



## **Greening a Campus-led Economy Through a Low-Carbon Transport: The case of Prince of Songkhla University**

### **Teaching Note**

#### **CASE SUMMARY**

Prince of Songkhla University (PSU) has enacted a number of green development projects aimed at greening the campus economy through sustainable production and consumption (SPC). In particular, this project aims to revamp the on-campus transportation system through campus waste management, alternative energy research and practice, and environmental and resource conservation. This learning case illuminates the development and planning of an electric vehicle (EV) bus programme for on-campus and neighbouring community transport. Instrumental to the success of the learning case is the collaboration among university researchers and delegates from industries, communities, and government sectors. Thai universities share common ambitions aimed at producing a more environmentally friendly surroundings; yet, the EV system can be designed to fit specific environments based on different needs, policy, and willingness. Nonetheless, the need for comprehensive discussion which seeks plausible policy solutions, including laws, incentive schemes and infrastructure development is undeniable.

#### **LEARNING OBJECTIVES**

- To appreciate the broad concept of green growth promotion.
- To better realize the contribution of the EV programme.
- To understand the link between EVs and reduction of CO<sub>2</sub> emissions.
- To scrutinize the challenges regarding implementation of an EV transportation system.

#### **TIPS FOR FACILITATORS**

The main idea is to analyse the issues within this learning case and use it as a guide with regards to solving challenges related to green growth promotion within participants' own organisation/institution/community. Hence, there are no right or wrong answers when considering the solutions since, for each participant, the related context might be different.

The learning highlight of this case is that the most important aspect of environmental management is that participants need to clearly understand the situation at-hand and have thorough knowledge of the facts before applying any analytical framework or management principles to solve the prevailing challenges. Instructors should remind participants that it is important to note that in reality, the proposed working sessions and guided thinking process in this case study must include all stakeholders, and once improvement actions are implemented, monitoring must be factored in for continuous improvement.

## **FACILITATION OF THE LEARNING PROCESS**

The instructor should proceed to the working sessions through work groups and role playing as the executive board of the university. The time frame for each session depends on the available time designed by the instructor.

### **Working Session 1: Identification of stakeholders**

List groups of stakeholders who will gain and lose benefits.

### **Work Session 2: Sustainable Issues**

The sustainable issues should be used as the central basis for the evaluation.

### **Working Session 3: Impact Category**

Think about both area base and time base to describe the impact from EV system.

### **Working Session 4: SWOT analysis**

Keep in mind that the strengths and weaknesses represent the internal factors whereas the opportunities and threats represent the external factors.

### **Working Session 5: Prioritising the Stakeholders**

Encourage the participants to imagine being in the shoes of these stakeholders and to relate to their needs and wants.

## Working Session 6: Key Monitoring Actions

Think of the critical points of the implementation and use them as aspects for monitoring.

### APPENDIX A: Identification of Stakeholders

This appendix presents an approach that could be used to determine the stakeholders of the EV transportation system. It could be distributed after Working Session 1 is over.

A closed ended questionnaire could be distributed to participants as potential stakeholders. Use Table 1 to score the responses of stakeholders and identify ‘true’ stakeholders (those who are truly interested in EV). Use Table 2 to discuss participants’ differing viewpoints regarding EV and CV.

#### Questionnaire:

**1. Do you have any ideas or concepts about electric vehicles (EVs)?**

*5-Very High level 4-High level 3-Moderate level 2-Low level 1-No idea/concept*

**2. Can you distinguish an EV from other common vehicles (CVs)?**

*5-Very High level 4-High level 3-Moderate level 2-Low level 1-No idea/concept*

**3. Do you agree that an EV is a good alternative for modern transportation?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**4. Do you agree that an EV could be appropriate solution for changing the current system?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**5. Do you accept that an EV is cost effective for long run?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**6. Do you accept that an EV reduces noise pollution when compared to a CV?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**7. Do you accept that an EV reduces air pollution when compared to a CV?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**8. Do you accept that an EV reduces water pollution when compared to a CV?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**9. Do you accept that an EV is a more socially accepted vehicle when compared to a CV?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**10. Do you accept that an EV is easier than a CV (common vehicles) to manage waste?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**11. Do you accept that an EV is more accessible than a CV?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**12. Do you accept that government policies are more serious on EVs than on CVs?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**13. Do you accept that an EV is safer than a CV?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**14. Do you accept that an EV is easier than a CV for maintenance purposes?**

*5-Highly accepted 4-Moderately accepted 3-No comments 2-Moderately rejected 1-Highly rejected.*

**15. Do you agree to change towards an EV for your transportation system?**

*5- Highly agree 4- Moderately agree 3- No comments 2- Moderately disagree 1-Highly disagree*

**16. Would you encourage people or organization to adopt an EV as their transportation system?**

*5- Highly agree 4- Moderately agree 3- No comments 2- Moderately disagree 1-Highly disagree*

**17. Would you like to participate in a companion programme which promotes EVs?**

*5- Highly agree 4- Moderately agree 3- No comments 2- Moderately disagree 1-Highly disagree*

**18. Would you like to upgrade to the EV system in future?**

*5- Highly agree 4- Moderately agree 3- No comments 2- Moderately disagree 1-Highly disagree*

**19. How serious are you about the EV system?**

*5-Highly serious 4-Moderately serious 3- No comments 2- Not serious 1- Highly not serious*

**Table 1. Identification of stakeholders**

Score	Level of stakeholders	Identifying 'true' stakeholders
80-100	High level	Selected
60-80	Moderate level	Selected
40-60	Low Level	Rejected
Less than 40	Not stakeholder	Rejected

**Table 2. Comparison table**

Issues	Electric Vehicle	Conventional Vehicle	Difference in score	Remarks
Reduction of air pollution				
Reduction of water pollution				
Reduction of noise pollution				
Cost effective				
Socially acceptable				
Waste Management & Recycle				
Accessibility				
Government policy/law				
Safety & Insurance				
Safety from accident				
Adjustment in traffic system				
Adjustment of other accessories				
Maintenance facilities				
Score: 5: Very Highly effective, 4: Highly effective, 3: Moderately effective, 2: Less effective, 1: Not effective				