# EECI

at a Glance

The ultimate goal of EECi is to support the transformation of Thailand into a country that thrives on innovation to enhance competitiveness of its economy and quality-of-life of its people. To achieve this goal, The vision's EECi strives at becoming "the leading national infrastructure in which research and innovation are translated into commercialization and advanced solution for industries" and sets its actions in 4 strategic mission areas to bring about its vision and ultimate goal. These 4 mission areas of EECi are:

1. Hub of Translational Research and Technology Localization
2. Center for Human Resource and Advanced Skill Development
3. House of Industrial Technology Capability Services
4. Provider of Community Development Program

# The Innovation Hub for Translational Research and Technology Localization

- EECi : The Unique Innovation Hub
- EECi : The Innovation Hub Supporting Advanced Industries
- Automation, Robotics and Intelligent Systems Platform (EECi ARIPOLIS)
- Biotechnology Platform (EECi BIOPOLIS)
- Privileges & Incentives
- Our Growing Pool of Partners
- EECi Master Plan

# EECi : The Unique Innovation Hub

## for Translational Research & Technology Localization


Eastern Economic Corridor of Innovation (EECi), under the management of National Science and Technology Development Agency (NSTDA), is set to be a key facilities and quality infrastructures in a comprehensive innovation ecosystem to accommodate the sustainable economy under the BCG Economy Model which reflex through our 3 main implementations:

- **Cultivating value for agricultural sector**
- **Facilitating industrial transformation**
- **Supporting new industries development**

EECi offers comprehensive R&D infrastructures to support scale-up of locally developed technologies with translational research infrastructure and facilitate technology localization to enable foreign technology adaptation to local application.

# EECi : The Innovation Hub

## Supporting Advanced Industries

**6**
**Focus Industries**

EECi, as a strategic innovation zone focused on fostering research, innovation and technology which will sharpen Thailand's competitive edge and benefit the country's economy and society, aims to advance the S-curve and emerging industries of the country or the following 6 target industries, namely,

1. Modern Agriculture
2. Biorefinery
3. High Performance Battery & Modern Transports
4. Automation, Robotics & Intelligent Systems
5. Aviation
6. Medical Devices

Integrated through 4 large innovation platforms which are ARIPOLIS, BIOPOLIS, FOOD INNOPOLIS, SPACE INNOPOLIS and forefront research facility of 3-GeV synchrotron light source to bring about the advancement in basic science knowledge, applications and innovations.

**4** **Innovation Platforms**

**1** **Scientific Infrastructure**

EECi ARI POLIS

EECi BIO POLIS

FoodInnopolis an anchor of EECi

EECi SPACE INNOPOLIS

THAI SYNCHROTRON NATIONAL LAB

Automation, Robotics and Intelligent Systems platform aims to promote technology development and technology localization which correspond to the needs of private and industrial sectors through R&D, testing, demonstration and intensive training.

### Sustainable Manufacturing Center (SMC)

The center is equipped with all necessary service components to support Thai manufacturing sector in its journey toward industry 4.0, including:

- Advanced training courses for high-skilled manpower development
- Testbed to develop innovative solutions and validate the proof-of-concept system
- Consultation and advice on the appropriate solution and the implementation roadmap
- IIoT and AI technology platforms for the manufacturing sector
- Industry 4.0 Readiness Assessment and manufacturing gap analysis

### Alternative Battery Pilot Plant

The development of alternative high-performance batteries with high safety, low cost and environmentally friendly aims to strengthen Thailand's energy security. The center also provides services to support R&D such as product development using modern technology and advanced materials, battery efficiency and properties testing, and battery analysis to support renewable energy industry and energy storage systems (ESS).

### Connected and Autonomous Vehicle (CAV) Proving Ground

To strengthen the modern automotive industry, this facility is the first of its kind in Thailand as a "regulatory sandbox" for testing the connected and autonomous vehicle with international standards. The facility provides full supports for the research and development of CAV manufacturers helping to reduce cost and risk of initial investments and be able to compete internationally.

### Regulatory Sandbox

Serves as test and trial ground for technology and innovation under appropriate safeguards to contain the consequences of failure and maintain the overall safety while efficiently cooperate in shorten procedure and time of innovation commercialization. Projects within the area are:

- Authorization to test for UAV development
- Connected and Autonomous Vehicle (CAV) Proving Ground
- Authorization to use radio frequency spectrum for innovation development and testing

# Facilitating Industrial Transformation

# Cultivating Value for Agricultural Sector

Biotechnology platform aims to promote bio-based industries in accordance with the government's Bio-Circular-Green (BCG) Economy Model as well as supporting Thailand's agricultural direction, focuses on Modern Agriculture, Biorefinery and Functional Ingredients from lab to commercial market and, ultimately, strengthening the nation's prosperity sustainably.

## Tissue Culture Facility

It is equipped with facilities to conduct practical experiments that focus on cells, tissues, or organs of a plant and their subsequent placement into an artificial environment conducive to growth. This facility enhances precision and accelerates the production of true-to-type plant varieties that meet specific requirements.

## Smart Greenhouse

Foundational structure for semi-closed plant cultivation equipped with automated environmental control systems such as water, nutrients, temperature, humidity and light. This enables comprehensive data analysis for potential commercial applications with high precision.

## Phenomics Greenhouse

Designed to support the study of plant phenotyping under various environmental conditions through the integration of image analysis systems, digital technology, and automation which enhance the accuracy of plant breeding programs, allowing the rapid development of distinctive characteristics to meet market and agricultural demands.

## Plant Factory

Closed-system cultivation facility allows complete environmental control for growing valuable crops. Additionally, it serves as a foundational structure for the development and testing of tools and equipment related to plant production, aiming to advance the next generation of the plant manufacturing industry.

## Biorefinery Pilot Plant

The Biorefinery Pilot Plant provides scale-up services for bioprocesses or high-value bio-based products from wild-type and genetically engineered microorganisms. The pilot plant equipped with the 15,000 – liter fermenters and broad selection of downstream processing units. The Biorefinery Pilot Plant consists of 4 modules as follows:

1. Biomass Pretreatment
2. Upstream Fermentation Process
3. Downstream Process
4. Green Chemistry


# Privileges & Incentives

- **Long-term land lease & flexible-term office and laboratory space lease**
- **Hub of scientists, researchers and experts**
- **Accessible to R&D supporting infrastructures**
  *(3-GeV synchrotron light source, testing and analytical equipment, pilot plants, demonstration plants, testbeds and etc.)*
- **Tax exemption for R&D raw material**
- **Smart visa for international experts**
- **Shared facilities**
  *(online & offline conference room, Indoor & outdoor exhibition space, co-working space, maker space & fabrication laboratory)*
- **Regulatory sandbox**
- **17% flat rate personal income tax for international experts**
- **13 years (maximum) corporate income tax exemption**

# Our Growing Pool of Partners

## International Alliance

## Government Sector

## Industrial Sector

## Educational Institution

# EECi Master Plan

Wangchan Valley, Rayong Province

| Total Area | 3,454 | Rai |
|---|---|---|
| Community Zone | 152 | Rai |
| Education Zone | 1,340 | Rai |
| Innovation Zone | 1,157 | Rai |
| Green Area | 458 | Rai |
| Infrastructure and Utilities | 347 | Rai |

Highway No. 344
(Baan Bueng – Klaeng)

## COMMUNITY ZONE

Community Mall

Hotel & Serviced Apartment

International School

PTT Station

THAI SYNCHROTRON NATIONAL LAB

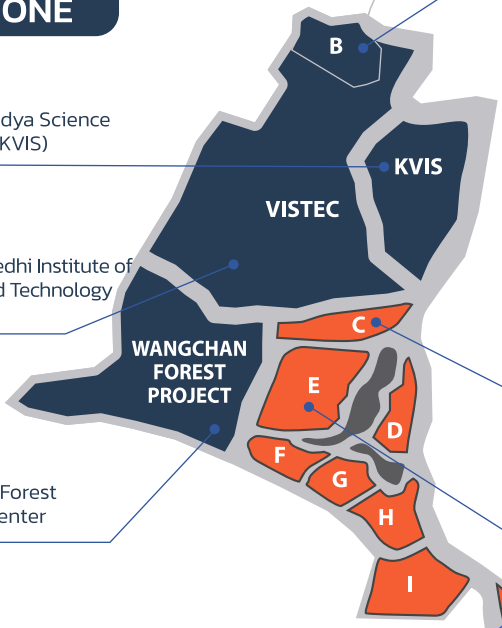
3-GeV Synchroton Light Source

## EDUCATION ZONE

KVIS Kamnoetvidya Science Academy (KVIS)

VISTEC Vidyasirimedhi Institute of Science and Technology (VISTEC)

Wangchan Forest Learning Center




## INNOVATION ZONE

PTTEP Technology & Innovation Center (PTIC)

EECi Headquarters

Intelligent Operation Center (IOC)

Innovative Agriculture Learning Center, Chitralada Technology Institute

GPSC Smart Energy Center

WHA Utilities & Power Wastewater Treatment Plant

eastwater Water Treatment Plant

Connected and Autonomous Vehical (CAV) Proving Ground

# Rental Space for Research and Development to Support Technology Business

- Utility Services
- Facility Services
- Wet Laboratory
- Office Space
- Pilot Plant
- High Bay Lab
- Greenhouse
- Plant Factory
- Auditorium and Exhibition Space
- Mini Auditorium
- Meeting Facility

# Utility Services

## Basic Utilities in EECi Headquarters

| Utility | Specifications |
|---|---|
| Electricity Capacity | Total capacity = 12 MVA |
| Water Supply | Capacity at 1500 cu.m/day |
| Wastewater Treatment | Capacity at 300 cu.m/day (Max BOD = 600 mg/L and max COD = 1,600 mg/L) |
| Waste and Hazardous Waste | Sorting and storage waste center for proper disposal |
| Cold Water Supply | 3,600 tons (refrigeration) (CHS/CSR : 6/15 deg.C at 5,712 RT.hr) |
| ICT Infrastructure | Broadband 3G, 4G and 5G and Wifi coverage in all area with fiber optic network for high speed connection |

# Facility Services

## Safety & Security

- Fire Alarm / Fire Pump / Generator
- Access control
- CCTV camera with facial recognition
- Emergency call center
- Security guards on-site 24 hours a day – 7 days a week

## Internet / Communication Providers

- Voice over Internet Protocol (VoIP)
- Leased line internet
- Internet share bandwidth / FTTx
- IP VPN
- Cloud service
- Fax to e-mail
- VDO conference

# WET LABORATORY

## Flexible laboratory space for research and development

### Basic Utilities

- Total cooling capacity = 560 tons (refrigeration)
- Total electricity capacity = 2,000 kVA
- Total water capacity = 100 cubic meters/day
- Fire alarm and sprinkler systems covering all area

### Specifications

- Rental space 75 – 77 sq.m
- Ceiling height = 4.05 – 4.55 m
- Polished floor (wet lab area)
- Antistatic flooring tiles (office area in each module)
- Floor load = 500 kg/sq.m
- Normal electricity load ~ 3 Phase 40A (with kWh meter)
- Essential electricity load ~ 3 Phase 32A (with kWh meter)
- Grounding system
- Data outlet

# OFFICE SPACE

## Space for R&D and business supporting activities

### Basic Utilities

- Total cooling capacity
  = 560 tons (refrigeration)
- Total electricity capacity
  = 2,000 kVA
- Total water capacity
  = 100 cubic meters/day
- Fire alarm and sprinkler systems covering all area

### Specifications

- Rental space 77 – 111 sq.m
- Ceiling height = 3.5 m
- Floor load = 300 kg/sq.m
- Vinyl floor

# PILOT PLANT

## Flexible scale up pilot facility for testing and validation of R&D output to a commercially viable process

## Basic Utilities

- Total cooling capacity
  = 280 tons (refrigeration)
- Total electricity capacity
  = 1,600 kVA
- Total water capacity
  = 40 cubic meters/day
- Fire alarm and sprinkler systems covering all area

## Speciafications

- Rental space 734 / 1,115 / 2,240 sq.m
- Normal electricity load ~ 3 Phase 320A (with kWh meter)
- Essential electricity load~ 3 Phase 320A (with kWh meter)

- **Operation area on 1st floor :**
  - Ceiling height = 13 m
  - Floor load = 2,000 kg/sq.m
  - Polished concrete floor
- **Characterization lab on 1st floor :**
  - Ceiling height = 4.15 m
  - Floor load = 500 kg/sq.m
  - Polished concrete floor
- **Wet lab on 2nd floor :**
  - Ceiling height = 4.15 m
  - Floor load = 500 kg/sq.m
  - Polished concrete floor
- **Wet lab on 3rd floor :**
  - Ceiling height = 4.15 m
  - Floor load = 500 kg/sq.m
  - Polished concrete floor

# HIGH BAY LAB

## High bay structure laboratory space for large, versatile and flexible R&D activities

### Basic Utilities

- Total cooling capacity
  = 560 tons (refrigeration)
- Total electricity capacity
  = 2,000 kVA
- Total water capacity
  = 100 cubic meters/day
- Fire alarm and sprinkler systems
  covering all area

### Specifications

- Rental space 320 / 550 / 770 / 910 sq.m
- Ceiling height = 7.5 m
- Floor load = 750 kg/sq.m
- Vinyl floor

# GREENHOUSE

## Semi-closed plant cultivation equipped with automated control system

### Basic Utilities

- Total cooling capacity = 280 tons (refrigeration)
- Total electricity capacity = 500 kVA
- Total water capacity = 30 cubic meters/day
- Fire alarm and sprinkler systems covering all area
- Loading area height = 4.1 m with polished concrete floor

### Specifications

- Rental space 200 / 230 sq.m
- Ceiling height = 8.1 m
- Floor load = 1,000 kg/sq.m
- Polished concrete floor

# PLANT FACTORY

## Closed-system cultivation facility for economically valuable crops

### Basic Utilities

- Total cooling capacity
  = 280 tons (refrigeration)
- Total electricity capacity
  = 500 kVA
- Total water capacity
  = 30 cubic meters/day
- Fire alarm and sprinkler systems
  covering all area
- Loading area height
  = 4.1 m with polished concrete floor

### Specifications

- Rental space 425 sq.m
- Ceiling height = 9.55 m
- Floor load = 1,000 kg/sq.m
- Polished concrete floor
- Normal electricity load ~ 3 Phase 160A
  (with kWh meter)
- Normal electricity load ~ 3 Phase 50A
  (with kWh meter)

# AUDITORIUM & EXHIBITION SPACE

**A multi-purpose auditorium suitable for your business needs e.g. seminar, conference, symposium, contest**

## Specifications

- Room size
  = 607.92 sq.m
- Capable of serving
  up to 200 seats
- Ceiling height
  = 7.7 m
- Floor load
  = 750 kg/sq.m
- Vinyl floor


# MINI AUDITORIUM

**Our facilities can seamlessly be transitioned to provide room functionalities as per your preference.**

## Specifications

- Room size
  = 157.53 sq.m
- Capable of serving up to 30 seats
- Ceiling height
  = 7.7 m
- Floor load
  = 750 kg/sq.m
- Ceramic Tile Floor

# MEETING FACILITY

**Flexible space for your need;
training course, workshop,
board meeting,
focus group,
etc.**

## Specifications

- Room size
  = 80 – 120 sq.m
- Capable of serving
  = 30 – 50 seats
- Ceiling height
  = 3.5 m
- Floor load
  = 300 kg/sq.m
- Vinyl floor

info@eeci.or.th
EECiThailand
www.eeci.or.th
333 EECi Headquarters
Wangchan Valley, Rayong Province
21210