List of Tables

Table 1.1	Road Vehicle Stock Data of Lao PDR	7
Table 1.2	Estimated Parameters of Equation (1)	8
Table 1.3	Kilometres Travelled, Fuel Economy, and Battery Efficiency Assumptions	10
Table 1.4	Basic Equations for Electric Vehicle Scenarios	11
Table 2.1	Different Modes of Plug-in Electric Vehicle Charging	18
Table 2.2	Examples of Slow and Semi-fast Charging Facility Purchase and Installation Costs	23
Table 2.3	Examples of Fast-Charging Facility Purchase and Installation Costs	25
Table 2.4	Indicated Average Ratios of Electric Vehicles per Public Charge Point	27
Table 2.5	Assumptions on Availability (AVAILYEAR), Efficiency (CHAREFF), and Charging Power (CHARPWR)	37
Table 2.6	Assumption 1: Increasing Energy Use Ratio in Public Charging from 2020 to 2040	38
Table 2.7	Assumption 2: Constant Energy Use Ratio in Public Charging from 2020 to 2040	38
Table 2.8	Assumed Installation Costs	44
Table 3.1	Changes in Energy Demand from EV Penetration in 2040 (ktoe)	52
Table 3.2	Lao PDR Energy Balance Table of BAU Scenario in 2040	54
Table 3.3	Lao PDR Energy Balance Table of EV 50% Scenario with 100% Hydropower in 2040	56
Table 4.1	Estimation of Demand for Gasoline and Diesel Oil by EV Penetration Scenario Compared to BAU in 2040 (1,000 kl)	64
Table 4.2	Total Import Value of Lao PDR in 2015	65
Table 4.3	Import Value of Gasoline and Diesel Oil in 2015	65
Table 4.4	Import Value in 2040 by EV Penetration Scenario (\$1,000)	65

Table 4.5	Decreased Import Value of Gasoline and Diesel Oil in 2040 Compared with BAU (\$1,000)	67
Table 4.6	Government Revenue (\$/litre)	67
Table 4.7	Government Revenue in 2040 by EV Penetration Scenario (\$1,000)	68
Table 4.8	Sales Amount by EV Penetration Scenario in 2040 (\$1,000)	70
Table 5.1	EDL's Transmission Line and Substation Facilities (as of 2020)	81
Table 5.2	Power Development Plan up to 2030	85
Table 5.3	Difference Between BAU and EV Case in the Draft NPDP	86
Table 5.4	Annual Charging Power Demand	86
Table 5.5	Monthly Charging Power Demand	87
Table 5.6	Daily Charging Power Demand	87
Table 5.7	Power Demand Forecast Including Charging Power Demand at 22:00 (MW)	91
Table 5.8	Power Development Plan of Hydropower up to 2030 (under construction)	93
Table 5.9	Capacity Factor of Hydropower	95
Table 5.10	Unit Cost of Each Type of Power Generation	97
Table 5.11	Monthly Power Generation of Additional Power Stations in the Draft NPDP EV Case	97
Table 5.12	Required Power Generation	98
Table 5.13	Required Capacity for Case 1	99
Table 5.14	Required Capacity for Case 2	99
Table 5.15	Installation Cost of Required Capacity of the NPDP EV Case	102
Table 5.16	Total Installation Cost of Required Capacity for Case 1	102
Table 5.17	Total Installation Cost of Required Capacity for Case 2	103
Table 5.18	Peak Demand Forecast and Installed Capacity in 2040	103
Table 5.19	Peak Demand Forecast in Thailand (PDP 2018)	104
Table 5.20	Assumed Total Power Demand in Thailand and Lao PDR	105

Table 5.21	Maximum Change Rate of Charging Demand in 2030 and 2040	105
Table 5.22	Ratio of the Change Rate of Charging Power to the Total Demand in Thailand and Lao PDR	106
Table 5.23	Ratio of the Change Rate in TEPCO Area to the Total Demand in TEPCO and Tohoku EPCO	107
Table 5.24	Number of Required Hydropower Stations	108
Table 5.25	Unit Cost for Transmission Lines and Substation Switch-yard Facilities	109
Table 5.26	Required Transmission Equipment for the Draft NPDP EV Case	110
Table 5.27	Required Transmission Equipment for Additional Power Stations	111
Table 5.28	Total Cost of Required Transmission Equipment	111
Table 5.29	Project Outline of Rural Electrification Project, Supported by World Bank	112
Table 5.30	Installation Data for Distribution Network (as of 2019)	112
Table 5.31	Existing Distribution Network Cost (as of 2019)	113
Table 5.32	Cost of Required Distribution Network up to 2040	113
Table 5.33	Assumption of Future Unit Coal Price	114
Table 5.34	Fuel Cost Estimation for Case 2	115
Table 5.35	Electricity Generation Investment in Lao PDR from 2015 to 2019 (\$ million)	116
Table 5.36	Annual Cost of Required Generation Capacity	117
Table 5.37	Ratio of the Cost of RGC Required Generation Capacity to Electricity Generation Investment	117
Table 5.38	Government Investment in Lao PDR from 2015 to 2019	117
Table 5.39	Total Cost of Required Transmission and Distribution Network	118
Table 5.40	Annual Cost of Required Transmission and Distribution Network	118
Table 5.41	Ratio of the Cost of Required Transmission and Distribution Network to Government Investment	118

Table 5.42	Expected New Employment for the Draft NPDP EV Case	119
Table 5.43	Expected New Employment for Case 1	120
Table 5.44	Expected New Employment for Case 2	120