

Title	Introduction of Clean Energy Vehicles in Poland
Sub Title	
Author	Romejko, Kamila(Nakano, Masaru) 中野, 冠
Publisher	慶應義塾大学大学院システムデザイン・マネジメント研究科
Publication year	2014
Jtitle	
JaLC DOI	
Abstract	
Notes	修士学位論文. 2014年度システムエンジニアリング学 第153号
Genre	Thesis or Dissertation
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO40002001-00002014-0007

慶應義塾大学学術情報リポジトリ(KOARA)に掲載されているコンテンツの著作権は、それぞれの著作者、学会または出版社/発行者に帰属し、その権利は著作権法によって保護されています。引用にあたっては、著作権法を遵守してご利用ください。

The copyrights of content available on the KeiO Associated Repository of Academic resources (KOARA) belong to the respective authors, academic societies, or publishers/issuers, and these rights are protected by the Japanese Copyright Act. When quoting the content, please follow the Japanese copyright act.

Introduction of Clean Energy Vehicles in Poland

Kamila Romejko

(Student ID Number : 81234537)

Supervisor Masaru Nakano

September 2014

Graduate School of System Design and Management,
Keio University
Major in System Design and Management

SUMMARY OF MASTER'S DISSERTATION

Student Identification Number	81234537	Name	Kamila Romejko
Title			
<h3>Introduction of Clean Energy Vehicles in Poland</h3>			
Abstract			
<p>Clean Energy Vehicles (CEV) are slowly getting worldwide attention due to its both economic and environmental benefits. It is becoming increasingly difficult to ignore the energy problems that are appearing all over the world. Over the past century there has been a dramatic increase in usage of energy, especially in transportation sector.</p> <p>First chapter reviews the literature concerning future portfolio of Clean Energy Vehicles worldwide and describes aim, methodology and originality of the study. The purpose of this study is to analyze the development of Clean Energy Vehicles (CEV) market in Poland while considering economic and energy security issues. Therefore, to investigate and analyze automotive industry and energy sector in Poland in order to create a future scenario of car portfolio in 2030 that will sustain energy security.</p> <p>Chapter 2 and 3 present qualitative analysis of automotive industry and energy sectors. Automotive is of great importance to the Polish economy, however the sector has been on a decline in recent years, which causes cuts in working force and locating foreign direct investment in other countries. Poland is the biggest hard coal producer in the EU and nearly all of its generated electricity comes from coal-fired power plants. Nevertheless, Poland imports 96.8% of crude oil consumption and 69.4% of Poland's natural gas consumption, which causes a threat to energy security of the country.</p> <p>Chapter 4 gives insight into optimization model. Explanations of constraints are provided with an outline of an optimization model, restriction goals are being set and the objective function of this research is presented. What is more various preconditions and result of calculation are described as well.</p> <p>The last chapter provides deliverables of this research and future subject are also identified. One of the more significant findings to emerge from this study is that, Polish society will require a full</p>			

portfolio of clean energy vehicles and fuel options to achieve both economic and energy security objectives. Those goals cannot be reached by introducing only one type of CEV alone. HEV might be treated as an intermediate step before introduction of e.g. EV. The results of this study indicate that CNG can enjoy a great popularity in Poland if the proper infrastructure is abundant. Furthermore, only strong governmental policy response can help key technologies to evolve truly competitive and world-widely used. What is more, investment in non-technological aspects like consumer-education is crucial since the results of the study show that Polish people have little knowledge of eco-issues and Clean Energy Vehicles.

Key Word (5 words)

CEV, policy, automotive, energy security, oil dependency

INTRODUCTION OF CLEAN ENERGY VEHICLES IN POLAND.

Kamila Romejko

*THE GRADUATE SCHOOL OF SYSTEM DESIGN AND MANAGEMENT, KEIO
UNIVERSITY KYOSEI BUILDING, 4-1-1, HIYOSHI, KOHOKU-KU, YOKOHAMA,
KANAGAWA, 223-8526, JAPAN*

Abstract

Clean Energy Vehicles (CEV) are slowly getting worldwide attention due to its both economic and environmental benefits. It is becoming increasingly difficult to ignore the energy problems that are appearing all over the world. Over the past century there has been a dramatic increase in usage of energy, especially in transportation sector. The purpose of this study is to analyze the development of Clean Energy Vehicles (CEV) market in Poland while considering economic and energy security issues. Therefore, to investigate and analyze automotive industry and energy sector in Poland in order to create a future scenario of car portfolio in 2030 that will sustain energy security. The first step is to qualitatively investigate automotive and energy sector in Poland by conducting literature review, intelligence gathering and carrying out interviews with the pundits. The second step is a quantitative analysis in order to analyze the development of CEV market in Poland till 2030. This study thus adopts optimization to uncover an optimal portfolio of CEV in Poland. The results indicate that it is crucial to introduce portfolio of clean energy vehicles and fuel options to achieve both economic and energy security objectives.

Keywords: CEV, policy, automotive, energy security, oil dependency, gas, scenario, Poland