

List of Figures

Figure 1.1	Final Energy Consumption by Sector, 2010-2015	2
Figure 1.2	Total Electricity Generation, 2010-2015	3
Figure 1.3	Final Electricity Consumption by Sector, 2010-2015	4
Figure 1.4	Residential Energy Consumption by Fuel Type	4
Figure 1.5	Data Process Flow	5
Figure 1.6	Share of Vehicle Type	8
Figure 1.7	Comparison of Survey Results and National Statistics on Number of Households by Income Level	9
Figure 1.8	Comparison of Lowest-Income and Highest-Income Household Shares of Appliances	10
Figure 1.9	Comparison of Survey Results and National Statistics on Number of Vehicles	10
Figure 1.10	Share of Appliances Utilising Electricity (%)	12
Figure 1.11	Average Yearly Electricity Consumption per Household by District, and National Average	14
Figure 1.12	Average Monthly Electricity Consumption per Household and Corresponding Electricity Consumption of Two Major Appliances	15
Figure 1.13	Electricity Consumption per Dwelling in European Union Countries	15
Figure 1.14	Average Electricity Consumption per Household in Asia	16
Figure 1.15	Share of Electricity Consumption by Appliance	16
Figure 1.16	Share of Electricity Consumption by Appliance by District	17
Figure 1.17	Average Number of Appliances per Household	18
Figure 1.18	Number of Units by Age Group	19
Figure 1.19	Share of Vehicles by Engine Capacity	21
Figure 1.20	Share of Fuel Economy by Vehicle Engine Capacity	22

Figure 1.21	Age of Vehicle (Years)	22
Figure 2.1	Building Energy Intensity Against Total Gross Floor Area for Small Offices	31
Figure 2.2	Building Energy Intensity Against Total Gross Floor Area for Medium-sized Offices	31
Figure 2.3	Building Energy Intensity Against Total Gross Floor Area for Large Offices	32
Figure 2.4	Building Energy Intensity Against Total Gross Floor Area for All Offices	32
Figure 2.5	Building Energy Intensity Against Total Gross Floor Area for Retail Buildings	33
Figure 2.6	Building Energy Intensity Against Total Gross Floor Area for Hospital Buildings	34
Figure 2.7	Building Energy Intensity Against Total Gross Floor Area for 4-5 Star Hotels	35
Figure 2.8	Building Energy Intensity Against Total Gross Floor Area for 1-3 Star Hotels	35
Figure 2.9	Building Energy Intensity Against Total Gross Floor Area for Small Mosques or Prayer Halls	36
Figure 2.10	Building Energy Intensity Against Total Gross Floor Area for Medium-sized Mosques	37
Figure 2.11	Building Energy Intensity Against Total Gross Floor Area for Large Mosques	37
Figure 2.12	Average Energy Use Intensity Trend by Commercial Building Type in Singapore	39
Figure 2.13	Survey Results	42
Figure 2.14	Energy Reduction Strategies Towards Low-energy Buildings	43

List of Tables

Table 1.1	Number of Validated Survey Samples by District	7
Table 1.2	Brunei Darussalam Household Energy Consumption Survey Items	7
Table 1.3	Comparison Between Projected National Residential Electricity Consumption and National Energy Statistics	11
Table 1.4	Number of Households Using Other Fuels, Percentage Share of Households Using Other Fuels, and Household Consumption by Type of Fuel by District	13
Table 1.5	Number of Units and Electricity Consumption per Unit by Number of Usage Years	20
Table 2.1	Number of Samples by Building Type	27
Table 2.2	Comparison of Building Energy Intensity Values in Malaysia and Singapore	28
Table 2.3	Questionnaire Sections and Details	29
Table 2.4	Validated Samples with Respect to Total Samples	30
Table 2.5	Summary of Average Building Energy Intensity Values for Conventional Buildings Derived from the Survey	38
Table 2.6	Existing Technologies and Strategies	44
Table 3.1	Energy Efficiency Improvement Action Plans	49

List of Abbreviations and Acronyms

ASEAN	Association of Southeast Asian Nations
BAGUS	Brunei Accredited Green Unified Seal
BCA	Building and Construction Authority, Singapore
BDHECS	Brunei Darussalam Household Energy Consumption Survey
BEI	building energy intensity (kWh/m ² /year)
BNERI	Brunei National Energy Research Institute
C-BDECS	Commercial Buildings – Brunei Darussalam Energy Consumption Survey
DES	Department of Electrical Services
EE	energy efficiency
EEC	energy efficiency and conservation
ERIA	Economic Research Institute for ASEAN and East Asia
EU	European Union
EUI	energy use intensity
ktoe	kiloton of oil equivalent
GWh	gigawatt hour
JPKE	Jabatan Perancangan dan Kemajuan Ekonomi (Department of Economic Planning and Development)
kWh	kilowatt hour
LPG	liquefied petroleum gas
MEPS	minimum energy performance standards
MOD	Ministry of Development
ME	Ministry of Energy
UBD	Universiti Brunei Darussalam