



Contents

Abbreviations and Acronyms	ix
List of Project Members	x
Executive Summary	xii
Chapter 1 : Primary Energy Data	1
Chapter 2 : Energy Balance Table	18
Chapter 3 : Energy Consumption Survey	38
Chapter 4 : Analysis of Demand–Supply Situation	70
Chapter 5 : Conclusion	94
References	98
Annexes	
Annex 1. Definition of Lao PDR’s Energy Products and Flows	99
Annex 2. Petroleum Products Sales Questionnaire Definitions	106
Annex 3. Enabling Policy and Institutional Support for a Functioning Lao Energy Statistics	114
Annex 4. Lao PDR’s Energy Balance Tables, 2000–2015	119

List of Tables

Table 1.1. Coal Production	2
Table 1.2. Coal Export	3
Table 1.3. Coal Consumption Data	4
Table 1.4. Import of Petroleum Products	5
Table 1.5. Consumption of Petroleum Products	6
Table 1.6. Petroleum Sales Data, 2015	8
Table 1.7. Electricity Production by Source	9
Table 1.8. Export-Import of Electricity	10
Table 1.9. Electricity Consumption	11
Table 1.10. Fuelwood Production	11
Table 1.11. Charcoal Production	12
Table 1.12. Biomass Consumption	12
Table 1.13. Oil Supply and Consumption	15
Table 2.1. Calorific Content of Energy Products in the Lao PDR	23
Table 2.2. Export of Coal	24
Table 2.3. Coal Consumption in the Industry Sector	25
Table 2.4. Revised Coal Balance	26
Table 2.5. Import of Petroleum Products	27
Table 2.6. Consumption of Petroleum Products	29
Table 2.7. Revised Petroleum Product Balance	30
Table 2.8. Electricity Balance	31
Table 2.9. Biomass Balance	33
Table 2.10. Lao PDR's Energy Balance Table, 2000	34
Table 2.11. Lao PDR's Energy Balance Table, 2005	35
Table 2.12. Lao PDR's Energy Balance Table, 2010	36
Table 2.13. Lao PDR's Energy Balance Table, 2015	37
Table 3.1. Overview Information on the Industry Sector	41
Table 3.2. Density and Heating Values of Different Fuels	41
Table 3.3. Average Sales Revenue and Fuel Consumption	42
Table 3.4. Lao PDR Gross Domestic Product	44
Table 3.5. Estimated Total Consumption of the Industry Sector	45
Table 3.6. Estimated Total Consumption by Fuel	45
Table 3.7. Estimated Total Energy Consumption by Fuel	46
Table 3.8. Fuel Economy and Distance Travelled of Sampled Vehicles	49
Table 3.9. Estimated Total Consumption on Road Transport	51
Table 3.10. DEPP Statistics on Gasoline and Diesel Supply and Consumption	52
Table 3.11. Comparison of Building Energy Intensity Values	54

Table 3.12. Average Share of Energy Sources Consumed by Each District	65
Table 3.13. Projected National Energy Consumption of the Commercial Sector	67
Table 3.14. Projected National Energy Consumption of the Residential Sector	68
Table 4.1. Indigenous Production and Energy Imports	72
Table 4.2. Total Final Energy Consumption by Sector	75
Table 4.3. Coal Supply and Consumption	77
Table 4.4. Supply and Consumption of Petroleum Products	78
Table 4.5. Consumption of Petroleum Products by Product	80
Table 4.6. Electricity Supply	83
Table 4.7. Electricity Consumption	85
Table 4.8. Energy and Economic Indicators	88
Table 4.9. Factor Analysis of Energy Consumption	89
Table 4.10. Energy and CO ₂ Emission Indicators	92

List of Figures

Figure 1.1. Lao PDR Coal Data	13
Figure 1.2. Lao PDR Electricity Data	16
Figure 1.3. Lao PDR Biomass Data	17
Figure 2.1. Energy Flow in the Energy Balance	20
Figure 3.1. Types of Vehicles Sampled	48
Figure 3.2. Breakdown of Vehicles by Fuel Consumed	48
Figure 3.3. Vehicle Population in the Lao PDR, 1990–2016	50
Figure 3.4. Preliminary BEI vs GFA Trend of Office Buildings	56
Figure 3.5. Final Analysis of BEI vs GFA of Office Buildings	57
Figure 3.6. Preliminary BEI vs GFA Trend of 4- and 5-Star Hotels	58
Figure 3.7. Preliminary BEI vs GFA Trend of 1- to 3-Star Hotels	59
Figure 3.8. Final Analysis of BEI vs GFA for 4- to 5-Star Hotels	60
Figure 3.9. Final Analysis of BEI vs GFA for 3-Star Hotels	60
Figure 3.10. Analysis of BEI vs GFA of Retail Buildings	61
Figure 3.11. Analysis of BEI vs GFA of Hospitals	63
Figure 3.12. Average Electricity Consumption by District per Household	64
Figure 3.13. Total Energy Consumption (including Electricity) by District per Month per Household	64
Figure 3.14. Average Share of Energy Sources Consumed by Each District	65

Figure 4.1. Total Primary Energy Supply	70
Figure 4.2. Energy Mix of the Total Primary Energy Supply	71
Figure 4.3. Dependence on Imported Energy	73
Figure 4.4. Total Final Energy Consumption by Fuel	74
Figure 4.5. Fuel Mix in Total Final Energy Consumption	74
Figure 4.6. Total Final Energy Consumption by Sector	76
Figure 4.7. Coal Consumption	77
Figure 4.8. Consumption of Petroleum Products by Sector	79
Figure 4.9. Consumption of Petroleum Products by Product	81
Figure 4.10. Biomass Consumption	81
Figure 4.11. Electricity Production vs Electricity Export	84
Figure 4.12. Electricity Consumption	86
Figure 4.13. TPES and Energy Intensity	89
Figure 4.14. CO ₂ Emissions from Fuel Combustion by Sector	91
Figure 4.15. Coal Share in TPES, CO ₂ Emissions, and CO ₂ Intensity	93