
มหาวิทยาลัยเชียงใหม่
CHIANG MAI UNIVERSITY
CMU
CHIANG MAI UNIVERSITY
thai digital energy development
bcpg
CMU Smart University
บริษัท บีซีพีจี จำกัด (มหาชน)
บริษัท ไทยดิจิทัลเอนเนอร์ยี่เดเวลอปเม้นท์ จำกัด

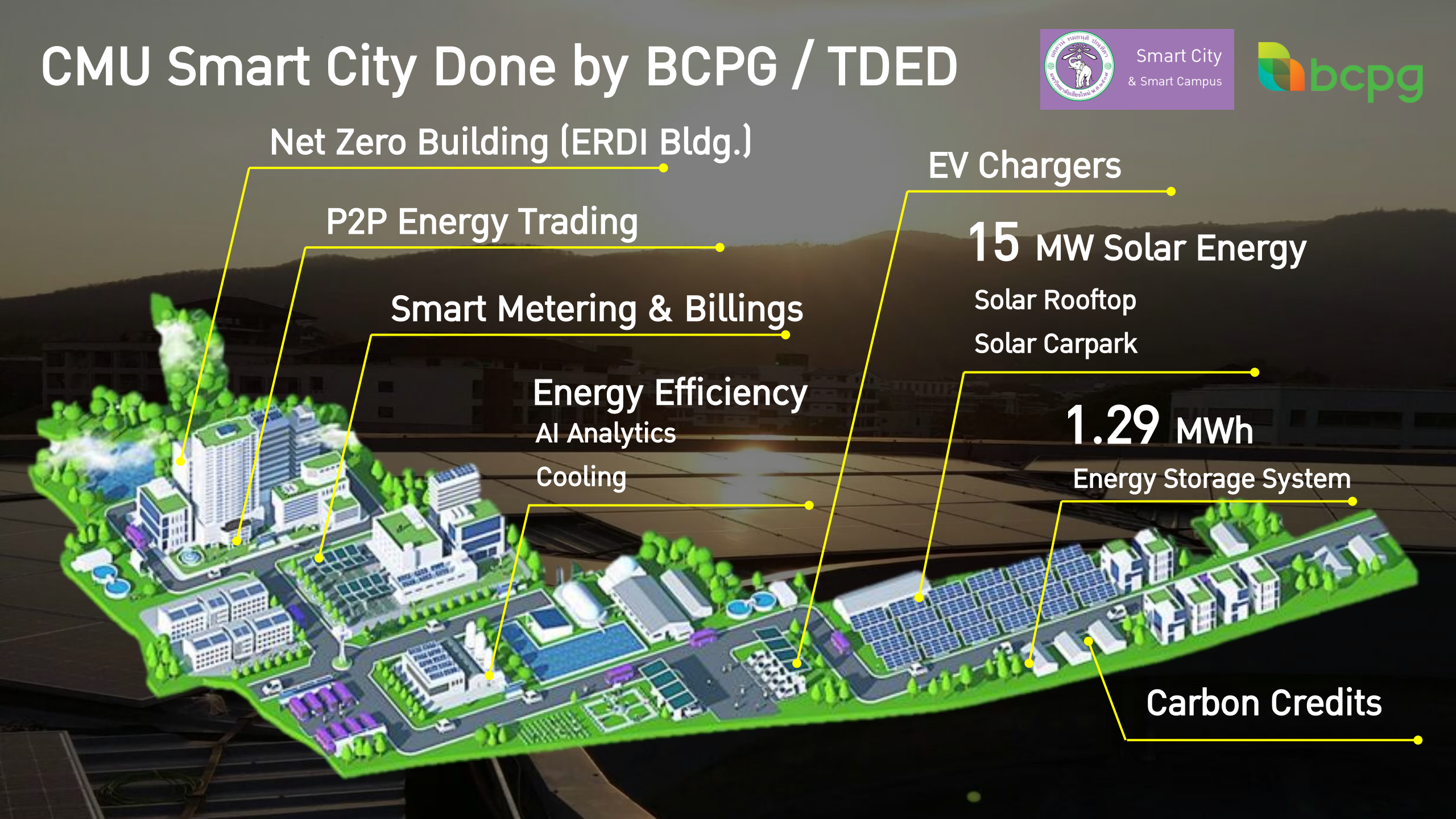
Our goals

- To enable *prosumerization and smart grid* through blockchain-based peer-to-peer electricity trading platforms
- To promote *self-sustainability and energy independence* via solar power, energy storage and energy & efficiency management
- To support *DEPA's Long-Term Development Plan*: three Thai cities will enter world ranking in 2032 and one Thai city will be ranked in Top 10 in 2036
- To support *Thailand's Net-Zero goal* by lowering GHG Emissions of Chiang Mai University by 25% from 2018 base line

CMU Smart City Done by BCPG / TDED

Smart City & Smart Campus

bcpg



Solar Energy Installation

Smart City & Smart Campus

bcpg

BCPG Develop Smart Energy from T77

CMU Developed Smart City Plan

Mar 2019

12 MW

Solar Rooftop Installation Agreement

1.29 MWh ESS

May 2019

Thai Digital Energy Development Co., Ltd. (TDED) founded

2020 - 2022

Smart City Collaboration

JCM THE JOINT CREDITING MECHANISM

Power Ledger

Enterprise Singapore

Feb 2022

15 MW

New Target on Agreement (+3 MW)

25.13 MW

Extension 10.13 MW. In 2024 -2027

Solar Energy Installation

Smart City & Smart Campus

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7.6 MW COD

113 Bldgs.

Nov 2021

9.8 MW COD

141 Bldgs.

Apr 2022

12.7 MW COD

167 Bldgs.

Aug 2023

15 MW COD

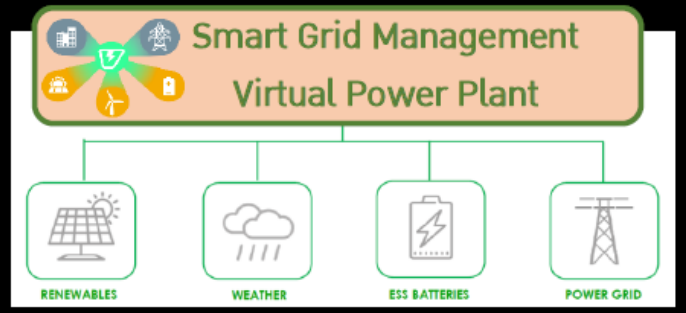
Target per PPA

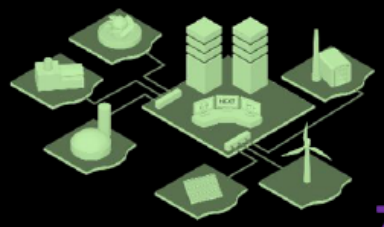
2024 - 2025

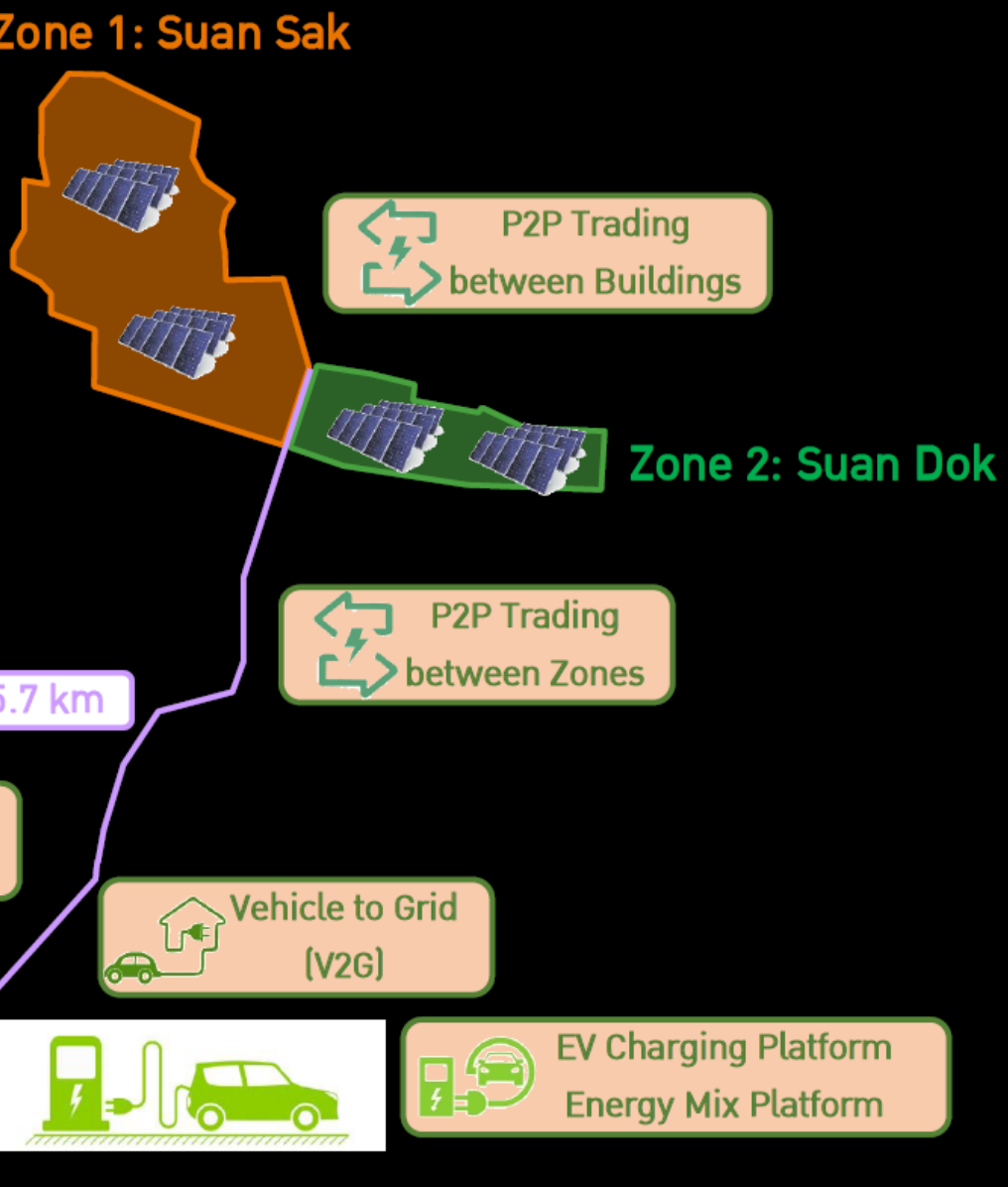
Development Feature

With our **blockchain-based platform,** electricity from solar rooftops in each building in Suan Sak and Suan Dok Zones will be traded freely across the zones.

In Mae Hia zone, apart from blockchain-based platform, **Internet of Things (IoT)** will help monitor energy consumption, predict power generation from solar rooftops and manage demand & supply. We also aim to leverage energy management system with **Energy Storage, Vehicle to Grid, EV Charging and Energy Mix Platform.**







THE SYNERGY OF TECHNOLOGIES

ERDI – Role model of Net Zero Energy Building

Project Performance 2023

E

การสร้างคุณค่าต่อสิ่งแวดล้อม

ช่วยลดการใช้ไฟฟ้าจากพลังงานเชื้อเพลิง
เป็นการใช้ไฟฟ้าจากพลังงานแสงอาทิตย์

2566 Total Consumption

16,774 MWh

Carbon Emission Reduction

8,146 tCO_2e

S

การสร้างคุณค่าต่อสังคม

ส่งเสริมให้เกิดการพัฒนาคุณภาพชีวิตที่ดีขึ้น

CMU Population 52,000 per day

- Student **26,000** people
- University Staff **11,200** people
- Visitor **15,000** people

G

การสร้างคุณค่าต่อเศรษฐกิจ

นวัตกรรมช่วยสร้างมูลค่าเพิ่มแก่องค์กร

Cost saving

20 mil-THB

25.25%

Net Profit

8.8 mil-THB

Project Performance

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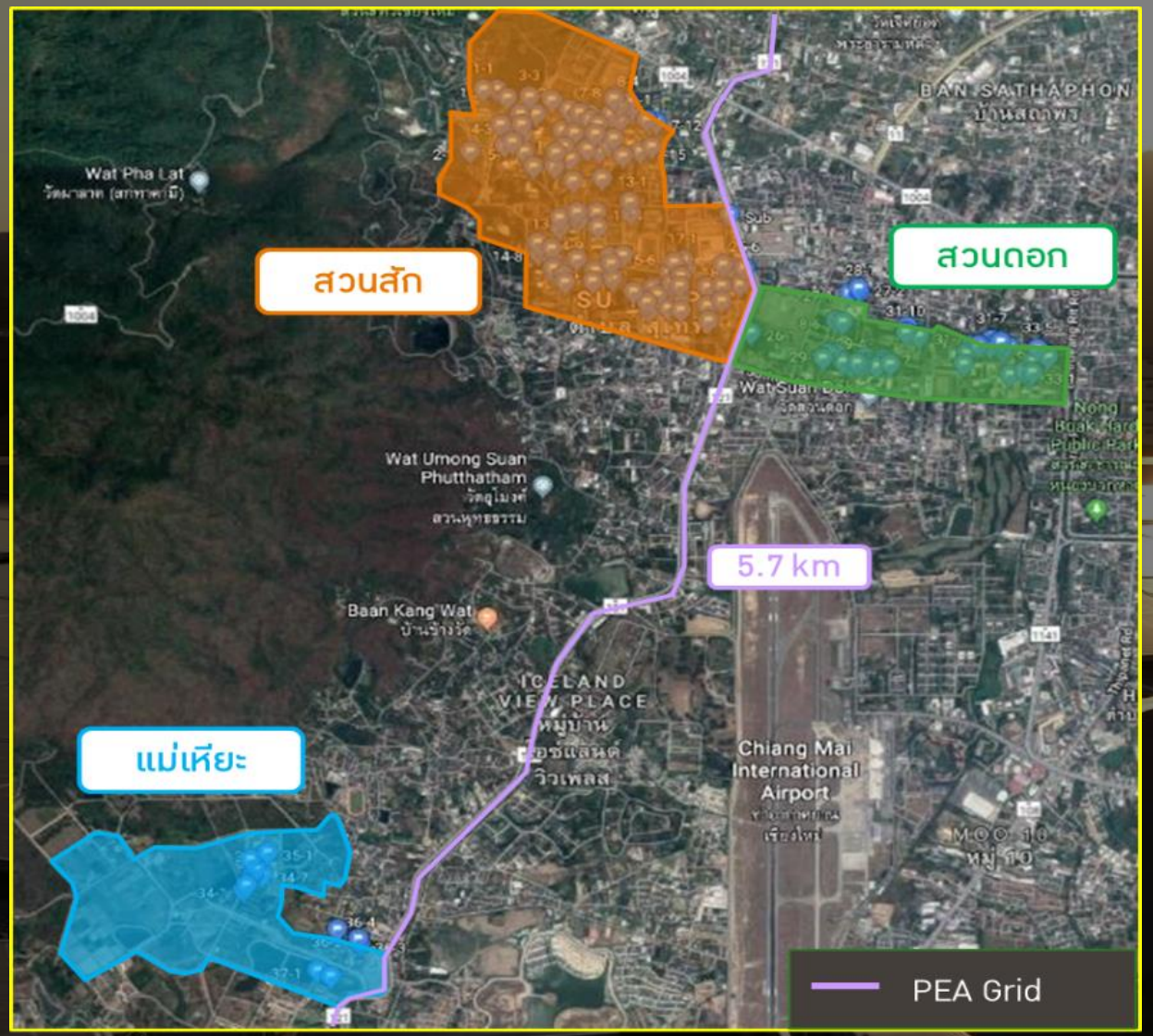

3 Zone

สวนสัก
สวนดอก
แม่เหียะ

50k+
Population/day

Student 26,000 man / day
Staff 11,200 man / day
Visitor 15,000 man / day

Car + Bike 30,000+ Unit / day

CMU Electrical Configuration

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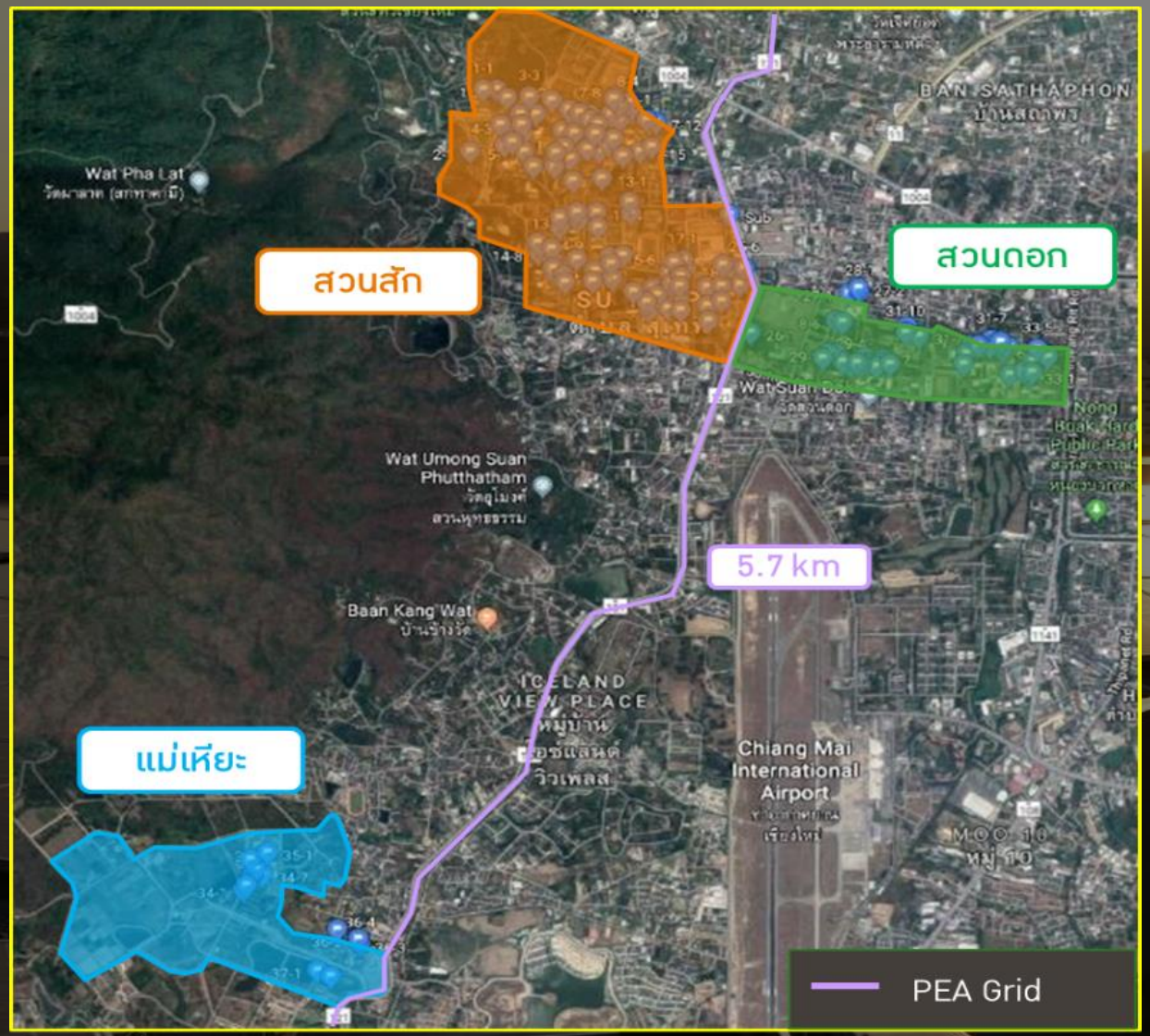

3 Campus Zone — สวนสัก, สวนดอก, แม่เหียะ

5 22 kV Internal Feeders from 115 kV PEA — สวนสัก, สวนดอก

1 22 kV Feeder from PEA — แม่เหียะ

CMU Smart City Target - Energy

Smart City & Smart Campus

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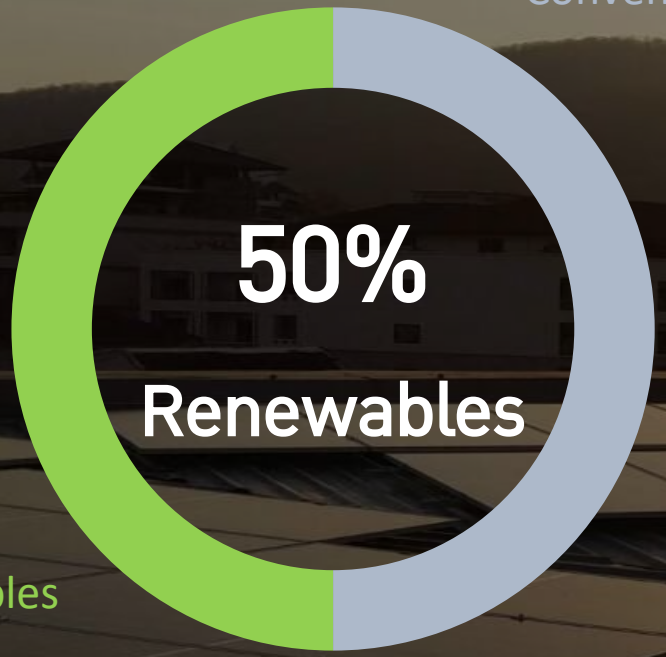
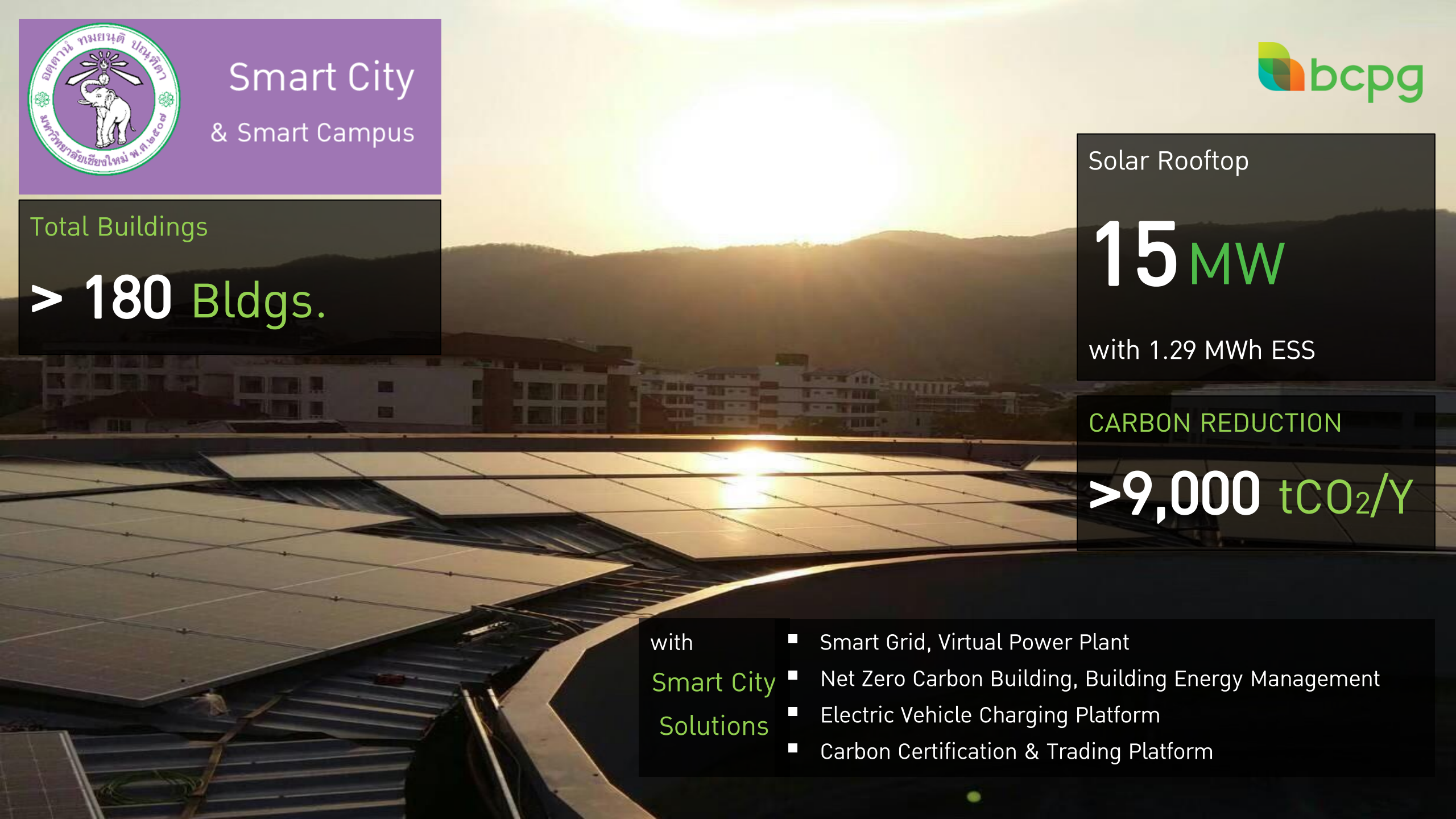


within 2030

25%

Lower GHG Emission

From 2018 Base Line



Smart City & Smart Campus

bcpg

Total Buildings

> 180 Bldgs.

Solar Rooftop

15 MW

with 1.29 MWh ESS

CARBON REDUCTION

>9,000 tCO_2/Y

with Smart City Solutions

- Smart Grid, Virtual Power Plant
- Net Zero Carbon Building, Building Energy Management
- Electric Vehicle Charging Platform
- Carbon Certification & Trading Platform

Joint Credit Mechanism (JCM)

Smart City & Smart Campus

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JCM THE JOINT CREDITING MECHANISM

Global Environment Centre Foundation | Access | Contact | Search | Japanese

Overview | Call for Proposals | Projects | News | Publications | JCM Global Match

2.7MW Solar Power Project with Blockchain Technology in Chiang Mai University Town Community

Representative Participant

Inabata Co., Ltd.

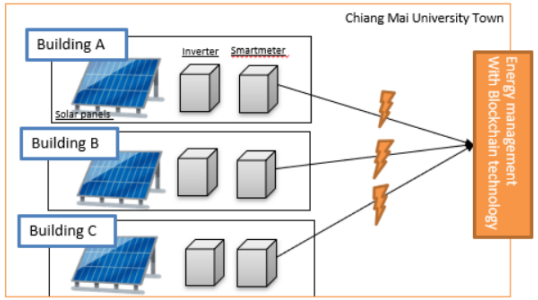
Partner Participant: Thai Digital Energy Development Co.,Ltd

Host Country	Thailand
Selected Year	2020
Type	JCM Model Project
Sector	Renewable Energy

Outline of GHG Mitigation Activity

Active | Not registered

This project introduces a 2.7 MW solar power generation system on the roofs of multiple buildings in Chiang Mai University, Thailand.This project is operated by blockchain technology which realizes the expansion and maximum utilization of renewable energy on campus and reduces greenhouse gas (GHG) emissions by introducing renewable energy.



2.7 MW

Registered to JCM

Smart City Project with Low-Carbon Footprint Blockchain Technology in University Town Community

Future Development

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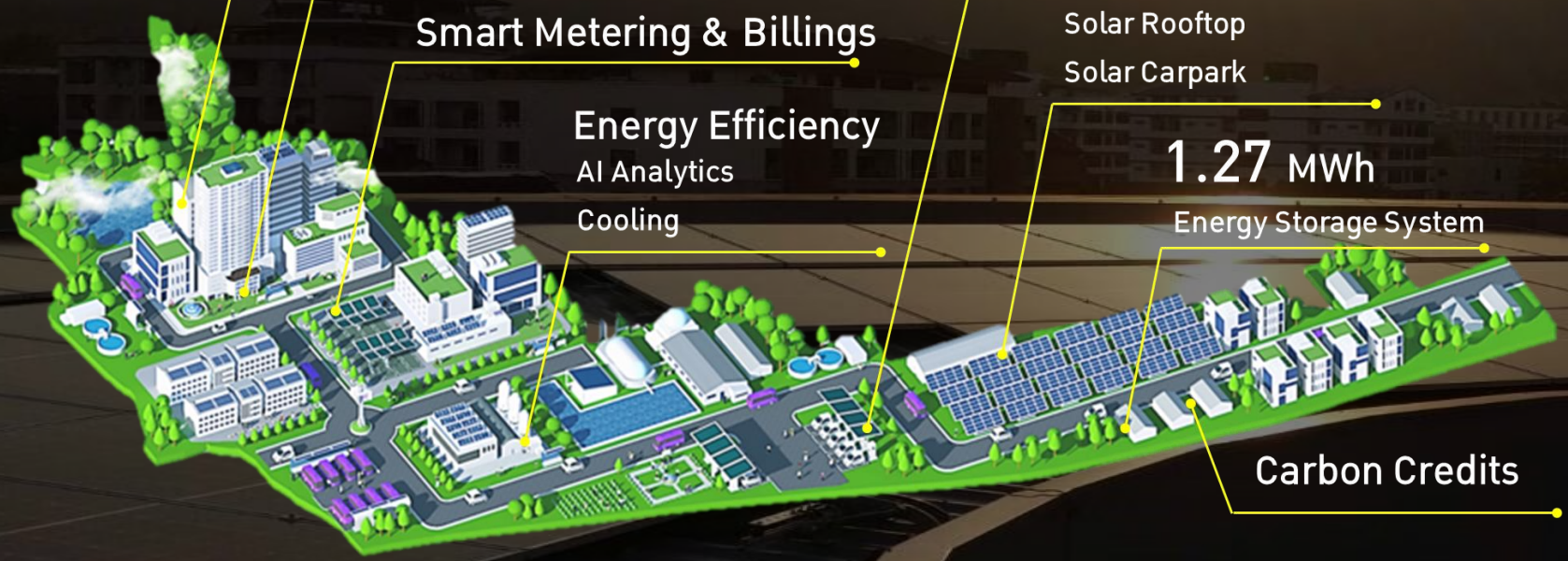

- Virtual Power Plant
- Vehicle to Grid
- Building Management
- Carbon Trading Platform
- IOT & AI

Forward | Green | World