

Penang

The Silicon Valley of the East -- Malaysia's semiconductor capital and global chip supply chain node

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Executive Summary

Penang, as Malaysia's northern economic center, leverages its "Silicon Valley of the East" brand and over 50 years of electronics manufacturing heritage to become an important destination for global semiconductor industry redeployment. Amid US-China tech competition and global supply chain restructuring, Penang has attracted global semiconductor giants including Intel, Micron, Broadcom, and Texas Instruments, thanks to its comprehensive electronics industry ecosystem, mature technical workforce, and competitive business costs.

In 2024, Penang's GDP reached RM 122 billion, with cumulative manufacturing FDI reaching RM 203 billion -- accounting for a significant share of Malaysia's total manufacturing investment. AERI considers Penang a critical node for Chinese enterprises seeking to position themselves in the global semiconductor supply chain.

Part 1: City Overview

1.1 Geographic Location

Penang consists of Penang Island (293 km²) and Seberang Perai on the mainland (738 km²), connected by two bridges (Penang Bridge and Second Penang Bridge). Located in northwestern Peninsular Malaysia, Penang is strategically positioned along the Strait of Malacca shipping lane.

1.2 Population

Penang's population is approximately 1.8 million (2024), with a diverse ethnic composition: Malay 42%, Chinese 40%, Indian 10%, others 8%. The Chinese community is particularly strong in commerce and industry, making Penang one of the most Chinese-culture-rich cities in Malaysia.

1.3 Economic Structure

Penang's economy is driven by two pillars:

Electronics & Electrical (E&E) Manufacturing:

- Penang hosts over 350 multinational companies and 6,500 local manufacturing SMEs
- Global semiconductor leaders: Intel, AMD, Broadcom, Micron, Infineon, Texas Instruments, Osram, Renesas
- Complete E&E supply chain from design to packaging & testing

- Manufacturing FDI cumulative: RM 203 billion
- Trade exports account for 35% of Malaysia's national total

Tourism & Services:

- UNESCO World Heritage Site: George Town historic center
- Medical tourism hub with world-class facilities
- Growing digital economy and shared services sector

1.4 Development Strategy

Penang2030 Vision: Transforming Penang into a smart, green, and inclusive state. Key initiatives include:

- Penang South Islands (PSI): Land reclamation creating three new islands for high-tech manufacturing and BPO
- Penang Transport Master Plan: LRT, highways, and public transport improvement
- Digital Penang: Smart city initiatives and digital transformation programs

Part 2: Investment Environment and Policies

2.1 Business Environment

Penang offers a compelling investment environment:

- MIDA incentives: Pioneer Status (70-100% tax exemption up to 10 years), Investment Tax Allowance
- Free Industrial Zones (FIZ): Duty-free import of raw materials and equipment for export manufacturing
- Licensed Manufacturing Warehouses (LMW): Similar benefits for domestic market-oriented manufacturing
- Penang Skills Development Centre (PSDC): Industry-led workforce training center

2.2 Semiconductor Industry Ecosystem

Penang's semiconductor cluster is one of the most comprehensive in Asia:

- IC Design: Multiple design centers from global and local companies
- Wafer Fabrication: Growing presence including Infineon's SiC fab in Kulim (neighboring Kedah)
- Packaging & Testing (OSAT): Major OSAT players including Intel, Inari, and CEMS
- Equipment & Materials: Growing ecosystem of semiconductor equipment and materials suppliers
- Talent Pipeline: Strong engineering talent from local universities and PSDC training programs

2.3 Key Investment Incentives

- Pioneer Status: Up to 100% income tax exemption for 5-10 years for qualifying high-tech projects
- Investment Tax Allowance: 60-100% on qualifying capital expenditure
- Global Establishment Fund: Incentives for regional HQs and shared services

- Double deduction for R&D expenditure and training expenses
- Import duty exemption on machinery, equipment, and raw materials for manufacturing

Part 3: Chinese Enterprise Investment

Chinese Companies in Penang

- Several Chinese OSAT companies have established packaging and testing operations
- Chinese equipment suppliers serving the semiconductor ecosystem
- New energy companies in solar and battery manufacturing
- Construction and real estate companies active in Penang projects

Priority Sectors for Chinese Enterprises

- Semiconductor packaging & testing: Leveraging China's OSAT capabilities to serve global chipmakers in Penang
- Semiconductor equipment & materials: Supply chain opportunities in equipment, chemicals, and consumables
- New energy: Solar cell/module manufacturing and energy storage
- Medical devices: Growing cluster with export orientation
- Shared services & BPO: IT outsourcing, finance & accounting, and engineering services

Part 4: Corporate Financing and Capital Markets

Standard Malaysian banking and capital market frameworks apply. Key points for Penang:

- All major Malaysian banks have significant presence in Penang
- Strong focus on manufacturing financing, trade finance, and supply chain financing
- Access to MIDA's incentive programs for qualifying investments
- Growing fintech ecosystem supporting digital payment and trade solutions

Part 5: Compliance and Legal Environment

Standard Malaysian legal framework applies. Key considerations:

- Company registration via SSM
- Manufacturing licenses via MIDA for projects with paid-up capital \geq RM 2.5 million
- Environmental compliance: DOE approval for manufacturing projects
- Employment compliance: Minimum wage RM 1,700/month; increasing Saudization requirements
- Intellectual property protection through MyIPO

Part 6: Living and Working Information

Climate

Tropical climate with temperatures of 24-32degC year-round. Monsoon season from September to November.

Cost of Living

Significantly lower than Singapore and KL for most items.

Item | Monthly Cost (MYR)

Apartment rent (1BR, city center) | 1,500-3,000

Meals (regular restaurant) | 10-25 per meal

Groceries | 800-1,500

International school tuition | 20,000-60,000/year

Education

International schools include Dalat International School, St. Christopher's International Primary School, and Tenby Schools Penang.

Healthcare

Major hospitals include Penang Adventist Hospital, Gleneagles Penang, and Island Hospital -- all popular with medical tourists.

Culture

George Town's UNESCO heritage status ensures a vibrant cultural scene with diverse cuisine, historic architecture, and arts festivals.

AERI Assessment

Penang's position as the "Silicon Valley of the East" is more relevant than ever amid global semiconductor supply chain restructuring. AERI recommends Penang as a priority destination for:

- Semiconductor supply chain companies seeking to serve global chipmakers with Southeast Asian manufacturing bases
- Chinese OSAT companies expanding internationally
- New energy manufacturer targeting ASEAN markets from a cost-competitive base
- Technology service providers supporting the electronics manufacturing ecosystem

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