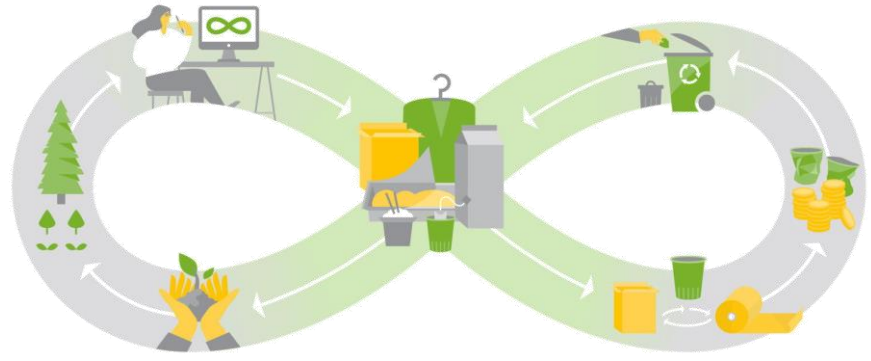


Conclusion of BCG Economy Model



Thailand's Perspective

The 60th Meeting of the APEC Expert Group on Energy Efficiency & Conservation (EGEEC 60) and Associated Workshops

15 - 17 March 2023

Presented by :

Department of Alternative Energy Development and Efficiency (DEDE), Ministry of Energy, Thailand



✦ National Energy Plan (NEP)

✦ BCG Model on Energy Plan

1. Adjust power and heat production portfolio to low carbon way
2. Adjust the energy consumption and production in transport sector to low carbon way
3. Increase energy efficiency
4. Biorefinery
5. Increase CO₂ absorption

National Energy Plan (NEP)

Goals

- To use clean energy and to achieve **Carbon Neutrality by 2050 and Net Zero Emission by 2065**
- To increase **competition and investment capacity of Thai's stakeholders** in order to **adapt with low carbon economy and new innovation**
- To be in line with **Long-Term Low greenhouse gas Emission Development Strategies (LT-LEDS)**

Policy Directions

Increase Energy Efficiency more than 30% (~ 40%)



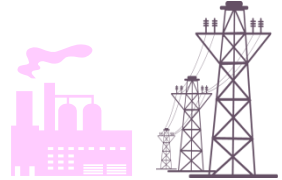
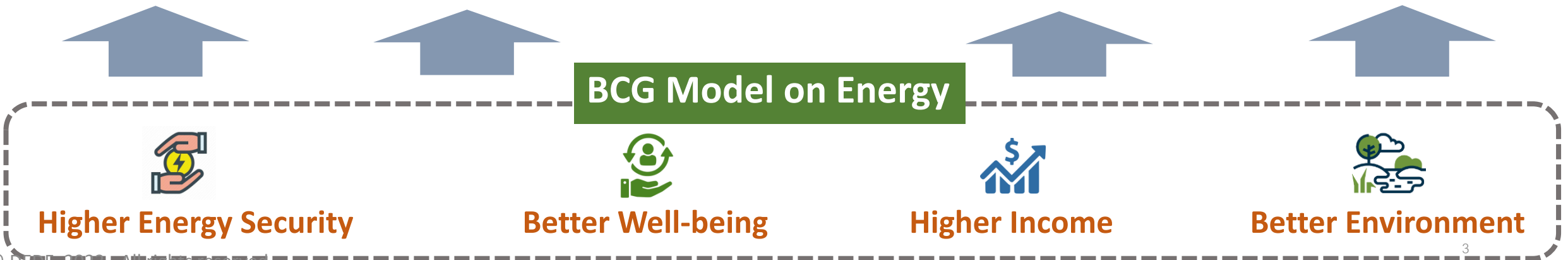
Shift energy using in transportation sector to green energy by using EV 30@30 policy



Increase RE share in new electricity production at least 50% (~ 70 - 80%)



Improve energy infrastructures in order to support energy transition with 4D1E policy
 (Digitalization De-Centralization De-Regulation De-Carbonization and Electrification)










Vision : Develop green energy according to BCG Model to achieve Carbon Neutrality by 2050

5 Action Plans for BCG on Energy

Action Plans on Green Energy




- 
1. Adjust power and heat production portfolio to low carbon way
- 2. Adjust the energy consumption and production in transport sector to low carbon way

- 
3. Increase energy efficiency
- 4. Biorefinery


Actions Plans on Carbon Sink

5. Increase CO₂ absorption



Expected Results

	Job	35,340 Positions
	Income	34.66 Million THB
CO₂ Reduction		43.13 MtCO₂ 

Remark : The results are forecasted from BCG action plans of MOEN 2021-2027

1. Adjust power and heat production portfolio to low carbon way



BCG Model : ชุมชนสีเขียวต้นแบบ Bang Krurai Green Community

SMARTER **GREENER** **TOGETHER**

EGAT for All

Bang Krurai Green Community



Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY **RE Heat Subsidy**

	Qualified applicants : 46		Budget support : 103,359,100 THB
	Biomass Users 21		
	Biomass Conversion 23		
	Biogas Users 2		
	Project Timeframe : 24 months (2021-2023)		
	Expecting result : Increase RE in heat 62 ktoe		

2. Adjust the energy consumption and production in transport sector to low carbon way

(Draft) EV Charging Station Development Plan

Policy Scheme → Demand Response + Electricity incentives

Regulatory Scheme → Standard Development for Safety & Installation + Approval Process Improve + Framework for integration various EV types

Technology Scheme → Grid Development for charging station + Communication Infrastructure Development for future Integration

Study on biodiesel application on small EURO5 cars


 Department of Alternative Energy Development and Efficiency
MINISTRY OF ENERGY

Target fuel for test drive

Diesel EURO5 standard
B7 / B10 / B20


 Test drive on small EURO5 cars (30,000 km.)
 

Expecting Result
 * Impact analysis from using biodiesel EURO5 in small EURO5 cars
 * Environmental impact analysis from using biodiesel EURO5 in small EURO5 cars

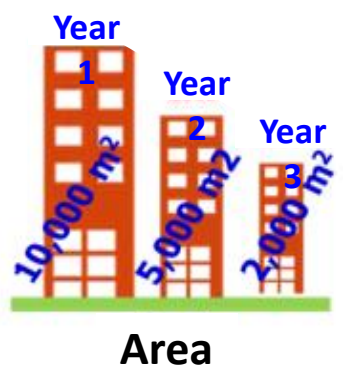
Action Plans on Green Energy

3. Increase energy efficiency

Department of Alternative Energy Development and Efficiency MINISTRY OF ENERGY

Building Energy Code (BEC)

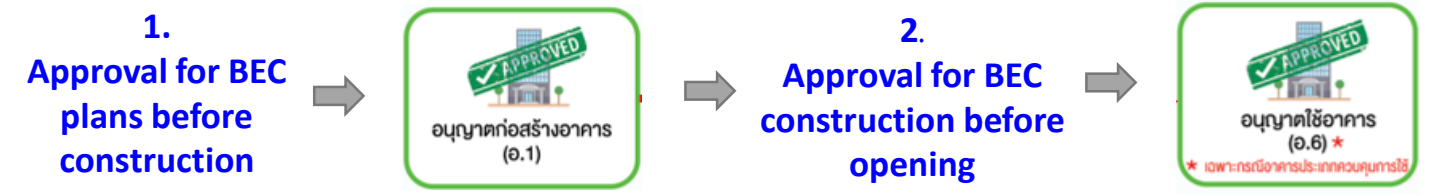
9 types of Building



New or retrofitted buildings being constructed which have total area equal to **2,000 m² or more** must be designed under the energy conservation requirements.

- 1. ระบบเปลือกอาคาร (Envelope system)
- 2. ระบบไฟฟ้าแสงสว่าง (Electric lighting system)
- 3. ระบบปรับอากาศ (Air-conditioning system)
- 4. ระบบอุปกรณ์ผลิตน้ำร้อน (Water heating appliance)
- 5. ระบบพลังงานหมุนเวียน (Renewable energy system)
- 6. การใช้พลังงานรวม (Whole Building Energy)

Process for BEC Approval



Standard and Labelling

- ✓ 4 Groups
 - * Construction products
 - * Agricultural machines
- ✓ 19 Products
 - * Business and industrial products
 - * Home products



Project Result
(Sept 2021 – Jan 2023)

Label Approval	3,850,932
Energy Saving	122.2 ktoe
Money Saving	3,604.48 Million THB

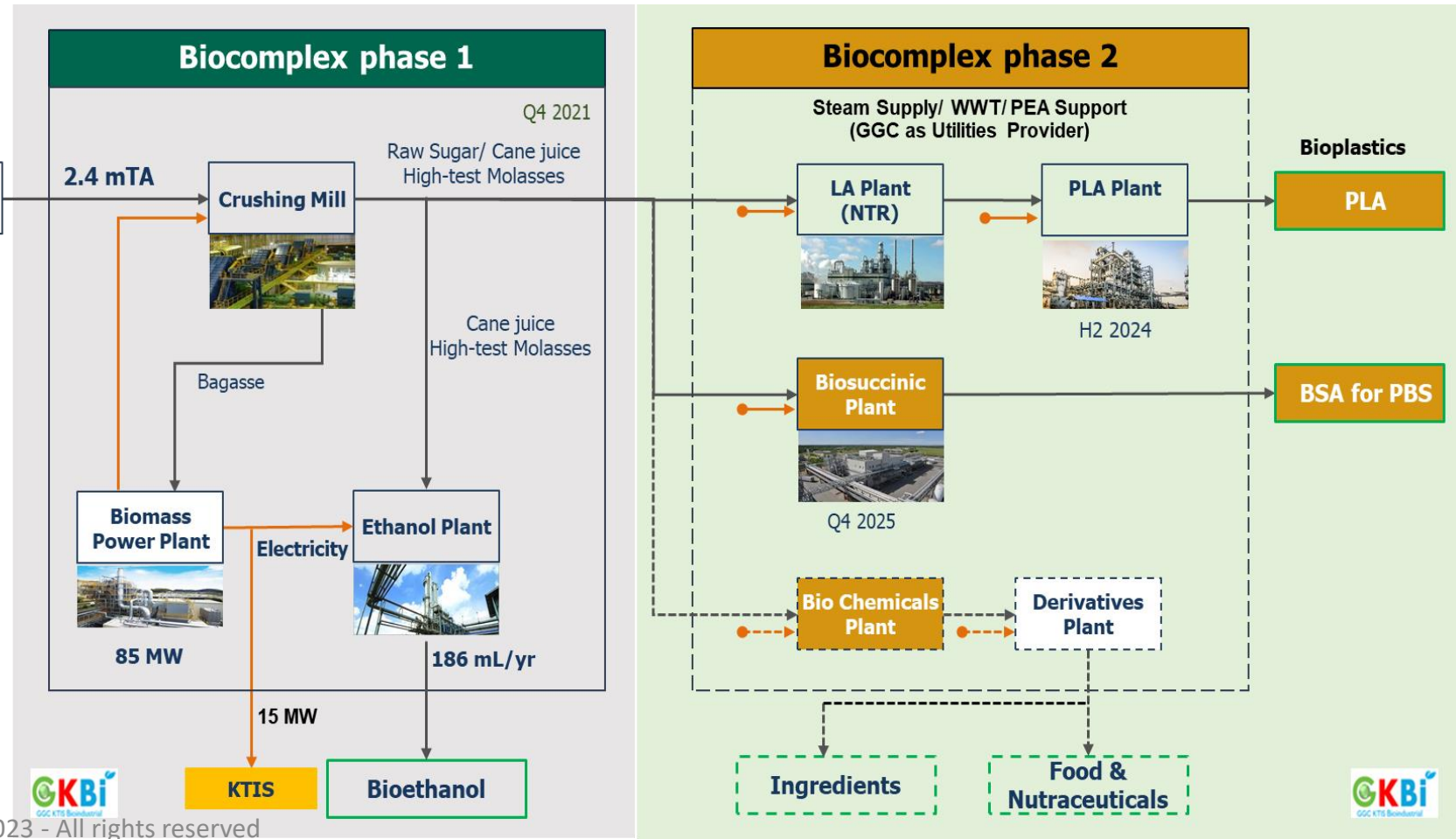
GCC 4. Biorefinery

Nakornsawan Biocomplex (NBC)



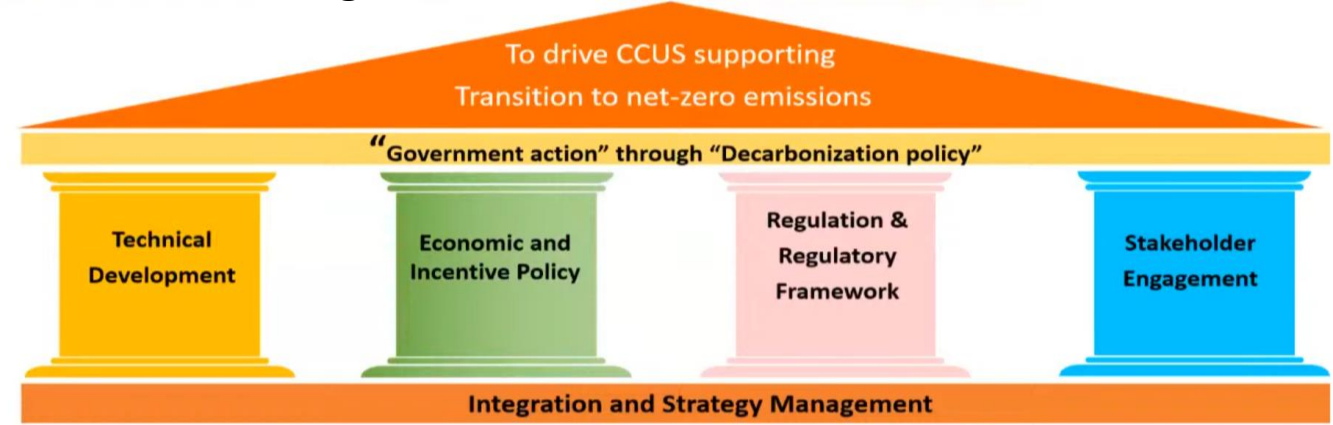
Phase 1 :
 Biomass Power Plant + Ethanol Plant

Phase 2 :
 Biomass Power plant + Biochemical/Plastic Plant + Water Treatment Plant



Department of Mineral Fuels
MINISTRY OF ENERGY **5. Increase CO₂ absorption**

Strengthened Climate Commitment in COP26

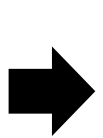
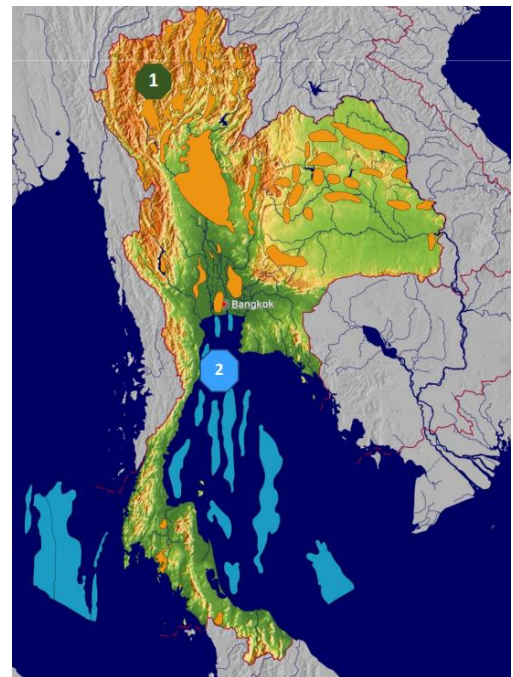


- CO₂ emission sources
- CO₂ storage capacity
- CCS pilot project
- CO₂ utilization opportunity
- Environment assessment

- Public acceptance
- Government agency collaboration
- Cooperative networking

- Feasibility of project
- Driven mechanism
- Incentive & compulsory measures
- Carbon Credit

- CO₂ Storage legislation
- Technical standard and guideline
- Environmental legislation
- Relevant regulators



CCUS Pilot Projects in Thailand

Highlight Projects	2022	2023	2024	2025-26	Status
1 Mae Moh & Lampang CCS Project					Data Review & Preliminary Study
2 North Gulf of Thailand CCS					Preliminary Study
3 CCS Regulation					Drafting technical guideline ⁹



Thank you