**-**
Testing & Packaging				**Immediate to Mid term**

Areas of focus:

Based on the above assessment, the taskforce identified a roadmap with **3 priority areas for intervention**: (a) Skills development (b) Business environment & policy support & (c) Global linkages and collaborations. The following short, medium and long-term interventions are provided against each focus area.

1.0. Skills Development:

The taskforce recommends that a core group is set up with representatives from GoB, industry and academia to execute an internationally benchmarked skills development program for the semiconductor sector; a program that to create a reliable pipeline of engineers for hire by companies in Bangladesh and globally. The ICT Division has initiated such a program, through a proposed academy, and taskforce members have contributed extensively to the concept; consensus has been reached that this program will deliver the following.

1.1. Short-term: (2025-2026)

1.1.1. *Training modules & certifications:*

- Create a **virtual knowledge portal** to launch a tiered certification (levels 1-3), with a globally accepted and industry-backed curriculum. A combination of online courses and in-person teaching will be disseminated through selected public and private universities. This will enable a faster supply of design engineers to the market on an immediate basis.

- Encourage selected universities to offer **advanced courses for students** to pursue specializations; for example, in the senior year of bachelor's programs.

- Implement **complementary modules in targeted training institutes** that can offer internationally accepted certificates. For example, 12-week training modules on topics such as Register Transfer Level (RTL), Synthesis, Design for Testability (DFT) and Static Timing Analysis (STA).

- Strengthen **faculty development and curriculum updates** through international collaborations, exchange programs and leveraging the rich experience of NRB academics.

1.1.2. *Infrastructure:*

- Set up **industry-standard training labs**, equipped with appropriate EDA tools in at least 5 (five) selected public or private institutions by 2027.

- Establish a rotation-based **on-site training calendar** for selected industry players and universities to facilitate training on the effective use of packaging and testing machines.

1.1.3. *Ecosystem:*

- Conduct national-level **outreach programs, hackathons and innovation challenges** for universities and startups to create buzz within the potential talent pool.

1.2. Medium-term: (2027-2029)

- Universities and training institutes can **periodically adjust the certification & training modules** to cater to specific evolving areas in the sector, e.g. processors, AI accelerator, signal processing.

1.3. Long-term: (2030 & beyond)

- Selected universities will provide **MSc, PhD and postgraduate diplomas** in semiconductor.

2.0. Business Environment & Policy Support:

To catalyze semiconductors as a priority sector in the country, taskforce recommends that GoB provides the following set of smart and targeted support.

2.1. Short-term: (2025-2026)

2.1.1. *Fiscal incentives:*

- **Progressive tax exemptions** for up to 10 years set up with certain guidelines for R&D and assembly and packaging factories in Bangladesh (example: similar model is followed for renewable energy producers).

- **Bonded facilities and streamlined customs processes** for packaging and testing units to enable exports.

- Time-bound **import facilitation interventions** on selective import items such as duty waivers on servers, network and internet security, appliances.

- Set-up a **"semiconductor fund"** under ICT or Bangladesh Bank, similar to the startup model, to provide venture capital support or term-financing to new initiatives against clear criteria.

2.1.2. *Infrastructure*:

- Identify and designate **an area for semiconductor sector within the high-tech parks** for smooth initiation of new businesses with high standard infrastructure and good quality utilities supply, including uninterrupted power and high-speed internet.

- Set-up a **shared, accessible & vendor-neutral cleanroom space** in a designated university or government institution for housing of the first few packaging and testing machines.

2.2. Medium-term: (2027-2029)

- Formulate **national R&D programs** benchmarking other globally practiced models, such as the US programs on SBIR (Small Business Innovation Research) or NSF (National Science Foundation). The focus of R&D would be to continuously identify markets or products with export potential based on competitive advantage.

3.0. Global Linkages and Collaborations:

The taskforce recommends that GoB, private sector and universities work closely together to establish international alliances in the following specific areas.

3.1. Short-term: (2025-2026)

- Targeted **G2G engagements with priority countries** to unlock & execute at least 1-2 JV deals in design or testing space.

- Partnership with other **emerging countries in the semiconductor space** at both G2G and private sector levels to forge mutually beneficial outcomes focused on talent exchange, R&D, technology sharing and investments. For example, Malaysia will require 60,000 chip designers in the next 5 years to become a chip hub and local supply can provide only 20,000; this gap can be covered easily by Bangladesh.

- Leverage **Bangladesh diaspora and NRB network** from semiconductor industry to support training and investment initiatives.

- Set-up **exchange programs between local and globally renowned universities** to enable sharing of skills and expertise.

- Participate in **international semiconductor conferences**, such as SEMICON SEA, SEMICON WEST, DAC, GSA and ITC summits to showcase Bangladesh's capabilities and long-term potential.

- Engage development partners (example: JICA) to fund an **initial pilot training project on assembly and packaging** with an objective of supplying manpower back to host country.

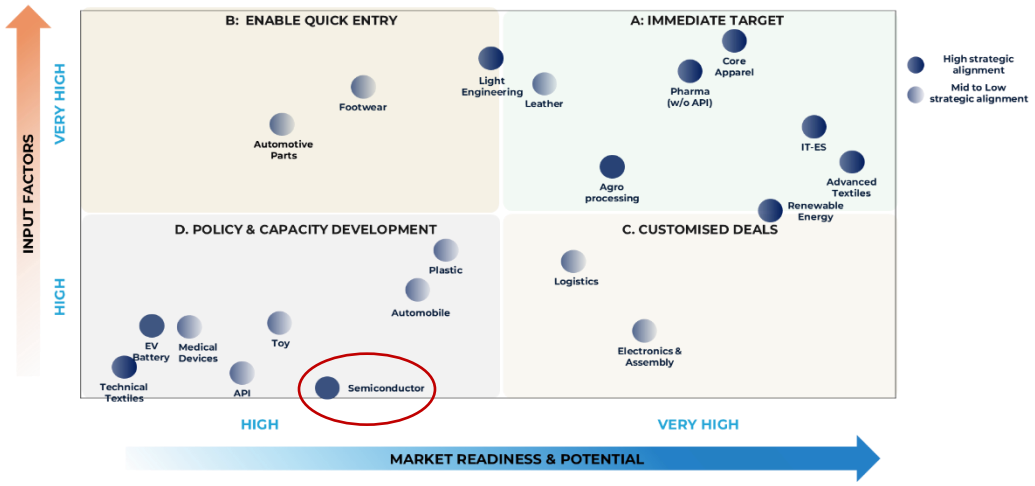
3.2. Medium-term: (2027-2029)

- Explore opportunities to **gradually enter into the fabrication space** through partnerships with other lead markets.

Summary:

The semiconductor industry offers Bangladesh a unique opportunity to graduate into a high-value, high-growth sector and establish itself as a credible player in the global technology ecosystem. As an immediate priority, it is recommended that the country leverages its abundant engineering talent and NRB expertise to focus on chip design and testing stages. As global companies increasingly look to diversify the countries they source from, the recommendations above on the interventions required on skills development, policy support and global collaborations will position Bangladesh as a competitive and emerging player in the sector.

Appendix 1: Foreign Direct Investment (FDI) Heatmap



Appendix 2: Responsibility Matrix

Category 1.0: Skills Development	Create a virtual knowledge portal to launch a tiered certification course.	Consortium / Academy of public & private sector representatives
	Implement complementary modules in targeted training institutes.	
	Strengthen faculty development and curriculum updates.	
	Set up industry-standard training labs, equipped with appropriate EDA tools in at least 5 (five) selected	

	public or private institutions by 2027.	
	Establish a rotation-based on-site training calendar for selected industry players and universities to facilitate training on the effective use of packaging and testing machines.	
	Conduct national-level outreach programs, hackathons and innovation challenges for universities and startups to create buzz within the potential talent pool.	
	Encourage selected universities to offer Advanced Courses for students to pursue specializations.	
	Universities and training institutes can periodically adjust the certification & training modules to cater to specific evolving areas in the sector.	
	Selected universities will provide MSc, PhD and postgraduate diplomas in Semiconductor.	
Category 2.0: Business Environment & Policy Support	Progressive tax exemptions for up to 10 years set up with certain guidelines for R&D and assembly and packaging factories.	NBR

	Bonded facilities and streamlined customs processes for packaging and testing units.	
	Time-bound import facilitation interventions on selective import items such as duty waivers.	
	Set-up a “semiconductor fund” under ICT or Bangladesh Bank.	Bangladesh Bank
	Identify and designate an area for semiconductor sector within the high-tech parks for smooth initiation of new businesses with high standard utilities.	BHTPA
	Set-up a shared, accessible & vendor-neutral cleanroom space in a designated university or government institution.	Consortium / Academy of public & private sector representatives
	Formulate national R&D programs benchmarking other globally practiced models.	
Category 3.0: Global Linkages & Collaborations	Targeted G2G engagements with priority countries to unlock & execute at least 1-2 JV deals in design or testing space.	CAO, ICT & BIDA
	Partnership with other emerging countries in the semiconductor space at both G2G and private sector levels.	CAO, ICT & BIDA

	Leverage Bangladesh diaspora and NRB network.	ICT & BIDA
	Participate in international semiconductor conferences.	ICT
	Engage development partner to fund an initial pilot training project on assembly and packaging.	BIDA
	Set-up exchange programs between local and globally renowned universities.	Public / Private sector universities
	Explore opportunities to gradually enter the fabrication space through partnerships with other lead markets.	Private sector